

Union Special INDUSTRIAL SEWING EQUIPMENT

Instructions and Illustrated Parts List

CATALOG NO.

194-10-GR

First Edition

STYLES

160-20



LEWIS
CLASS 160-20
SINGLE THREAD BLINDSTITCH
SPOT TACKING MACHINE



Manual No. 194-10-GR Adjusting Instruction Illustrated parts for 160-20 Series Machines

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PREFACE

This parts manual has been prepared to guide you while adjusting the 160-20 Series machines.

This manual explains in detail the proper setting for each of the components related to forming the stitch and completing the functions of the machine. Illustrations are used to show the adjustments and reference letters are used to point out specific items discussed.

Careful attention to the instructions for operating and adjusting these machines will enable you to maintain the superior performance and reliability designed and built into every Union Special machine.

Adjustments are presented in sequence so that a logical progression is accomplished. Some adjustments performed out of sequence may have an adverse effect on the function of the other related parts.

This manual has been comprised on the basis of available information. Changes in design and/or improvements may incorporate a slight modification of configuration in illustrations or part numbers.

On the following pages will be found illustrations and terminology used in describing the adjustments for the 160-20 Series machines.

FOREWORD STATE OF THE STATE OF

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All parts in Style 160-20 are made by precision methods insuring complete interchangeability.

It is our constant aim to furnish carefully prepared information which will enable the customer to secure all possible advantages from the use of UNION SPECIAL machines. The following pages contain valuable operating and adjusting data, and illustrate and describe the parts for Style 160-20.

Union Special representatives will be found in all manufacturing centers, to cooperate with you to plan and estimate requirements.

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UNION SPECIAL CORPORATION

IDENTIFICATION OF MACHINES

Each UNION SPECIAL LEWIS machine carries a style number, which, on this machine, is stamped in the style plate on the right side of the column.

The serial number of each machine is stamped in the column on the right side below the stitch indicator.

APPLICATION OF CATALOG

This catalog applies specifically to Style 160-20. All references to direction, such as right and left, front and back, etc., are taken from the operator's position while seated at the machine.

The operating direction of the pulley is counterclockwise.

DESCRIPTION OF MACHINE

Style 160-20 is a single thread blindstitch spot tacking machine. Curved needle. Automatic thread cutting device. Calibrated stitch selector for 6, 8 or 12 stitches. Dial adjusted stitch penetration. Automatic stitching cycle. Fully enclosed arm. Work space behind needle 9 inches. Two pedal operation. For attaching labels to sweaters, neckties, jackets, and similar articles. Also used for tacking operations on trouser cuffs, linings of suit coats, uniforms, and trouser waistbands. Can be used on light, medium or heavy knitted or woven materials.

The machine will be fitted with presser foot No. 405-555 and plunger No. 26-173 suitable for medium weight work; unless otherwise specified.

Other combinations available, are as follows:

Presser Foot	Plunger	Operation
405-554 405-554 L 405-554 L 405-555 H	26-170 26-170 26-174	For tacking light materials. For tacking light materials. For tacking fabric labels.
405-555 H	26-173 26-172	For tacking heavy materisls. For tacking extra heavy materials.

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 ° Fahrenheit.

Most of the oiling places on the machine are readily identifiable because of the fact they are painted red. However, reference to the oiling diagram Fig. 21 on Page 13 will be beneficial.

Please note that it will be necessary to tip the machine back and to remove the work plate, head cover, and cylinder end cover to reach some of the oiling places.

Also note that there is a label on the pulley which reads "Grease Here". A tube of grease is furnished with the machine, and periodically the plug screw in the pulley should be removed and the grease level checked and replenished if required. The greasing place is indicated by the letter "A" in the diagram. All other places shown are oiled.

Tubes of grease may be ordered under part No. 28604 P.

SPEED

The recommended operating speed of this machine is 1200 R.P.M.

NEEDLES

Each 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 largest diameter of blade, measured 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. The recommended needle for Style 160-20 is Type 29 BD-100/040. It has a blade diameter of .040 inch (1.0mm). It is also available in the following sizes:

Needle Type	<u>Inches</u>	<u>Size</u> <u>Millimeters</u>
29 BD-065/025 29 BD-075/029	.025 .029	.65 .75
29 BD-090/036 29 BD-110/044 29 BD-140/054	.036 .044 .054	1.10 1.40

Selection of proper needle size is determined by size of thread and weight of material used. Thread should pass freely through the 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 BD-100/040".

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 completely.

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

THREADING

To thread the machine, turn pulley in operating direction until the needle carrier is in its highest position, and thread in accordance with diagram Fig. 20 on Page 11.

ADJUSTING

CAUTION! Do not run the Electro Drive during the following adjusting operations until ready to sew.

The 160-20 machine is equipped with a cycling mechanism, which, with one pressure on the operating treadle, produces 6, 8 or 12 stitches, and automatically stops.

In the following instructions, reference is made to "the machine in stop position".

This position is that which is shown in Fig. 1 with the stop motion disc and pawl against the plunger (A).

To release the machine from stop position so that it may be manually operated, depress the operating treadle, and turn the pulley and stop motion disc in required direction.

E 3/8

Fig. 1

ADJUST STOP MOTION CLUTCH

With machine in stop position, stop motion plunger (A, Fig.1) should be set so that there is 3/8 inch between the bottom of plunger and plunger lever bracket (B).

Loosen the lower lock nut (C) and adjust upper nut (D) to obtain this setting. Lock lower nut.

Adjust screw (E) in cam lever (F) so that there is 1/32 inch clearance between ball (G) and thin section of lever when the pulley is pressed in toward machine. Lock screw with nut (H).

TIMING THREAD TAKE-UP LEVER

Remove head cover. With machine in stop position, remove gear (A, Fig. 2) from main shaft. Turn head main shaft gear (B) until the take-up lever (C) is at its highest point. Replace main shaft gear (A) with spot screw (D) in line with timing slot in main shaft. Tighten screws.

TIMING NEEDLE

With machine in stop position, loosen screws in the needle drive crank (E, Fig. 2), and turn crank until

needle carrier (A, Fig. 3) is at highest point of travel, and tighten screws in crank.

At this point, the slot in needle vibrating cam (B) should be on right side of cam center, and in a vertical position. To make this adjustment, loosen accessible set screw (A, Fig. 4) in gear (B), disengage stop motion lever, and rotate pulley until second set screw in gear (B) is accessible. Loosen this screw and return to stop position. With a screwdriver, align slot in vibrating cam as per above. Tighten gear set screws.

Turn pulley in operating direction until needle enters needle guide slot in presser foot on left side. There

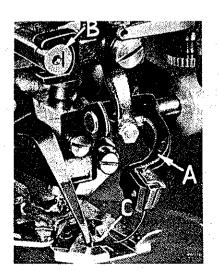


Fig. 3

should be. 012 inch clearance between left side of needle blade and presser foot needle guide slot. Lightly tap the needle vibrating crank adjusting lug (A, Fig. 5) to right or left to secure this

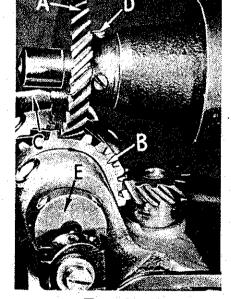


Fig. 2

adjustment. In the photograph the needle vibrating crank has been removed for clarity.

TIMING THE LOOPER

Loosen set screws in the looper drive shaft gear (A, Fig. 6). Turn pulley in operating direction until needle has reached the forward end of its left side travel and returned 3/32 inch. Turn looper and its shaft so that the point of looper is over center of needle, and tighten set screws in gear (A). Lower point of looper as close to the needle as possible without deflecting the needle. Loosen screw (A, Fig. 7) to make this adjustment.

ADJUST STROKE OF NEEDLE

Turn pulley in operating direction until point of looper is directly over center of needle as needle is returning on its left stroke. The back of needle eye should now be 1/16 inch from looper point. If adjustment is required at this point, loosen the two locknuts (B, Fig. 5) on ball joint connecting rod (C) and turn rod to secure this setting.

ADJUST NEEDLE HEIGHT

A new eccentric needle carrier stud, No. 17-175, replaces No. 1708 L and has been developed to enable the needle height to be adjusted more closely, so that it does not strike the needle guide too far forward.

To check adjustment of needle height, turn the pulley in operating direction until screw (A, Fig. 7) in looper driving gear (B) points to right of machine. At this point the needle point should be approximately 1/16 inch past the front edge of needle guide (C, Fig. 3) on presser foot, and just contacting needle guide.

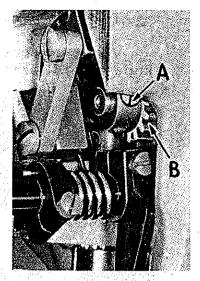


Fig.

Fig. 5

If needle point strikes needle guard too far forward of the 1/16 inch dimension, or too hard, an adjustment can be made by loosening set screw (C, Fig. 7) and inserting a screwdriver in slot of needle carrier eccentric shaft (D). Turn eccentric shaft as required to bring needle carrier up or down and tighten set screw. After making this adjustment check and be sure there is no play between needle and needle guide when needle point is over center of plunger No. 26-173. After making this adjustment it may be necessary to reset the adjustment under "Adjust Stroke of Needle" and "Timing the Looper".

ADJUST WORK CLAMP

The distance the work clamp opens for insertion of work is set at the factory and usually does not have to be adjusted. Should it become necessary to do so, the

proper setting may be obtained as follows: Tip machine on its side and loosen clamp screws (A, Fig. 8). Disengage spring (B) from crank roll. Depress lever (C) until it rests against its stop pin (D). Turn plunger

shaft (E) clockwise until bottom of work clamp (A, Fig. 9) is 5/32 inch above plunger bearing block. Tighten clamp screws (A, Fig. 8) and re-engage spring (B).

ADJUST PLUNGER

With machine in stop position, tilt machine on side, pull penetration dial out, and turn clockwise as far as it will go. Loosen locknut (F, Fig. 8), and adjust screw (G) until space between plunger block (A, Fig. 10) and crank (B) is 1/64 inch. Lock nut (F, Fig. 8) securely. Tip machine back, engage clutch, and turn pulley in operating direction until point of looper is over center of needle. Loosen locknut (A, Fig. 11) and adjust plunger up or down by means of nut (B) until point of looper just contacts needle. Lock nut (A) securely.

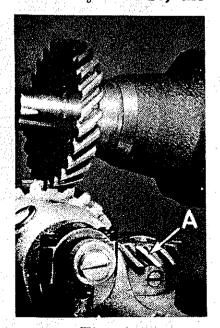


Fig. 6

ADJUST THREAD CUTTING FINGER AND THREAD WIPER

The purpose of the thread cutting finger is to carry the thread across the knife edge. The purpose of the thread wiper is to keep the thread taut during

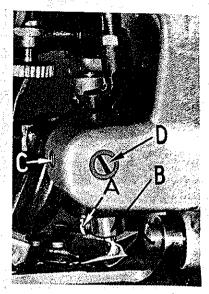


Fig. 7

maining needle thread from the sewing area. In order to function properly, the thread cutting finger should start its motion before the thread wiper. The adjustment of these members are accomplished in the following manner.

Rotate the spring

the cutting operation and to remove or wipe the re-

Rotate the spring collar (A, Fig. 12), and tighten binding screw (B) when collar has been turned about 45° from zero tension.

With thread cutting finger (A, Fig. 13) at the back of its travel, set the trimmer lever (C, Fig. 12) so that it is over the center of the ball (D) from front

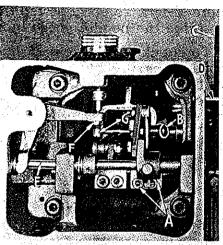


Fig. 8

to back.

Check position of thread wiper crank (A, Fig. 14) through the access hole at the back of

the machine. With the machine in stop position, this crank should be horizontal or slightly below to the right. If the crank is not in this position, loosen the two set screws (B, Fig. 13) in the thread wiper finger (C). Return to the back of the machine, and loosen the two screws (B, Fig. 14) in the cam plate (C), and move the crank (A) to the desired position. Now, slightly tighten one screw in the thread wiper finger (C, Fig. 13).

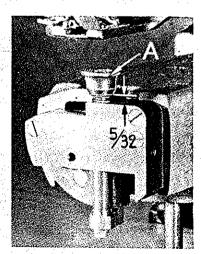
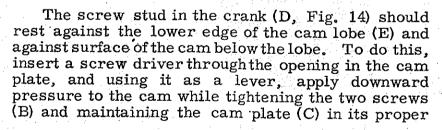


Fig. 9

position to hold the crank (A) horizontally as previously described. Now, return to the thread wiper finger (C, Fig. 13), and check its position.



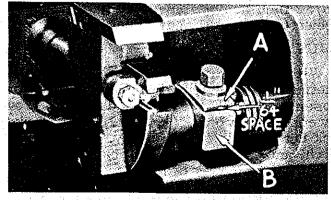


Fig. 10

ADJUST THREAD CUTTING FINGER AND THREAD WIPER (Continued)

There should be a slight amount of side play between the finger and the presser foot. If the finger is tight against the presser foot, loosen screw (B), and move finger slightly, then, re-check previous settings, and tighten both screws (B) in wiper finger securely.

ADJUST THREAD CUTTING KNIFE

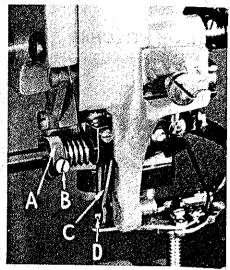


Fig. 12

The thread cutting knife (D, Fig. 13) should be set forward in its slot enough to provide proper cutting action.

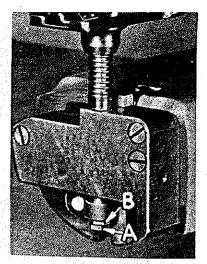


Fig. 11

ADJUST THREAD PULL-OFF LEVER

The pull-off lever (A, Fig. 15) is set correctly when it snaps off the plunger (B) as the stop motion plunger (A, Fig. 16) comes to an abrupt stop against the stop motion disc (B) when operating machine by hand.

To adjust, release machine from its stop motion, and

turn the stop motion disc opposite to direction of rotation one half turn. Then, reverse direction, and turn until stop motion disc pawl (C) comes to rest against the plunger (A).

Check the pull-off lever plunger (B, Fig. 15) to be sure it operates freely. Looking down into the head of the machine under the front main shaft bearing, loosen the clamp screw in driving crank (A, Fig. 17), and manually raise the pull-off lever

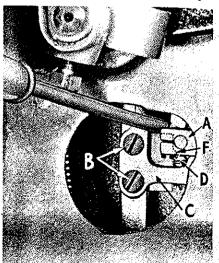


Fig. 14

(A, Fig. 15) and plunger operating lever (C). Then, carefully lower the pull-off lever (A)

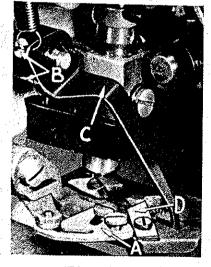


Fig. 13

until it just drops off the point of the plunger (B). Then, carefully tighten clamp screw in driving crank (A, Fig. 17).

Re-check operation of pull-off lever manually as described in paragraph one, and re-set if required.

ADJUST AUTOMATIC TENSION

Engage clutch and turn pulley in operating direction until the needle is on its return stroke and its point is 9/16 inch to the front of the center of the plunger.

Fig. 15

ADJUST AUTOMATIC TENSION (Continued)

The automatic thread tension lever (A, Fig. 18) should now begin to part the tension discs. This adjustment is made by manually depressing the lever (A) until its projection begins to part the discs, loosening screw (B), and moving the eccentric sleeve (C) to maintain the lever (A) in the desired position. This is an approximate setting only, and may have to be changed slightly to compensate for varying thicknesses of thread.

SELECTING NUMBER OF STITCHES

To set stitch selector to desired number of stitches,

either 6, 8, or 12, operate machine until red arrow on cam shaft (A, Fig. 19) coincides with red line (B) on bushing. Pull out stitch selector knob (C), and move sideways until indicator point lines up with desired number of stitches, and release selector knob

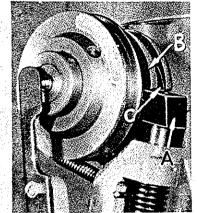


Fig. 16

Fig. 17

STARTING TO OPERATE

Thread as per threading diagram (Fig. 20). Depress work clamp treadle, insert work over work clamp, and release treadle. Depress and release starting treadle. CAUTION! Do not hold starting treadle down as the

machine will not stop automatically at the end of the stitch number cycle for which it is set. The red line on the right side of the presser foot is a guide line for the material being tacked.

ADJUSTMENT FOR NEEDLE THREAD LOOP

It may be necessary to increase or decrease the size of the needle thread loop for various sizes of thread. This adjustment is made by advancing needle drive crank (D, Fig. 18) slightly for larger loop, retarding slightly for smaller loop.

Loosen set screws (E) to make this adjustment.

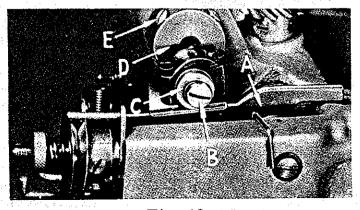


Fig. 18

THREAD TENSIONS

Adjust thread tensions to secure proper appearance of tack. A relatively strong pressure is carried on both tension assemblies, but may have to be varied to suit different threads.

ADJUSTMENT FOR LENGTH OF STARTING THREAD

If too much thread tail shows on completed tack, turn pull-off lever control screw (D, Fig. 15)

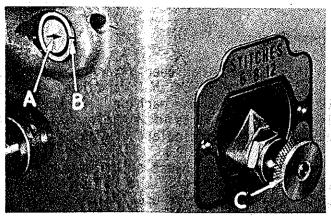


Fig. 19

clockwise to reduce length of tail. If starting thread is too short, causing loss of stitches, turn the control screw counterclockwise until slight amount of tail shows.

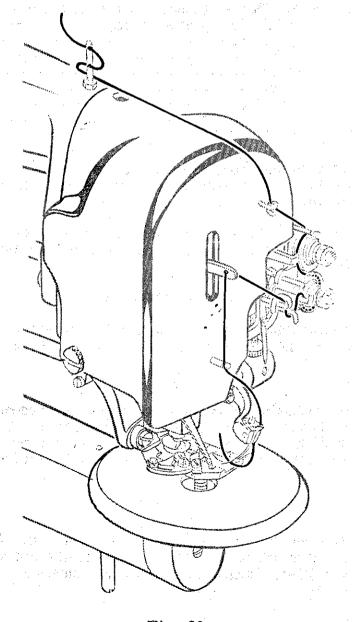


Fig. 20

ORDERING REPAIR PARTS

ILLUSTRATIONS

This catalog has been arranged to simplify ordering repair parts. Exploded views of various sections of the mechanism are shown so that the parts may be seen in their actual position in the machine. On the page opposite the illustration will be found a listing of the parts with their part numbers, description 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 that part in the illustration. Reference number should never be used in ordering parts. Always use the part number listed in the second column.

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. Example:

25 26 27 28	447-128 4124-57 18-391 1012	Needle Carrier Connecting Rod, complete
29	71-95	Rod 1
30	869 L	Nut 1
31 32	447-23 18-391	Ball Joint, lower, complete 1 Screw 2

It will be noted in the above example that the balls and the straps are not listed. The reason is that replacement of these parts individually is not recommended, so the complete sub-assembly should be ordered.

At the back of the book will be found a numerical index of all the parts shown in this book. This will facilitate locating the illustration and description when only the part number is known.

IDENTIFYING PARTS

Where the construction permits, each part is stamped with its part number. Part numbers represent the same part, regardless of catalog in which they appear.

USE GENUINE REPAIR PARTS

Success in the operation of these machines can be secured only with genuine repair parts as furnished by the Union Special Corporation, 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.

TERMS

Prices are 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 postage and insurance.

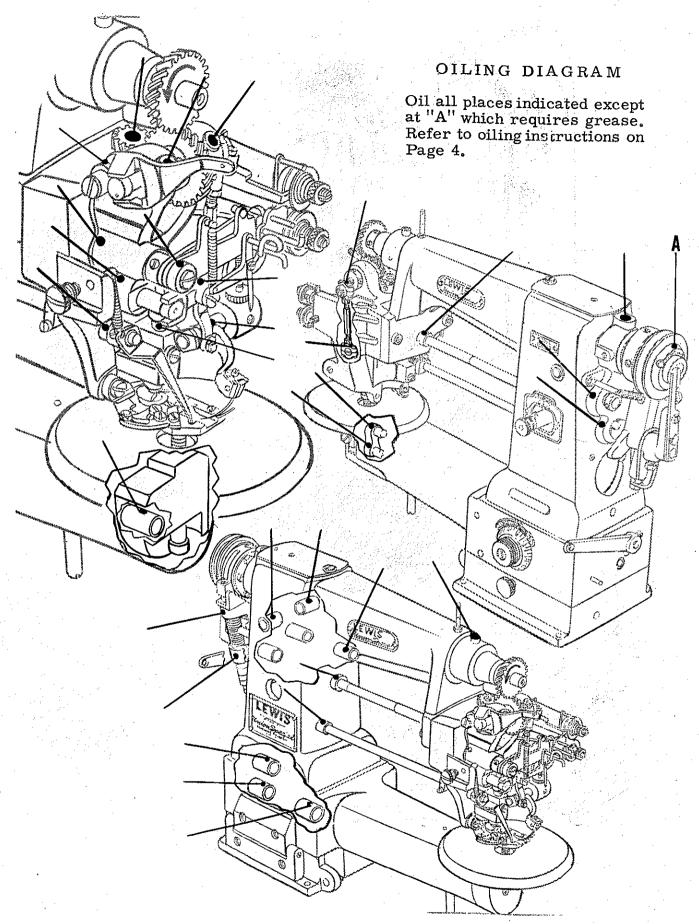
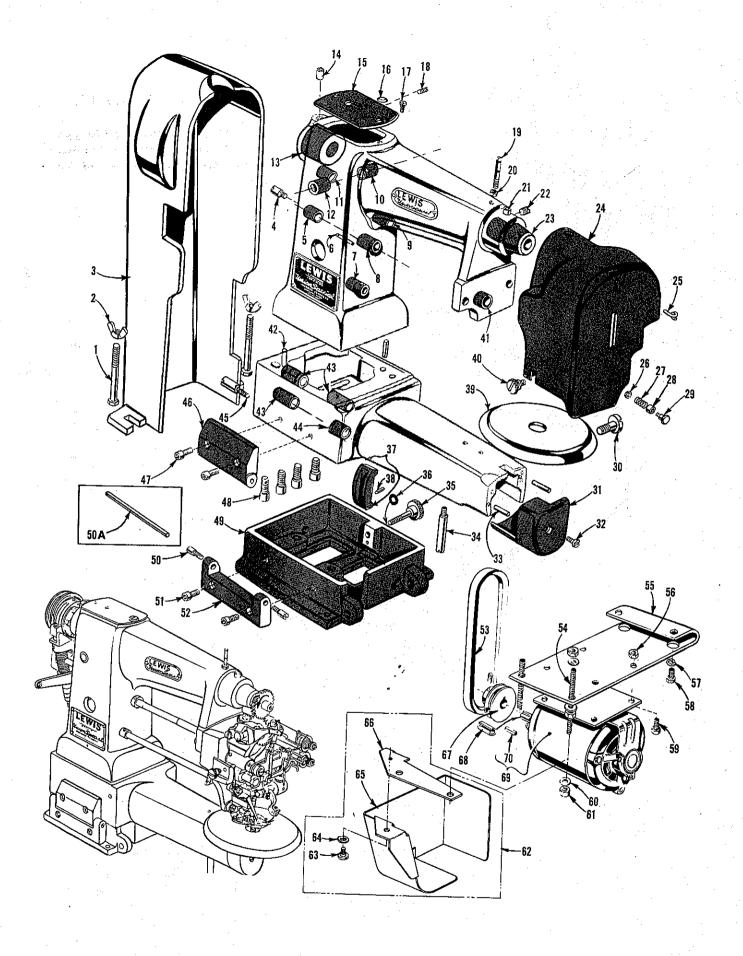


Fig. 21

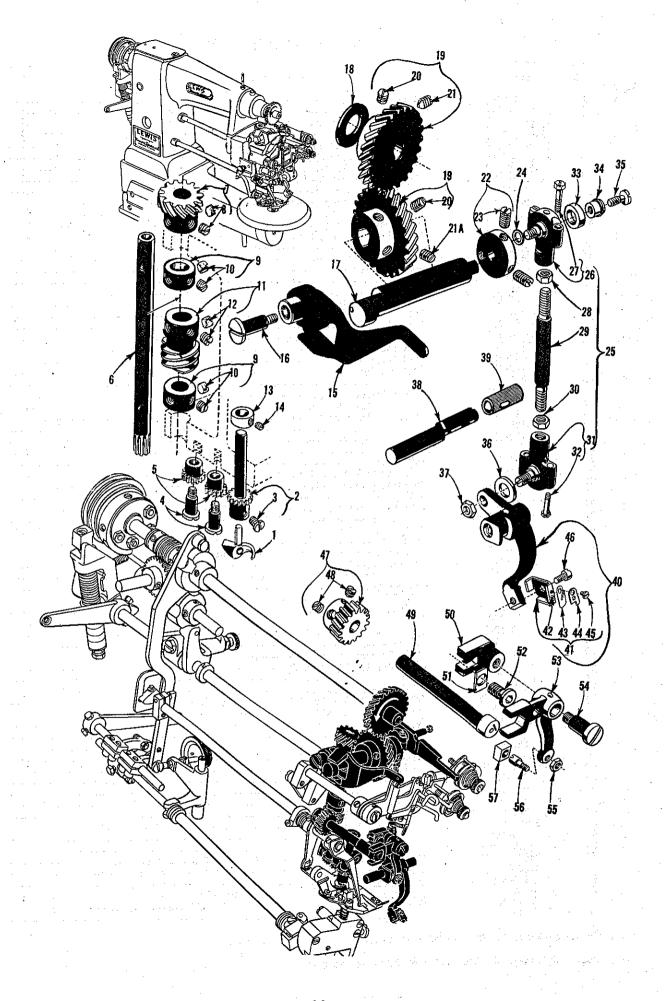


MAIN FRAME, ARM, BASE AND COVERS

Ref. No.	Part No.		Description
1	18-993		
2	20-130		ScrewWing Nut
3	32-265		Pulley and Stop Motion Cover
4 5	18-979		Stop Screw
6	16-326 22-275		Stop Motion Lever Shaft Bushing, back
7 .	16-338		Plunger Restoring Spring Pin
8	16-344		Stop Motion Lever Shaft Bushing, middle
9	16-343		Cam Shaft Bushing front
10 11	16-324 16-325		Jack Shaft Bushing, right
12	16-323		Jack Shaft Bushing, back
13	16-333		Jack Shaft Bushing, left
14	125-23		0il Cup
15 16	1219 L 1221 L	1471	Arm Cover Plate
17	1220 L		Spring Washer
18	1195 L		Set Screw, for No. 16-333
19	41-55		Thread Guide Pin
20 21	1160 L		Nut
22	61-76 CS320-1/2		0i1 Tube
23	1196 L		Set Screw, for No. 1196 L
24	32-266		Head Cover
25	147-10		Thread Guide
26 27	1311 L 21-381		Nut
28	70-77		Thread Snubber Spring
29	17-176		Thread Snubber Sleeve
30	LS395		Screw, for No. 4-134
31	32-275	* .*	Cylinder Base End Cover
32 33	CS313 667 B-20		Screw
34	17-167		Dowel PinCylinder Base Supporting Stud
35	18-1030		Sub-Base Locking Latch Adjusting Screw
36	40-139		Washer
37 38	GR-51-26 GR-22C214-2		Sub-Base Locking Latch
39	4-134		Sub-Base Locking Latch Pin
40	854 L		Work Support Plate
41	16-345		Stop Motion Lever Shaft Bushing, front
42 43	22-148		Locating Dowel Pin
44	16-354 16-379		Plunger and Jack Shaft Bushing
45	22845 D		Plunger Shaft BushingStop Pin
46	50-263 L	-	Cylinder Base Hinge Bracket
47	18-998		Screw
48 49	18-1045		Screw
*50	3-91 18-959	·	Sub-Base
*50A	14-508		Hinge Bracket Pivot Screw
51	18-998		Screw
52 .	50-262		Sub-Base Hinge Bracket
53 54	21261 M-440	** y***	"V" Belt, 44 inch (1117.6 mm) outside circumference
55	21697 AF-32 21697 AE		Motor Hanger Adjusting Stud
56	651-20	5	Motor Hanger
57	652 A-20		Lock Washer
58 50	22642 K-32		Lock Washer
59 60	22642 K-48 652-20		Screw
61	651-20		Washer
62	408-150		Belt Guard Assembly
63	1220 L		Shoulder Screw
64 65	12957 E		Spring Washer
66	8-150 50-319		Belt Guard
67	28602 AS-18		Belt Guard Bracket
	28602 AS-22		Electro Drive Pulley, 2 3/4 inches (69.8 mm) working diameter
68	660-615		Split Steel Bushing
69	28741 H		Electric Motor, 1 phase, 60 Hz., 110 volts
70	28742 AG 108-9		Electric Motor, 3 phase, 50/60 Hz., 208/220/380/440 volts
	•••		Key

^{*}On new machines two No. 18-959 will be replaced by one No. 14-508.

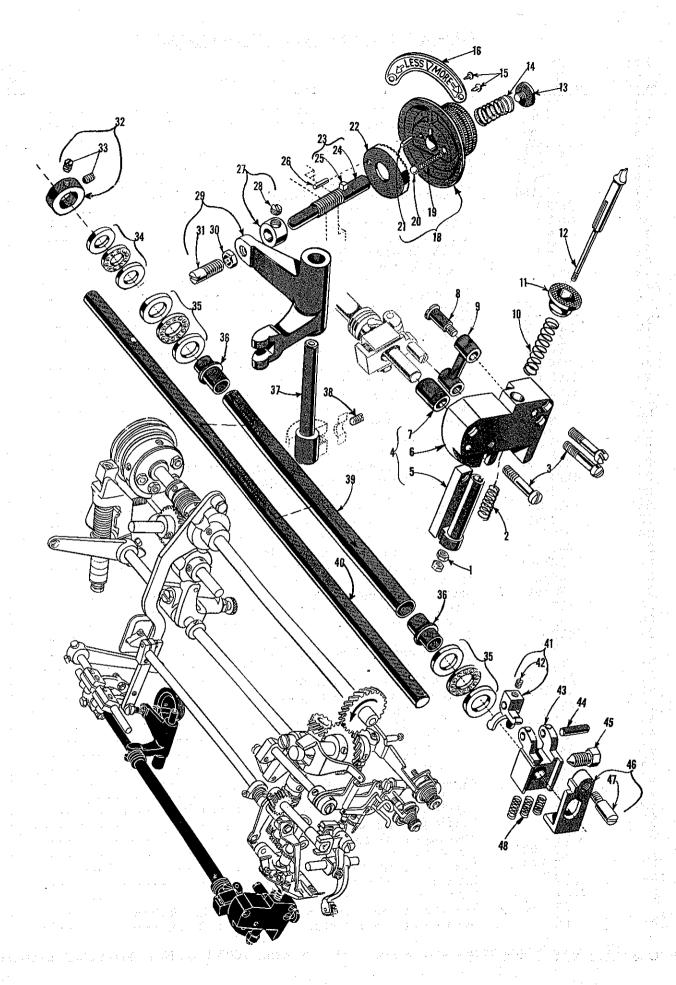
NOTE: Ref. Nos. 53 thru 70 are optional accessories.



NEEDLE AND LOOPER DRIVING MECHANISM

Ref.	Pa	art						
No.		0.			D	escription		Amt.
							•	Req.
$\frac{1}{2}$		6-19	Loop	oer	·			- 1
3		7-186 8-949	Lool	per Driving	g Gear -			- 1
4		8-619	Sere	screw	; 			- 1
5		7-187	Idle	Gear				
6	1	4-447						2
7		7-188	Loop	er Timing	Shaft Driv	ing Gear		- 1
8	102		_	Set Screw	,			- 1 - 2
9	102	•	Coll	ar				- 2
10 11	102 176	-	7.7 -	Set Screw				- 2
12	102		меес	ue Carrier	r Vibrating	Worm Gear		-
13		9-95	Cali	set Screw		70 0 00		- 2
14	102		Set S	Crow				- 1
15		5-366	Inre	ad Taka-m	n I arran a			-
16	1	8-994	Scre	w				- 1
17		4-448	Head	l Main Shaf	ft			- <u>I</u>
18		0-17	Wasi	ner				- 1
19 20	1804		*AT C****	onan Driv	ve and Driv	en Gears		
21	100: 120:			Set Screw				- 1
*21A	100		Set S	opot Screw	,			- 1
22		3-154	Head	Main Shaf	ft Crank			- 1
23	18	3-624		Set Screw				_
24	51242		Wash	er				- 2 -· 1
25		7-128	Need	le Carrier	Connecting	Rod, complete	e	- 1
26 27	4124			Ba∐ √oint	unner cor	nnlete	- 	4
28	1012	3-391 o r		Screw				- 2
29		95		Nut				- 1
30	869		7	V11t ~				- 1
31		7-23		Ball Joint	lower cor	onlete		- 1
32	18	3-391		Screw-		iibiere		- 1 - 2
33	-	5-26	Ecce:	ntric Sleev	7e Roll			- 1
34		-61	Ecce	ntric Sleev	re	,	·	-
35 36	CS327	-57	Screy	v				- 1
37	1012		wasn Nut ~	er				- 1
38		-175	Need	le Commission	· ·			Τ.
39		-382	Slip I	Bushing	Eccentric	5tua		
40	118	-34	Need	le Carrier.	complete-			7
41	1432		I	Veedle Clar	mp. comple	ete		- 1 - 1
42	1420			Pin				· 1
43 44		-28		Thread	d Guide Plat	e		- 1
45	1016 1036			Thread	d Guide			. 1
46	1014		S	Screw-	7			. 1
47	1763		Needi	e Cannion	Vibrating (`		1
48	1025		S	et Screw -	J gimsardiv	ear		• 1
49	1718	L	Needl	e Carrier	Crank Shaf	t. marked "B"		2
50	1717		Needl	e Carrier	Crank Adiu	sting Lug		1 1
51	1719		Recta	ngular Was	sher			. 1
52 53		-1094	Screw	~				1
53 54	46 782	-146 T	Needl	e Carrier	Vibrating C	Crank		ī
55	1311		ocrew			7-7-7-7-7-		1
56		-137	Needl	e Cannion	Vibration C	Total Cital Pr	-1- C/ 1	1
57		-18	Needl	e Carrier	Vibrating C	rank Slide Blo	ck Stud ck	1
					. TOT WITH	Temy OTTOR DIO	CK	1

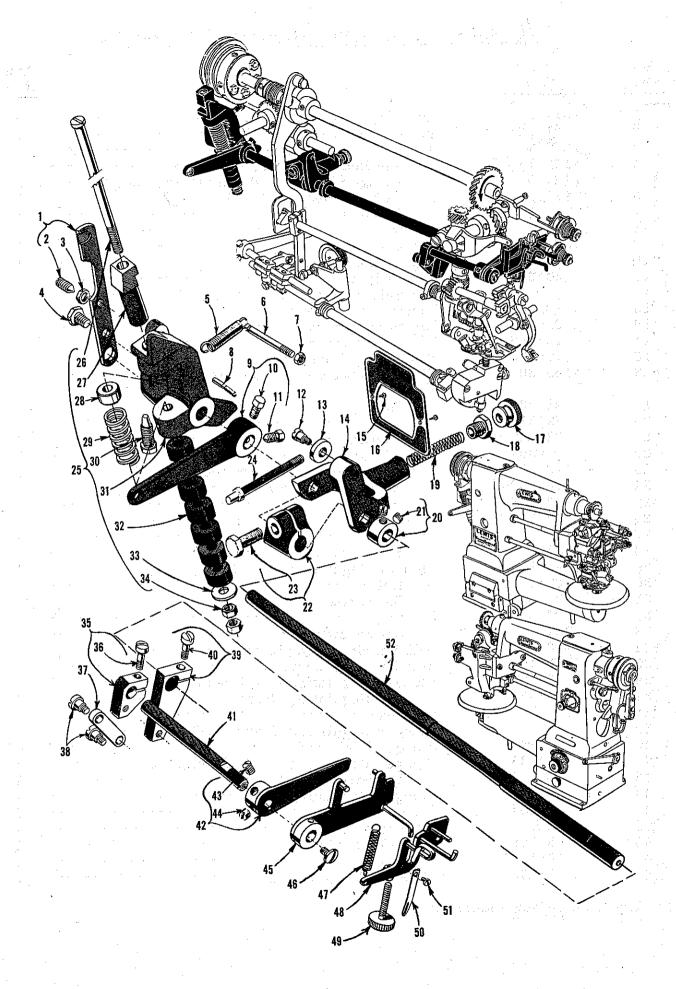
^{*} One No. 1203 L Spot Screw will be replaced by one No. 1005 L on Head Main Shaft Driven Gear.



PLUNGER AND PLUNGER REGULATING MECHANISM

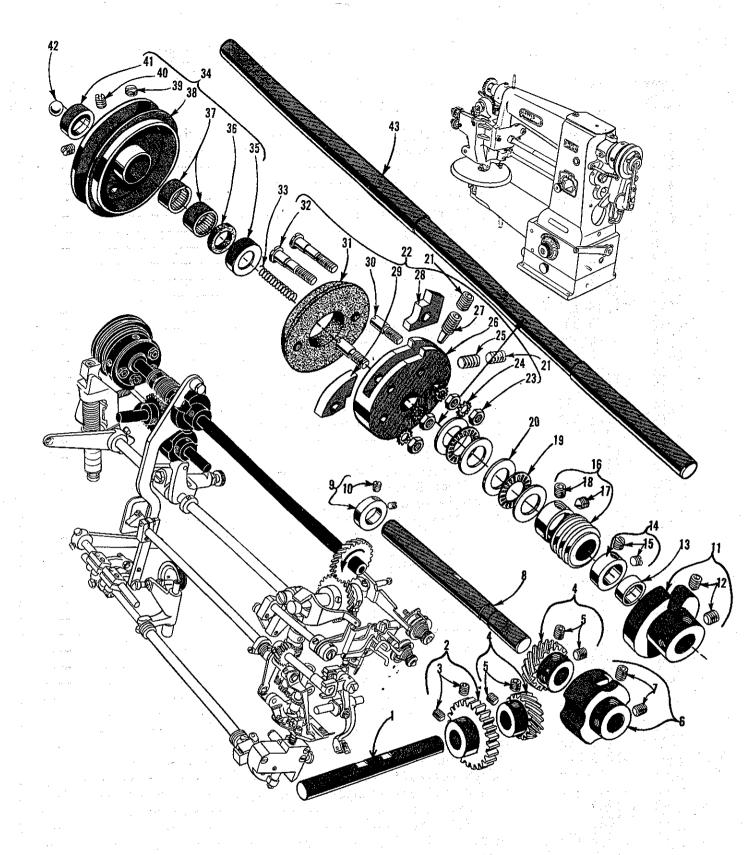
\mathbf{Ref}	. Part		
No.			Amt.
110.		Description	Req.
1	1011 T		
1	1311 L	Nut	2
2	21-383	Plunger Spring	1
.3	1279 L		
4	4115-134-2	Plunger Bearing Block, complete	1
5	4121-5	Plunger Frame and Barrel Assembly	1
6	115-122	Plunger Bearing Block	1
7	16-352	Plunger Bearing Block	1
8	1306 L	Screw	1
9	1304 L	Plunger Frame Link	. 1
10	21-402	Clath Clama Caring	1
11	30-65	Cloth Clamp Spring	1
12	30 00	Cloth Clamp	1
	10 1000	Plunger, See Page No. 29	.1
13	18-1028	Screw	1
14	21-404	Spring	1
15	18-768	Drive Screw	2
16	110-323	Spring Drive Screw Regulating Plate	1
18	GR- 4149-30	Plunger Regulating Knob Assembly	1 1
19			
19	21-237	Spring	1
20	79-31	Ball	1
21	GR-22C214-4	Spring	<u>,</u>
22	44-301	Dica Natah Diata	Ţ.
23	418-1026	Disc Notch Plate	<u>.</u>
$\frac{23}{24}$		Plunger Regulating Screw, complete	1
	18-1026	Regulating Screw	1
25	22-296	Stop Pin Collar	1 ·
26	GR-22C214-4	Stop Pin	1
27	1173 L	Collar	1
28	1137~ m L	Set Screw	1
29	48-166	Plunger Regulating Bell Crank, large	
30	20-34	Nr.+	-
31	1192 L	Set Screw	1
32	1027 L	Collar	1
33	1029 L	Collar	7
*34	478-11	Poll Descine	4
35	478-23	Ball Bearing, complete	Ţ
		Ball Bearing, complete	2
36	16-366	Plunger Regulating Crank Shaft Bushing	2
37	14-472	Plunger Regulating Crank Shaft	. 1
38	1005~ m L		
39	61-82	Plunger Regulating Crank Shaft Tube	1
40	14-446	Plunger Shaft	1
41	48-165	Plunger Regulating Bell Crank, small	ī
42	18-416	Set Screw	1
43	115-139	Plunger Regulating Block	î
44	22-297	Small Rell Cronk Pin	1
45	1298 L	Small Bell Crank PinSet Screw	<u>,</u>
46	48-168	Plunger Crank	Ŧ
		runger Crank	1
47	18-1027	Screw	1
48	21-403	Plunger Crank Spring	3

^{*} Not used on new machines.



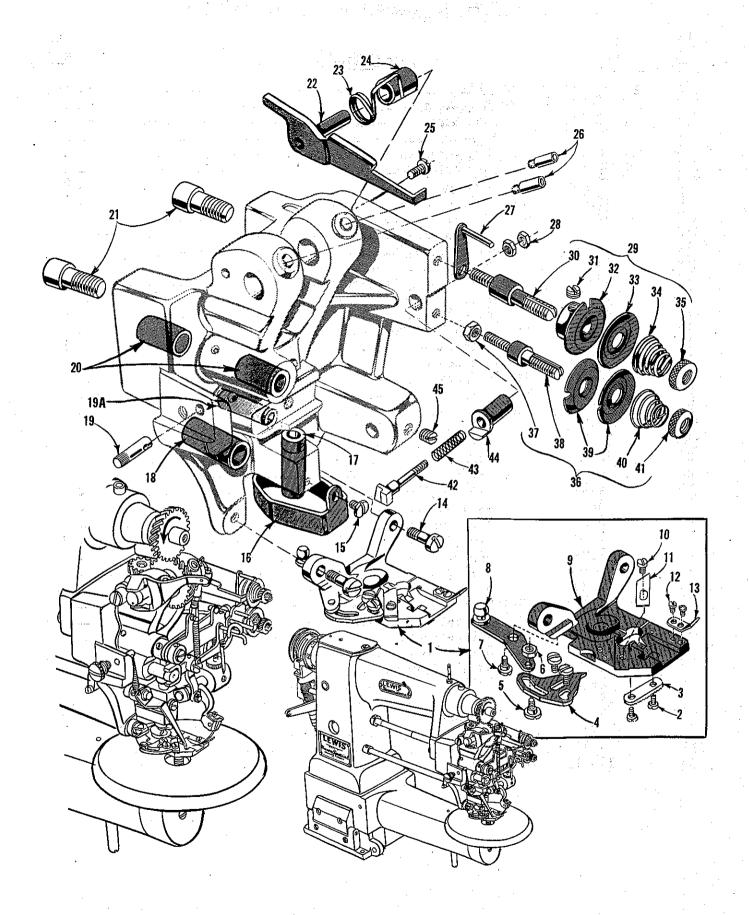
STOP MOTION, STITCH REGULATING AND THREAD PULL-OFF PARTS

Ref.	Part		Amt.
No.	No.	Description	Req.
1	45-302	Lever for applying pressure on Pulley Clutch Disc	- 1
2	18-747	Spot ScrewNut	1
3	20-34	Nut	1
4	18-280	Screw Stop Motion Lever Restoring Spring Stop Motion Lever Restoring Spring Pin	1
5	21-360	Stop Motion Lever Restoring Spring	1
6 7	22-276	Stop Motion Lever Restoring Spring Pin	1
8	1009 L 22-266	NUL =	1
9	45-362	Stop Motion Lever Restoring Spring Pin	1
10	18-120	Some Some	1
11	1298 L	Foot Pedal Chain Lever	1
12	18-1105	Schom	1
13	35-28	Stitch Adjusting Lover Poli	1
14	45-360	Stitch Adjusting Lever Roll	1.
15	18-768	Drive Screw	1
16	97 -1 8	Stitch Indicator Plato	2
17	1316 L	Stitch Selector Plunger Adjusting Nut	· 1
18	20-124	Stitch Selector Plunger Spring Retaining Nut	1
19	21-347	Stitch Selector Plunger Spring	1
20	439-7	Stitch Selector Plunger SpringCollar	1 .
21	SB15	Set Screw	. T
22	115-135	Stitch Selecting Cam Block	1
23	18-978	Clamp Screw	1
24	426-166	Stitch Selector Plunger, complete	1
25	445-348-4	Stop Motion Lever, complete	1
26	71-92	Stop Motion Lever, complete	1
27	26-163 A	Stop Motion Plunger	ī
28	157-13	Stop Motion Spacer Collar Stop Motion Spring	ī
29	21-457	Stop Motion Spring	$\bar{1}$
30	18-819	Screw	1
31	45-348	Stop Motion Plunger Lever	1
32	40-198	Washer	6
33	652-16	Washer	1
34 25	20-128	Nut	2
35 36	48-161 1073 L	Inread Pull-off Crank, short	1
37	46-167	Thread Pull-off Crank, short ScrewLink for Thread Pull-off Crank	1
38	18-688	Concest Inread Pull-off Crank	1
39	48-162	ScrewThread Pull-off Crank, long	2
40	1073 L	Screw	1
41	14-466	ScrewThread Pull-off Lever Shaft	1
42	445-397	Thread Pull off Division Openating Lover Annual Co.	1
43	1005 L	Thread Pull-off Plunger Operating Lever, complete Set Screw	
44	1025 L	Set Screw	
45	445-398		
46	1329 L-1/2	Thread Pull-off Lever, completeScrew	
47	21-390	ScrewThread Pull-off Lever Spring	1
48	499-325	Thread Pull-off Pin Holder, complete	. <u>1</u>
49	18-1005	Thread Pull-off Adjusting Screw	1
50	21-389	Thread Pull-off Adjusting Screw Retaining Spring	1
51	1075 L	Screw	1
52	14-467	Stop Motion Lever Shaft	1



MAIN SHAFT, HANDWHEEL AND STOP MOTION DRIVE

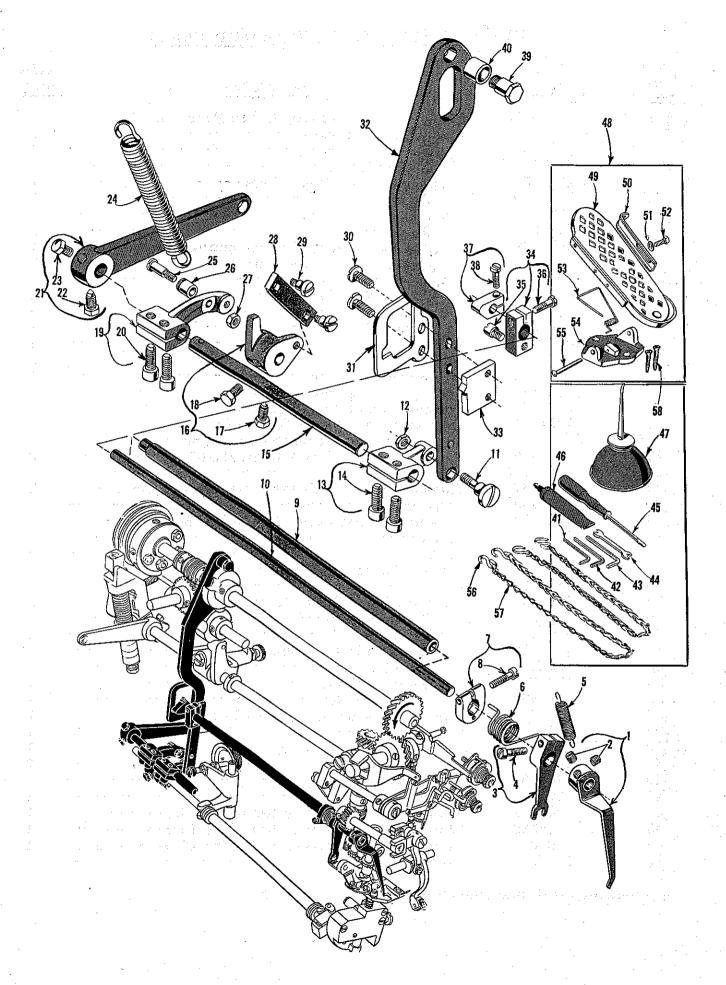
Ref.	Part			Amt.
No.	<u>No.</u>	Description		Req.
. 4				
1	14-444	Jackshaft		1
2	27-185	Jackshaft Worm Gear		1
3 ·	18-730	Set Screw		2
4	27-168	Spiral Gear		2
5	18-996	Set Screw		2
6	34-67	Stitch lacking Cam		1
7	18-730	Set Screw		2
8	14-465	Camshaft		1
9	439-7	Collar		1
10	SB15	Set Screw		2
11	34-59	Plunger Raising Cam		1 .
12	18-730	Set Screw		2
13	35-30	Roll for Plunger Lifting Connecting Rod		1
14	39-92	Collar		1
15 16	1025 L	Set Screw		. 2
	27-184 10-076	Main Shaft Worm Gear		1
17 18	18-976	Set Screw		1
19	18-730	- OCC OCIEM		, 1
20	478-27	Needle BearingWasher		2
21	40-135	wasner		2
22	18-967	Set Screw		2
23	444-334	Stop Motion, complete		1
24	20-127 652 N-14	NUT		4
25	18-967	wasner	~==	4
26	44-334	Set Screw		1
27	18-958	Stop Motion Disc		1
28	166-7	Stop Screw		1
29	51-20	Scop MULION DISC PAWI		1
30	18-959	Stop Motion Disc Latch		1
31	44-288	Screw		2
32	18-982	Pulley Clutch Disc		1
33	21-229	Strew		2
34	458-39	Dullow Assembly		1
35	40-169	Potesting Assembly, complete		1
36	63-32	Retainer Washer Grease Retainer Needle Bearing Pulley		. 1
37	478 - 10	Monda R		1
38	59-39	Needle Bearing		2
39	18-800	Set Commi		1
40	1005 L	Set ScrewSet Screw		1
41	190-2 L	Pulley Insert		2
42	79 - 37	Rall		1
43	14-442	Ball Main Shaft		1
	エー・サイン	FIGHT STOLE		7



HEAD, PRESSER FOOT AND TENSION PARTS

Ref. No.	Part No.	Description	Amt. Req.
			
* 1	405-555	Presser Foot, complete, See Page No. 29 for	
		other presser feet	1
2	18-983	Screw	2
3 3	6-65	Needle Guide	1
4	119-85	Thread Breaking Finger	1
. 5	18-1007	Screw	3
6	20-13	Nut	1
7	18-980	Screw	1
8	445-399	Thread Cutting Finger Operating Lever	1
9,	5-555	Presser Foot, main section	1
10	1351 L	Screw	1
11	119-76	Thread Cutting Knife	1
12	18-621	Screw	2
13	8-130	Needle Guard	1
14	1073 L	Thread Cutting Knife Screw Needle Guard Screw Screw Looper Gear Cover	2
15	CS337	Screw	1
16	32-233	Looper Gear Cover	1
17	16-328	Tooper Driving Sust. Dright 5	
18	16-337	Trimmer Shaft Bushing, front	1
19	22-274	Thread Wiper Finger Spring Pin	1
19A	LS201	Needle Carrier Crankshaft Bushing	1
20	16-346	Thread Pull-off Lever Shaft Bushing	2
21	18-1045	Screw	2
22	445-367	Thread Tension Releasing Lever, complete	1
23	21-349	Tension Release Lever Spring	1
24	16-264	Thread Tension Releasing Lever Bushing	1
25	810 L	Screw	1
26	125-23	Oil Cup	2
27	4137-127	Nipper Retainer, complete	1
28	20-13	Nut	• 2
29	468-25	Thread Nipper Staff, complete	· 1
30	68-27	Tension Staff	1
31	1029 L	Set Screw	· 1
32	444-282	Tension Disc; complete	1
33	1183 L	Tension Disc	1
34	1132 SL	Tension Spring	1
35	20-60	Adjusting Nut	· 1
36	468-26	Thread Tension Staff complete	• 1
37	1160 L	Nut	- 1.
38	68-28	Tension Staff	• 1
39	1183 L	Nut	- 2
40	21-284	Pension Spring	- 7
41	20-60	Adjusting Nut	- 1
42	26-171	Thread Pull-off Lever Retaining Plunger	- 1
43	21-339	Thread Pull-off Lever Retaining Plunger Spring	
44	70-63	Thread Pull-off Lever Retaining Plunger Sleeve	
45	1005~ m L	Set Screw	- 1

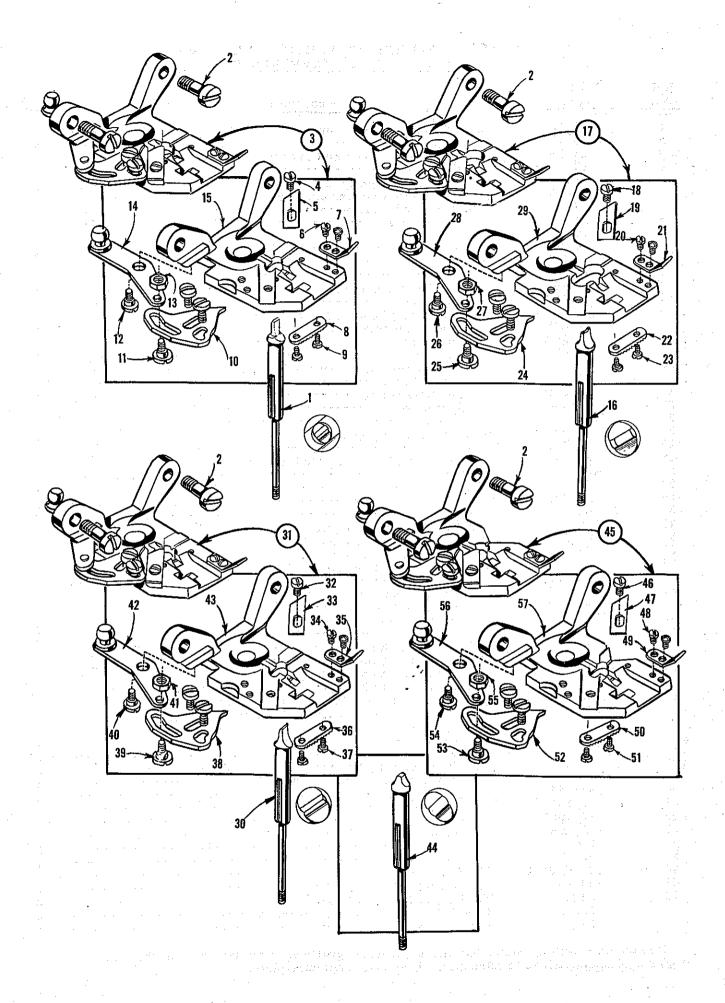
^{*} Furnished with machine unless otherwise specified.



PLUNGER DEPRESSING AND THREAD WIPER FINGER MECHANISM AND ACCESSORIES

Ref.	Part		f_{1},\dots,f_{n}	· .		Λ.
No.	No.			Description		Amt. Req.
4	41.00 41					<u>-1004.</u>
$rac{1}{2}$	4122-41 1025 L		Thread Wiper	Finger, complete		1
3	48-156	100	Set Screv	VT. 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7		2
. 4	18-40		TIMMET Let	er Operating Crank		1
5	21-319		Thread Wines	Tinger Spring		1
6	21-380		Trimmer Kni	fe Operating Spring		1
7	30-64		Trimmer Spr	ing Clamp		1
8	18-40		Clamp So	rew		1 1
9	14-459		Trimmer Sha	ft		1
10	14-460		Thread Wiper	Shaft		ī
$egin{array}{ccc} 11 & & \ 12 & & \end{array}$	18-990		Screw			ī
12	1012 L	: . [*]	Nut			. 1
14	48-160 18-998	·	Plunger Rest	oring Crank		1
15	14-461	1	Plunger Liftin	rew		2
16	48-146		Plunger Dann	ng Rod Jackshait		1
17	18-690		Snot Sore	essing Crank		1
18	18-493		Screw			1
19	48-159		Plunger Depr	essing Differential Crank-		1
20	18-998		Clamp So	rew		2
21	45-364		Plunger Depr	essing Lever		1
22	18-690		Spot Scre	w		ī
23	1333 L		Screw	·		ī
24 25	21-206		Plunger Resto	oring Spring		1
26 26	18-408 35-24		Screw			1
27	1160 L		Plunger Resto	oring Spring Stud Roll		1
28	46-137		Tink			1
29	18-688		Screw			1
30	FP505		Screw			: 2
31	110-375		Thread Winer	Operating Cam Plate		2
32	47-127		Plunger Liftin	g Connecting Rod		1 1
33	34-64		Automatic Th	read Trimmer Cam		1
34	48-163	_	Thread Break	ing Finger Operating Cra	nk	1
35	18-901	•	Screw			1
36 37	18-375		Clamp Sc	rew		ī
38	48-172 1750 L		Thread Wiper	Crank		1
39	1750 L 18-991	,	Clamp Sc	rew		1
40	35-29		Diverge Taken			1
41	WR56		Wrench 1/9:	ng Rod Roll		1
42	WR57		Wrench 5/32	inch hexagon		1
43	WR58		Wrench, 3/16	inch hexagon		1
44	1405 L	- 53	Double End W	rench, $1/4$ inch and $5/16$		1
45	21201		Screwdriver,	9/64 inch round blade, ov	erall length 7 11/16	
40	00004 D	100	inches			1
46 47	28604 P		Grease Tube-			ī
†48	413 D		O11 Can			1
49	4135-9 135-9		Foot Treadle,	complete		2
50	45-424		Foot Trea	adle, main section		1.
51	40-181		Washer			1
52	18-1033		Scrow			1
53	21-408		Snring			1
54	50-265		Bracket -	<u> </u>		1
55	43-27		Rivet			1
56	131-C163-1		''S'' Hook			1 4
57	130-10		Foot Treadle $^{\circ}$	Chain		2
. 58	1504 L		Wood Screw (#	$14 \times 3/4$ inch)		4
* ,	18-955		Stove Bolt, 1/	4 - 20 thread, 3 inches lo	ng	4
*	652-16		Washer, for s	tove bolt		$\overline{4}$
				8		•

[†] Not furnished with machine, but will be furnished gratis upon request with machine order. * For attaching machine to tableboard, not shown on picture plate.



PRESSER FEET AND PLUNGERS

Ref. No.	Part No.	Description	Amt Req.
<i>i</i> .		Alternate Combination for Heavy and Extra Heavy Weight Material	
1	26-172		1
	26-173	Plunger, for heavy weight material, see Ref. No. 16	1
2	1073 L	Screw for pregger foot serversessessessessessessessessessessessesse	$\overline{2}$
3	405-555	H Presser Foot, complete	1
4	1351 L	Screw	1
5 6	119-76 18-621	Thread Cutting KnifeScrew	1
7	8-130		2
8	6-65	Needle Guide	1
9	18-983		1
10	119-85	Thread Breaking Finger	2 1
11	18-100	Thread Breaking Finger7 Screw	3
12	18-980		1
13	20-13	Lock Nut	1
14	445-399	Thread Cutting Finger Operating Lever	1
15	5-555	Thread Cutting Finger Operating Lever	1
		Standard Combination for Medium Weight Material	
16	26-173	Plunger	
17	405-555	Presser Foot, complete	1
18	1351 L	Some Some Some Some Some Some Some Some	1
19	119-76	ScrewScrew	1
20	18-621	Screw	1 2
21	8-130	Needle Guard	1
22	6-65	Needle Guide	1
23	18-983	Screw	2
24	119-85	Thread Breaking Finger	ī
25	18-100	7 Screw	3
26	18-980		1
27	20-13	Lock Nut	1
28	445-399		1
29	5-555	Presser Foot, main section	1
		Alternate Combination for Light Weight Material	
30	26-170	Plunger	
31	405-554	Presser Foot complete	1
32	1351 L	Presser Foot, complete	1
33	119-76	Thread Cutting Knife	1
34	18-621	Screw	2
35	8-130	Needle Guard	ī
36	6-61	Needle Guide	ī
37	18-983	Screw Thread Breaking Finger	2
38	119-85	Thread Breaking Finger	1
39	18-100		3
40	18-980		1
41 42	20-13 445-399	Lock Nut	1
43	5-554	Thread Cutting Finger Operating Lever	1
-10	3 304		1
		Alternate Combination for Tacking Labels and Light Weight Material	
44	26-174	Plunger, for tacking labels	1
4 =	26-170	Plunger, for light weight material, see Ref. No. 30L Presser Foot, complete	1
45	405-554	L Presser Foot, complete	1
46 47	1351 L	Screw	1
48	119-76 18-621	Thread Cutting KnifeScrew	1
49	8-130	Needle Guard	2
50	6-61	Needle Cuide	1
51 .	18-983	Needle Guide	1 2
52	119-85	Thread Breaking Finger	2 1
53	18-1007	Thread Breaking Finger7	3
54	18-980	Screw	3 1
55	20-13	Lock Nut	1
56	445-399	Thread Cutting Finger Operating Lever	1
57	5-554	L Presser Foot, main section	ī

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48-162	. 21		129	1196 L	
48-163	27			1203 L	
48-165	19		19	1219 L 1220 L	
48-166			21	1221 L	
48-168			21,23	1279 L	
48-172	27	444-282	25		19,21
50-262	15		23	1304 L	
50-263 L 50-265			121	1306 L	
50-319		445-366			15,17,19
51-20	23		25	1316 L	
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WR56			25,29	1333 L	25,29
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58-39			17	1420 L	
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61-82 63-32	19		25	1717 L	
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69-18			23	1762 L	
70-61	17	499-325	21	1763 L	
70-63		FP505	27	1804 L	17
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