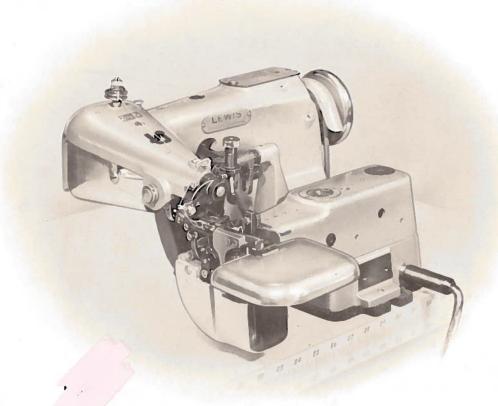




INDUSTRIAL SEWING MACHINES

STYLE 150-200

No. 194-12



LIST OF PARTS AND INSTRUCTIONS

## UNION SPECIAL CORPORATION

CHICAGO

From the library of: Superior Sewing Machine & Supply LLC

Catalog No. 194-12

INSTRUCTIONS

FOR

ADJUSTING AND OPERATING

LIST OF PARTS

Style 150-200

First Edition

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## UNION SPECIAL CORPORATION

INDUSTRIAL SEWING MACHINES

CHICAGO

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## IDENTIFICATION OF MACHINES

Each UNION SPECIAL LEWIS machine carries a style number which is stamped in the style plate on the head of the machine. The serial number of each machine is stamped in the arm, under the top cover.

## APPLICATION OF CATALOG

This catalog is a supplement to catalog No. 194-5 and should be used in conjunction therewith. Consult catalog No. 194-5, machine Style 150-20, for all parts not illustrated or described in this catalog. Opposite the illustrated page is listed each part by number, name and amount required.

This catalog applies specifically to the Standard Style of machine as listed herein. References to direction such as right, left, front, back, up or down, etc., are given from the operators position while seated at the machine. Operating direction of handwheel is away from the operator.

#### DESCRIPTION OF MACHINE

Style 150-200 is a single needle, chainstitch, blindstitch machine for producing a double inturned edge finish belt loop in 5/16 or 3/8 inch finished widths. This machine is equipped with a trimming device, front top feed drive, and a stationary work support plate.

#### **OILING**

The machine should be oiled twice daily, before the morning and afternoon starts. Use a good grade of straight mineral oil of a Saybolt viscosity of 90 to 125 seconds at  $100^{\circ}$  Fahrenheit.

Most of the oiling places on the machine are readily identified because of the fact they are painted red.

#### SPEED

The recommended operating speed of this machine is 3000 R.P.M.

#### NEEDLES

Use only genuine UNION SPECIAL needles. The needles are packaged under our brand name Union Special.

The recommended needle for this machine is Type 29 BL-090/036. It has a blade diameter of .036 inch (.90 mm). It is also available in the following sizes:

Needle Type	Size	
29 BL-065/025	.025 inch (.65 mm)	
29 BL-075/029	.029 inch (.75 mm)	
29 BL-100/040	.040 inch (1.00 mm)	
29 BL-110/044	.044 inch (1.10 mm)	

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

To have needle orders promptly and accurately filled, an empty container, a sample needle, or the Type number should be forwarded. Use the description on the label. A complete order would read: '100 Needles, Type 29 BL-090/036''.

#### CHANGING NEEDLES

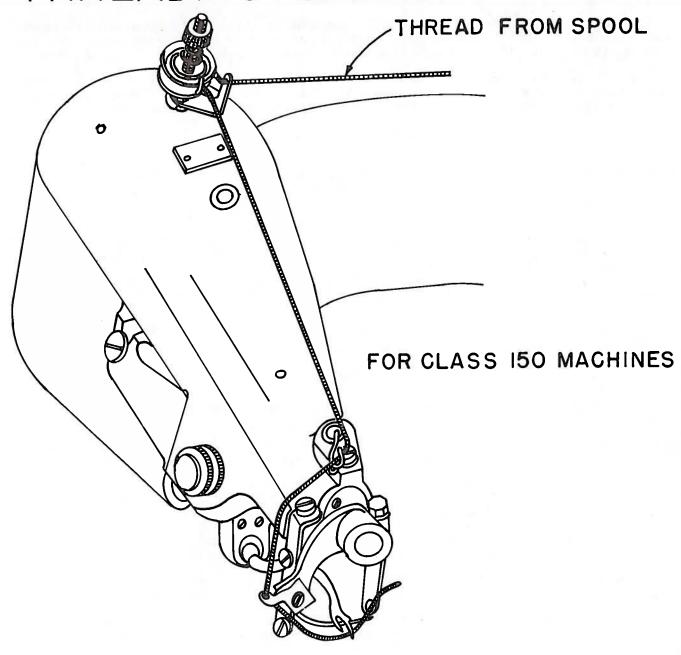
When changing needle, make sure that it is inserted in the needle carrier as far as it will go, and tighten clamp screw securely.

Immediately discard any needle which may have a hooked or blunt point, as improper needle penetration will result.

#### THREADING

To thread the machine, turn handwheel in operating direction until the needle carrier is in its highest position. Thread machine as indicated on threading diagram on next page.

# THREADING CHART



Thread machine as indicated above.

The machine should be oiled twice daily, before the morning and afternoon starts. Use a good grade of straight mineral oil of a Saybolt viscosity of 90 to 125 seconds at 100° Fahrenheit.

Most of the oiling places on the machine are readily identified because of the fact they are painted red.

#### ADJUSTING INSTRUCTIONS

## ADJUSTING PRESSER FOOT TO NEEDLE

Insert a new needle, of proper size and type, as far as it will go in the needle carrier and securely tighten the clamp screw.

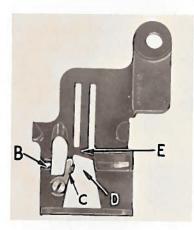


Fig. 1

Turn the handwheel until point of the needle is over the right side of needle guide (C, Fig. 1) of the presser foot. At this position, the needle should just be making contact or be slightly deflected. Continue turning the handwheel until the needle point is 1/2 inch beyond the right side of cloth opening (D, Fig. 1), at which time there should be a clearance of .001 to .003 inch between the needle point and the presser foot.

In order to accomplish these adjustments, the screws in the presser foot brackets (A, Fig. 2) are manipulated. Screws (B) are used to clamp the brackets securely, and screws (C) are used to assist in making adjustments.

Loosen screws (C) so that the heads do not contact the brackets (A). Loosen screws (B), manually force presser foot up and re-tighten screws only sufficiently to hold foot in place. Adjust the right screw (C) in clockwise direction to lower the foot to secure the required clearance on the right

side of foot and tighten screw (B) securely. Then, adjust the left screw (C) in the same manner to obtain the proper clearance on the left side of the foot, and tighten left screw (B) securely.

After screws (B) have been tightened, no further tightening of screws (C) should be attempted.

Re-check the clearance on right side, and make sure the point of the needle is in slight contact with the needle guide. If not, re-set as previously described.

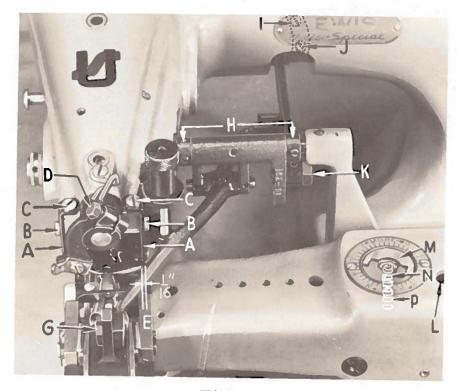


Fig. 2

#### POSITIONING THE NEEDLE

Turn the handwheel in operating direction until the needle has reached the extreme left position. In this position the needle point should be in the center of the needle groove (B, Fig. 1) and even with the left side of the looper opening in the presser foot.

To obtain this adjustment, loosen needle clamp screw (D, Fig. 2) just enough to allow the carrier to be moved by taping. Re-tighten clamp screw (D, Fig. 2) when the above setting is obtained.

Turn the handwheel in operating direction until the needle has reached the extreme right position. The point of needle should be 1/16 inch from the upper right edge (E, Fig. 2) of the presser foot.

If this is not the case, the travel of the needle will-have to be adjusted in the following manner. With the needle at its extreme left position, loosen the clamp screw in the needle crank, accessible through hole on top of head (A, Fig. 3). Turn the needle eccentric ball stud (A, Fig. 4) so that the lower end of its slot is 10 to 15 to the right of vertical with the punch marks in the ball stud down. Re-tighten clamp screw and recheck the position of the needle point in relation to the left side of looper opening in the presser foot as previously described. It may be necessary to slightly retard or advance this adjustment to obtain desired results.

CAUTION! When adjusting the needle eccentric ball stud, make sure that it is seated against the needle shaft crank.

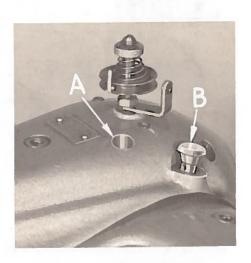


Fig. 3

## TIMING AND ADJUSTING LOOPER

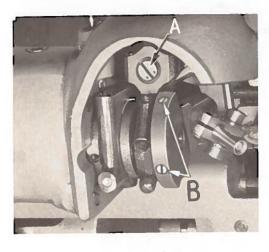


Fig. 4

The looper motion is timed in relation to the needle motion so that the long prong of the looper enters the spot of the needle at the time the largest loop of needle thread is being formed.

Under normal conditions, this timing is adjusted in the following manner.

Insert the looper in its holder so that the flat on its shank corresponds with flat on holder and so that there is 1/64 inch space between looper seat and holder (Fig. 5).

In the left end of the main shaft is a "V" groove, and on the looper crank, there is a timing line (A, Fig. 5).

Turn the handwheel in operating direction until the "V" groove in the main shaft is at the bottom.

Loosen the two set screws in the looper crank (B, Fig. 4) and position the crank so that its timing line coincides with the right edge of the "V" groove in the main shaft. This setting will be satisfactory for average conditions.

Variations in materials and threads used may make it necessary to slightly advance or retard this timing to obtain the desired results.

Again, turn the handwheel in operating direction until the long prong of the looper is over the spot in the needle. At this point, the long prong of the looper should just clear the spot in the needle and be from 1/16 to 3/32 inch to the left of the inner end of the needle eye, and the short prong of the looper should clear the bridge of the presser foot (E, Fig. 1) by no more than 1/32 inch.

On continuing the rotation of the handwheel, the short prong of the looper should clear the right side of the looper opening in the presser foot, and the needle, on its return stroke, should enter the crotch of the looper midway between the prongs.

The adjustment of the looper is secured by manipulation of the looper adjusting sleeve and the looper holder connecting rod.

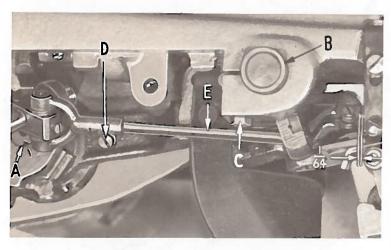


Fig. 5

The looper adjusting sleeve (B, Fig. 5) positions the looper laterally, and also provides a limited amount of vertical or height adjustment. Lateral adjustment is secured by loosening the clamp screw (C) and pulling the adjusting sleeve in or out. Vertical or height adjustment is secured by turning the sleeve.

The looper holder connecting rod also adjusts the looper vertically, but to a greater extent than the adjusting sleeve.

If the looper is radically out of adjustment, the initial adjustment is made by loosening the clamp screw

in the looper connecting rod yoke (D) and by turning the connecting rod (E), rolling the looper to the desired height. If only a slight amount of height adjustment is required, it can be secured by turning the adjusting sleeve. Final setting involves adjustment of both the connecting rod and adjusting sleeve.

#### REAR FEED POINT

To set the rear feed, turn the handwheel in the operating direction until the point of the needle is moving to the left and is 1/16 inch to the right of the right edge of the cloth opening in the presser foot. Set the rear feed point so that the short prong of the feed point is 1/4 inch in back of the needle. The feed surface should be flush with and parallel to the bottom of the presser foot. This adjustment is made with the stitch length set at 7 stitches per inch.

The feed point is adjusted by means of two screws (A, Fig. 6) holding the feed point to the feed driving arm.

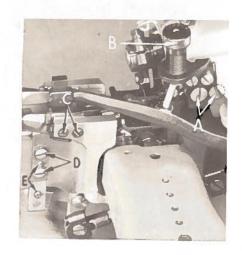


Fig. 6

#### FEED PLATEN

When the feed point is on its feeding stroke, the feed platen presses the work against the bottom of the presser foot and feed point under spring pressure.

The platen is controlled by two springs which should be adjusted so that the tension on the platen will compensate for varying thicknesses of material.

There must be enough pressure applied to keep the material from moving when the needle makes its penetration. If the material moves with the needle, a loop will not be formed for the looper, resulting in skipped stitches.

Check to see that the feed platen clamps a piece of newspaper before point of needle penetrates material.

Pressure on the feed platen is controlled by the two nuts in the back of the cylinder (A, Fig. 7). Turning them counterclockwise increases the tension, clockwise acts the reverse.

#### RIDGE FORMING DISC

The yielding ridge forming disc should be located in the center of the opening in the presser foot and folder, as noted in subsequent paragraph "Folder Adjustment". As the needle is traveling to the right, the forward position of the ridge former should be set so that the distance from the point of the needle to the small radius of the nose on the disc is 1/16 inch when the needle point is directly over the disc.

NOTE: Before adjusting the ridge forming disc, be sure that there is no end play in the cradle (H, Fig. 7). If there is end play see Catalog No. 194-5, pages 9 and 10.

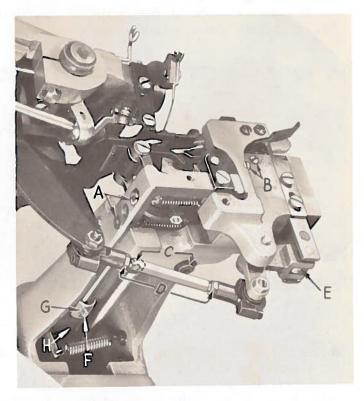


Fig. 7

In order to adjust the disc, loosen the set screw (F, Fig. 7) in the collar (G, Fig. 7); also the clamp screw in the crank, accessible through the hole (L, Fig. 2). Turn the handwheel in operating direction until the point of the needle, when traveling to the right, is in line with the center of the presser foot. Position the disc manually so that it lines up with the center of the presser foot and there is 1/16 inch between the small radius of the nose of the disc and the point of the needle. Re-tighten the clamp screw in the crank; also the set screw (F, Fig. 7) in collar (G, Fig. 7) and set the collar to take up all the end play in the ridge forming disc shaft.

If there is a need to remove the ridge forming disc assembly, depress the feed plate holders, remove the nut (B, Fig. 8) on the ridge former shaft and remove the ridge forming disc assembly. Remember when re-assembling the ridge forming disc assembly, care must be taken so that the key in the flange engages with the slot in the ridge forming disc holder. Then re-assemble the nut (B, Fig. 8) and tighten firmly.

Pressure is directly applied to the yielding ridge forming disc by adjusting the plunger rod (C, Fig. 8) with the upper nut (D) and locking in place with lower nut (E). Generally, the correct pressure is obtained when there is 5/32 inch clearance between the top of the plunger holder and the underside of the head of the plunger shaft (Fig. 8).

#### RIDGE FORMING DISC REGULATOR

The dialed regulator (M, Fig. 2) located on top of the cylinder base raises and lowers the ridge forming disc to get the correct needle penetration in the work being sewn. The word "More" indicates more depth, and "Less" indicates less depth of needle penetration.

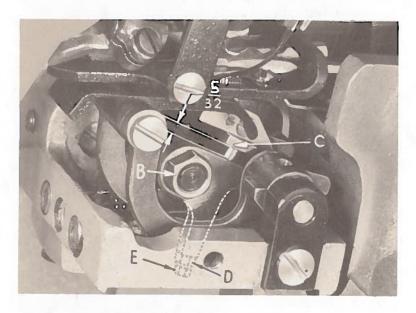


Fig. 8

The regulator also limits the amount that the disc can be raised in order to protect the needle point from striking the ridge forming disc. The adjustment is made by turning the regulator (M, Fig. 2) in the "More" direction as far as possible to stop pin inside of the regulator.

The needle point should be over the center of the ridge and the needle should just graze the ridge former. If this is not the case, remove the set screw (N, Fig. 2) and adjust screw (P, Fig. 2) underneath that contacts the cradle (H, Fig. 7) in which the ridge forming disc shaft is mounted and adjust screw so that the needle just grazes the ridge

forming disc. Re-assemble the set screw (N) and set tightly to lock screw (P) in place.

#### FOLDER ADJUSTMENT

The folder should be set so that its front edge is approximately 1/16 inch from the center line of the needle and located in the center of the opening in presser foot.

With the front top feed and folder removed, check the ridge former - needle height relationship. The needle point should just clear the ridge forming disc as the needle is traveling to the right.

Rotate the handwheel in operating direction and position the needle at the extreme left end of stroke. Insert the folder and position the front edge approximately 1/16 inch from the needle. A slightly wider belt loop can be obtained by increasing the 1/16 inch dimension. With the folder resting on the ridge former tighten the folder with the two locking screws (B, Fig. 7). If the folder does not center over the ridge former and in the opening of the presser foot, loosen the two knife block mounting screws (C, Fig. 7) and move the block accordingly. Care should be taken to move the block perpendicular to the line of feed.

NOTE: If the ridge former has been correctly set in relation to the center of the opening in the presser foot, the ridge former should line up with the center of the folder. If this is not the case, position ridge former accordingly.

#### FRONT TOP FEED

Assemble front feed to feed arm with screw (G, Fig. 2). Do not tighten securely. Release feed arm pressure by rotating adjusting knob (B, Fig. 6) counterclockwise.

Insert a piece of paper between feed dog and folder to obtain approximately .003 inch clearance.

Apply finger pressure to the top feed dog shank, holding the feed dog flat against folder base. While doing so, raise feed bar so that screw (G, Fig. 2) is at the top of the slot in the feed dog. Tighten screw securely in this position.

The center prong of feed should be located in center of opening in folder. To obtain this setting, adjust two collars on feed rocker (H, Fig. 2) accordingly.

NOTE: It may be necessary to adjust top front feed drive eccentric located on the main shaft when making the above adjustment. Loosen the two screws (I, J, Fig. 2) in the eccentric and position eccentric so that the feed drive strap operates free of any binds. The first screw (I), when turning the handwheel in operating direction, locates on a flat on the main shaft. It is essential that this timing be maintained.

The travel of the front feed is regulated by the position of the feed driving arm in the feed rocker slot. If it is desirable to increase the stitch length, loosen lock nut (K, Fig. 2) and raise driving arm in the feed rocker slot. To shorten stitch length, lower driving arm in slot. When the arm is at the top of the slot, the stitch length is approximately 4 1/8 S.P.I. When the arm is at the bottom of the slot, the stitch length is approximately 8 S.P.I. Normally, the arm is set in the center of the slot. With the driving arm located in the desired position, adjust the feed lift as follows:

Rotate handwheel until the top front feed dog is in the center of its travel toward the operator. Raise feed dog 3/32 to 1/8 inch and slide the feed lift regulating block (A, Fig. 9) so that it contacts the underside of the feed driving arm, and locate the connecting rod regulator block (B, Fig. 9) against the feed driving arm. Lock in this position.

Re-apply sufficient tension to feed bar by adjusting knob (B, Fig. 6) to insure proper feeding action.

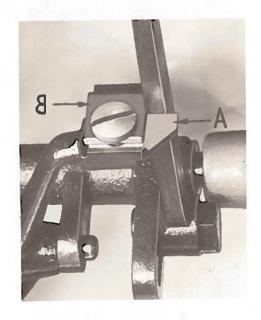


Fig. 9

#### TRIMMING MECHANISM

The width of trim is determined by the use of spacer pins and spacer plates for the upper and lower knives. The selection of these spacers is relative to the size of the folder being used and the material being sewn.

Refer to chart on Page 15 for the parts to be removed and added when changing width of finished belt loops, weight of material or type of folder.

#### UPPER KNIVES

Attach upper knives, chip deflector, and correct spacing plates with four attaching screws (C, Fig. 6 & 10). When securing knives, apply a slight upward pressure to the chip deflector and knives and lock in place. This will insure proper space between top of folder and cutting edges of the knives.

NOTE: The chip deflectors should be assembled to the knife block so there is no gap between the deflectors and the upper knives.



Fig. 10

It should be noted that the location of the cutting edge of the upper knives from the top of the folder base can be varied slightly. Normally the knives are positioned as far up as possible, to give maximum clearance.

#### LOWER KNIVES

Turn handwheel clockwise until lower knives are at top of stroke. Loosen knife attaching screws (D, Fig. 6 & 10) and position knives to their maximum low position and retighten. (The elongated slots in the knives are to compensate for resharpening.)

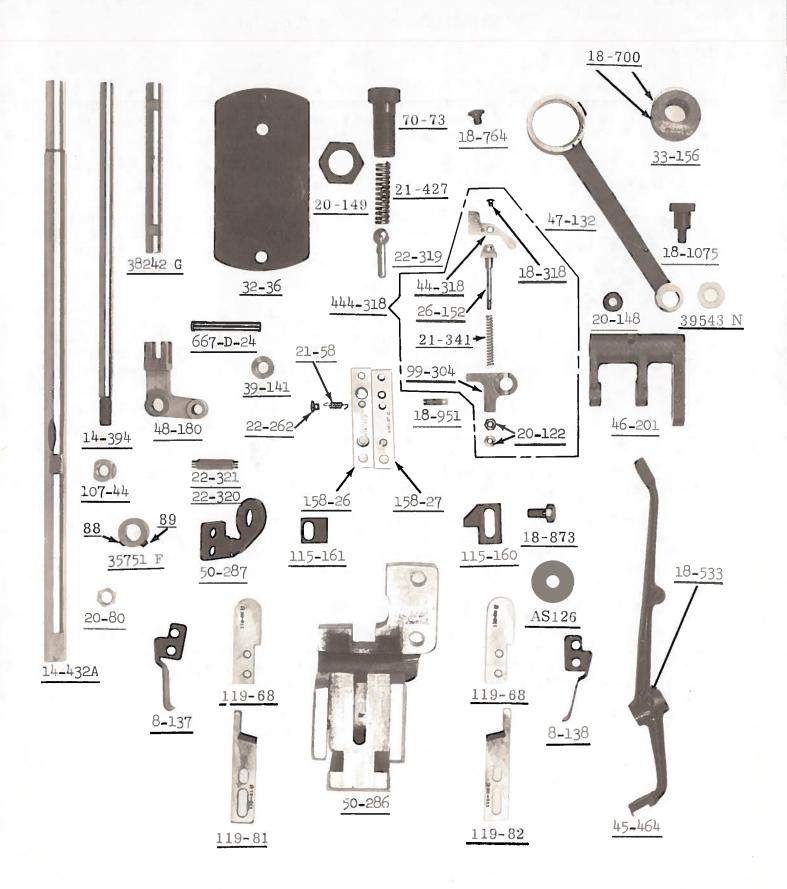
Loosen nuts on ball joint connecting rod (D, Fig. 7) and turn connecting rod until front edge of lower knife is 1/32 inch above bottom edge of top knife. Tighten nuts.

Adjust tension on knives by turning two screws (E, Fig. 6). The amount of tension applied may vary with the thickness of cloth to be trimmed.

Proper alignment of the bottom knives to the top knives is obtained by positioning the collar (E, Fig. 7). To obtain the correct alignment, loosen collar screw and operate the machine slowly. The knives will automatically align themselves. Lock collar in position, being careful not to disturb the alignment.

#### STITCH LENGTH

The stitch length is regulated by the knob (B, Fig. 3) on the arm of the machine near the head. Open the top cover on the arm and observe the feed indicator on the shaft with numerals which indicate the number of stitches per inch. Press the knob down, which will engage a slot in the feed mechanism. While holding the knob down, turn the handwheel away from you to lengthen the stitch and toward you to shorten the stitch. As you turn, observe the indicator until the number corresponding to the desired amount of stitches per inch appears directly under the indicator. Release the knob. Stitch range of the machine is from 6 to 8 stitches per inch.



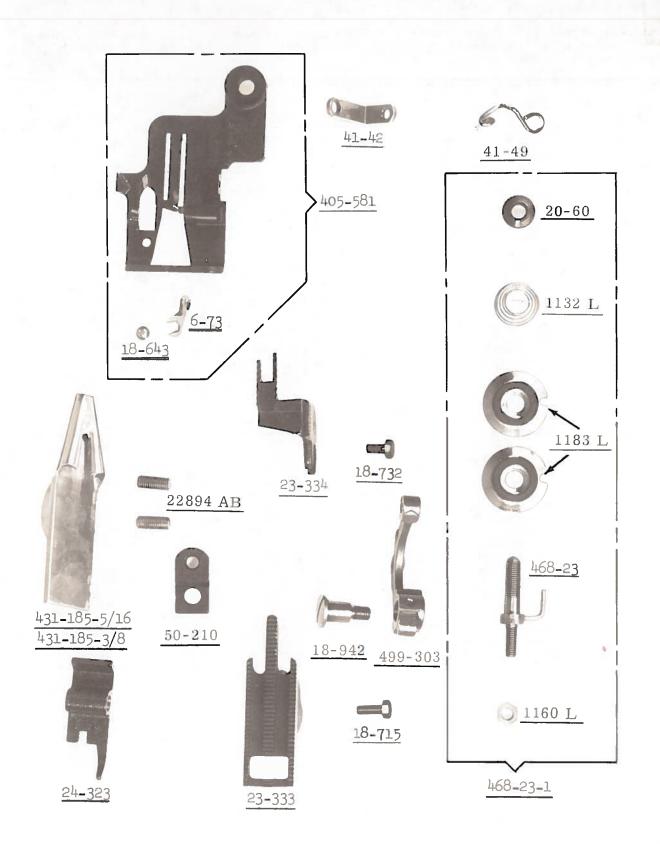
The parts illustrated on the preceding and following page, that are described on this page and on page 15 represent the parts that are used on Style 150-200 but are not used on Style 150-20.

On the preceding page, part numbers contained within abox are components of the part number listed opposite or below the box and are indicated on this page by indenting their descriptions under the description of the main assembly.

Use Catalog No. 194-5 for all parts not illustrated and described here.

Part No.	Description	Amt. Req.			
8-137	Knife Guard, left				
8-138	Knife Guard, right	-			
14-394	Ridge Former Shaft	-			
14-432 A	Main Shoft				
*18-400	Screw, for 119-68 on Style 150-200-5/16				
18-533	Screw, for 119-68 on Style 150-200-5/16				
*18-533	Screw, for 38242 G	1 1			
18-764	Plug Screw, for machine arm	1			
18-873	Screw, for 115-160	1			
18-951	Screw, for 158-27	2			
18-1075	Screw, for 47-132	ī			
20-80	Nut, for 14-394	1			
20-148	Nut, for 18-1075	ī			
20-149	Locking Nut, for 70-73	1			
21-58	Tension Spring, for lower knives	2			
21-427	Presser Spring	-			
22-262	Spring PinPresser Pin	<u>2</u>			
22-319	Presser Pin	1			
22-320	Pin, for driving lower knives, on Style 150-200-3/8				
22-321	Pin, for driving lower knives, on Style 150-200-5/16	1			
32-36	Arm Cover Plate	1			
*32-302	Cover, for 50-286	1			
33-156 18-700	Auxiliary Feed Driving Eccentric	1			
39-141	Screw	2			
45-464	Drive Pin Collar	_			
46-201	Front Feed RockerFront Feed Rocker	1			
47-132	Connecting Rod	1			
48-180	Driving Crank, for lower knives	1			
50-286	Knife Support Bracket	1			
50-287	Spring Support Bracket	1			
*57-52	Handwheel	·- 1			
70-73	Spring Barrel	1			
107-44	Flange, for ridge former shaft	1			
*110-285	Top Knife Spacing Plate, for Style 150-200-5/16				
*110-314	Top Knife Spacing Plate, for Style 150-200-3/8	2			
115-160	Feed Lift Regulator	- 1			
115-161	Connecting Rod Regulator Block	- 1			
119-81	Bottom Knife, left	·- 1			
119-82	Bottom Knife, right	·- ī			
AS126	Washer, for 18-873	·- ī			
158-26	Slide Plate, left	·- 1			
158-27	Slide Plate, right	·- 1			
444-318	Ridge Former Assembly	·~ 1			
18-318	Screw	- 1			
20-122	Nut	- 2			
21-341 26-152	Spring	- 1			
44-318	Plunger	- 1			
99-304	Disc	- 1			
667 D-24	Disc Plunger HolderFront Feed Rocker Shaft	- 1			
*1158 L	Screw, for 50-287	- 1			
*1160 L	Nut, for 865 L	-			
*1750 L	Screw, for 119-68 on Style 150-200-3/8	- 1			
*6042 A	Washer, for 22652 D-12	- 4			
*22652 D-12	Screw, for 50-286	- 2			
35751 F	Looper Rocker Shaft Stop Collar	- 2			
88	Set Screw	- 2			
89	Spot Screw	- 1			
38242 G	Feed Rocker Shaft	- <u>1</u>			
39543 N	Thrust Bearing Washer, for 18-1075	- 1 - 1			
*20-31	Nut, for No. 4118-15	- 1 - 1			

<sup>\*</sup> Not shown on the picture plate on page 12.



#### MISCELLANEOUS PARTS

Part No.		Amt. Req.
18-715 18-732 18-942 23-333 23-334 24-323 41-42 41-49 50-210 405-581 5-581 6-73 18-643 *431-185-5/16	Screw, for 23-333	Req.
†431-185-3/8 *431-186-5/16 †431-186-3/8 468-23-1 20-60 468-23 1132 L 1160 L 1183 L 499-303 22894 AB	Folder, marked "B", split type, 3/8 inch finish, for Style 150-200-3/8 Folder, marked "C", solid type, for 5/16 inch finish Folder, marked "D", solid type, for 3/8 inch finish  Tension Post, complete  Nut  Tension Staff  Tension Spring  Nut  Tension Disc  Feed Plate Holder, right  Screw, for folder	1 1 1 1 1 1 1 1 2 1 2

If a customer desires to sew a different weight material, a different folder or finish, the chart below indicates the parts to be removed and added to a standard 150-200-5/16 machine that is set up to sew 5/16 inch belt loops made of light to medium weight material using a split type folder, No. 431-185-5/16.

Type of Material	Folder	Finish	Remove	Fit With
Light to Med.	431-185-3/8 Marked "B" Split Folder	3/8"	(4) 18-400 (1) 22-321 (2) 110-285 (1) 431-185-5/16	(4) 1750 L (1) 22-320 (2) 110-314 (1) 431-185-3/8
Light to Med.	431-186-5/16 Marked "C" Solid Folder	5/16"	(1) 431-185-5/16	(1) 431-186-5/16
Light to Med.	431-186-3/8 Marked "D" Solid Folder	3/8''	(4) 18-400 (1) 22-321 (2) 110-285 (1) 431-185-5/16	(4) 1750 L (1) 22-320 (2) 110-314 (1) 431-186-3/8
Extra Light	431-185-5/16 Marked "A" Split Folder	5/16"	(2) 110-285 (1) 22-321	(2) 110-314 (1) 22-320
Extra Light	431-186-5/16 Marked "C" Solid Folder	5/16"	(2) 110-285 (1) 22-321 (1) 431-185-5/16	(2) 110-314 (1) 22-320 (1) 431-186-5/16
Extra Heavy	431-185-3/8 Marked "B" Split Folder	3/8"	(4) 18-400 (1) 431-185-5/16	(4) 1750 L (1) 431-185-3/8
Extra Heavy	431-186-3/8 Marked "D" Solid Folder	3/8"	(4) 18-400 (1) 431-185-5/16	(4) 1750 L (1) 431-186-3/8

<sup>\*</sup> Folder can be used for extra light and light to medium weight material, depending on shims used. † Folder can be used for light and medium or extra heavy weight material, depending on shims used.



3 / NCE 188



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