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P. FANGHANEL & CO. LTD.
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united

**TAPE
EDGE**

**closing
machine**

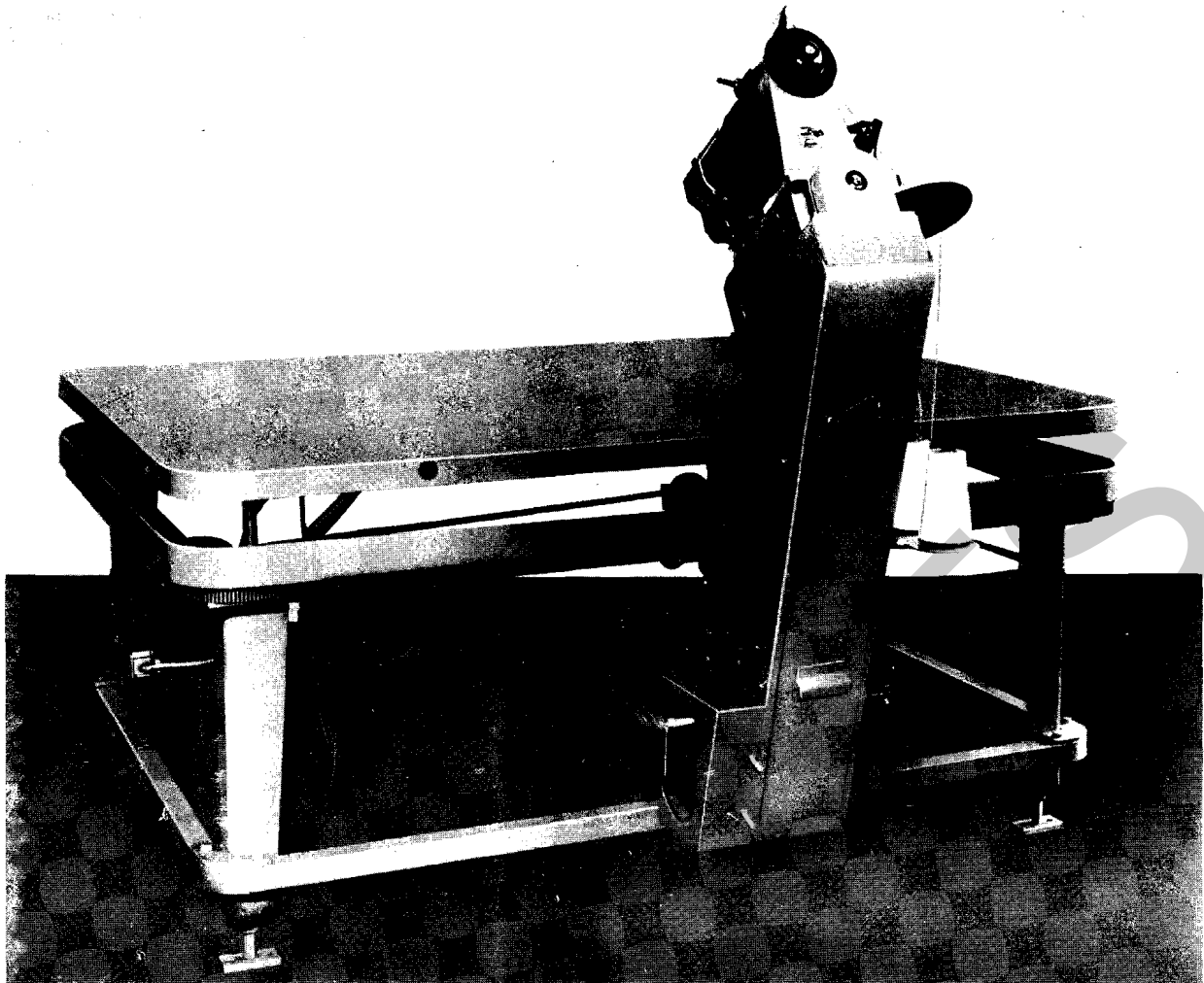
MODEL NR

UNITED MATTRESS MACHINERY COMPANY

Division of Mathewson Corporation

2 Hancock Street • Quincy, Massachusetts 02171 • Phone 617/472-7250

A COMPLETE LINE OF BEDDING MACHINERY



United Tape Edge Closing Machine

MODEL NR

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Foreword

This construction manual and parts catalog contains all of the necessary information on the installation, operation, care and maintenance of the United model NR Tape Edge Closing Machine.

The design of this machine is the result of a continuous development program to provide you with modern

production equipment to help you make better products . . . faster and at less cost.

To insure the successful operation of the machine it should be kept well lubricated and as clean as possible.

Please read this manual thoroughly before operating the machine.

Assembly Instructions

This heavy duty machine is shipped to you in a single crate, with the completely assembled table and table-top on a skid, and the boxed carriage and sewing head each strapped to it. The accessories are packed in with the sewing head.

When setting up the table in proper location, preparatory to putting the carriage on the tracks, remember that the legs are adjustable for height, to take care of irregularities in the floor, and also perhaps to regulate to the best suitable height for the operator. An adjusting screw with its lock nuts is found on the bottom of each leg.

To assemble the carriage to the table, first remove the roller and stud from the bracket at upper track level. This roller normally runs against the narrow inside (back) face of the upper track. It must be removed to get the carriage on the track. When the carriage has been lifted on the track, running on its caster rollers, replace the roller and stud, and the carriage will be properly in place.

Attach the sewing head to the carriage, by means of the four hex head screws provided. These are put in from the bottom, and on two of them a little reaching under the carriage upper tilt plate will have to be done. The cover over the drive wheel and its V-belt should be removed so that the V-belt can be fastened over the V-pulley. The screws fasten the V-belt cover on again.

The work-light bracket is fastened on the side of the head opposite the operator's position. Two screws for fastening the bracket will be found in place. The wire to plug in the work light should be fastened in two places with plastic loops before being plugged in on the bottom one of the two outlets on the carriage. (The top outlet is for the main power wire coming down from the swivel.) Both these plugs (connectors) are of the twist-on type, requiring a short twist to lock them in place.

Next, fasten the (lower) thread cone platter and the (upper) tape reel on the same side of the carriage, away from the table. A rubber guide loop for the main power wire is attached to the head with the same screw used to fasten the tape reel.

Three thread guides, consisting of a wire with a loop at each end are fastened to the carriage and sewing head below the tape reel. The right-hand (needle) thread uses two thread guides, a long one on the carriage and a shorter one on the head; the latter to the left to by-pass the reel. The looper thread, further to the left, uses only one (long) thread guide on the carriage. These guide the two threads to the bracket on top of the head.

The looper thread (on the left) passes from the bracket down through a tube provided. Just thread any needle to the thread and use it as a weight to pass the thread down through the tube to its lower tension post.

The other (needle) thread goes from the upper tension post over various thread guides across the top of the head and down the nose to the needle. The sewing head comes to you fully threaded, so please observe the various thread guides. For further threading information, consult the green Singer booklet to be found in the packing case. This shows the threading and adjustments for their twin needles, whereas the "United" head uses only one needle; but the instructions are the same.

Now we are ready to have the electric connections made. Do not overlook the geared-in-head motor which raises and lowers the table top. A connection through the floor from the ceiling below will eliminate exposed wires, which might trip the operator or other workers around the table. This wire should be connected after the location of the machine has definitely been established. It should be centered under the table on the floor.

Then the ceiling swivel (banjo) should be connected. It is fastened anywhere from 7' to 10' above the floor level. The swivel wire is brought down and threaded through a rubber loop, which is fastened to the head below the tape reel with one of the tape reel screws. An extra wire is provided in the cable in case a "ground" is required by law. The swivel wire is plugged in and twisted (locked) in place on the upper one of the two connectors on the side of the carriage.

At this point the machine is ready to operate. It is advisable to first turn it over by hand, to be sure everything is in order before turning on the power.

Adjustments

The machine is designed to tape-sew the full circumference of the mattress, to sew the complete panels to the boxing.

It will also close the ends of the mattresses filled on a filling machine with or without tape. When finishing a seam with tape, cut it off just behind the needle and sew it off to complete the unbroken tape continuity around the mattress edge. To rethread the tape into the binder, if necessary, cut it off on a long bias to create a point on the tape for easier threading.

The United heavy-duty head on this machine sews without bobbins, without interruption for the length of the thread cones. It makes what is known as a Union Special #401 double lock stitch, using two threads. Owing to the special construction of the sewing head, it sews with walking feet up very close to the end of the arm, with the tape always under compression and requiring a minimum of effort for the operator to pull the boxing and the panel into sewing position in the binder.

The standard 9/16" binder on the head uses a 5/8" wide tape. It should be a full weave tape, otherwise it will wobble in the binder. If the tape used is not full weave, it will have to be 1/32" wider (21/32") and the stretch-out of the lighter weave, when sewing, will reduce it to 5/8". If a full weave 21/32" tape is used, a 5/8" binder should be provided.

A special 9/16" binder with a slightly wider opening for chenille binding can be furnished with the machine, if desired. One binder is furnished without charge with each machine. The head can be set for a longer stitch, to sew on plastic and not cut the plastic with a tight stitch.

For sewing a small tape roll edge with some of the quilted panel cotton felt to form the roll filling mate-

rial, special 1 1/4" or 1-7/16" binders can be furnished, but they cost extra and are made to order from a sample of the tape to be used.

A soft 30/3 cord thread is recommended for both the needle and the looper. Either left twist or right twist thread can be used.

For the piping attachment, a 24/3 cord thread is recommended for the needle only.

LOOPER ADJUSTMENT

The following instructions take place of and supersede those on Page 25 of the green Singer booklet.

To time and position the "United" sewing machine looper, set the machine to the desired stitch length. Loosen the Looper Carrier Crank Clamping Nut (#201524E) sufficiently to be able to tap the Looper Carrier from position. Set looper timing mark (L.T.) on machine pulley opposite the arrow on the front of the arm. Tap the looper carrier until the looper point is at the center of the needle.

Turn the machine pulley until the letter "G" is opposite the arrow on the front of the arm. At this position the looper point should again be at the center of the needle. If it is not, adjust the timing of the looper crank by adjusting the looper timing screw, until the point of the looper is at the center of the needle at both the above described position of the machine pulley. ("L.T." opposite arrow and "G" opposite arrow.)

When this position is obtained, securely tighten the looper carrier crank clamping nut. The looper will now be timed and positioned correctly.

Operating Instructions

About 7' x 10' floor space is needed for operating the machine. A combination of the angle setting (tilt) of the sewing head, plus the power adjustment of the table height, permits closing mattresses and cushions from 1" up to 11 1/4" box, or knife edge cushions and pads.

When the clutch handle, located to the left of the starting switch, is vertical (upright), the carriage is not in gear and will not move forward when the power is turned on. When this same handle is pulled to a horizontal position, the machine carriage is in gear and will move forward when the sewing head starts to function.

There is a plunger type locking device just below the clutch handle which locks the carriage tight in place when it is desired to use the sewing head in a stationary position, viz: for closing cushions or similar smaller articles.

In general operation of this equipment, to stop the whole mechanism, both sewing head and forward motion carriage, press the right knee against the foam rubber pad on the knee control. This will leave both, the operator's hands free to guide the sewing. To start the whole mechanism forward, sewing, remove the knee pressure slowly from the knee control.

Operating Instructions (continued)

For the mattress closing operation, have a fully assembled mattress on the machine table with both the hemmed panels temporarily fastened to the hemmed boxing with 3" upholstery pins — six pins per panel will do. Use the finger-tip table height control to regulate for the proper sewing height by merely pulling the cord at any point around the table. Pull to the right to raise the mattress; to the left to lower it. Limit switches prevent the table from raising or lowering too far.

Before starting to sew, grasp the panel firmly with the left hand, the boxing with the right, aiming the two together so that the edges are in the binder. A special lever on the sewing head will lock the presser foot in the upper (open) position so that the panel and boxing can be pushed into the binder without difficulty.

To release the presser foot from the upper (raised and locked) position, the operator needs only to push the lever with his elbow, so that it disengages from its lock notch and closes down on the material to be sewn. The sewing head can then be turned over by hand to push the needle through the goods to be ready for sewing.

Have everything ready to sew, with the right knee pushed up against the foam rubber knee pad, and then turn on the power. Withdraw the knee pressure gradually, permitting the carriage to start forward, sewing as it goes along. To stop the machine, apply positive pressure with the right knee on the foam rubber pad again, which disengages the clutch and stops the machine.

A new operator should be given a mattress to practice on for a day. He should sew up one panel, rip off the tape, and then do it again, until he has the "feel" of the machine. He should practice on the first panel until he acquires the knack of sewing and then try the second panel, which will be tighter.

In the beginning the operator will sew for as long as he can hold the panel and the boxing, and then stop the machine (with the knee control) until he can get another firm hold. It takes strong fingers to make a good tape edge machine operator. After several months, the operator's fingers will become calloused, which will help.

The technique of a good tape edge closing operator is to pull upward to get the panel and the boxing under the needle, into the binder, but not to pull forward. When the two hands have the panel and boxing well into the binder and are holding it several inches ahead of the needle, shift the hold to the right hand and move the left hand for a new hold further to the front; at the same time being ready to move

the right hand forward to a new hold the minute the sewing mechanism has closed the mattress (with tape) thus far.

As some experience is gained, longer stretches of tape will be sewn without stopping the machine. Note that the binder and presser feet are right at the far end of the sewing arm, flush with the edge, which makes it easier to pull the panel and boxing up into sewing position. As more experience is gained, this feature will aid and encourage non-stop sewing for the length of the straight seams, and facilitate sewing around the corners.

Mattresses with Marshall (muslin pocket) type spring units are quite soft and therefore easy to close. Those requiring the most effort are the ones selling under various names identifying them as extra firm. These are particularly tight after the half-way-around point on the second panel when everything tightens up. At this point it is essential for the operator to use his left elbow to draw the panel towards the needle, to ease the pressure at the point of sewing.

Most good operators use this elbow technique on all mattresses, and by so doing have been able to improve their sewing speed. A combination crawling fingers and the elbow technique aids non-stop sewing on the long seams, especially on this machine with its special features to encourage such speed sewing.

It should not be difficult to close a whole side (or end) of a mattress with a soft Marshall type unit. On foam rubber units this is common practice, except when a flange of wide tape has been glued to the side of the foam unit to sew in with the closing tape, to prevent the cover from shifting.

The machine is equipped with two motors. One is in the bottom of the carriage to drive the carriage and sewing machine. The second is under the table to raise or lower the table top. Motors are installed according to the customer's electrical specifications.

When there are figures shown in parentheses () after the description of parts, they indicate the number of such parts used on machine.

Special Optional Features

PIPING ATTACHMENT

A piping attachment is available, at an extra price, for the United Model NR Tape Edge Machine. It consists of a bracket for holding the 12 lb. roll of roving, guide piece to feed the roving into the needle, and a binder for using 1-7/16" tape.

This attachment produces the effect of a miniature roll edge, and adds height to the box of the mattress. If the original machine is purchased with this piping attachment, there is no problem for the user to figure out the feed of the roving. The tape goes into the binder from the binder platen just as any other tape would, and is hand-fed into the binder by cutting off the tape on the bias to create a point for easier handling.

All machines are drilled in the factory for this piping attachment, so it can be put on with the aid of an instruction blueprint (NR-465) furnished when sold separately for later attaching.

SPECIAL NOTE: When the piping attachment is used, we recommend changing from a 30/3 to a 24/3 cord thread on the needle.

Machines furnished with the piping attachment as original equipment also have a standard 9/16" tape binder and pivot arm furnished as a separate unit. The two binders with their pivot arms are interchangeable so that the machine can be used for either a piping or a plain tape.

To change over from one attachment to another, simply remove the knurled-head pivot screw, replace the one attachment and its arm with the other, and the machine is ready to sew. Of course, the different size tape (with or without the roving) has to be fed into the binder. To do this quickly, cut the tape on the bias with scissors to create a long (tapered) point, which will feed into the binder easily.

EXTENSION RACK

The special optional extension rack for oversize mattresses easily slides out 18" on either side to give extra support for King and other oversize mattresses. Locks out of the way when working on standard sizes. (see Plate 16)

UNDER-TABLE SWIVEL

The new United under-table swivel not only gives you trouble-free operation, but it eliminates all overhead cords or swivels and their possible interference with the operator. Just plug in the power inlet cord and you are ready to start operating.

Singer Parts

Used in Sewing Head Only
Shown on Plates 1 Thru 9.

Part No.	Description	Plate No.
1562J	Nut	8
2102	Flange	5
2455	Flange (2)	8
10141	Spring	8
25362	Ball for 267718	1
32572	Flange	5
32787	Lifting Crank	1
50326	Stud	5
51570	Nut	5
54279	Needle Thread Tension Guide Double	5
59537	Bushing	5
67425	Looper Carrier Crank Washer	6
131741	Spring for Needle Thread Tension	5
140321	Screw for Collar #167416 (2)	6-9
167416	Collar (3)	6-9
200004E	Screw	8
200043C	Screw for 267638 (2)	3
200047D	Screw (3)	2-5
200054C	Looper Thread Tube (4)	5
200058C	Screw for 267702 and 267621 (4)	2-3
200061D	Screw for 32787 (2)	1
200061C	Screw (4)	7
200064C	Screw	7
200064D	Screw	9
200066C	Screw for 267629	1
200069C	Screw for NR-438 (2)	1
200078F	Locking Screw for NR-433A	1
200078H	Screw for 267604 (4)	3
200081C	Screw for 267629	1
200082D	Needle Thread Guide Screw	5
200089C	Screw	6
200095X	Needle Bar Connecting Link Cap Washer Screw	1
200098F	Looper Thread Take-up Driving Conn. Hinge Set Screw (2)	4
200100C	Feed Dog Screw	6
200123D	Needle Bar Rock Frame Driving Connection Cap Screw	7
200125F	Screw for NR-482	1
200167E	Screw for 32787 and 200167E (2)	1-3
200169B	Screw	8
200173D	Needle Bar Oiling Felt Holder Screw (2) ..	1
200303H	Looper Driving Crank Oil Hole Cover Screw	7
200342C	Balance Wheel Position Screw	2
200337C	Top Shaft Lock Set Screw	3
200344C	Screw (3)	1-7
200346	Screw for 268142	2
200347C	Balance Wheel Lock Screw	2
200351C	Lifting Presser Bar Guide Rod Set Screw ..	1
200354C	Screw (2)	2-6

Singer Parts (continued)

Part No.	Description	Plate No.	Part No.	Description	Plate No.
200362C	Screw (4)	3-6-7	267610	Feed Driving Eccentric (2)	2-7
200364	Screw	7	267612	Foot Lifter Crank	3
200373C	Screw (3)	3-6-9	267617	Lifting Eccentric Connection Hinge Pin (2)	1-2
200377	Screw	6	267618	Lifting Eccentric Adjusting Disc. Spring	2
200378	Screw for 268142	2	267619	Connection for 267620 Assembly	2
200380C	Screw (5)	2-6-9	267620	Assembly Including 268063 and 267619	2
200382C	Screw (2)	7	267621	Lifting Eccentric Connection Crank (2)	2-3
200386C	Set Screw for Collar 268072 (10)	2-6-9	267622	Lifting Eccentric Flange	2
200394E	Feed Lifting Eccentric Set Screw	7	267623	Gib for 398834 Assembly and 398805 Assembly (3)	2-7
200403C	Screw	9	267624	Lifting Eccentric Spacing Collar	2
200416E	Screw	8	267625	Lifting Lever	1
200417C	Screw	3	267626	Lifting Lever Link Stud	1
200507	Screw (2)	8	267627	Lifting Lever Link	1
200571D	Screw	1	267628	Lifting Presser Bar	1
200573D	Screw	7	267629	Lifting Presser Bar Guide Block	1
200578XC	Screw	5	267630	Lifting Presser Bar Guide Rod	1
200583X	Screw	1	267631	Lifting Presser Bar Lifting Crank	1
200650X	Screw	3	267633	Lifting Rock Shaft for 267634 Assembly	3
200928	Shoulder Screw	4	267634	Lifting Rock Shaft 267633 With 2022 and 267636	3
200987	Stud	8	267636	Lifting Rock Shaft as Part of 267634	3
201052	Screw	5	267638	Needle Bar Rock Frame Driving Arm	3
201063D	Hinge Pin Pinch Screw	2-3	267639	Needle Bar Rock Frame Driving Eccentric Flange	2
201160E	Screw Eye	4	267650	Presser Bar Spring Housing Support Retainer	4
201188C	Set Screw for Thread Guide	1	267657	Vibrating Presser Bar	1
201254C	Screw (5)	1-2-7	267658	Vibrating Presser Bar Hinge Stud	1
201256C	Screw	6	267665	Loop Deflector (For 267664) Feed Dog	6
201363C	Screw	4	267673	Needle Bar Rock Frame	1
201409F	Screw	1	267702	Foot Lifter Arm	3
201418C	Screw	7	267704	Foot Lifter Lever Rod	4
201485C	Screw	4	267707	Needle Thread Tension Releasing Plate (Adj.)	4
201522E	Nut (2)	7-3	267714	Presser Bar Pressure Cylinder Support	4
201524E	Nut (4)	4-6	267718	Presser Bar Spring Arm Ball Bearing Retainer	1
201526E	Nut	4	267738	Lever	4
201537	Nut	6	268004	Arm Shaft Ball Bearing (Back) Housing	2
201622	Nut	4	268005	Arm Shaft Ball Bearing Front	2
201736E	Nut	7	268008	Flange for Top Shaft	2
202005	Washer	8	268029	Needle Bearing	1
204348	Spring	4	268032	Face Plate Lock Spring	1
204365	Spring	5	268044	Arm Shaft Oil Stop Ball Spring (Rear)	7
204925	Washer (2)	7-9	268045	Spreader Driving Eccentric	7
206133	Washer	4	268046	Spreader Driving Eccentric Counter Balance	7
208636	Washer (2)	6	268047	Feed Lifting Eccentric	7
210805	Washer	4	268048	Balance Wheel	2
224742	Pin	8	268049	Assembly Including 268048 - 200-347 - 200342	2
225708	Spring	8	268051	Looper Thread Guide	8
226206	Releasing Pin	5	268052	Looper Thread Take-up Rod	9
238089	Plate Pin	4	268053	Spreader Driving Rock Shaft	9
240245	Spring	8			
241763	Ball (6)	2-7			
259549	Binder	8			
267110	Bearing (3)	2-3			
267600	Arm Casting	4			
267603	Arm Shaft Assembly	2			
267604	Arm Side Cover	3			
267608	Connector for 267609 Assembly	2			
267609	Connector Assembly (Included) 267608 - 271055	2			

Singer Parts (continued)

Part No.	Description	Plate No.
268061	Puller Feed Driving Connection	7
268062	Pin (3)	3-7
268063	Bearing for 267619 Assembly 267620	2
268064	Lifting Eccentric	2
268065	Adj. Flange for 398834 Assembly and 398805 Assembly (3)	2-7
268066	Adjusting Flange Spring	7
268067	Adjusting Flange Collar	7
268070	Feed Driving Rock Shaft	6
268072	Collar Replaced by 167416	2-3-6
268073	Feed Driving Rock Shaft Crank	7
268074	Feed Driving Connection	7
268075	Feed Lifting Crank	6
268078	Feed Lifting Link	6
268079	Feed Lifting Link Hinge Pin (2)	6
268080	Feed Lifting Rock Shaft	6
268081	Feed Regulating Stud	8
268082	Feed Regulating Stud Socket	8
268102	Looper Driving Crank Oil Hole Cover	7
268121	Needle Thread Tension Bracket Spring Collar (4)	5-8
268123	Looper Thread Tube	5
268124	Looper Thread Tube Clamp (2)	5
268139	Needle Bar Connecting Link Cap Washer	1
268142	Needle Bar Crank	2
268144	Needle Bar Oiling Felt	1
268150	Needle Bar Rock Frame Regulating Stud	3
268162	Spreader Point	9
268167	Needle Thread Tension Bracket	5
268168	Needle Thread Tension Release	5
268169	Needle Thread Tension Release Cap	5
268185	Spreader Holder	9
268187	Spreader Driving Crank	9
268190	Spreader Driving Pin	9
268197	Face Plate Lock Spring Plate	1
268198	Feed Lifting Rock Shaft Crank	7
268208	Looper Carrier Crank Hinge Pin	6
268214	Arm Shaft Oil Stop Ball	7
268216	Looper Driving Connection Assembler	6
268219	Needle Bar Rock Frame Thread Guide	1
268220	Thrust Washer (2)	7
268233	Spreader Driving Connector	7
268265	Bed Shaft Oil Control Rod (Wood)	7
268277	Looper Driving Crank	7
268278	Needle Bar Ceiling Felt Holder	1
268307	Looper Carrier Crank	6
268308	Looper Carrier Crank Clamp Stud	6
268310	Needle Guide	6
268312	Needle Thread Guide (On Arm Head)	5
268315	Feed Driving Flange With Accessories	7
268330	Stud for Face Plate NR-411 (2)	1
268331	Plate	8
268333	Frame Guide	8
268369	Looper Assembly	8
268370	Looper	8
268373	Thread Guide	8

Part No.	Description	Plate No.
268506	Thread Guide for Top Arm	5
268512	Thread Guide (On Needle Bar Stud)	1
268513	Thread Guide (2)	5
270026	Feed Regulating Stud Spring	8
270266	Bearing for NR-439	1
271055	Bearing for 267609	2
350149C	Spreader Screw	9
350171C	Set Screw	2
350267E	Looper Holder Screw	6
350466C	Spreader Driving Rock Shaft Screw Stud	7
350467AL	Screw for 398834 & 398805(6)	2-7
350477C	Screw for 398834 & 398805 (6)	2-7
350478C	Screw	6
350524X	Foot Lifter Lever Rod Hinge Screw	4
350548C	Screw for Gib for 398834 Assembly and 398805 Assembly (6)	2-7
350552	Screw	6
398805	Assembly	7
398817	Assembly Crank for Looper	7
398834	Assembly (Top Shaft)	2

NR Parts

Part No.	Description	Plate No.
NR-1	Main Drive Assembly	15
NR-2	Main Frame, Steel Weldment	13
NR-3	Gear Box, Casting	14-10
NR-4	Worm Drive Shaft, Steel	10
NR-5	Clutch Ring, Steel	15-10
NR-9	Drive Shaft Worm, Steel	10
NR-10	Gear Box Vertical Bearing, Steel	10-15
NR-12	Sewing Drive Sheave (Groove Pulley) Casting	15
NR-14	V-Belt Clutch, Steel	15
NR-15	Head-Drive V-Belt, Rubber	14
NR-18	Gear Box Cover Plate, Casting	10-15
NR-20	Driven Adjustable Sheave (Pulley) Casting	15
NR-22	Vertical Shaft, Steel	15
NR-23	Vertical Shaft, Sleeve (Bushing) Bronze	10-15
NR-24	Main Drive Worm Gear Casting	10-15
NR-25	Feed Clutch Spring, Steel Wire, 3" x 1"	15
NR-27	Center Pivot Bracket, Casting	11-14
NR 84P	Caster Arm-Left	11
NR 849	Caster Arm-Right	11
NR 30	Center Pivot Roller, Steel	11-14
NR-32	Sleeve, Steel	11-14
NR-33	Washer, Steel	11-14
NR-34	Head Tilt Base, Steel	12
NR-35	Head Tilt Pivot Shaft, Steel	14
NR-38A	Head Tilt Screw Shaft, Steel	12
NR-39A	Head Tilt Nut, Bronze	12
NR-40	Head Tilt Arm, Steel	12
NR-41	Head Tilt Link, Steel	12
NR-42	Head Tilt Crank, Brass	12

NR Parts (continued)

Part No.	Description	Plate No.	Part No.	Description	Plate No.
NR-45	Head Tilt Pad, Steel	12	NR-112	Clutch Release Arm Guide Screw, Steel	15
NR-46	Head Belt Adjuster Arm, Steel	15	NR-115	Wire (Switch to NR-134) Black Plastic Cover (2)	
NR-47	Head Belt Adjuster Spring, Steel Wire	15	NR-116	Wire (Switch to No. 1309) (2)	
NR 170	Knee Plunger Rod, Steel	15	NR-117	Wire (Switch to Motor), Black Plastic Cover (2)	
NR-49	Brake Arm Bracket, Steel	15	NR-120	Motor	14
NR-50	Brake Rod, Steel	14	NR-123	Bracket Shim Set	14
NR-51	Brake Disc Spring, Steel Wire	14	NR-125	Key, Steel (NR-9 to NR-22)	15
NR-52	Brake Disc, Brake Lining	14	NR-132	Heaters	
NR 171	Clutch Arm, Steel	12	NR-133	Receptacle Cover Plate, Steel	12
NR 172	Gear Lock Pin Housing, C.I.	14	NR-146	Electrical Box (for NR 149) (1)	13
NR 173	Clevis Adjusting Rod, Steel	15	NR-147	Transformer	13
NR 174	Cover Plate (Single Ph. Only)	14	NR-148	Wire (No. 1921A to NR14) and (NR147 to No. 1309)	13
NR 176	Patent Nos. Plate		NR-149	Transformer (Special) (1)	13
NR-58	Knee Control Spring, Steel Wire	15	NR-156	Extension-Tape Reel Pin. Copper Tubing. Lamp	8
NR-59	Flangette Stamping, Steel	15	NR-157	Hinge Pin	11-14
NR-60	Leading & Trailing Cam Roller, Steel (2)	14	NR-163	United (Decal)	13
NR-61	Leading Roller Stud, Steel	14	NR-164	Lamp	4
NR-64	Corner Cam, Steel (8)	17	NR-165	Sleeve Worm Spacer	10
NR-65	Roller-Caster	11	NR-166	Sleeve Worm Spacer—Sheave Side	10
NR-66	Bracket—Right Guide Roller	11	NR-167	Cap Gear Box Large	10
NR-67	Bracket—Left Guide Roller	11	NR-168	Nut Worm Shaft	10
NR-68	Spacer—Guide Roller Bracket (2)	11	NR-300	Table Assembly	18
NR-69-R	Assembly (bearing for NR-65 and Caster Roller)	11	NR-301	Leg, Steel (With NR-301 Sub. 1-5) (4)	18
NR-69-L	Assembly (Retaining Ring for NR66) (4)	11	NR-846	Rail Weldment Assembly, Steel	18
NR-70	Cap—Gear Box	10	NR-303	Bushing, Bronze (For NR-311) (8)	18
NR-71	Gasket—Gear Box Cap	10	NR-847	Rack and Rail Assembly (Sub)	18
NR-73	Gasket—Large Cap	10	NR-306	Lower Side Rail, Steel (2)	18
NR-75	Pipe Lug—Vented	10	NR-307	Lower End Rail, Steel (2)	17
NR-77	Spacer—Cam (8)	17	NR-308	Reversing Switch Sash Cord, 20 Ft. Long	18
NR-83	Table End Gear Rack, Steel (2)	17	NR-310	Elevating Limit Switch Trip, Steel	17
NR-84	Table Side Gear Rack, Steel (2)	18	NR-311	Elevating Screw, Steel (4)	18
NR-85	Corner Gear Segments, Steel (4)	18	NR-312	Elevating Sprocket, Steel (4)	18
NR-86	Main Drive Gear, Steel	15	NR-313	Elevating Sprocket, Retaining, Steel	18
NR-88	Lower Roller Stud, Steel	14	NR-315	Table Elevating Drive Sprocket (On Motor)	18
NR-89	Lower Roller Steel	14	NR-316	Motor Reduction Unit	17
NR-90	Clutch Release Arm, Steel	15	NR-318	Elevating Limit Switch Bracket, Steel	18
NR-91	Clutch Release Stud, Steel	15	NR-322	Bracket—Elevating Limit Switch (2)	17
NR 333	Left Head Belt Idler Sheave	14	NR-331	Wire, #1 Term, to #3 Term	
NR-95	Gear Lock Pin, Steel	14	NR-338	Wire (4)	
NR-96 A	Clutch Eccentric Steel	15	NR-339	Wire (4)	
NR-97	Eccentric Sleeve, Steel	15	NR-340	Wiring Diagram (Table—1 Phase)	
NR-98	Motor Pivot Base, Steel	15	NR-351	Lever Switch Segment	18
NR-99	Tool Tray, Steel Weldment	13	NR-352	Bracket—Vertical	17
NR-100	Tape Weight—Steel		NR-353	Stud (2)	17
NR-101	Motor Pivot Shaft, Steel	15	NR-354	Bracket—Elevating Motor	17
NR-102	Knee Pad Plate, Steel	15	NR-355	Lifting Lever Hinge Stud	
NR-104	Knee Plate Pad, Double Sponge Rubber	15	NR-356	Chain	17
NR-105	Round Side Cover, Steel	12	NR-372	Wire (4)	
NR-106	Thread Spool Bracket, Steel	12	NR-392	Harness—Table Wiring—Universal	
NR-107	Rectangular Rear Cover, Steel	13	NR-393	Wiring Diagram—Table—3 Phase	
NR-108	Full Rear Cover, Steel	13	NR-394	Set Screw	
NR-109	Head Drive Sheave (Pulley) Cover, Steel	12	NR-396	Bracket—Special—Addit. Idler	
NR 375	Head Drive Idler Sheave (Pulley), Steel	15	NR-401	Sewing Machine Bed, Aluminum	6
			NR-402	Bed Plate, Left, Steel	8

NR Parts (continued)

Part No.	Description	Plate No.	Part No.	Description	Plate No.
NR-403	Presser Foot Lift Lever Screw, Steel	5	NR-460	Piping Reel Holder Bracket, Steel, Stud	
NR-405	Bed Shaft, Steel	7	NR-461	Piping Reel Holder	
NR-406	Bed Shaft, Oil Plug, Steel	7	NR-466	Feed Driving Rock Frame, Steel	6
NR-407	Bed Plate, Right, Steel	8	NR-467	Feed Bar, Steel	6
NR-408	Head Sheave (Grooved Pulley), Steel	7	NR-468	Feed Bar Hinge Pin Collar, Steel	6
NR-409	Plate Oiler Assembly	8	NR-469	Spreader, Steel	9
NR-410	Cover Plate, Steel	8	NR-470	Standard Needle, For Regular Work	1
NR-411	Face Plate, Aluminum	1	NR-474	Body—Tape Tension	
NR-412	Face Plate, Pin, Steel	1	NR-475	Plate—Tape Tension	
NR-413	Presser Foot, Steel	1	NR-476	Field Assembly	
NR-414	Side Bed Cover, Steel	8	NR-478	Piping Guide Base Plate	
NR-415	Thread Guard, Steel	8	NR-480	Piping Guide	
NR-416	Gasket, Vellumoid	8	NR-481	Bearing	7
NR-417	Binder Pivot Stud Steel	8	NR-482	Needle Bar, Steel	1
NR-418	Looper Rocker Shaft Bushing—Steel	6	NR-484	Thread Guide	12
NR-419	Looper Rocker Shaft, Steel	6	NR-485	Binder Swing Plate Stop	8
NR-420	Spreader Bar, Steel	9	NR-486	Foot Lifter Lever	4
NR-421	Feed Dog, Steel	6	NR-488	Assembly—Throat Plate	
NR-423	Feed Dog Adapter, Steel	6	NR-489	Binder Assembly 1 $\frac{3}{4}$ " Ruching	
NR-424	Throat Plate, Steel	8	NR-490	Guide—1 $\frac{3}{4}$ " Ruching	
NR-425	Presser Foot Lifting Rod Steel	4	NR-491	Pulley—Arm Shaft Timing Pulley	2
NR-426	Presser Foot Lifting Lever, Steel	5	NR-492	Flange—Arm Shaft Timing Pulley (Part of NR-491)	
NR-427	Lifting Lever Latch Plate, Steel	5	NR-493	Pulley—Arm Shaft—Timing (NR-491N)	
NR-428	Looper Carrier, Steel	6	NR-494	Belt—Arm Shaft—Timing Assembly	2
NR-429	Collar	6	NR-496	Assembly, Binder Head & Tape Tension on Swing Bracket	8
NR-430	Thread Guide, Steel	8	NR-499	Cover Screws	
NR-431	Oilwick Assembly, Yarn (6)	5	NR-501	Screw (2)	8
NR-432	Feed Dog Lifting Shank, Steel	6	NR-502	Presser Bar Spring Arm Fulcrum	3
NR-433	Vibrating Presser Foot, Steel	1	NR-505	Assembly—Presser Bar Pressure Control	4
NR-434	Feed Dog Lifting Motion Shaft, Steel	6	NR-506	Adaptor for NR-505	4
NR-438	Needle Bar Connecting Stud, Steel	1	NR-600	Table Top, Steel (Incl. Sub 1-8)	16
NR-439	Needle Bar Connecting Link, Steel	1	NR-601	Elevating Screw Top Plate, Steel (4)	16
NR-440	Looper Holder, Steel	6	NR-S-259552	Tape Binder Only $\frac{3}{8}$ "	
NR-441	Side Cover Bed Spacer	8	AT-29	Wheel Spacer, Steel (For Sheave #7151)	16
NR-442	Screw, Steel	1	BM-186	Plate Model and Machine No.	3
NR-443	Long Shaft Collar, Steel	6	BM-187	Plate—Model and Machine No.	12
NR-444	Spreader Bar Bearing Steel	9	BM-430	Thread Spool Holders, Steel (2)	12
NR-445	Felt Oiler	9	BEE-197	Foot, Steel (For NR-301) (4)	16
NR-446	Spring Spreader Bar Oiler Retainer	9	D-6	Thrust Bearing (For NR-38)	12
NR-447	Connecting Belt Pulley, Steel	7	D-650	Complete Swivel (Banjo) Assembly 4 Wire	
NR-448	Small Needle, for Plastics	1	DBM-337	Key, Steel (NR-9 to NR-4)	10
NR-449	Swing Plate for 1 $\frac{1}{8}$ " Binder		DBM-338	Key Steel (Main Shaft to NR-22)	15
NR-450	Binder 1 $\frac{3}{8}$ " Tape Only		N-9	Feed Clutch, Steel	15
NR-450	Binder 1 $\frac{1}{8}$ " Tape Only		N-2-B	Nut—Tension Lock	
NR-451	Set Screw, Steel	6	N-691	Clutch Release Handle, Brass	13
NR-457	Piping Support		N-740	Tape Reel, Steel	8
NR-458	Piping Guide Ring Bracket, Steel				
NR-459	Piping Reel Holder Bracket, Steel				

NR Accessories

Standard Parts (continued)

Part No.	Description
NR465-R	Piping Attachment Assembly
NR465A-R	Piping Guide Assembly
NR720-S	Table Extension Assembly
UTS 1-T	Under Table Swivel (Factory Assembly)
NR717-R	Quick Reverse 1:1 Assembly (Factory Assembly)

Singer Binders . . . # 259553, $\frac{5}{8}$ - $\frac{3}{16}$ - $\frac{7}{8}$ " wide mouth binder
 Singer Binders . . . # 250549, $\frac{5}{8}$ - $\frac{3}{16}$ - $\frac{7}{8}$ " narrow mouth binder
 Special Binder Sizes—Including Ruching—"Furnish Sample Roll"
 Oil Can—Singer # 97—23253
 Screw Driver—Singer # 23308
 Wrench # 4803—(For # 3 and # 4 Hex. Soc. Set Screws)

Standard Parts

Part No.	Description
66	Screw
101	Screw Steel
102	Lockwasher
105	Washer, Steel
106	Nut (2)
107	Washer
108	Washer, Special, Steel (For Ball Joint # 1658)
109	Nut, Steel
110	Screw, Steel
113	Screw, Steel
115	Nut, Steel (20)
116	Lockwasher, Steel
117	Washer, Steel, Special (For NR-97)
119	Washer, Steel, Special (NR-40 to NR-2-T)
120	Lockwasher, Steel
129	Cotter Pin, Steel
138	Screw
148	Nut
160	Screw Steel (2)
164	Compression Elbow
172	Screw
174	Nut, Steel
177	Screw, Steel
181	Washer, Steel, Special
193	Lockwasher, Steel
198	Key, Steel
199	Screw
214	Screw
229	Bolt
234	Washer, Steel—Special (For NR-89) (2)
238	Lockwasher, Steel

Part No.	Description
261	Screw, Steel (8)
262	Pipe Plug, Steel
268	Screw, Steel
270	Nut, Steel (8)
282	Nut, Steel
302	Screw
319	Nut, Steel (8)
331	Nut, Steel (20)
350	Screw, Steel (24)
353	Screw
356	Set Screw, Steel
364	Screw
367	Washer
368	Screw, Steel (8)
416	Screw, Steel (2)
418	Screw
428	Pipe Plug
446	Screw, Steel (6)
494	Screw, Steel (2)
500	Screw, Steel (2)
522	Screw
525	Screw
645	Taper Pin
648	Lock Washer
694	Screw, Steel
705	Screw, Steel (2)
746	Screw, Steel (2)
749	Screw, Steel
751	Screw, Steel
760	Screw, Steel (2)
771	Screw, Steel
813	Washer, Steel (6)
815	Lockwasher, Steel (6)
877	Screw, Steel
1028	Flexible Conduit (Box to Box) (2)
1028	Flexible Conduit (Switch Box to Motor)
1132	Steel Connector
1153	Vertical Shaft Upper Bearing, With Collar
1307	Male Cap With Cord Grip
1309	Flush Base—Female
1318	Oil Gauge
1360	Nipple, Steel (Utility Box to Motor)
1367	Oil Cup
1542	Retaining Ring, Steel (6)
1630	Retaining Ring, Steel
1632	Lockwasher, Steel, Special
1633	Screw, Steel
1634	Bushing, Bronze (2)
1635	Collar, Steel (3)
1636	Screw, Steel
1637	Screw, Steel
1638	Screw, Steel

Standard Parts (continued)

Part No.	Description
1640	Screw, Steel
1641	Set Screw, steel
1642	Set Screw, Steel
1643	Lockwasher, Steel, Special
1645	Pin, Steel (2)
1647	Rivet, Steel (2)
1648	Ball Joint, Steel With Male and Female Ends
1650	Needle Bearing, Steel (6)
1651	Screw, Steel
1655	Thumb Screw, Steel
1661	Micro Switch, Single Phase for Table NR-318N
1665	Screw
1685	Conduit
1687	Set Screw
1688	Set Screw
1711	Screw (2)
1720	Flush Base, Male
1721	Reversing Switch
1722	Cover, Utility Box
1723	Connector Body, Female (4 wire)
1725	Utility Box
1743	Wire Cap
1752	Nut for Wire Connector (7)
1773	Wire Cap
1854	Bearing (2)
1909	Connector
1911	Screw
1921A	Switch
1922	Transformer (4)
1959	Reducer (For Reversing Switch)
1992	Switch Enclosure
1994	Knob (Plastic)
2036	Bearing for Caster Roller (2)
2084	Lamp
2306	Screw, Steel (2)
2438	Pipe Plug (Vent)
2814	Limit Switch
2839	Cable
2989	Seal
3060	Lubricant for (NR-3-T Gear Box)
3901	Valve 3236 Bolt
4676	Bearings 4237 Cable Tie
4678	Bearings 5182 Name Sticker
5711	Screw
5744	Screw, Steel (2)
5763	Screw
5887	Jam Nut, Steel (2)
5893	Screw, Steel (4)
5988	Jam Nut, Steel (3)
5997	Jam Nut, Steel (2)
6018	Screw
6034	Screw, Steel
6067	Jam Nut, Steel
6076	Lockwasher
6139	Jam Nut, Steel (2)
6171	Washer, Steel
6201	Set Screw
6205	Screw, Steel (2)
6219	Screw

2076 Connecting Link
2127 Connector
2126 Romex Connector

2466 Hose Clamp
2472 Contact Kit (Replacement Parts)

3100 Set Screw
5108 Spring Plunger

Part No.	Description
6243	Screw, Steel
6266	Set Screw, Steel (2)
6287	Jam Nut, Steel (4)
6315	Screw
6348	Retaining Ring, Steel
6357	Nut
6360	Nut
6373	Washer, Steel
6410	Set Screw, Steel
6451	Nut, Steel (6)
6493	Cap Screw, Steel
6494	Screw, Steel
6526	Set Screw, Steel (9)
6531	Set Screw, Steel (2)
6601	Set Screw, Steel (2)
6631	Screw, Steel (2)
6633	Screw, Steel
6645	Screw (3)
6657	Screw (3)
6678	Lockwasher, Steel, Special
6731	Dowel Pin, Steel
6753	Screw, Steel, Socket
7019	Lock Nut, Steel
7024	BX Connectors
7100	Set Screw, Steel (2)
7102	Screw, Steel
7106	Roll Pin, Steel
7114	Screw, Steel (2)
7123	Clip
7136	Connector (Rev. Switch & Utility Box) (2)
7151	Reversing Switch Cord Sheave Wheel, Steel (4)
7152	Set Screw, Steel (For Dowel # 1644) (2)
7172	Set Screw
7177	Roll Pin, Steel (2)
7199	Dowel Pin, Steel (Bed to Arm) (2)
7220	Set Screw, Steel
7221	Set Screw, Steel (2)
7233	Set Screw, Steel Hex, Socket (2)
7245	Elevating Thrust Bearing, Steel (4)
7283	Oil Cup Cover (2)
7368	Set Screw, Steel
7485	Bearing
7508	Clip
14462	Key, Steel
14625-N	Replacement Key
16561	Key, Steel
D663	Wire, 3 Phase Line to Table

6556 Screw (20)

6748-Set Screw

7253-Roll Pin

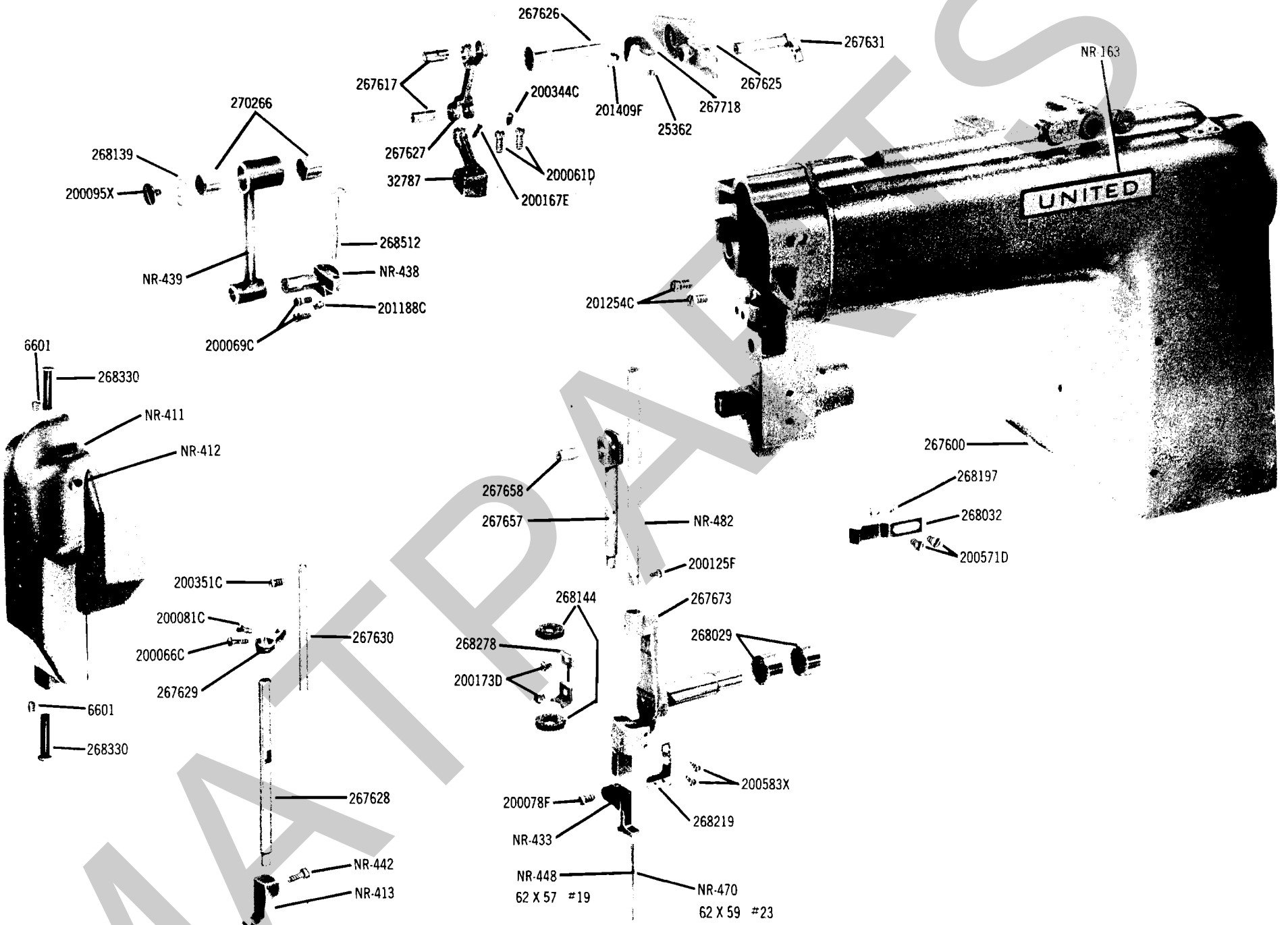
NR Accessory Parts

Table Extension

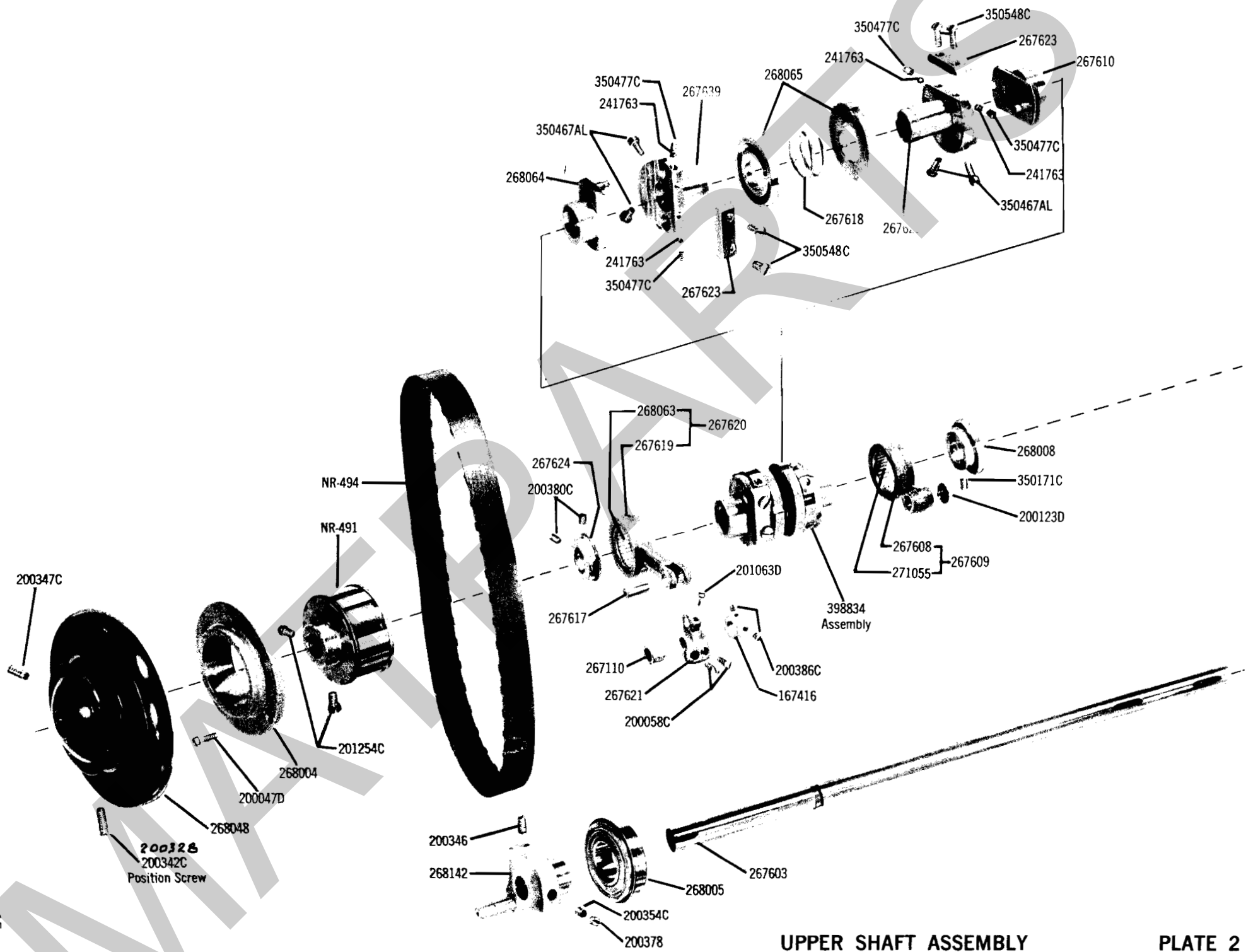
Part No.	Description
NR-721	Extension—Table (2)
NR-724	Stop—Table Extension (2)
NR-727	Chain—Extension Stop (2)
2466	Clamp—Stop (For NR-721-N)

NR Accessory Parts (continued)

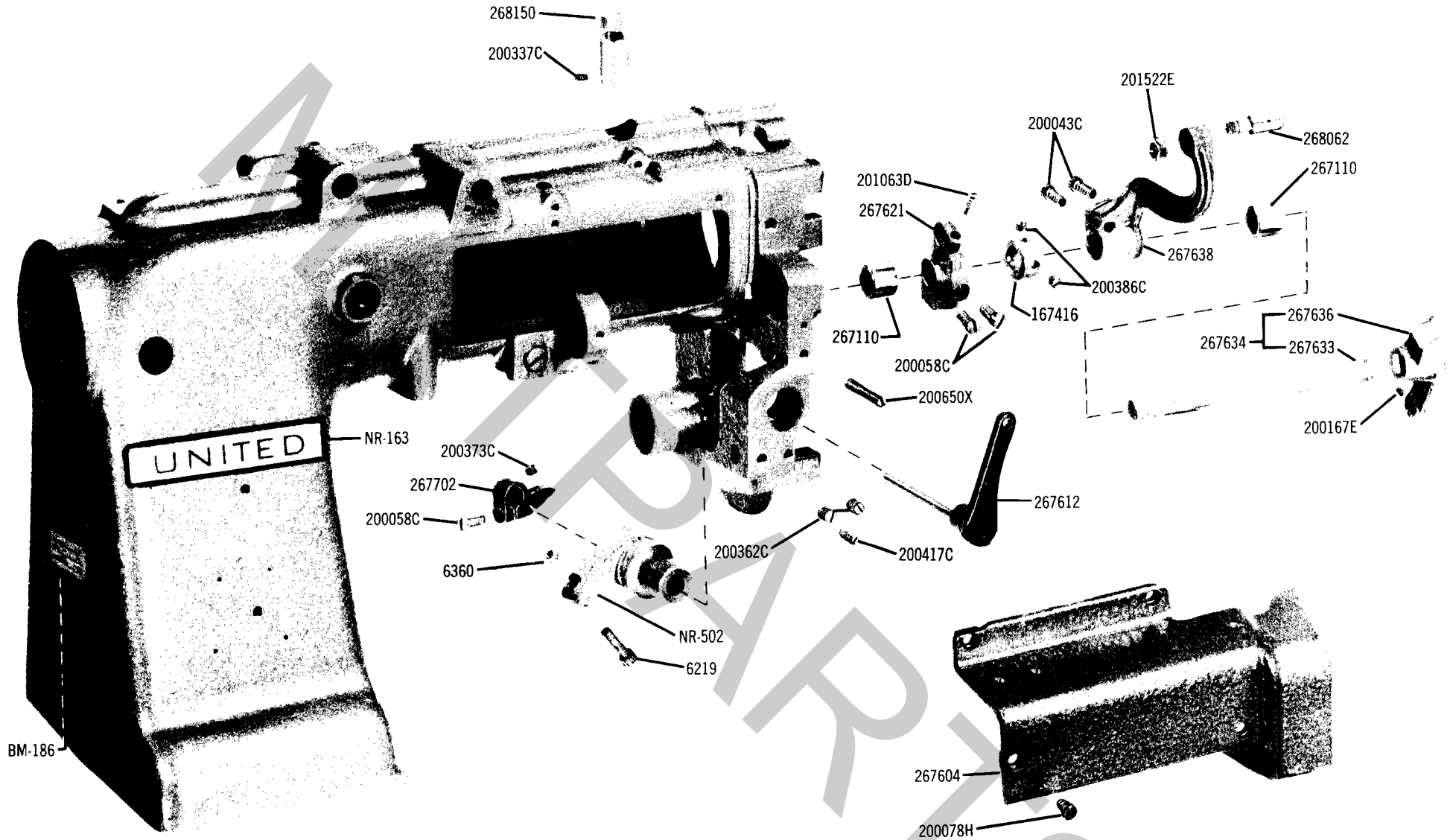
Special Piping Attachment		Part No.	Description
Part No.	Description		
NR-449A	Swing Plate for 1 $\frac{3}{8}$ Binder (1 $\frac{1}{2}$ Tape)	UTS 44	Wire (4)
NR-450A	1 $\frac{3}{8}$ Binder-Piping (For 1 $\frac{1}{2}$ Tape & Roving)	UTS 45	Bracket-Flexible Conduit
NR-457	Piping Support	UTS 46	Wire (3)
NR-458	Piping Guide Ring Bracket	UTS 47	Wire
NR-459	Bracket-Piping Reel Holder	UTS 48	Wire (2)
NR-460	Stud-Piping Reel Holder Brkt.	UTS 49	Wire (2)
NR-461	Piping Reel Holder	102	Lockwasher (10)
NR-474	Body—Tape Tension	106	Nut (2)
NR-475	Plate—Tape Tension	115	Nut (10)
NR-478	Base Plate-Piping Guide	116	Lockwasher (12)
NR-480	Assembly-Piping Guide	119	Washer (16)
364	Screw (2)	120	Lockwasher (2)
648	Lockwasher (2)	151	Bolt (4)
877	Screw	232	Bolt (UTS21 to UTS11) (4)
1073	Screw (2)	273	Bolt (2)
1774	Screw (2)	282	Nut (12)
1841	Screw (2)	287	Bolt (2)
1990	Roll Pin (2)	301	Screw (Brg. to UTS 2 Column) (4)
2171	Machine Screw (2)	372	Nut (12)
6067	Nut (4)	393	Bolt (2)
6219	Screw—Tape Tension Adjusting	500	Screw (2)
7230	Screw (2)	522	Screw (4)
N-21B	Nut-Tape Tension Lock (Cotton Tufter Part)	691	Bolt (8)
SM-163A	Spring—Tape Tension	815	Lockwasher (4)
	Under-Table Swivel	1027	Connector
UTS 2	Elevator—Under Table Swivel	1028	Conduit (3)
UTS 3	Support—Table Top	1058	Arm-Slip Ring Closure (for 44 $\frac{1}{2}$ wide table)
UTS 4	Elevating Screw (4)	1132	Connector W/Nut, Flexible (2)
UTS 5	Elevating Nut (4)	1360	Chase Nipple
UTS 6	Sprocket-Elevating Screw (5)	1471	Fitting
UTS 11	Brush Block	1661	Microswitch (2)
UTS 12	Brush Assembly (4)	1685	Flexible Conduit
UTS 13	Brush	1686	90 Connector (2)
UTS 14	Brush Cap	1689	Utility Box
UTS 15	Brush Holder	1721	Reversing Switch
UTS 16	Insulating Sheet	1722	Cover
UTS 17	Slip Ring (4)	1725	Utility Box
UTS 18	Spacer Button (8)	1909	Connector
UTS 19	Elevator Insulator (4)	1981	Connector
UTS 20	Spring-Brush Holder Contact	2558	Taper Pin (4)
UTS 21	Cover—Top & Bottom (2)	2953	Cord-Slip Ring Closure Swivel
UTS 22	Enclosure—Slip Ring	3058	Screw (4)
UTS 23	Cover—Enclosure	3080	90 Elbow
UTS 24	Felt—Cover Seal (2)	5702	Bolt (Brg. to UTS 21 Cover) (6)
UTS 25	Rod—Slip Ring Closure (2)	5857	Arm—Slip Ring Closure
UTS 26	Sleeve-Bearing Spacer (6)	6050	Set Screw (4)
UTS 27	Stud—Slip Ring Contact (4)	6076	Lockwasher (5)
UTS 28	Bracket-Reversing Switch	6171	Washer (4)
UTS 29	Extension-Switch Shaft	6360	Nut (2)
UTS 31	Bracket—Extension Cord	6427	Screw (8)
UTS 32	Bracket—Extension Cord-Short	6451	Nut (5)
UTS 33	Guard-Extension Chain (2)	6526	Set Screw
UTS 35	Tube-Extension Cord	6574	Screw (5)
UTS 41	Wire (4)	6657	Screw (2)
UTS 42	Wire (2)	7019	Locknut (6)
UTS 43	Wire (2)	7024	Connector (3)
		7131	Cover
		7136	Connector W/Nut (2)
		7221	Set Screw (4)
		7485	Bearing (10)



FRONT ASSEMBLY SEWING ARM

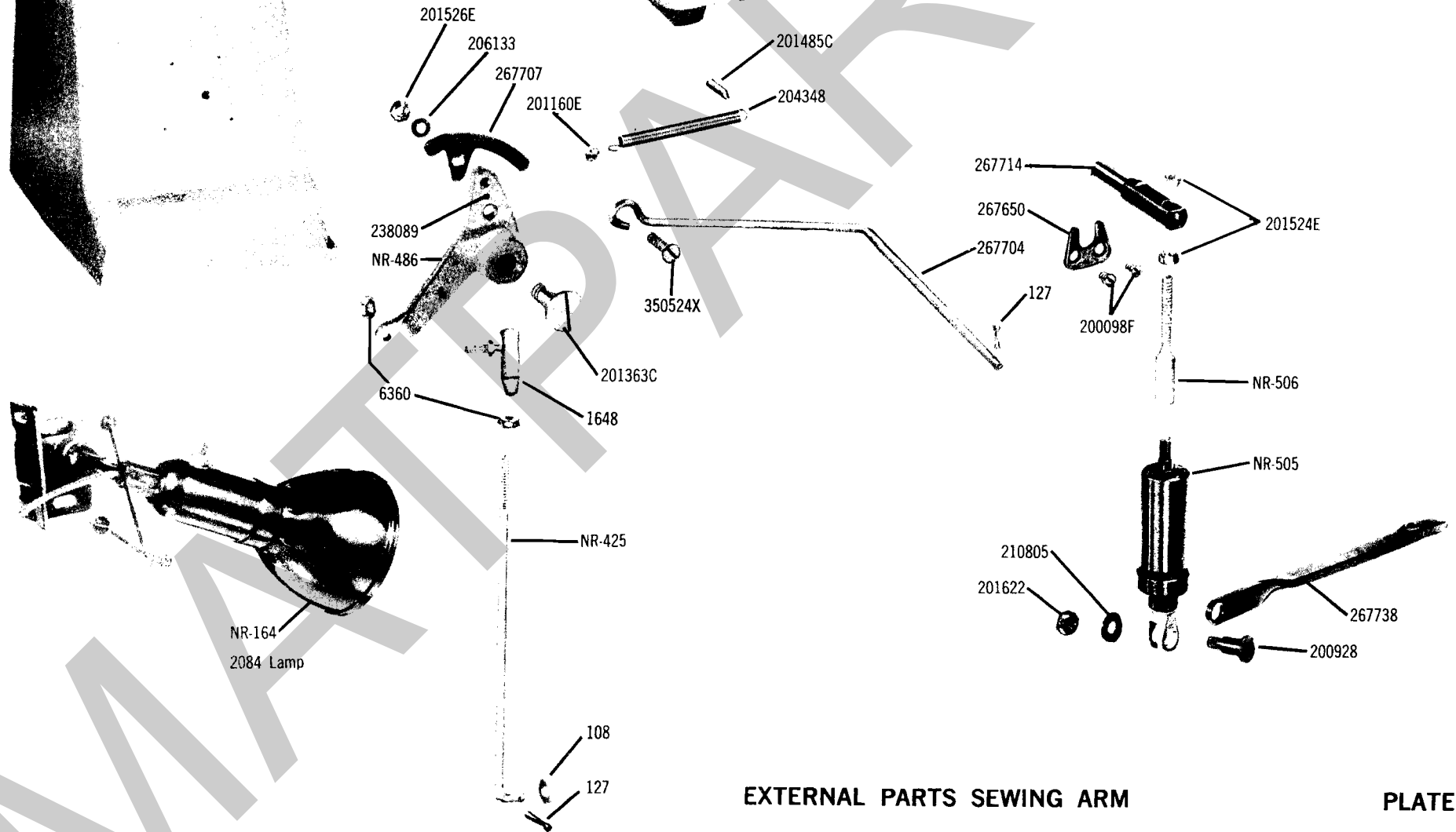
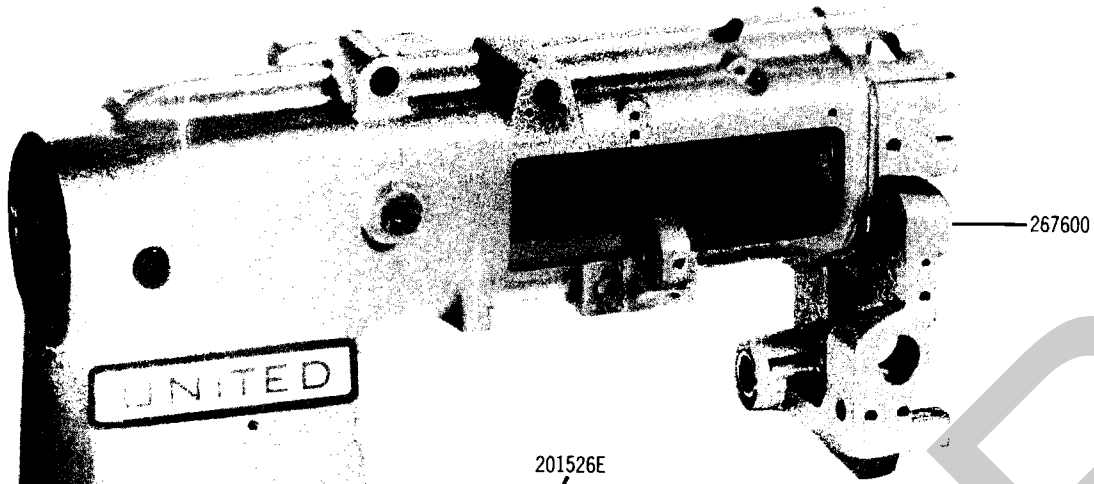


UPPER SHAFT ASSEMBLY

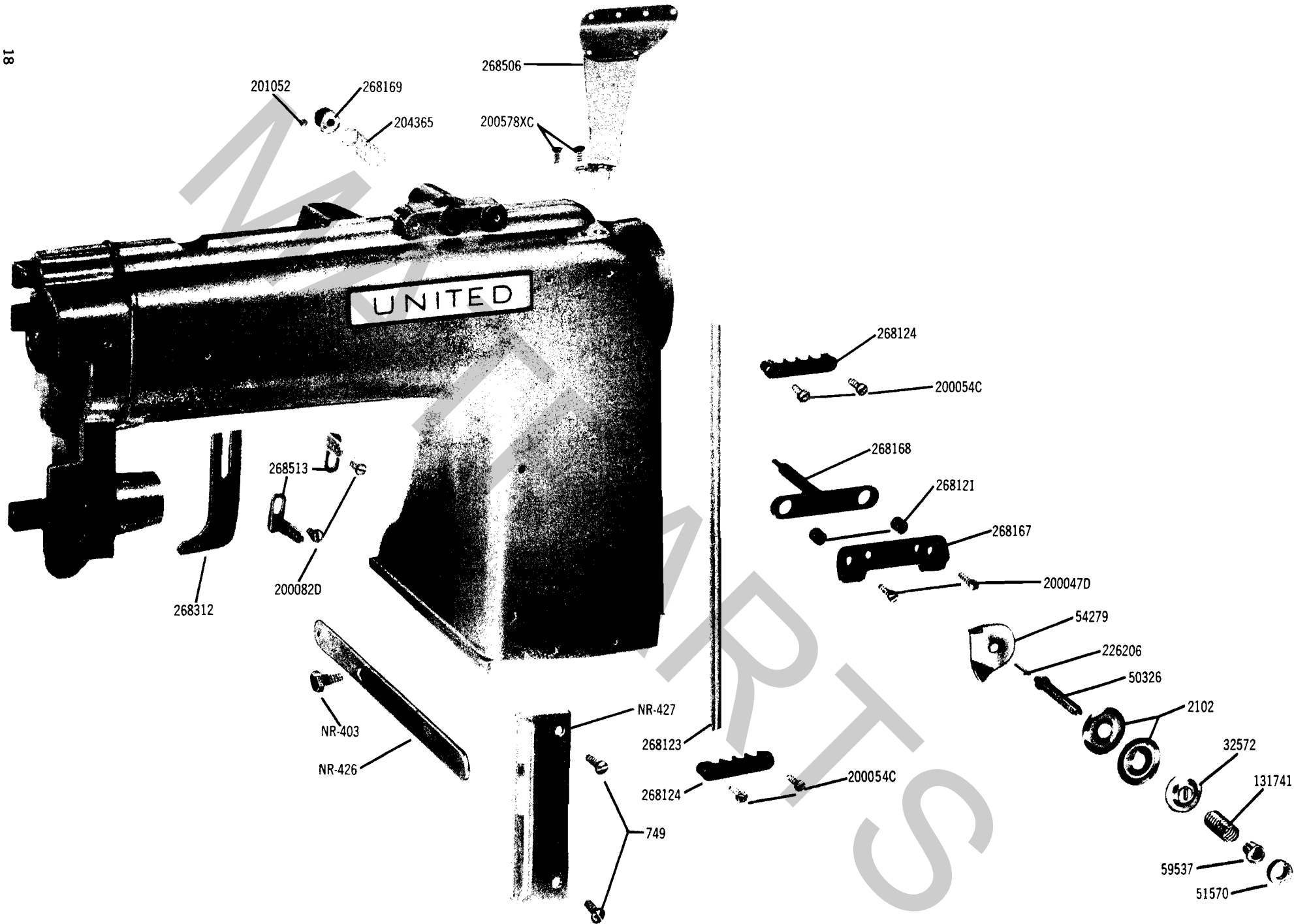


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EXTERNAL PARTS SEWING ARM

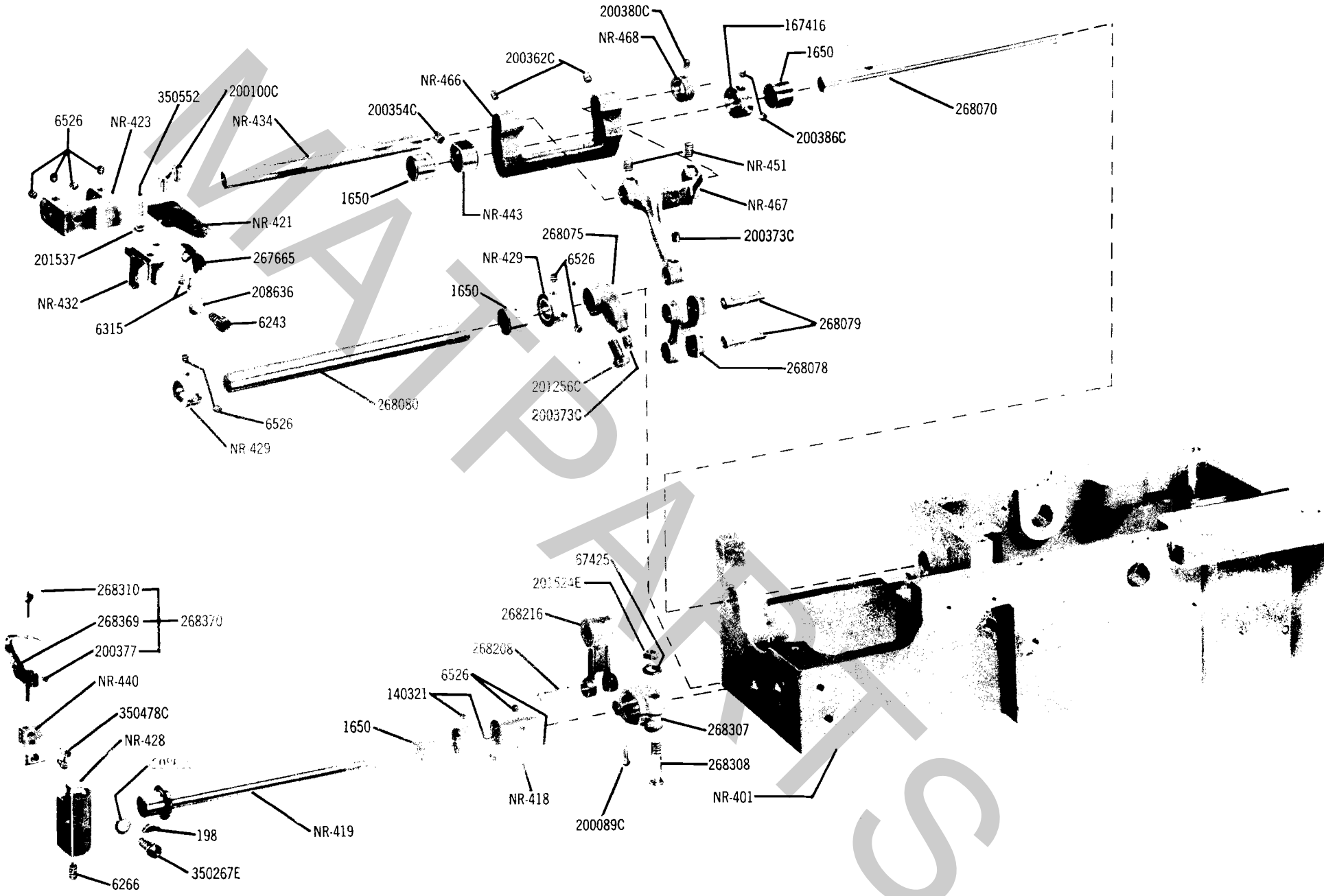


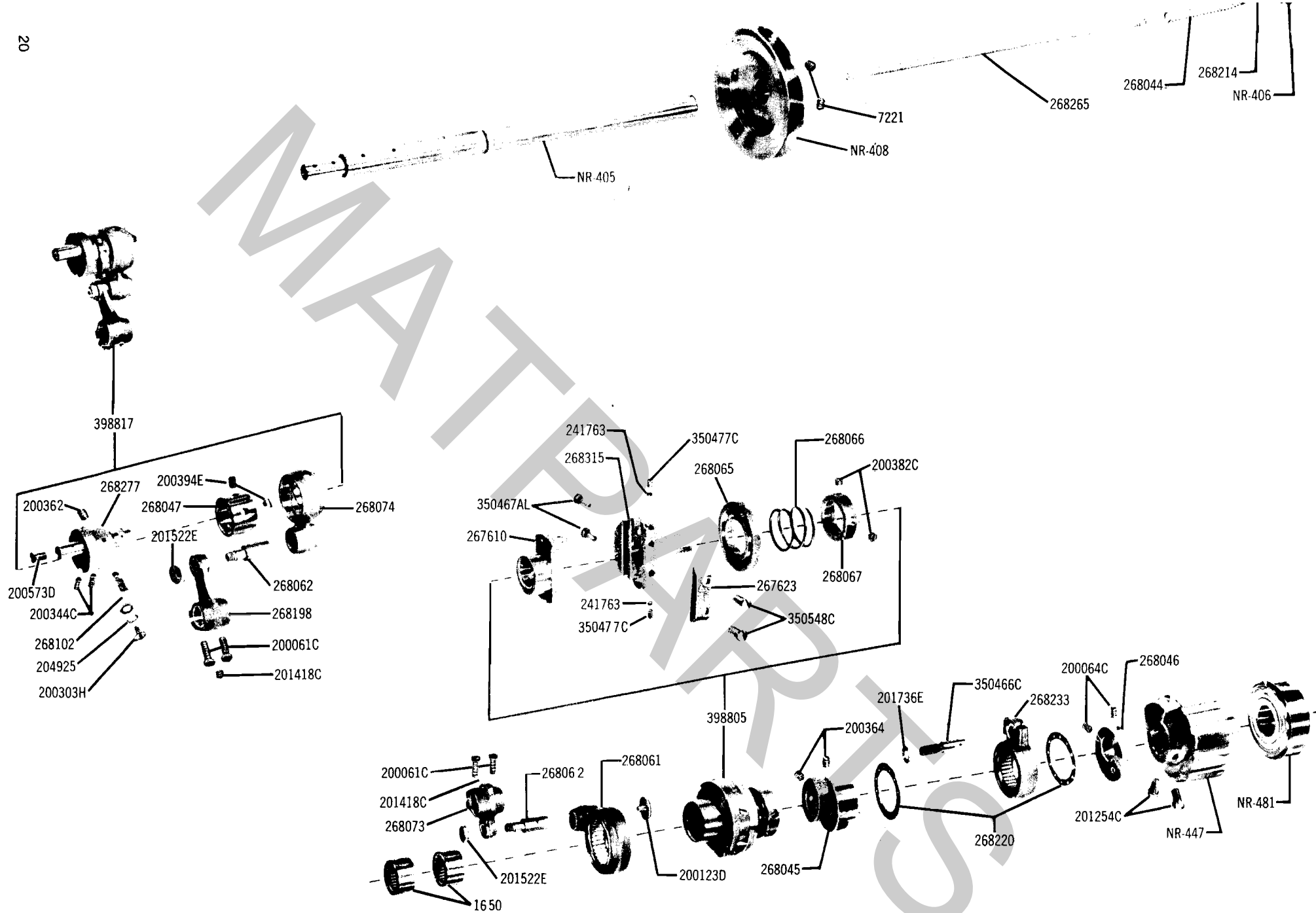
EXTERNAL PARTS SEWING ARM



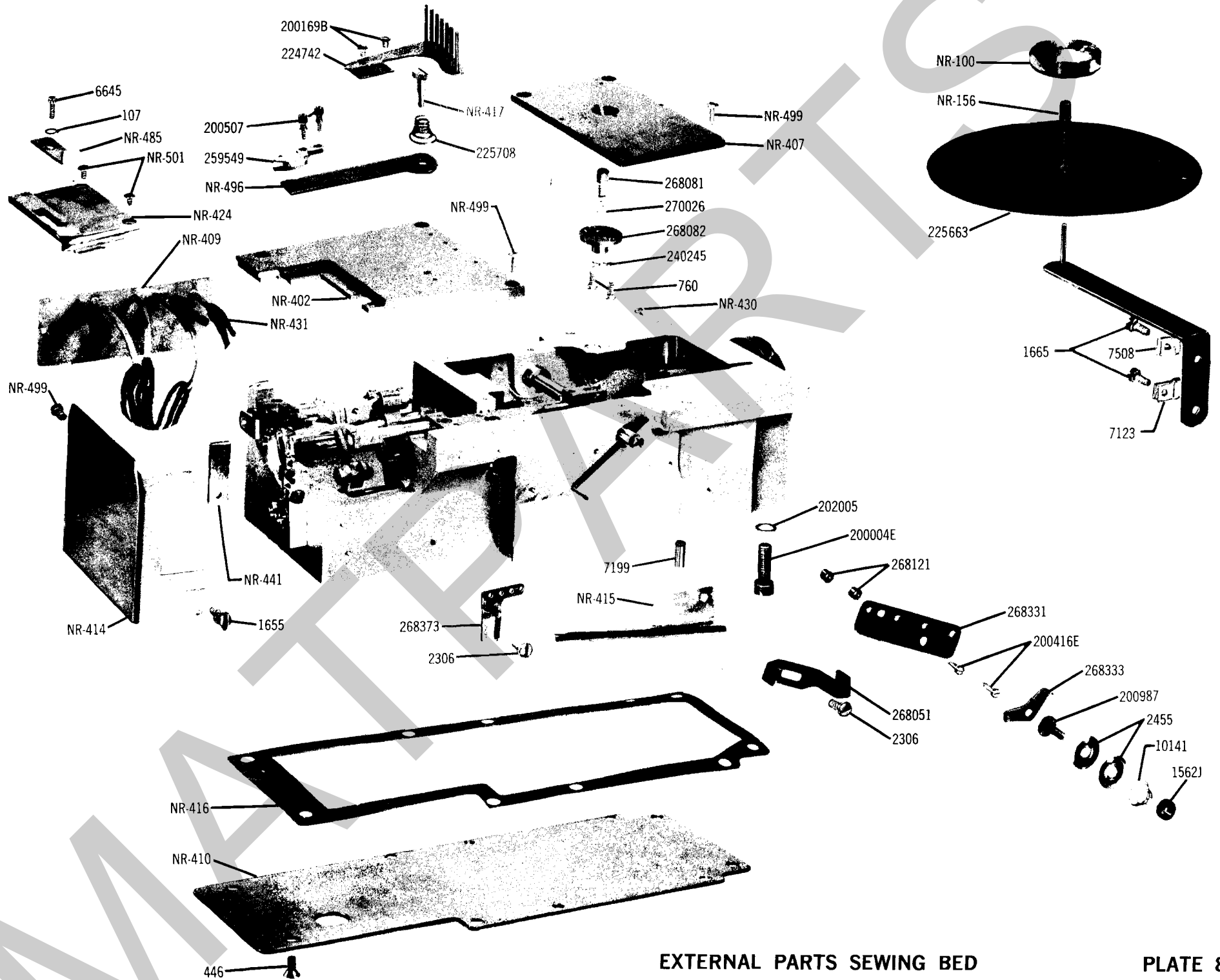
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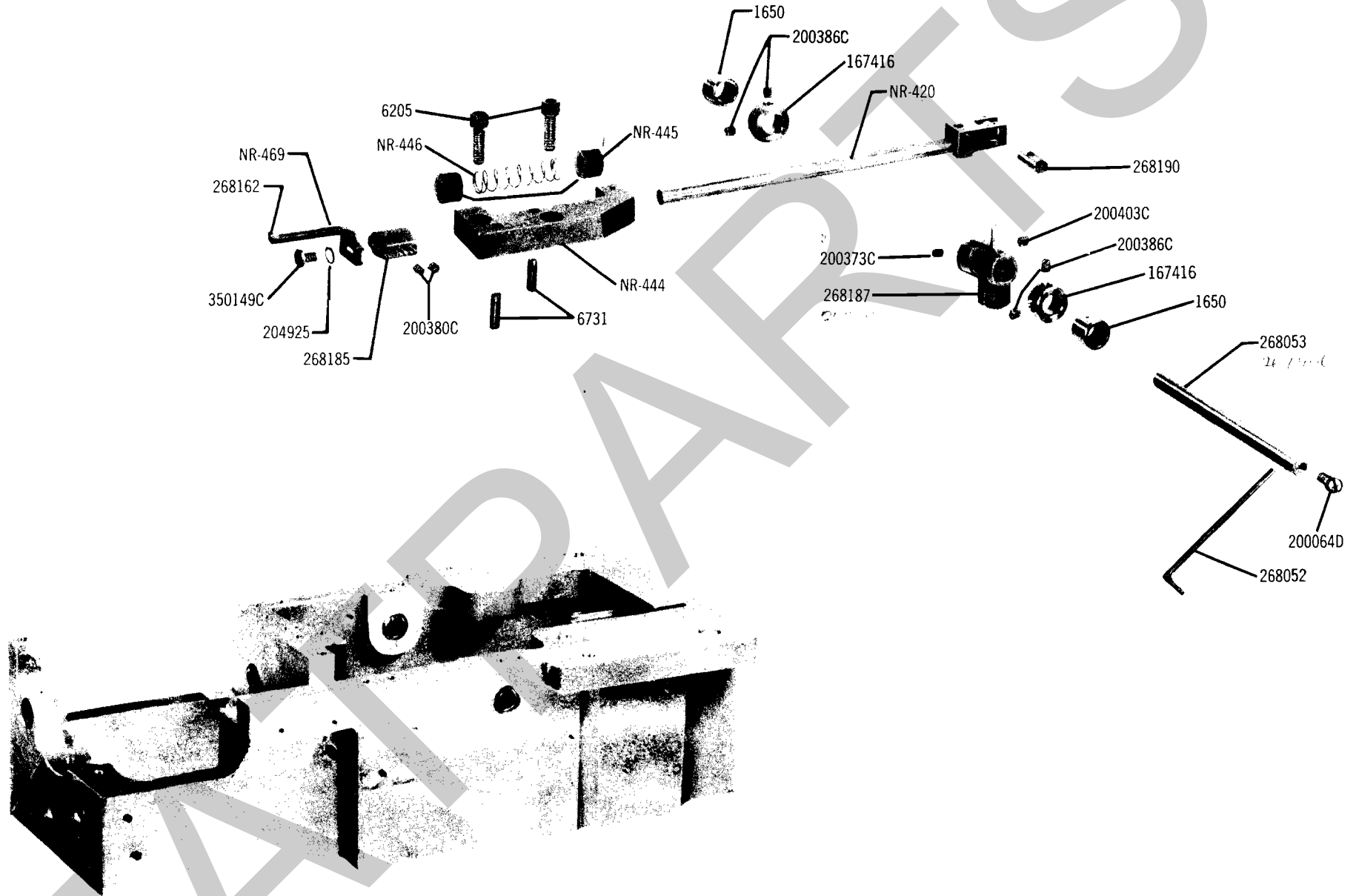
PLATE 5





LOWER SHAFT ASSEMBLY





CROSS SHAFT IN SEWING BED

EXTENSION RACK

UNDER TABLE SWIVEL

PIPING ATTACHMENT

NR465-R Piping Attachment Assembly
NR465A-R Piping Guide Assembly
NR720-S Table Extension Assembly
UTS 1-T Under Table Swivel (Factory Assembly)
NR717-R Quick Reverse 1:1 Assembly (Factory Assembly)

Singer Binders . . . #259553, $\frac{5}{8}$ - $\frac{3}{4}$ - $\frac{7}{8}$ " wide mouth binder
Singer Binders . . . #250549, $\frac{5}{8}$ - $\frac{3}{4}$ - $\frac{7}{8}$ " narrow mouth binder
Special Binder Sizes—Including Ruching—"Furnish Sample Roll"
Oil Can—Singer #97—23253
Screw Driver—Singer #23308
Wrench #4803—(For #3 and #4 Hex. Soc. Set Screws)