User Manual

GC-320 Series

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MP06600EN_200623

VERSION	DATE	APPROVED BY
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Content

A BASIC INFORMATION

A1. PRODUCT DESCRIPTION AND INTENDED USE

Cylinder bed machines for repairing equipped with walking foot and built-in energy saving direct drive servomotor 1x230 V. Possibility of manual drive for slow and precise stitching. It is possible to sew in all directions (360 degrees) because of the rotating presser foot. Narrow arm with length 30 cm or 44 cm (by choice) allows repairs of very small pieces which are difficult to access. Machines are suitable for repairs of shoes, furnishing, bags and technical products.

A2. TECHNICAL SPECIFICATIONS

Model	**GC-322-141/L30** **GC-322-141/L44**	**GC-322-441/L30** **GC-322-441/L44**
Max. stitch length	1 - 7 mm	
Presser-foot lift	10.5 mm	
Needle system	135x17	
Needle size	Nm. 100-120	
Hook type	Shuttle, vertically situated	
Bobbin type	size S (15.9 mm)	size L (20.1 mm)
Motor	Direct-drive servomotor 1x230V	
Arm dimensions (diameter/length)	GC-322-x41/**L30**: 25/300 mm GC-322-x41/**L44**: 30/440 mm	
Ground plan dimensions (including frame)	1070 x 550 mm	
Bedplate height	760 mm	
Machine height including thread stand	1260 mm	
Noise level by 50% machine utilization and under standard conditions	79 dB	
Max. sewing speed	500 st./min *	

* Do not exceed specified sewing speed due to the service life of the machine mechanism. This cannot be guaranteed under any conditions. It is necessary to reduce speed depending on the thread, needle and material, stitch length and the foot track.

B SAFETY INSTRUCTIONS

Read the instructions carefully before installation and use. Keep this manual for future reference.

B1. GENERAL INSTRUCTIONS

1. Do not operate the sewing machine until proper preparation has been made by a technician or qualified person and safety precautions have been taken.
2. Always follow the safety instructions when handling the machine.
3. This sewing machine may only be operated by properly trained personnel.
4. Maintenance, repair, inspection, and adjustment of the machine may only be carried out by a qualified person.
5. Work on electrical equipment may only be performed by a qualified worker or person with the appropriate authorization. Work on electric parts and equipment on your own is not permitted.
6. The machine may only be used for its intended purpose.
7. The warranty does not cover any problems in the operation of the machine that are caused by unauthorized modifications to the machine, as well as problems caused by non-observance of the instructions given in this manual and generally known habits for the operation and maintenance of industrial sewing machines.

B2. INSTALLATION PRECAUTIONS

1. Immediately report visible damage to the carrier. Check the contents of the order shipment and report any defects immediately to the manufacturer. Later claims will not be accepted.
2. Use the machine after checking that it meets all the safety standards of your country.
3. The machine head is covered with a corrosion-proof coating. Wipe off the lubrication and dust layer with a cloth or petrol before placing it on the work surface.
4. The machine has been thoroughly inspected and tested before shipment. However, it may have been damaged by transport or impact. Check the operation of the machine with the handwheel, to detect extraordinary noises, heavy running, etc. before starting the test sewing.
5. Never start the machine if the oil level is under or over the marked lines.
6. Check that the power and phase are in accordance with the label instructions.
7. Proper grounding of the machine is necessary.
8. Use the correct grounding plug.
9. Do not use an extension cord.
10. Make sure that the power supply and voltage match the requirements on the label of the machine.
11. Do not use the machine in explosive or corrosive environment.
12. In the first two weeks, do not exceed 3/4 of the maximum machine speed.

B3. OPERATIONAL SAFETY INSTRUCTIONS

1. Do not use the machine without a belt cover, finger guards or other protective equipment.
2. All protective equipment of the machine must be in place before operation. Do not use the machine without covers and protective equipment.
3. Repair damaged covers or replace them immediately.
4. If the safety label is damaged, order a new one from the machine supplier and place it in its original position.
5. Switch off the machine and unplug it from the electricity supply network in these situations (the motor still rotates after turning off; wait until it stops completely):
   - when threading the needle (needles), hooks, etc.
   - when changing the needle, presser foot, needle plate, hooks, hook bobbins, feeders, needle guards, finger guards, work guides, etc.
   - when the machine is not in use and left unattended
   - when opening or removing the protective covers
   - for any maintenance, repair, inspection, and adjustment of the machine
   - when cleaning the machine
6. Wear safety goggles and gloves when lubricating the machine. Do not drink oil under any circumstances, as it may cause vomiting and diarrhoea. Keep oil out of the reach of children.
7. Take special care when lifting/tilting the machine head. When tilting the machine head, make sure the machine is turned off. Always hold the machine head with both hands.
8. When handling cords and plugs, check if the machine is switched off to avoid electrical shock and injury.
9. Check the electrical cords for damage to avoid injury by touching an exposed wire.
10. Do not place any objects on the power cord.
11. Do not open or touch the inside of the junction box.
12. It is strictly forbidden to connect any connector while the machine is powered. Risk of damage to electrical components and drives.
13. Do not modify the machine in any way that could endanger safety.
14. Clean the machine regularly during operation.
15. Do not wipe the machine with thinner or acetone.
16. Use only original or approved spare parts from manufacturer.
17. Ensure adequate illumination of the work area and the surroundings of the machine.

B4. WORKING SAFETY INSTRUCTIONS

1. Make sure you know the position of the stop button / main power switch before starting to work.
2. Do not touch any moving parts or put objects into the machine while sewing.
3. Be careful not to catch or place objects near the machine's moving mechanisms, particularly fingers, sleeves, clothing, and hair.
4. Never touch the needle when the machine is turned on and sewing.
5. Never reach under the thread lever cover while the machine is on.

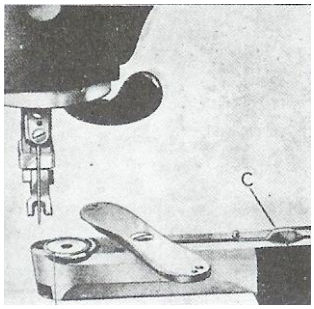
6. Do not place your fingers in the needle guard holder when feeding material manually.
7. Do not work on the machine under the influence of alcohol or drugs.
8. We recommend wearing safety goggles.
9. Do not remove covers or any other safety device while the machine is running.
10. Always turn off the main switch when leaving the machine.

B5. DISPOSAL INSTRUCTIONS

For disposal of the machine contact your local dealer or manufacturer in accordance with legislation.

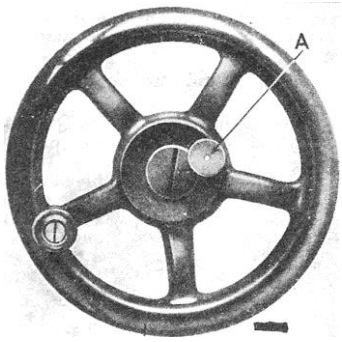
C OPERATING INSTRUCTIONS

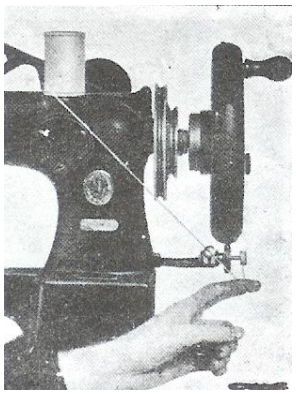
C1. BOBBIN TAKE-OUT



Raise the needle bar and presser-foot to the highest position. Push the lever C and turn the stitch plate. Turn the handwheel until the hook tip is closest to you and remove it. Then take the bobbin out.

C2. WINDING THE BOBBIN





Loosen the handwheel with screw A and place the bobbin on the pin. Thread the end of the thread through the hole in the bobbin. Then place the bobbin on the winder. If the handwheel is located on the front of the machine, it is important that the bobbin is inserted through the slot to the other side. If the handwheel is on the side of the machine, it is important that the bobbin is inserted through the slot to the other side. Loosen the winder screw and push it so that it touches the handwheel. Then tighten the screw. While the machine is running, guide the thread as shown in the figure on the right. When the thread supply is sufficient, retighten screw A and remove the bobbin.

C3. FEEDING THE BOBBIN INTO THE BOBBIN CASE

Leave around 5-7 cm of thread stand out of the bobbin. Insert the bobbin according to Fig. 5. Run the thread through the bobbin case according to Fig. 6 and 7.

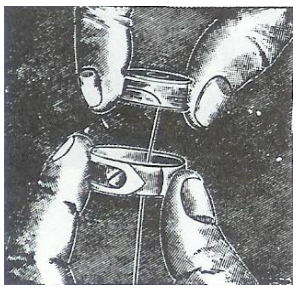


Fig.5

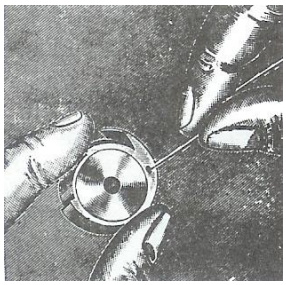


Fig.6

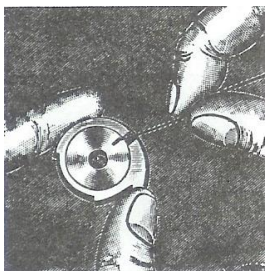
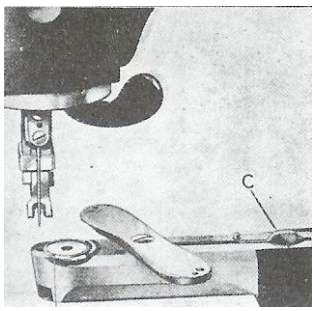


Fig.7

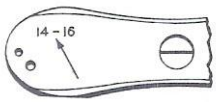
C4. PUTTING THE BOBBIN CASE IN



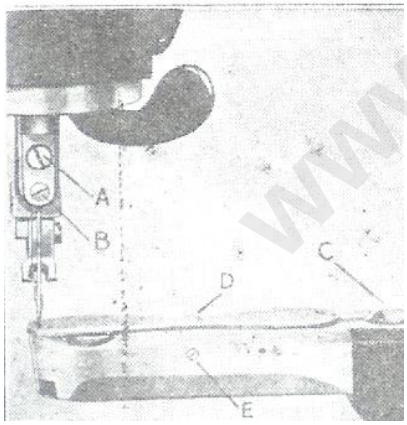
Turn the handwheel so that the hook carrier is as far to the right as possible. Raise the needle bar to the highest position and insert the bobbin case. Then push the lever C and return the stitch plate to its original position.

C5. NEEDLE SETUP

The machine is equipped with two stitch plates with two marked holes. Make sure you work with the appropriate needles. Raise the needle bar to the highest position and loosen the screw B (picture below). Insert the needle into the needle-holder so that the groove of the needle points to the left. Tighten screw B. Loosen screw A and center the needle-holder so that the needle goes into the appropriate hole in the stitch plate. Then tighten screw A.



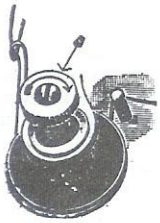
C6. STITCH PLATE EXCHANGE



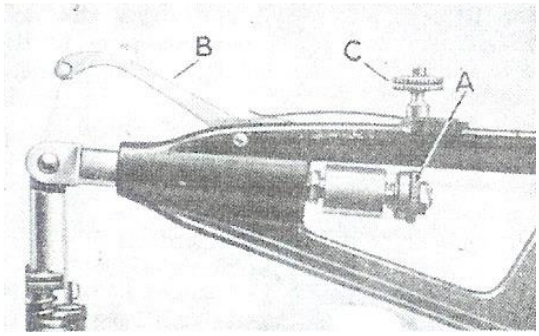
Loosen the screw E and take the stitch plate out. When attaching the stitch plate, make sure that the groove of the screw D points as shown. Then tighten the screw.

C7. THREAD TENSION ADJUSTMENT

The tension of the upper and lower thread should be equal for normal sewing. The thread crossing should be in the middle of the fabric. The correct mutual tension is usually achieved by adjusting the upper thread tension. To increase the tension, turn the nut in the direction of the arrow in the figure and vice versa. To increase the bobbin thread tension, tighten the screw at the end of the tension spring on the hook side and vice versa.



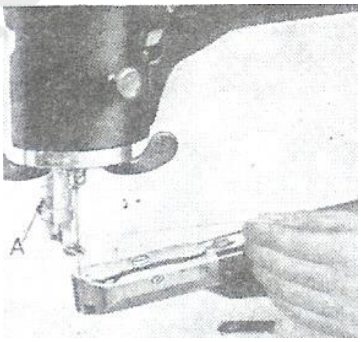
C8. ADJUSTMENT OF THE TAKE-UP LEVER B



The adjustment is made with screw C and should correspond to the upper thread tension setting with the tensioner. The spring should push the take-up lever enough so that the thread is under tension all the time before it sticks into the material. Decreasing the spring tension will increase the thread tension and vice versa. The movement of the take-up lever is regulated by screw A, which is marked with numbers 0-4. When using thin materials, set the screw A to 0. For thicker materials, select positions 1-4.

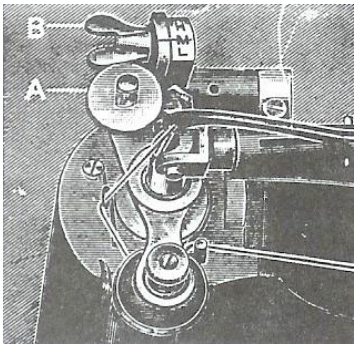
C9. STITCH LENGTH ADJUSTMENT

The stitch length is set by the regulator located next to the screw A (picture on the right). Loosen the screw and set the desired stitch length. Then tighten screw A.



C10. PRESSURE ADJUSTMENT

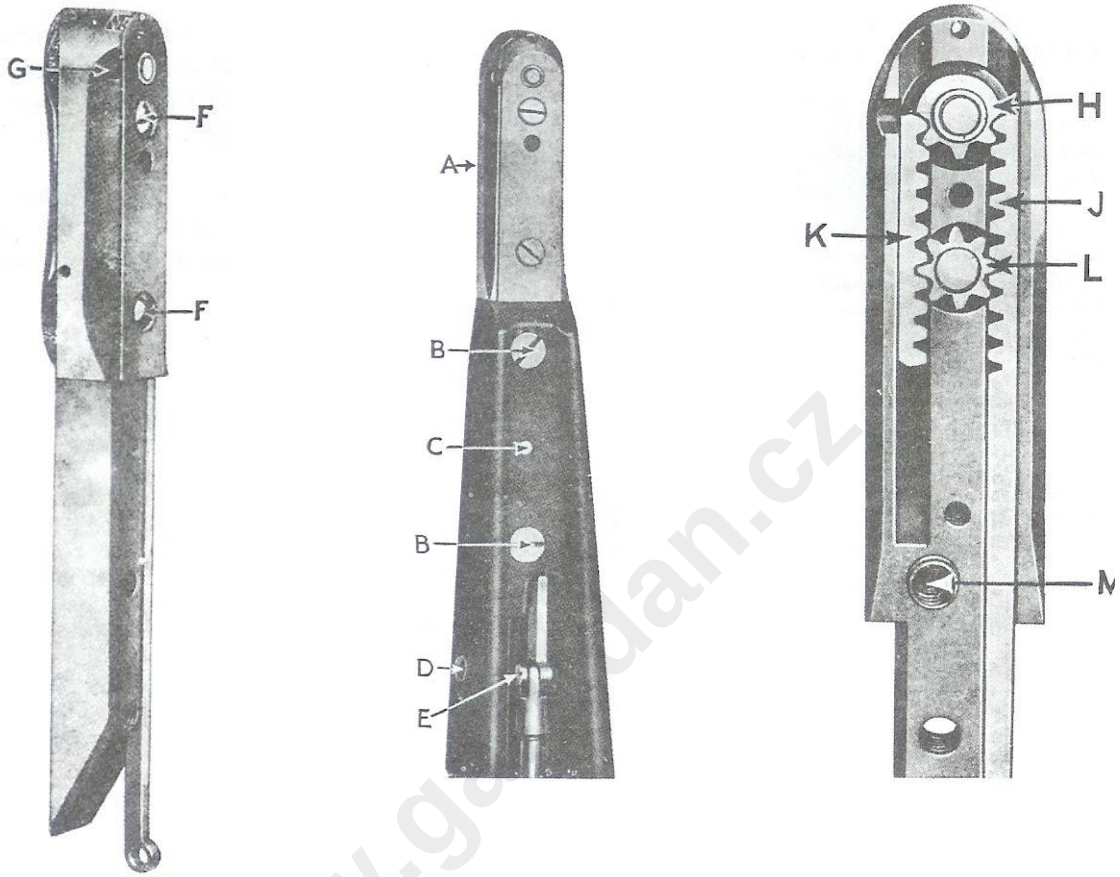
The pressure is set by nut A (picture on the right). To increase the pressure, tighten the nut and vice versa.



C11. FEED-DOG STROKE ADJUSTMENT

Loosen nut B (picture on the right). To increase the stroke, move the screw forward and vice versa. After adjustment, tighten nut B.

D MACHINE SERVICE



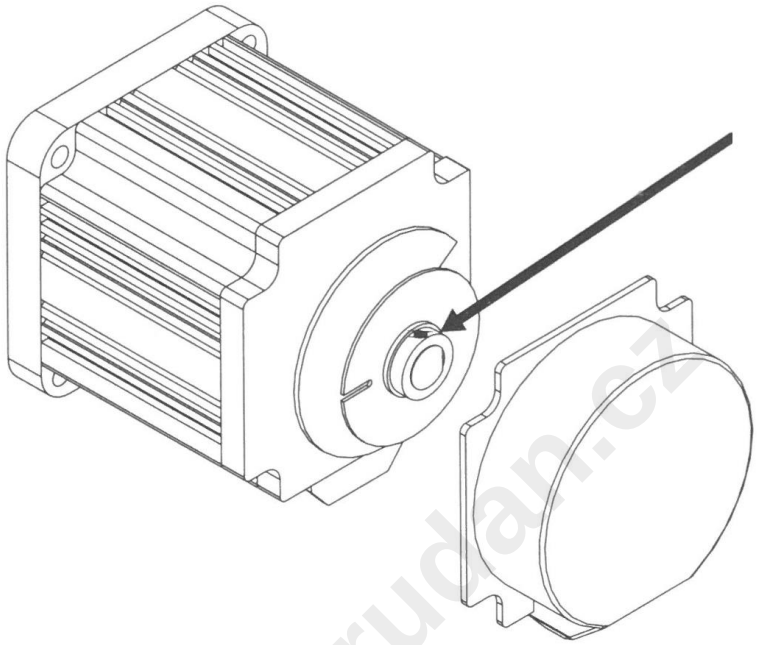
Inspection, removal and installation of the teeth-rack and hook drive teeth
Remove the machine head from the stand. Remove the cover by loosening the screws F. This gives you access to parts J, K, L, H and M, which can now be inspected or removed. To remove the hook carrier, loosen the screw in part H through the gap G. To remove the long teeth-rack (J), loosen the screw through the gap D (see fig.). Before reassembling, remove the teeth-wheel L. Then make sure that the position of the parts corresponds to figure.

Removing the hook drive housing
Remove the machine head from the stand. Turn the handwheel so that the screw E coincides with the gap D. Slightly loosen the screws B. Push out the pin C and remove the screws B. When reassembling, make sure that the pin C is in place before tightening the screws B.

The correct position of the eccentric bolt that connects the hook carrier and the hook drive rod
Make sure that the grooves in the bolt and rod are approximately overlapping.

E DRIVE UNIT MANUAL

E1. NEEDLE UP POSITION ADJUSTMENT



1. Remove the back cover from the servo-motor.
2. Find the adjustment wheel (shown in the picture) and loosen the screws.
3. Rotate the adjustment wheel to correct needle up position and fix the screws.

E2. CONTROLLER PANEL

ENTER: Confirm button for parameter adjustment

◄, ►: Plus and minus button for parameter adjustment

: Soft start

: Needle up or down

E3. CONTROLLER PARAMETERS ADJUSTMENT

1. Hold down the ENTER key to enter parameters setting mode.
2. Enter the password: **1234** using keys ◄, ►, and ENTER
3. To exit parameters setting hold down ENTER key again.

E4. DEFAULT PARAMETER VALUES

Parameter	Value	Meaning
001	300	Sewing speed
002	90	
003	100	
004	1700	
005	1700	
006	1700	
007	2000	
008	90	
009	3000	
010	800	
011	0	
012	0	
013	5	
014	1	
015	1	
016	0	
017	0	
018	0	
019	1	
020	1	
021	9999	
022	9999	
023	1	
024	0	
025	0	
026	0	
027	0	
028	1	
029	0	
030	0	
031	0	
032	0	
033	0	

Parameter	Value
034	0
035	0
036	100
037	40
038	100
039	100
040	100
041	100
042	100
043	100
044	0
045	100
046	30
047	0
048	50
049	0
050	100
051	30
052	10
053	20
054	250
055	260
056	1
057	0
058	0
059	100
060	25
061	80
062	160
063	10
064	60
065	100
066	100

Parameter	Value
067	30
068	100
069	130
070	240
071	160
072	8003
073	1190
074	0
075	0
076	0
077	0
078	0
079	0
080	30
081	***
082	250
083	90
084	340
085	0
086	0
087	0
088	1
089	0
090	100
091	200
092	340
093	380
094	7
095	***
096	0
097	1
098	0
099	0

E5. ERROR CODES

Error Code	Code Meaning	Recommended Solution
E1-0	Alarm of encoder connection	1. Encoder connector failure 2. Connector pin may be broken 3. Secure encoder connector screws
E1-2		
E1-3		
E2-0	Machine stuck or driver failure	1. Encoder connector failure 2. The machine can be mechanically stuck 3. Driver failed
E2-1	Low voltage or mechanical overload	1. Check the machine mechanical load 2. Check the bobbin, it may be enlaced
E2-2	Machine stuck or driver failure	1. Encoder connector failure 2. The machine can be mechanically stuck 3. Driver failed
E2-4	Over-current	1. Check the machine mechanical load 2. The machine can be mechanically stuck
E4-0	Pedal connection alarm	1. Pedal connecter failure 2. Connector pin may be broken
E6	LCD panel alarm	1. LCD panel connector failure 2. Connector pin may be broken
E7	Parameter setting error	1. Check correct parameter value
E8-0	Alarm for button SN_A	1. Check the button, it may be broken or short-circuit
E8-1	Alarm for button SN_B	

Katalog náhradních dílů
Spare Parts List

GARUDAN®

GC-320 Serie

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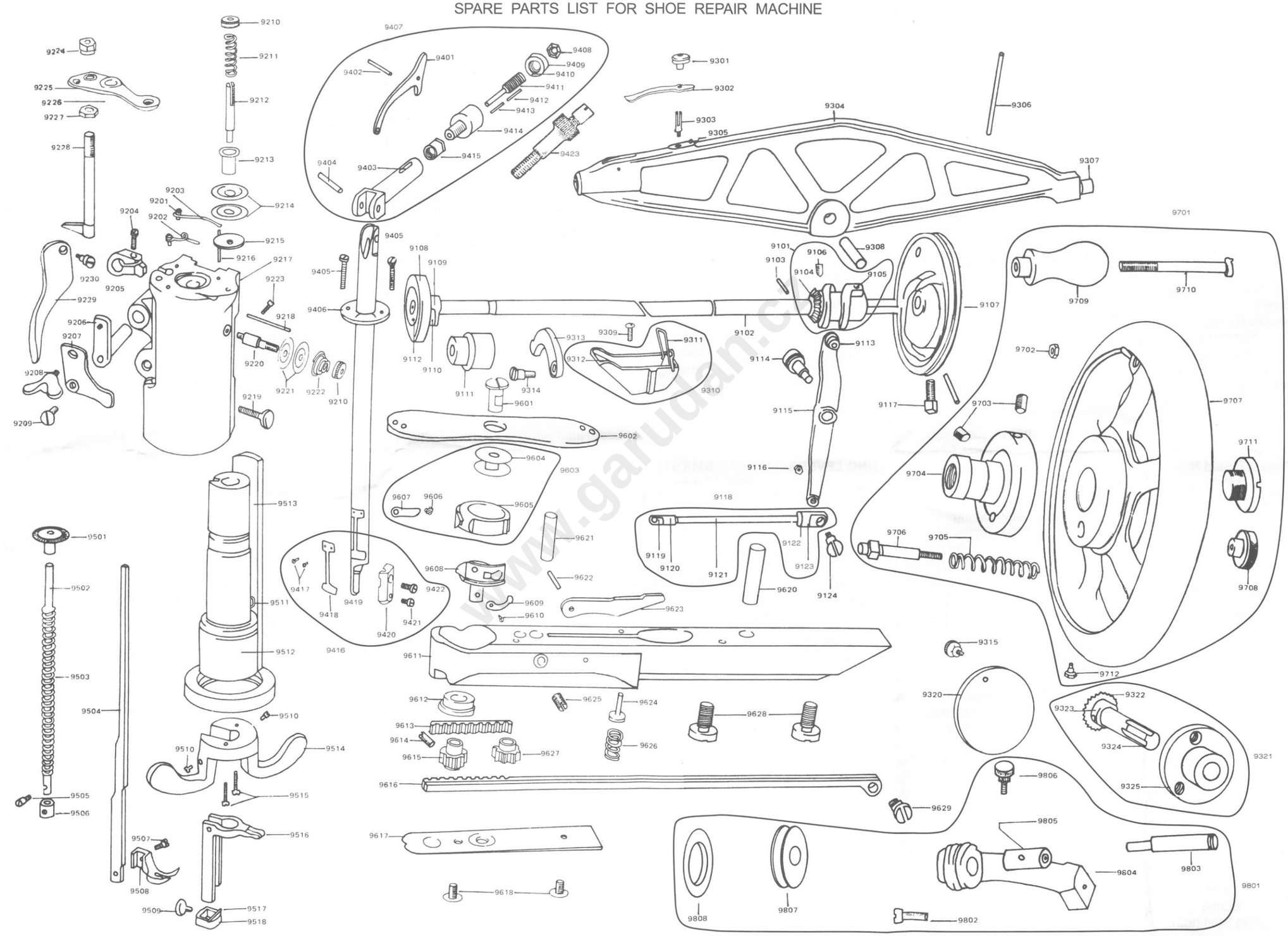
SPARE PARTS LIST FOR SHOE REPAIR MACHINE



9101 - 9124
SHAFT ,CAM WHEEL, SHUTTLE DRIVING LEVER, PULLEY WHEEL AND SHUTTLE DRIVING LEVER CONNECTING ROD ASSEMBLY

9101 Shuttle Driving Cam and Gear, Nos. 9104,9105 and 9106
9102 Shaft.
9103 Pin.
9104 Gear.
9105 Shuttle Driving Cam.
9106 Screw.
9107 Needle Bar Cam and Pulley Wheel.
9108 Feed Motion Cam Wheel.
9109 Cam Wheel Pin.
9110 Roller.
9111 Shaft Bushing.
9112 Roller Pin.
9113 Roller and Stud.
9114 Bearing Screw.
9115 Shuttle Driving Lever.
9116 Eccentric Stud Nut.
9117 Cam and Pulley Wheel Set Screw.
9118 Shuttle Driving Lever Connecting Rod Complete, Nos. 9119,9120,9121, 9122 and 9123
9119 Connecting Rod End (front).
9120 Nut (front).
9121 Connecting Rod
9122 Nut (back).
9123 Connecting Rod End (back).
9124 Eccentric Stud.

9201 - 9230
HEAD OF MACHINE AND TENSIONS COMPLETE

9201 Screw.
9202 Thread Eyelet (head of arm).
9203 Friction Spring.
9204 Clamping Screw.
9205 Lifting Lever Shaft Lever.
9206 Lifting Lever Shaft.
9207 Lifting Lever Shaft Adjusting Lever.
9208 Clamping Screw.
9209 Hinge Screw.
9210 Tension Thumb Nut (2).
9211 Tension Spring.
9212 Adjusting Stud (top).
9213 Cup (release).
9214 Disc (2).
9215 Washer (leather).
9216 Friction Spring Pin.
9217 Head of Machine.
9218 Thread Guide Pin (side).
9219 Head Revolving Bush Stop Thumb Screw.
9220 Adjusting Stud (side).
9221 Disc (2).
9222 Tension (side) Spring.
9223 Head Binding Screw (4).
9224 Slide Rod Lock Nut (upper).
9225 Foot Bar Revolving Joint Bearing
9226 Hinge Pin.
9227 Lock Nut (lower).
9228 Slide Rod.
9229 Lifter.
9230 Hinge Screw.

9301 - 9325
ARM SIDE COVERS, SHUTTLE DRIVING AND LIFTING LEVERS

9301 Stud Nut.
9302 Spring.
9303 Spring Stud.
9304 Needle Bar Driving Lever.
9305 Spring Stead Pin.
9306 Spool Pin.
9307 Cam Roller and Stud.
9308 Joint Pin.
9309 Oil Cup Screw.
9310 Oil Cup with 9311 and 9312
9311 Spring.
9312 Oil Pad (cloth).
9313 Vibrating Presser Lifting Lever (for medium work).
9314 Lifting Lever Screw.
9315 Thumb Screw.
9320 Arm Side Cover (back).
9321 Hand Wheel Hub Complete, Nos. 9322,9323,9324 and 9325 (for use when wheel is fitted on front of machine).
9322 Hand Wheel Shaft Gear.
9323 Gear Pin
9324 Shaft.
9325 Hub.

9401 -9422
CHECK LEVER AND NEEDLE BAR COMPLETE

9401 Check Lever
9402 Joint Pin.
9403 Piston Joint.
9404 Joint Pin.
9405 Washer Screw (2).
9406 Head Revolving Bush Supporting Washer.
9407 Check Lever Thread Take-up Adjusting Screw With indicator complete.
9408 Lock Nut.
9409 Index Head.
9410 Index Head Stop Pin.
9411 Adjusting Screw.
9412 Locating Plunger.
9413 Spring.
9414 Indicator Body.
9415 Indicator Body Lock Nut.
9416 Needle Bar Complete,Nos. 9417, 9418,9419,9420,9421 and 9422
9417 Spring Screw (2).
9418 Thread Tension Spring.
9419 Neede Bar.
9420 Needle Bar Clamp.
9421 Needle Clamping Screw.
9422 Clamp Screw.
9423 Check Lever Thread Take-up Adjusting Screw

9501- 9518
FOOT BAR AND FOOT BAR REVOLVING JOINT

9501 Adjusting Nut.
9502 Spring Bar.
9503 Vibrating Presser Spring.
9504 Foot Bar.
9505 Collar Screw.
9506 Spring Bar Collar.
9507 Feeding Foot Screw.
9508 Feeding Foot.
9509 Stitch Regulator Thumb Screw.
9510 Joint Screw (2).
9511 Roller, Stud, and Screw.
9512 Revolving Bush.
9513 Slide Bar.
9514 Revolving Bush Handle.
9515 Handle Screw (2).
9516 Bell Crank Lever.
9517 Gib.
9518 Stitch Regulator.

9601 - 9629
NEEDLE PLATES, GEAR BOX AND SHUTTLE COMPLETE

9601 Needle Plate Hinge Pin.
9602 Needle Plate (fine and medium needle holes).
9603 Shuttle Complete. Nos. 9604,9605, 9606 and 9607
9604 Bobbin.
9605 Shuttle Body.
9606 Tension Regulating Screw.
9607 Tension Spring.
9608 Shuttle.
9609 Spring.
9610 Spring Screw.
9611 Gear Box.
9612 Pinion Bushing.
9613 Rack (short).
9614 Pinion Screw.
9615 Driving Pinion.
9616 Rack (long).
9617 Pinion Cover Plate.
9618 Plate Screw (2).
9619 Needle Plate (medium and coarse needle holes).
9620 Following Pinion Stud.
9621 Gear Box Position Pin.
9622 Releasing Lever Hinge Pin.
9623 Releasing Lever.
9624 Locating Plunger.
9625 Needle Plate Hinge Pin Binding Screw.
9626 Plunger Spring.
9627 Following Pinion.
9628 Gear Box Screw (2).
9629 Connecting Rod Hinge Screw.

9701 - 9712
HAND WHEEL AND STOP MOTION COMPLETE

9701 Hand Wheel and Stop Motion Complete,Nos. 9702~9712
9702 Nut.
9703 Binding Screw (2).
9704 Hand Wheel Stop Motion Flanged Bushing.
9705 Spring.
9706 Stop Motion Plunger.
9707 Hand Wheel.
9708 Plunger Thumb Nut.
9709 Handle (wood).
9710 Spindle.
9711 Retaining Screw.
9712 Plunger Stop Screw.

9801 - 9808
BOBBIN WINDER COMPLETE

9801 Bobbin Winder Complete, Nos. 9802~9808
9802 Frame Screw.
9803 Spindle.
9804 Frame.
9805 Eccentric.
9806 Eccentric Thumb Screw.
9807 Pulley.
9808 Rubber Ring Spindle.

9851 - 9863
ACCESSORIES

9851 Oiler.
9855 Screw Driver (machine).
9856 Screw Driver (shuttle tension).
9857 Machine Screw (for fastening machine to power table) (4).
9859 Machine Screw (for fastening machine to stand) (4).
9863 Threading Wire.