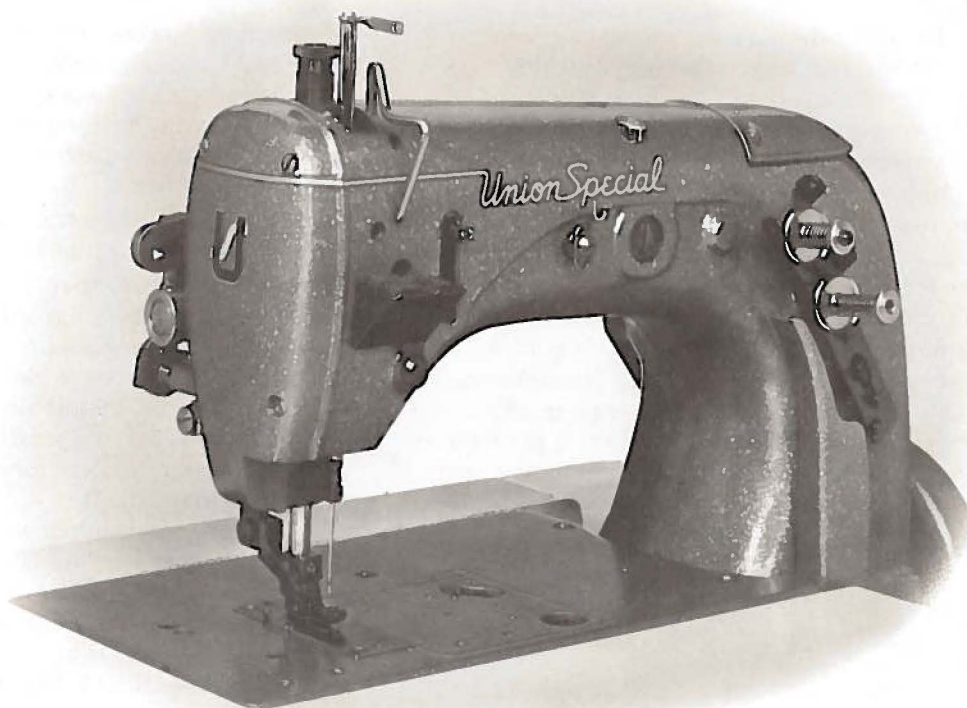


FINEST QUALITY

Union Special[®]
LEWIS[®] • COLUMBIA[®]

**INDUSTRIAL
SEWING
MACHINES**

**STYLE
53700C**



**CLASS 53700
STREAMLINED
FLAT BED MACHINES
WITH UPPER FEED
FOR
CLOSING GLOVE FINGERS**

UNION SPECIAL CORPORATION

CHICAGO

From the library of: Superior Sewing Machine & Supply LLC

Union Special is offering two practical systems to help pinpoint and reduce your sewing machine maintenance costs: a record keeping system to help spot machines requiring abnormally high maintenance, and a parts inventory system to speed routine repairs.

Repair-prone machines or inexperienced operators can eat up your maintenance dollars in short order. To help spot these problems, Union Special suggests two variations of a simple maintenance record keeping system using cards provided by Union Special.

[illegible][illegible]

Excessive machine downtime and wasted hours by mechanics can be eliminated with an orderly in-plant inventory of the most commonly needed parts. There is no longer a need to cannibalize other machines for spare parts. Long waits for deliveries are avoided and machine downtime is kept to a minimum. The cost of a parts inventory is small when the overall savings are considered.

Part Number	Description	Minimum Spare Parts Per Machine
39520 A	Presser foot	1
39530	Presser foot hinge spring	2
39597 A	Presser foot stitch tongue marked "DS"	1
39524 B 3/32	Throat plate marked "V-3/32"	1
or	or	
39524 B 1/8	Throat plate marked "V-1/8"	1
22524	Throat plate screw	2
39526 B	Differential feed dog, 16 teeth per inch	1
39505 B	Main feed dog marked B, 16 teeth per inch	1
39505	Chaining feed dog	1
22528	Screw	2
93 A		2
22797 A		2
39570		4
14077	Nut for upper knife clamp stud	1
39549	Lower knife	4
22588 A	Screw for lower knife clamp	1
39508 B	Lower looper	1
39508 A	Upper looper marked "CC"	1
225646	Screw for upper looper	2
39551 F	Needle clamp stud	1
14077	Nut for needle clamp stud	1
22596 E	Screw for needle driving arm	2
21225 1/8	Looper gauge	1
154 GAS	Needles (specify size)	100

From the library of: Superior Sewing Machine & Supply LLC

Catalog No. T100 C
(Supplement to Catalog No. 100 L)

INSTRUCTIONS
FOR
ADJUSTING AND OPERATING
LIST OF PARTS

CLASS 53700

Style

53700 C

First Edition

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UNION SPECIAL CORPORATION
INDUSTRIAL SEWING MACHINES
CHICAGO

Printed in U.S.A.

March, 1979

IDENTIFICATION OF MACHINE

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 53700 C". 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 53700 CZ".

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 53700".

APPLICATION OF CATALOG

This catalog is a supplement to Catalog No. 100 L and should be used in conjunction therewith. Only the parts found on Style 53700 C but not on Style 53700 B are illustrated. At the back is an illustration identifying the parts by reference number and on the opposite page, the part numbers and descriptions identifies the part. Any part that is a component of another part is indicated by indenting its description under the description of the assembly or base part. Always use the part number in the second column, never use the reference number in the first column when ordering repair parts.

Reference to direction, such as right, left, front, back, etc., are given from the operator's position while seated at the machine (unless otherwise specified). Operating direction of handwheel is toward the operator.

STYLE OF MACHINE

Streamlined Flat Bed, One Needle, High Throw Machine with 1 1/2 Inch Needle Travel, Power Driven Upper Running Feed with Alternating Presser Foot Action, Lower Feed, Single Reservoir Enclosed Lubricating System and Filter Type Oil Return Pump, Lateral Looper Travel, Maximum Work Space to Right of Needle Bar 7 3/4 Inches.

53700 C For closing glove fingers made of heavy canvas and similar operations on medium heavy to heavy weight materials, six to nine stitches per inch. Seam specification 401-SSa-1. Type 147 GS needle. Maximum recommended speed 3300 R. P. M.

NEEDLES

Each UNION SPECIAL needle has both a type 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 the largest diameter of blade, measured in thousandths of an inch, midway between shank and eye. Collectively, type and size number represent the complete symbol, which is given on the label of all needles packaged and sold by Union Special.

NEEDLES (Continued)

Standard recommended needle for Style 53700 C is Type 147 GS. It has a round shank, round point, long, double groove, struck groove, ball eye, spotted, short point, undersize eye and grooves, one step reduction, chromium plated and is available in sizes 080/032, 090/036, 100/040, 110/044, 125/049, 140/054, 150/060, 170/067.

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 147 GS, Size 140/054".

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

Success in the operation of UNION SPECIAL machines can be secured only by use of needles packaged under our brand name, *Union Special®*, which is backed by a reputation for producing highest quality needles in material and workmanship for more than three-quarters of a century.

OILING AND THREADING INSTRUCTIONS

CAUTION! Oil has been drained from the main reservoir before shipment, so the reservoir must be filled before beginning to operate. Use a straight mineral oil of a Saybolt viscosity of 90 to 125 seconds at 100° Fahrenheit.

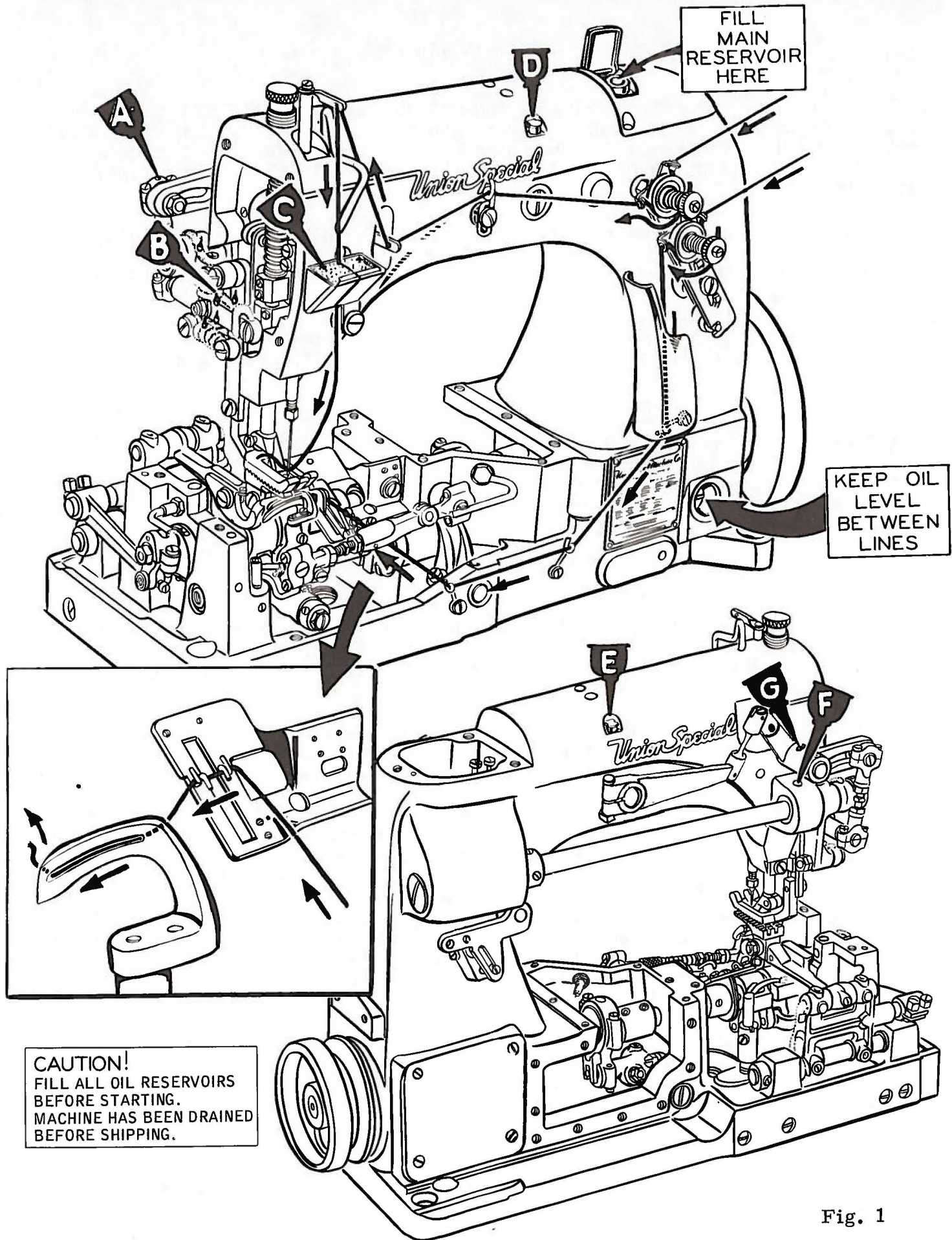
Oil is filled at the spring cap in the top cover and the level is checked at the lucite gauge on the front of the machine. The oil level should be maintained between the red lines on this gauge. Capacity of the oil reservoir is twelve ounces.

The lubrication, which is almost entirely automatic, requires a minimum of manual oiling. The oiling diagram (Fig. 1) is self-explanatory.

The main reservoir supplies oil to the looper drive eccentric, upper running feed drive eccentric and needle lever crank and the supply is registered at front gauge. The entire lower mechanism is served thru a system of channels and wicks in the main frame by this reservoir.

A daily check, before the morning start, should be made and oil added if required. Oil which has gone through the machine is filtered and pumped back into the main reservoir making too frequent oilings unnecessary. Excessive oil in the main reservoir may be drained at the plug screw in the main frame, directly under the handwheel.

Fig. 1 also shows the threading of these machines and the machines should be threaded accordingly.



SYNCHRONIZING LOOPER AND NEEDLE MOTIONS

Check the synchronization of the looper and needle motions, using gauge No. 21227 AC as follows:

Insert the pin, which is included with the gauge, in the looper rocker. Place the gauge plate on the throat plate seat using the throat plate screws for attaching. Place the indicator portion of the gauge in the needle thread take-up wire hole with the pointer to the right, but do not tighten the set screw at this time. Turn the handwheel in the operating direction until the pin in the looper rocker contacts the edge of the gauge plate and set the indicator so that the left end of the pointer rests against the top of the needle bar and the right end of the pointer rests at "0". Tighten the set screw and note indicator reading. Turn the handwheel in the reverse direction until the pin again contacts the plate. If the motions are in synchronization, the pointer of the indicator will return to the same reading. A variation of one graduation on the scale is allowable. If the reading is higher on the scale when the handwheel is turned in the operating direction, the looper drive lever rocker will have to be moved to the rear. If the reading is lower, the rocker will have to be moved to the front.

NOTE: If gauge No. 21227 AC is not available, synchronization may be checked as follows:

Insert the looper in the looper rocker and turn the handwheel in the operating direction until the point of the looper, moving to the left, is even with the left side of the needle. Note the height of the eye of the needle with respect to the looper point, then turn handwheel in the reverse direction until the looper point again moves to the left and is even with the left side of the needle. If the motions synchronize, the height of the eye of the needle with respect to the looper point will be the same. A variation of .005 inch is allowable. If the distance from the eye of the needle to the point of the looper is greater when the handwheel is turned in the operating direction, move the looper drive lever rocker to the rear. Moving it in the opposite direction acts the reverse. Moving of the looper drive lever rocker is accomplished as follows:

Remove the cloth plate, throat plate support, oil reservoir top cover and loosen the screws in the looper drive eccentric mechanism and move the eccentric as far to the right as it will go. Drive the rear bushing to the front or the middle bushing to the rear, as required. CAUTION: To avoid distorting the parts, remove the plug screw in the bed behind the rear bushing before driving to the front and place a horse-shoe shaped metal washer approximately 1/16 inch thick between the looper drive lever and adjacent bushing when driving the bushing to the rear. Correctly reposition the looper drive eccentric mechanism (per spot screws) and tighten all screws securely.

SETTING THE LOOPER

Insert a new needle, type and size as specified, with spot or scarf to the rear. With the looper (A, Fig. 2) at its farthest position to the right, its point should be $5/32$ inch from the centerline of the needle. If adjustment is required, loosen nut (B) (it has a left hand thread) and nut (C) on connecting rod (D) and turn the connecting rod forward or backward to obtain the $5/32$ inch dimension (Fig. 2). Looper gauge No. 21225- $5/32$ can be used advantageously in making this adjustment. Retighten both nuts, first nut (C), then nut (B). Make sure the left ball joint is in vertical position and does not bind after adjustment.

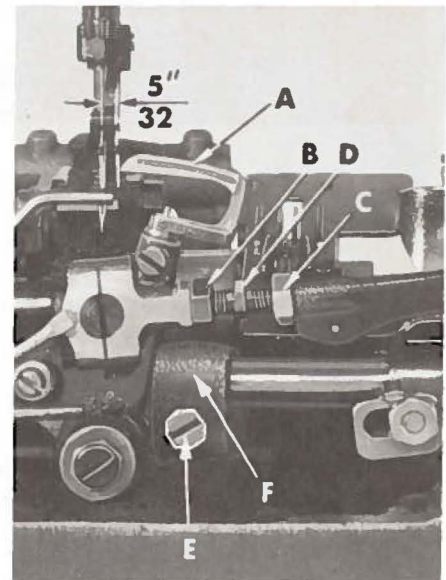


Fig. 2

SETTING THE LOOPER (Continued)

The looper is set correctly in-line-of-feed, as it moves to the left behind the needle, when its point passes as close as possible without contacting the needle. If adjustment is necessary, loosen screw (E, Fig. 2) in looper rock shaft arm (F), reposition looper as required and retighten screw (E).

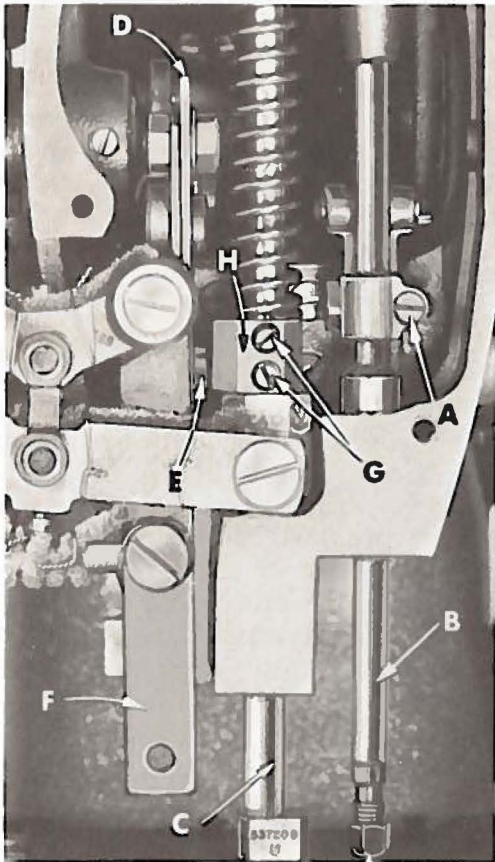


Fig. 3

If adjustment is necessary, loosen screw (A, Fig. 3) and move needle bar (B) up or down as required and retighten screw (A).

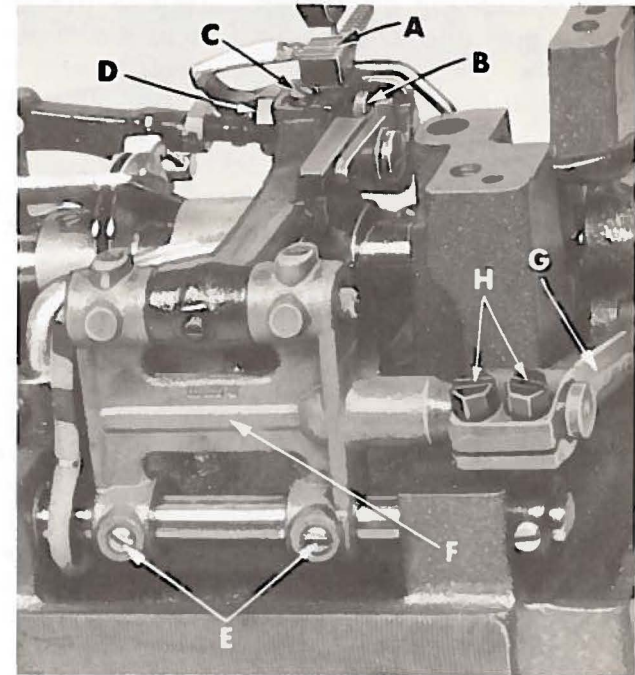


Fig. 4

SETTING HEIGHT OF NEEDLE BAR

The height of the needle is correct when the top of its eye is $1/64$ inch below the underside of the looper, when the looper point is flush with the left side of the

SETTING THE FEED DOG

Set the feed dog (A, Fig. 4) in the throat plate so there is equal clearance on all sides. See that the tips of the teeth extend slightly less than the depth of a tooth above the throat plate and are parallel with the throat plate at high point of travel. Height can be set by loosening feed dog attaching screw (B) and adjusting feed dog supporting screw (C). Parallelism can be set by loosening nut (D) and rotating feed dog holder adjusting screw (A, Fig. 5), as required and retighten nut. Side clearance can be set by loosening screws (E, Fig. 4) and moving feed rocker (F) to the right or left, as required.

NOTE: Whenever the feed rocker has been moved, always check to assure that the feed rocker arm (G) does not bind.

End clearance can be set by loosening screws (H) in the feed rocker arm (G) and moving feed rocker (F) forward or backward as required.

INITIAL SETTINGS OF UPPER RUNNING FEED MECHANISM

The top feed eccentric assembly should be located on the main shaft so that the first screw in the eccentric will be in a perpendicular position to the main shaft when the needle bar has risen $1/4$ inch from the bottom of its stroke, with the handwheel turned in the operating direction.

NOTE: The next two paragraphs refer to the maximum height setting of the top feed mechanism which can be lowered later to suit sewing conditions.

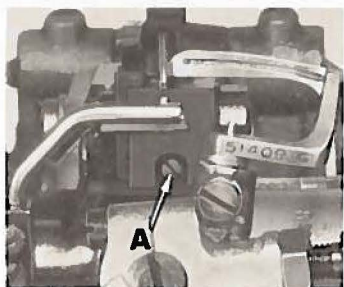


Fig. 5

Turn handwheel in the operating direction until the needle bar is at the bottom of its stroke. While holding the handwheel, position the upper feed lift driving lever (A, Fig. 6) after loosening nut (B) so the distance between the centerline of the link pin (C) and the centerline of the upper feed drive rock shaft (D) is $7/8$ inch (Fig. 6). Retighten nut (B).

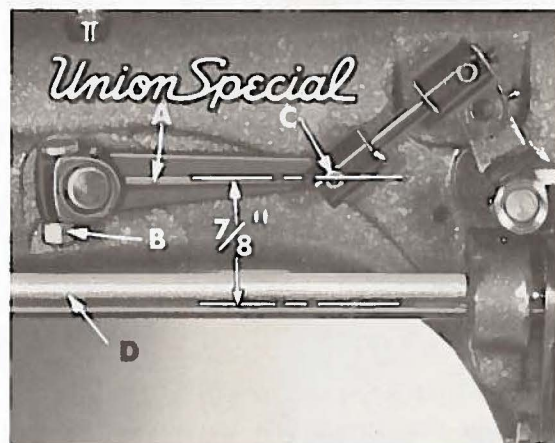


Fig. 6

The bell crank lever ball joint (A, Fig. 7) should be set all the way to the right in the slot of the upper feed bell crank lever (B). This connecting rod can also be lengthened or shortened to suit sewing conditions if required.



Fig. 7

As the needle bar just begins to rise from the bottom of its stroke, the distance between the rear of the needle bar (A, Fig. 8) and the front of the upper feed bar (B) should be $1 \frac{3}{32}$ inch (Fig. 8). Adjustment can be made by loosening screw (C) in the upper feed driving lever (D) and moving it forward or rearward as required and retighten screw (C).

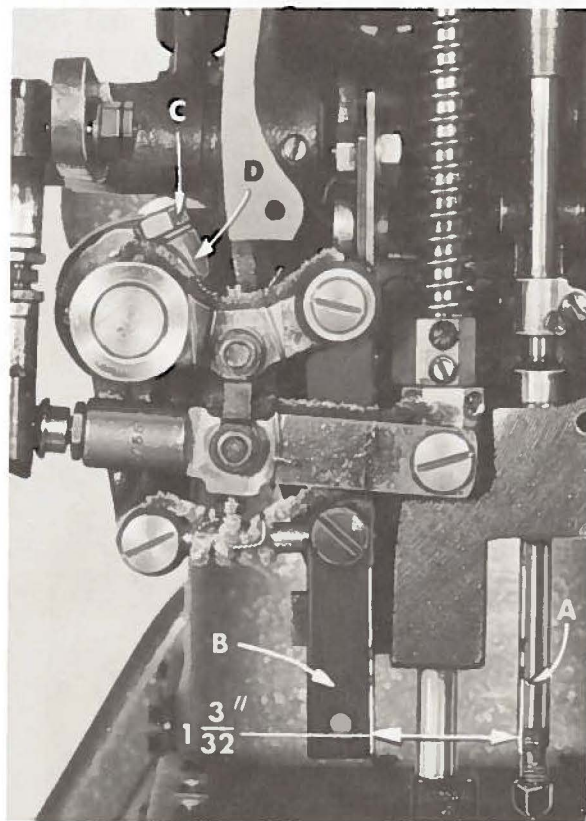


Fig. 8

INITIAL SETTINGS OF UPPER RUNNING FEED MECHANISM (Continued)

Synchronizing the upper feed with the lower feed can be accomplished by loosening nut (A, Fig. 9) and moving the ball stud in the upper feed driving shaft segment lever (B). Retighten nut.

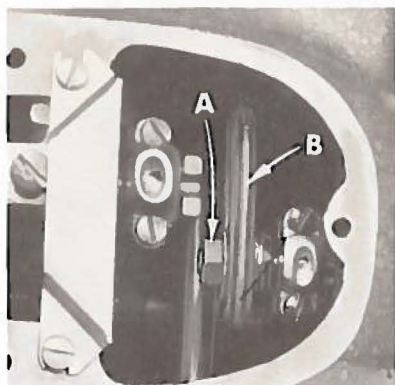


Fig. 9

CHANGING STITCH LENGTH

Set the stitch to the required length. This is accomplished by loosening locknut (A, Fig. 10) (it has a left hand thread) and turning the stitch adjusting screw (B). Turning screw (B) clockwise shortens the stitch and turning it in a counterclockwise direction lengthens the stitch.

NOTE: Any change in stitch length will necessitate a corresponding change in the rear needle guard setting and also synchronization of the upper running feed mechanism as described previously.

SETTING THE REAR NEEDLE GUARD

Set the rear needle guard (A, Fig. 11) horizontally so that it does not quite contact the rear of the needle (B) when at its most forward point of travel. A clearance of .005 inch is permissible. It should be set as low as possible, yet have its vertical face approach within about 3/64 inch of the needle, until the point of the looper (C), moving to the left, is even with the needle. To move needle guard forward or backward, merely loosen screw (D), move needle guard as required and retighten screw (D). To raise or lower the needle guard, loosen screw (D) and turn screw (E) clockwise to lower or counterclockwise to raise. Retighten screw (D) after guard is properly set.

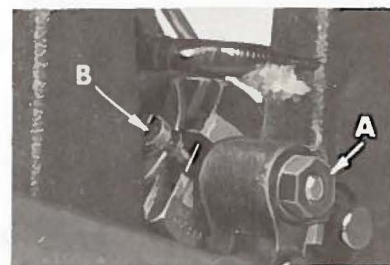


Fig. 10

SETTING FRONT NEEDLE GUARD

Set the front needle guard (F, Fig. 11) so that it barely contacts the needle (B) until the point of the looper (C), moving to the left, is just past the left side of the needle. The looper may brush, but not pick at the needle. The front needle guard should be set as low as possible to meet this condition yet not contact the rear needle guard or looper at any time. To move needle guard forward or rearward, loosen screws (G), rotate needle guard holder (H) as required and retighten screws (G). To raise, lower or rotate needle guard, loosen screws (J), reposition as necessary and retighten screws after guard is properly set.

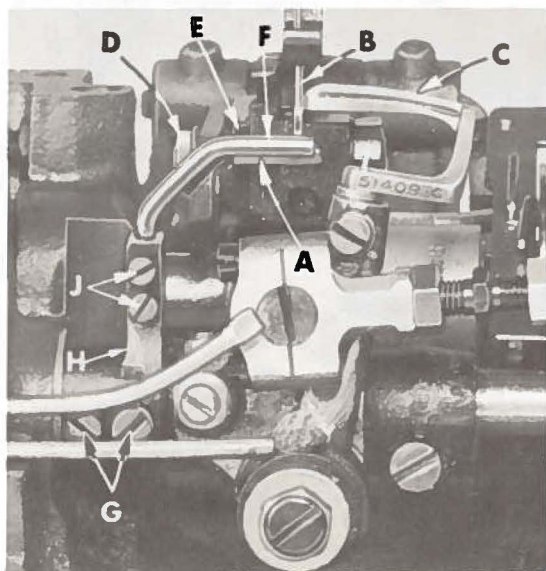


Fig. 11

THREAD TENSION RELEASE

The thread tension release is set correctly when it begins to function as the presser foot is raised to within 1/8 inch of the end of its travel and is entirely released when the presser

foot has reached its highest position.

THREAD TENSION RELEASE (Continued)

If adjustment is needed, loosen tension release lever screw (A, Fig. 12), located at the back of the machine and move tension disc separator as required. Retighten screw. After adjustment there should be no binding at any point.

SETTING HEIGHT OF PRESSER BAR

The height of the presser bar (C, Fig. 3) is set correctly if it is possible to remove the presser foot when the foot lifter lever (B, Fig. 12) is fully depressed. Also, there should be approximately 1/16 inch clearance between the bottom end of the slot of the lifter link (D, Fig. 3) and the stud (E) located in the upper feed bar (F) when the foot lifter lever is released and the presser foot resting on the throat plate, with the feed dog down below the throat plate.

If adjustment is necessary, turn handwheel in operating direction until the needle bar is in the low position. Loosen screws (G, Fig. 3), then, while holding presser foot down on the throat plate surface, pry up presser bar connection and guide (H) with a screwdriver to obtain the 1/16 inch setting and retighten screws.

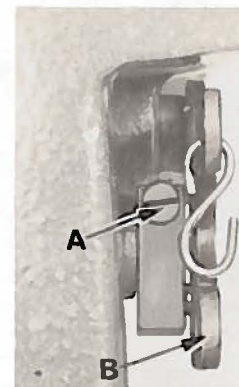


Fig. 12

THREADING

Draw the looper and needle threads into the machine and start operating on a piece of fabric. Refer to threading diagram (Fig. 1) for manner of threading these machines.

SETTING NEEDLE THREAD TAKE-UP WIRE AND FRAME EYELET

Set the needle thread take-up wire (A, Fig. 13) so that its upper surface is even with the top of the hole in the needle bar thread eyelet (B) when the needle bar is at the bottom of its stroke. Lower this setting for a smaller needle thread loop or raise it for a larger loop.

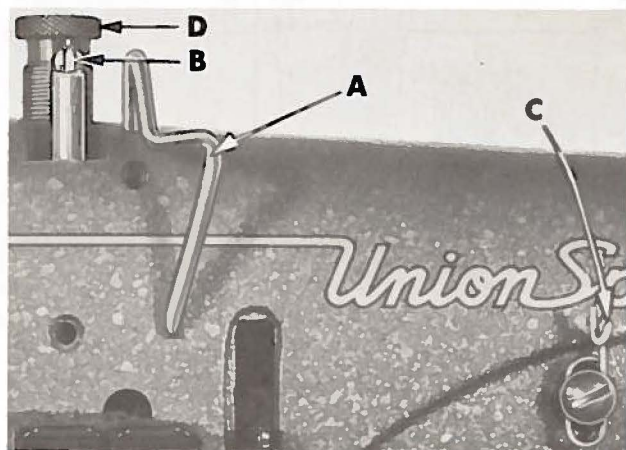


Fig. 13

Set the needle thread frame eyelet (C, Fig. 13) perpendicular to the machine base and midway in its mounting slot. Lower if more needle thread is desired in the stitch or raise for less.

SETTING LOOPER THREAD TAKE-UP

The looper thread retainer finger (A, Fig. 14) should be set so that the looper thread is cast-off just after the eye of the needle comes up out of the material. Co-ordinated positioning can be acquired by loosening screws (B and C). After looper thread retainer finger has been properly set, retighten screws.

PRESSER FOOT PRESSURE

Regulate the presser spring regulating screw (D, Fig. 13) so that it exerts only enough pressure on the presser foot to feed the work uniformly when a slight tension is placed on the fabric. Turning it clockwise increases the pressure, counterclockwise acts the reverse.

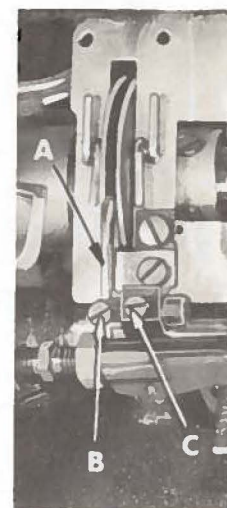
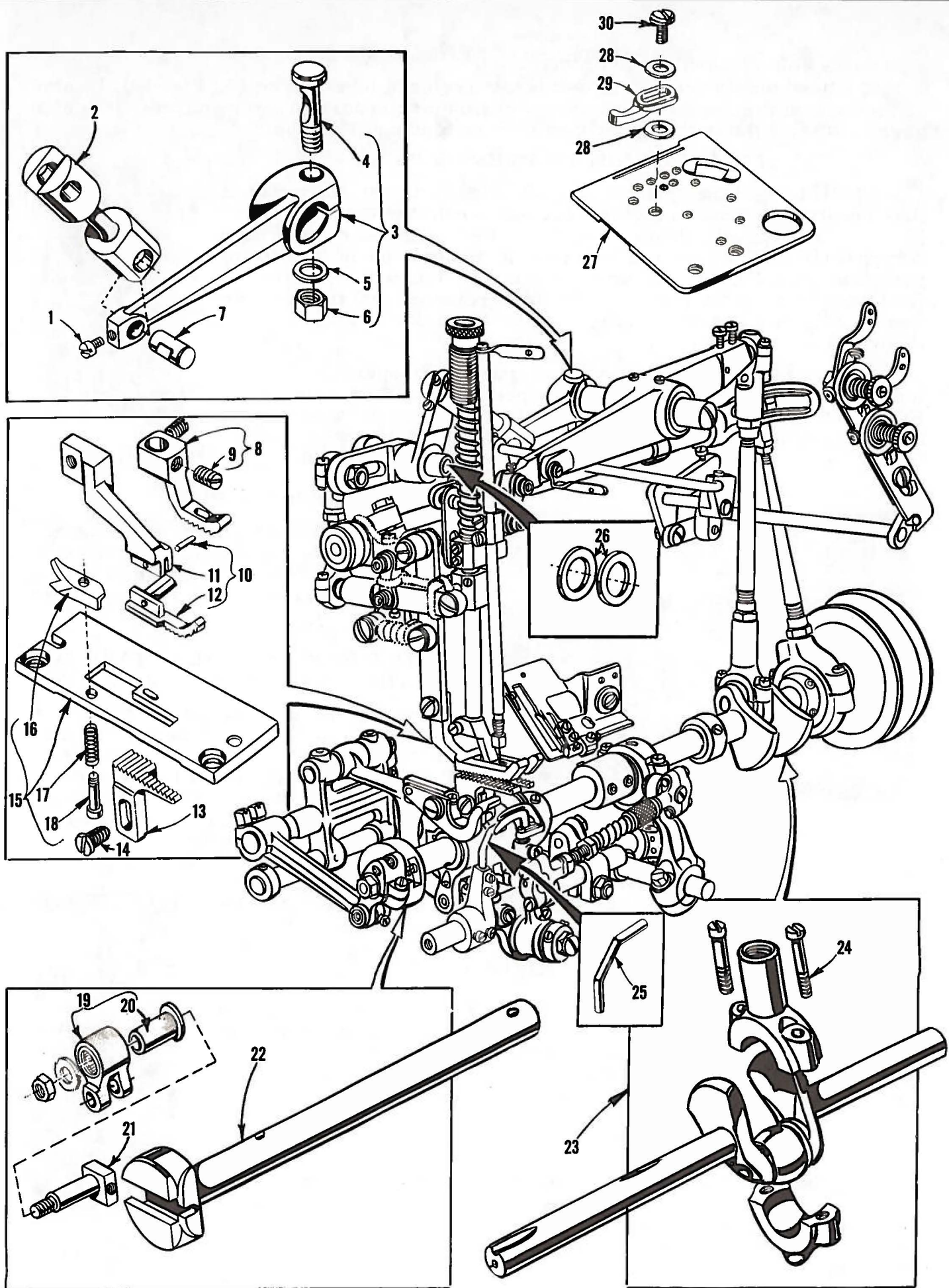


Fig. 14



The parts illustrated on the preceding page and described below represent the parts that are used on Style 53700 C, but not used on Style 53700 B.

Those parts shown in phantom views and bearing no reference numbers are common to Styles 53700 B and C.

Use Catalog No. 100 L (Style 53700 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.

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Amt. Req.</u>
1	77	Screw, for link pin No. 41336 C -----	1
2	53754 K	Upper Running Feed Lift Driving Link -----	1
3	53754 J	Upper Running Feed Lift Driving Lever-----	1
4	55235 D	Locking Stud-----	1
5	6042 A	Locking Stud Washer -----	1
6	55235 E	Locking Stud Nut -----	1
7	41336 C	Link Pin -----	1
8	53720 B	Presser Foot -----	1
9	78	Screw-----	2
10	53726 E	Top Feed Dog Assembly -----	1
11	53753 J	Top Feed Dog Shank -----	1
12	53726 D	Top Feed Dog, marked "FH"-----	1
13	53705 B	Lower Feed Dog, 14 teeth per inch-----	1
14	376 A	Screw, for feed dog -----	1
15	53724 B	Throat Plate-----	1
16	53770	Chain Cutting Knife, marked "L" -----	1
17	21-335	Spring -----	1
18	22799	Screw-----	1
19	51236 E	Feed Crank Link Assembly-----	1
20	51236 F	Ferrule -----	1
21	51236 G	Feed Crank Stud -----	1
22	53722 A	Main Shaft-----	1
23	29476 DD	Crank Shaft Assembly, .990 inch throw-----	1
24	22559 E	Screw-----	2
25	51325	Looper Needle Guard-----	1
26	51242 L	Washer, for No. 53754 F -----	2
27	51281 U-207	Cloth Plate Cover -----	1
28	21657 E	Washer -----	2
29	24 S	Edge Guide -----	1
30	22517 B	Screw, for edge guide -----	1
-	53701 A	Cloth Plate (not shown on picture plate)-----	1

Here are Oil Specifications for Union Special Sewing Machines

Specification 174 specifies a high quality petroleum oil, viscosity 100 seconds at 100°F. Recommended for all oiling applications on high speed machines.

Specification 175 specifies a high quality petroleum oil, viscosity 100 seconds at 100°F., water white or with a maximum A.S.T.M. color number of 1. *For use where freedom from oil staining is paramount.*

Specification 87 specifies a high quality petroleum oil, viscosity 300 seconds at 100°F.

Specification 100 specifies a general purpose high quality grease for use in ball bearings and transmitters. It is similar to commercial N.L.G.I., grease No. 3. Where No. 3 grease is not obtainable, No. 2 may be used.

UNION SPECIAL

SPECIFICATION NO.	174	175	87
Viscosity S.S.U. at 100°F	90-125	90-125	300-350
Flash (Min.)	350	350	350
Pour (Max.)	20	20	20
Color A.S.T.M. (Max.)	3	1	3
Neutralization No. (Max.)	0.10	0.10	0.10
Viscosity Index (D & D Min.)	85	85	85
Compounding	None	None	None
Copper Corrosion (Max.)	1A	1A	1A

*Anline No. 175-225 175-225 175-225

*Used with Buna N Rubber "O" Retainers



NOTE 1: The use of non-corrosive additives in oils meeting above classification is desirable but not essential. These may include:

1. Oxidation inhibitors
2. Rust inhibitors
3. Lubricity additives
4. Anti-oxidants
5. Film strength additives

These additives must be completely soluble in the oil and not removable by wick feeding nor shall they separate.

NOTE 2: Oils containing the following type additives shall not be used at any time:

1. Extreme pressure additives—corrosive
2. Tackiness or adhesive additives
3. Lead soap additives
4. Detergents



**UNION SPECIAL
CORPORATION**

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

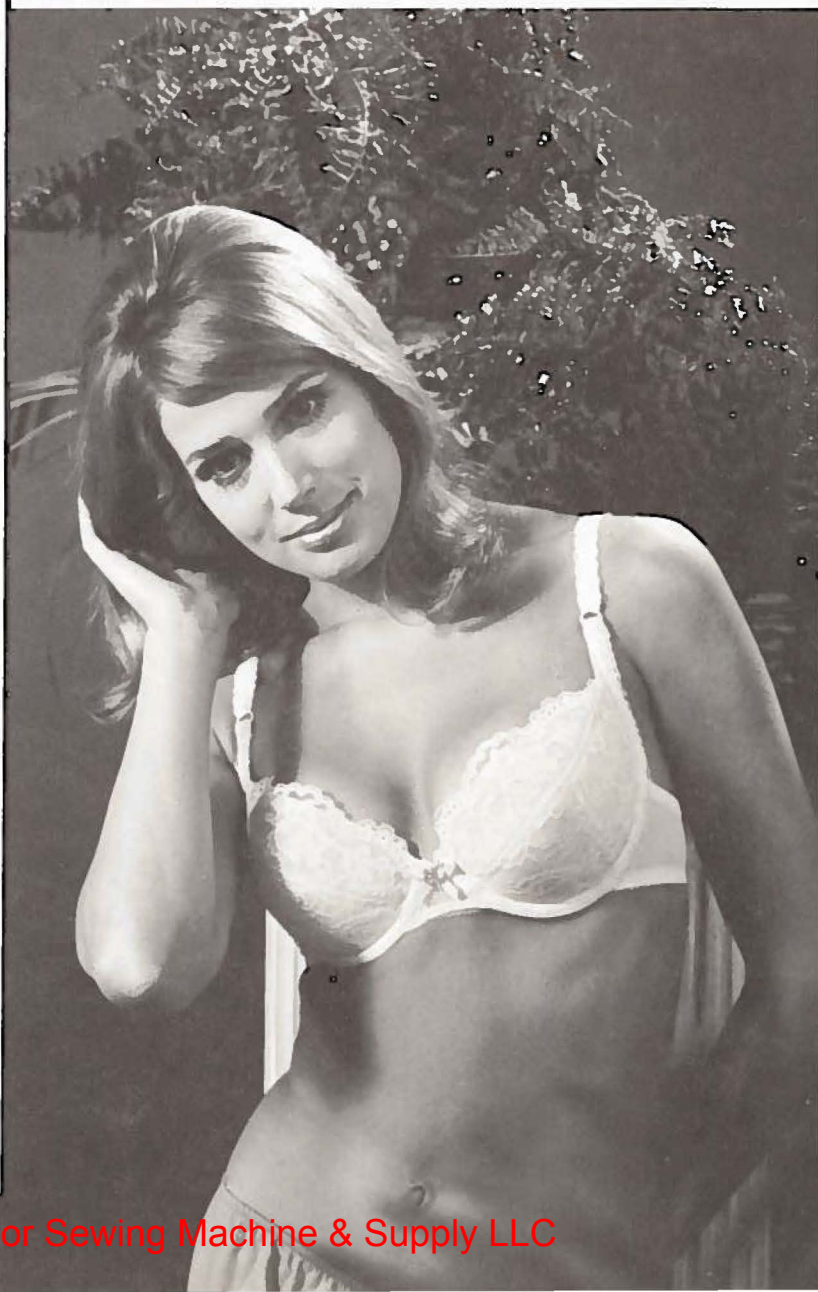


- No. 240, "Men's, Women's, Children's Footwear"
- No. 249, "Rainwear"
- No. 250, "Men's Dress Shirts"
- No. 251, "Service Shirts and Pants"
- No. 252, "Men's Shorts and Pajamas"
- No. 253, "Overalls, Coveralls, and Dungarees"
- No. 254, "Men's Knit Underwear"
- No. 256, "Knit Outerwear"
- No. 259, "Men's Sports Shirts"
- No. 260, "Work Gloves"
- No. 262, "Cotton, Burlap, Jute, and Multiwall Paper Bags"
- No. 263, "Men's Clothing"
- No. 264, "Men's Women's, Children's Jackets"
- No. 265, "Women's Wear"
- No. 266, "Women's Wear And High Fashion"
- No. 267, "Corsets, Girdles, Brassieres"
- No. 268, "Children's Wear"
- No. 269, "Mattresses, Slip Covers, Furniture Upholstery"
- No. 271, "Awnings, Canopies, Tents, Tarps"
- No. 273, "Curtains & Drapes"
- No. 610, "Klipp-it"
- No. 710, "MCS ForMation Unit"
- 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"



**UNION SPECIAL
CORPORATION**

**HERE ARE HELPFUL
BULLETINS and CATALOGS
TO HELP YOU SOLVE
SEWING PROBLEMS**



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UNION SPECIAL maintains sales and service facilities throughout the world. These offices will aid you in the selection of the right sewing equipment for your particular operation. Union Special representatives and service men are factory trained and are able to serve your needs promptly and efficiently. Whatever your location, there is a Union Special Representative to serve you. Check with him today.

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