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Singer 513K, 514K, 518K, 533K, 538K

Singer Sewing Machine Service Manual

Models: 513K, 514K, 518K, 533K, 538K

INTRODUCTION

This service manual provides comprehensive instructions for the maintenance, timing, and adjustment of Singer sewing machine models 513K, 514K, 518K, 533K, and 538K. It is intended for technicians and experienced users performing service and repair operations.

The manual contains detailed information to ensure proper functioning and longevity of your Singer sewing machine. Please refer to the specific sections for your machine model and the required procedure.

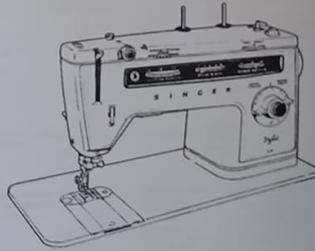


Image: Front cover of the service manual, displaying "Servicing Instructions for SINGER Machines Classes 513K & 533K, 518K & 538K, 514K" along with illustrations of the covered sewing machine models.

MACHINE DESCRIPTIONS

Singer Class 514K Machine

Servicing Instructions for SINGER Machines Class 514K



Servicing instructions for 518K Machines apply to the 514K with the exception of the special instructions on pages 52 to 61.

DESCRIPTION - 514K MACHINE

- For straight, zig-zag, stretch and ornamental stitching.
- Flat bed aluminum machine.
- Electrical power with built-in ENK8 motor, light K (hinged), rocker power and light switch J (located below arm and cover plate) and "Touch and Wind" hand-wheel C.
- Belt and gear driven horizontal rotating hook on a vertical axis, with stationary bobbin case (Apollo Hook System). Rotating hook makes two revolutions for each stitch.
- Throat plate M held in position by a position pin and spring loaded clamp for easy removal. Opening the bar slide L actuates the clamp and allows for easy removal of throat plate.
- Lock-stitch, Alpha feed, link take-up P.
- Self-threading take-up, slotted for easy threading P.
- Bobbin winder A mounted on top cover is actuated by means of a switch protruding through the top cover.
- Flexi-Stitch balance control dial B engages or disengages the cam controlled feed system. It also permits the operator to manually balance forward and reverse stitching to provide variations of Flexi-Stitch patterns.
- Pattern selector dial F located on front of arm. When Flexi-Stitch dial is OFF, dial moves easily to the left for zig-zag stitching, to the centre for blindstitching and to the right for multi-stitch zig-zag stitching. When Flexi-Stitch dial is ON, pattern selector dial moves easily to the left for ric-rac stitching, to the centre for slant needle stitching and to the right for faggoting.
- Right control dial E on front of arm in direct view of the operator. The dial controls the width of the zig-zag or ornamental stitch, up to a maximum of 5mm. When the machine is to be used for straight sewing in either left, centre or right needle position, this dial is set at the $\left| \right|$ position.
- Needle position selector dial D on front of arm in direct view of the operator. The dial enables the needle to be set in left, centre or right position.
- Four step buttonhole mechanism built into machine. Square end buttonholes can be made by turning buttonholer and feed regulator control dial H in a sequence of four steps beginning at $\left| \right|$. Balancing device incorporated in mechanism to permit equalising forward and reverse stitch length which may vary when changing from one fabric to another. This balancing is achieved by turning the push button G located in centre of buttonholer and feed regulator control dial.
- Plastic control panel N (Cream Tint), control panel insert (Architectural Bronze), names SINGER and "Stylor" and machine class No. 514 (Brown), indicators and names for "Pattern Selector", "Stitch Width" and "Needle Position" (White) and "Fast Stitch" indications (Bright Cherry Red).
- Buttonholer and feed regulator control dial H (Cream Tint), BUTTONHOLE, buttonhole designs and numerals 1, 2, 3, 4, "STITCH LENGTH", "FINE" and numerals 0, 6, 7, 8, 10, 12, 15, 25 (Brown) and Flexi-Stitch indication (Bright Cherry Red).
- Thrust tension control dial S increases or decreases the thread tension. Tension settings are indicated in numerals.
- Thread tension device R with central spacing disc for two needle threads.
- Control dial Q which projects from the arm top cover indicates the presser foot pressure. This dial is marked with setting NORM and MAX, indicating increasing pressure on the presser foot, and DARN which indicates the clarning position with no pressure on the presser foot.
- Push button reverse feed G in direct view of the operator located in buttonholer and feed regulator control dial H. Button is held depressed for reverse stitching and released to continue forward stitching.
- Bed—16 1/2 inches (41.91 cm) long—6 63/64 inches (17.78 cm) wide.
- Working space at right of needle 7 1/2 inches (19.1 cm).
- Needle catalogue 2020 (15x1)—thread from front to back.
- Needle catalogue 2028 for twin needle stitching.
- Needle catalogue 2245 for sewing synthetic materials.
- Maximum stitch length—6 per inch (4mm).
- Needle bar strike—1.183 inches (30.05mm).
- Presser bar lift: 290 to 300 inches (7.57 - 7.62mm).
- Maximum width of zig-zag stitch, (right) approximately 3/16 inch (5mm).
- Speed—maximum speed at the rated voltage not less than 800 r.p.m. supplied with single pile foot control.

Image: A page from the service manual detailing the Singer Class 514K machine, including an illustration of the machine and a list of its features and specifications.

- Designed for straight, zig-zag, stretch, and ornamental stitching.
- Features a flat bed aluminum machine.
- Equipped with built-in SINGER motor, light (hinged), rocker power, and light switch G (located below arm and cover plate).
- Includes a twin needle facility and a vertical axis with stationary bobbin case (Apollo Hook System).
- Rotating hook makes two revolutions for each stitch.
- Thread plate H is held by a spring-loaded clamp, allowing easy removal.
- Self-threading take-up, noted for easy threading.
- Bobbin winder A mounted on top cover, actuated by means of a switch.
- Flexi-Stitch balance control dial B engages or disengages the cam-controlled feed system.
- Stitch length control dial C on front of arm.
- Needle position selector lever C on front of arm.
- Buttonhole and feed regulator control dial H.
- Tension settings are indicated in numerals.
- Control dial Q projects from the arm top cover.
- Thrust tension control dial S increases or decreases the thread tension.
- Thread tension device R, with central spacing disc for two needle threads.
- Presser foot control dial D.
- Push button reverse feed F.
- 514K dimensions: 18.1 inches (41.9 cm) long, 6 63/64 inches (17.78 cm) wide.

- Needle catalogue 2020 (15x1) twin-needle threading from front to back.
- Needle catalogue 2028 for twin-needle stitching.
- Needle catalogue 2045 for synthetic materials.
- Maximum stitch length: 4 per inch (4mm).
- Needle bar stroke: 1.183 inches (30.05mm).
- Maximum width of zig-zag stitch: approximately 3/16 inch (5mm).
- Speed: maximum speed at the rated voltage not less than 900 r.p.m. supplied with single pile foot controller.

Singer Class 513K & 533K Machines

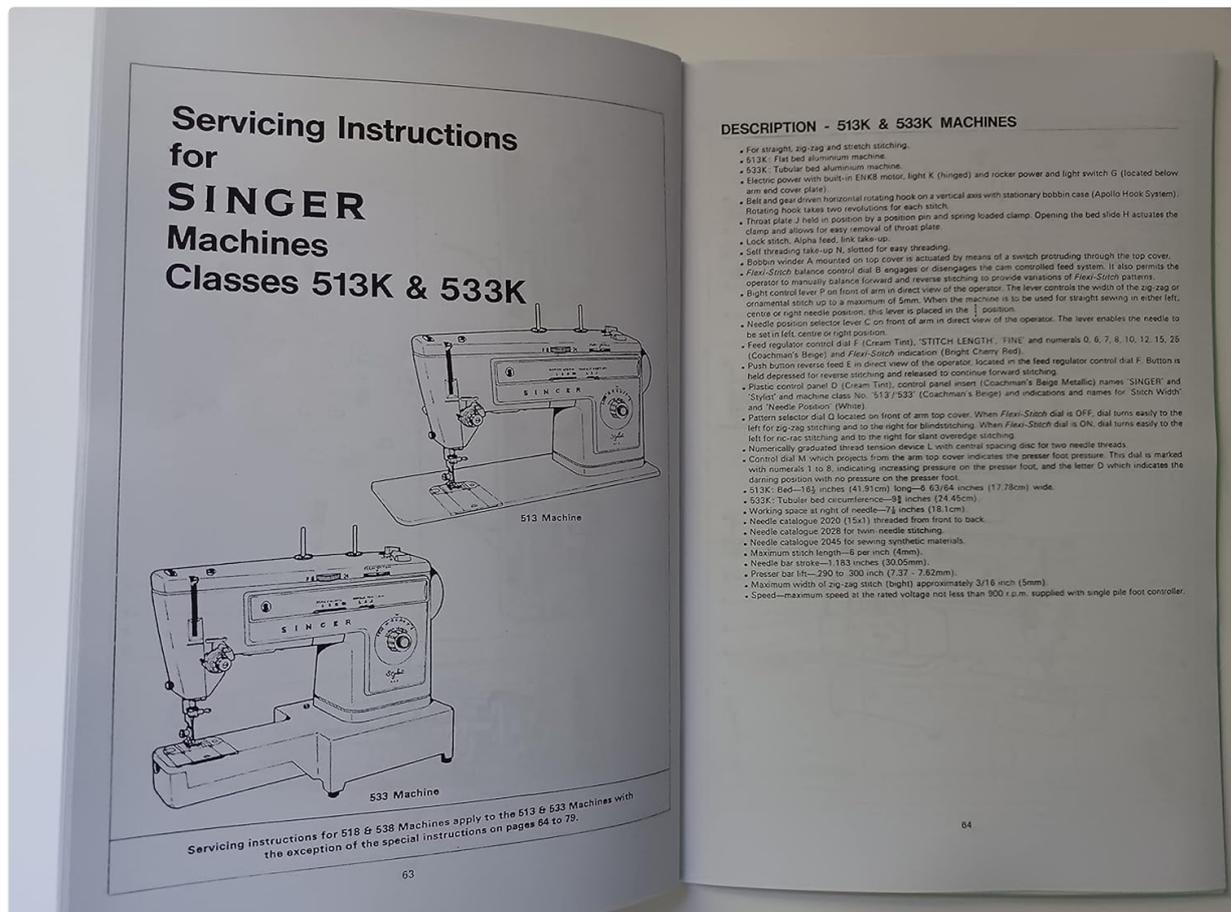


Image: A page from the service manual detailing the Singer Class 513K and 533K machines, including illustrations of both models and a list of their shared and distinct features.

- Designed for straight, zig-zag, stretch, and ornamental stitching.
- Features a tubular bed aluminum machine.
- Equipped with built-in SINGER motor, light (hinged), rocker power, and light switch G (located below arm and cover plate).
- Includes a twin needle facility and a vertical axis with stationary bobbin case (Apollo Hook System).
- Rotating hook makes two revolutions for each stitch.
- Thread plate H is held by a spring-loaded clamp, allowing easy removal.
- Self-threading take-up, noted for easy threading.
- Bobbin winder A mounted on top cover, actuated by means of a switch.
- Flexi-Stitch balance control dial B engages or disengages the cam-controlled feed system.

- Stitch length control dial C on front of arm.
- Needle position selector lever C on front of arm.
- Buttonhole and feed regulator control dial H.
- Tension settings are indicated in numerals.
- Control dial Q projects from the arm top cover.
- Thrust tension control dial S increases or decreases the thread tension.
- Thread tension device R, with central spacing disc for two needle threads.
- Presser foot control dial D.
- Push button reverse feed F.
- 518K dimensions: 16 1/2 inches (41.91 cm) long, 6 63/64 inches (17.78 cm) wide.
- 538K dimensions: 18 1/2 inches (46.99 cm) long, 6 63/64 inches (17.78 cm) wide.
- Working space at right of needle: 7 1/8 inches (18.1 cm).
- Needle catalogue 2020 (15x1) twin-needle threading from front to back.
- Needle catalogue 2028 for twin-needle stitching.
- Needle catalogue 2045 for synthetic materials.
- Maximum stitch length: 4 per inch (4mm).
- Needle bar stroke: 1.183 inches (30.05mm).
- Maximum width of zig-zag stitch: approximately 3/16 inch (5mm).
- Speed: maximum speed at the rated voltage not less than 900 r.p.m. supplied with single pile foot controller.

Singer Class 518K & 538K Machines

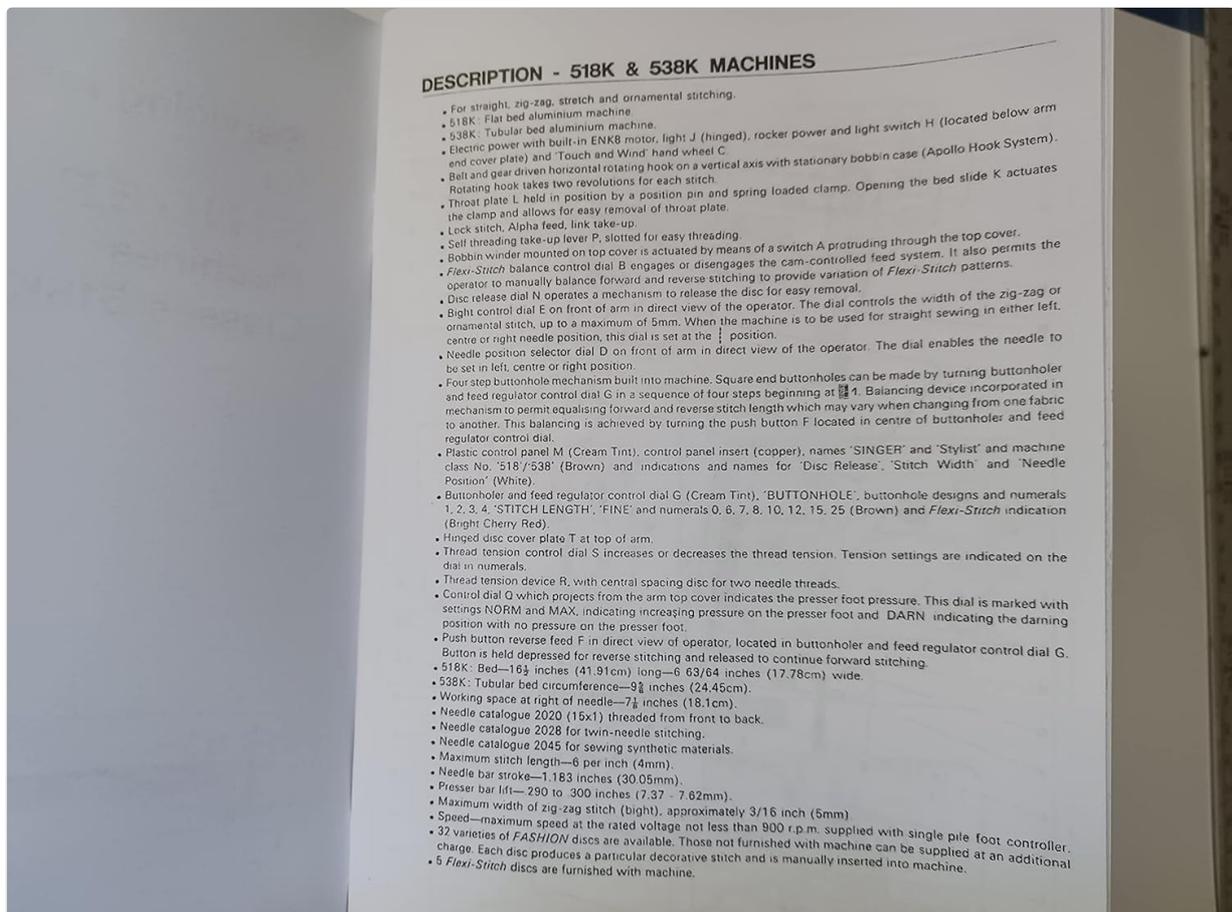


Image: A page from the service manual detailing the Singer Class 518K and 538K machines, including a list of their features and specifications.

- Designed for straight, zig-zag, stretch, and ornamental stitching.
- Features a tubular bed aluminum machine.
- Equipped with built-in SINGER motor, light (hinged), rocker power, and light switch H (located below arm and cover plate).
- Includes a twin needle facility and a vertical axis with stationary bobbin case (Apollo Hook System).
- Rotating hook makes two revolutions for each stitch.
- Thread plate H is held by a spring-loaded clamp, allowing easy removal.
- Self-threading take-up, noted for easy threading.
- Bobbin winder A mounted on top cover, actuated by means of a switch.
- Flexi-Stitch balance control dial B engages or disengages the cam-controlled feed system.
- Stitch length control dial C on front of arm.
- Needle position selector lever C on front of arm.
- Buttonhole and feed regulator control dial H.
- Tension settings are indicated in numerals.
- Control dial Q projects from the arm top cover.
- Thrust tension control dial S increases or decreases the thread tension.
- Thread tension device R, with central spacing disc for two needle threads.
- Presser foot control dial D.
- Push button reverse feed F.
- Plastic control panel M (Cream Tint), control panel insert (copper), names SINGER and 'Stylist' and machine class No. 518/538 (Brown) and indications and names for 'Disc Release', 'Stitch Width' and 'Needle Position' (White).
- Buttonhole and feed regulator control dial G (Cream Tint), BUTTONHOLE, buttonhole designs and numerals 1, 2, 3, 4. STITCH LENGTH: 'FINE' and numerals 0, 8, 7, 8, 10, 12, 15, 25 (Brown) and Flexi-Stitch indication (Bright Cherry Red).
- Thread tension control dial S increases or decreases the thread tension.
- 518K dimensions: 16 1/2 inches (41.91 cm) long, 6 63/64 inches (17.78 cm) wide.
- 538K dimensions: 18 1/2 inches (46.99 cm) long, 6 63/64 inches (17.78 cm) wide.
- Working space at right of needle: 7 1/8 inches (18.1 cm).
- Needle catalogue 2020 (15x1) twin-needle threading from front to back.
- Needle catalogue 2028 for twin-needle stitching.
- Needle catalogue 2045 for synthetic materials.
- Maximum stitch length: 4 per inch (4mm).
- Needle bar stroke: 1.183 inches (30.05mm).
- Maximum width of zig-zag stitch: approximately 3/16 inch (5mm).
- Speed: maximum speed at the rated voltage not less than 900 r.p.m. supplied with single pile foot controller.

Proper lubrication is essential for the smooth operation and longevity of your sewing machine. Follow these steps for regular maintenance:

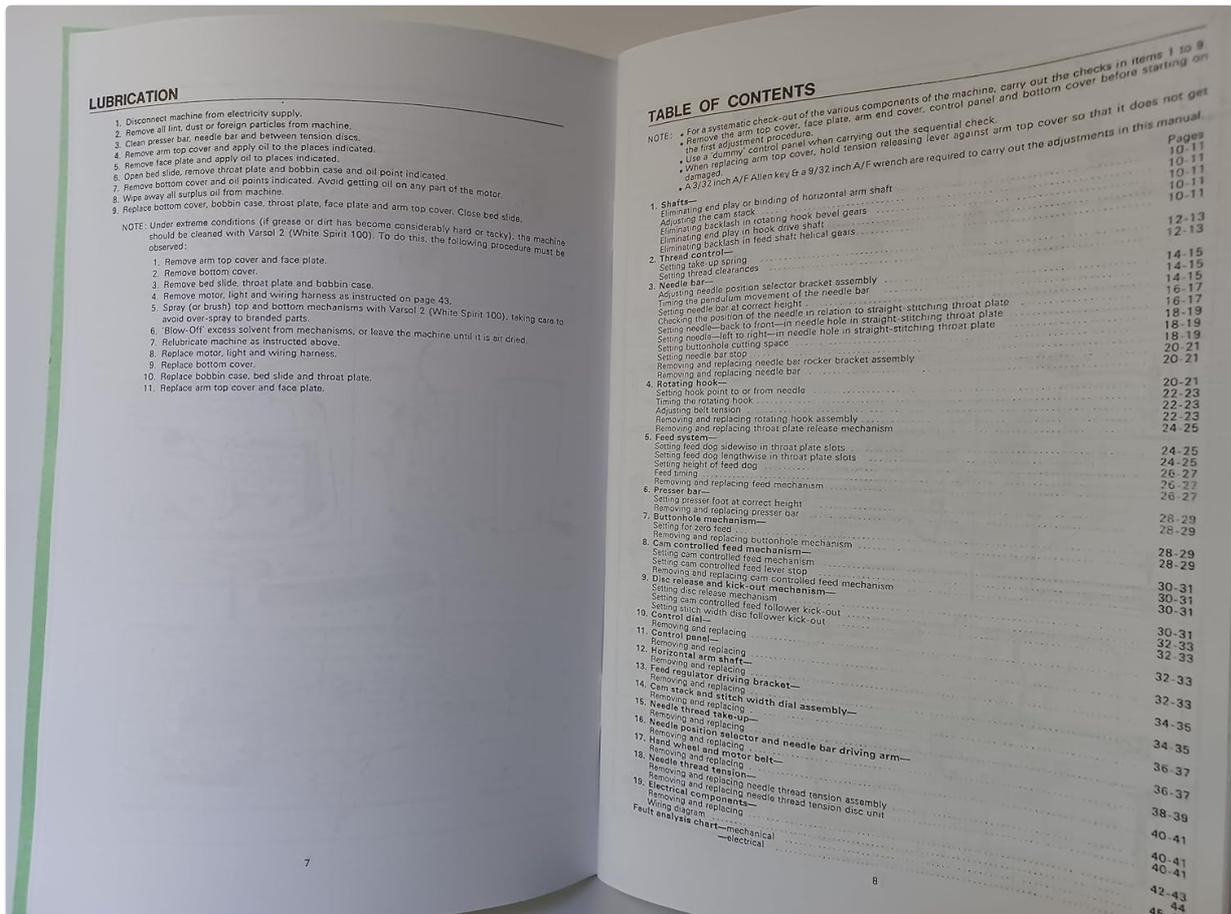


Image: A page from the service manual detailing lubrication instructions, including a list of steps for applying oil to various parts of the machine.

1. Disconnect machine from electrical supply.
2. Remove all lint, dust, or foreign particles from machine.
3. Open presser foot and remove needle.
4. Remove arm top cover and apply oil to the places indicated.
5. Remove face plate and apply oil to the places indicated.
6. Remove slide plate, throat plate, and bobbin case and apply oil to the places indicated.
7. Remove bottom cover and apply oil to the places indicated.
8. Wipe off any excess oil.
9. Replace bottom cover, bobbin case, throat plate, face plate, and arm top cover.

Note: Under extreme conditions (if grease or dirt has become exceptionally hard on the machine), the machine should be cleaned with Varisol 2 (White Spirit 100). To do this, the following procedure must be followed:

1. Remove arm top cover and face plate.
2. Remove needle bar.
3. Remove slide plate, throat plate, and bobbin case.
4. Remove motor, light, and wiring harness as instructed on page 43.
5. Spray all parts of both mechanisms with Varisol 2 (White Spirit 100), taking care to avoid over-spray to branded parts.
6. Wipe off excess Varisol from mechanisms, or leave the machine until it is air dried.

7. Reassemble mechanisms as instructed.
8. Replace motor, light, and wiring harness.
9. Replace needle bar.
10. Replace bobbin case, bed slide, and throat plate.
11. Replace arm top cover and face plate.

SERVICE AND ADJUSTMENT PROCEDURES

This section outlines various timing and adjustment procedures critical for maintaining the performance of your Singer sewing machine. Detailed steps for each procedure are provided within the full manual.

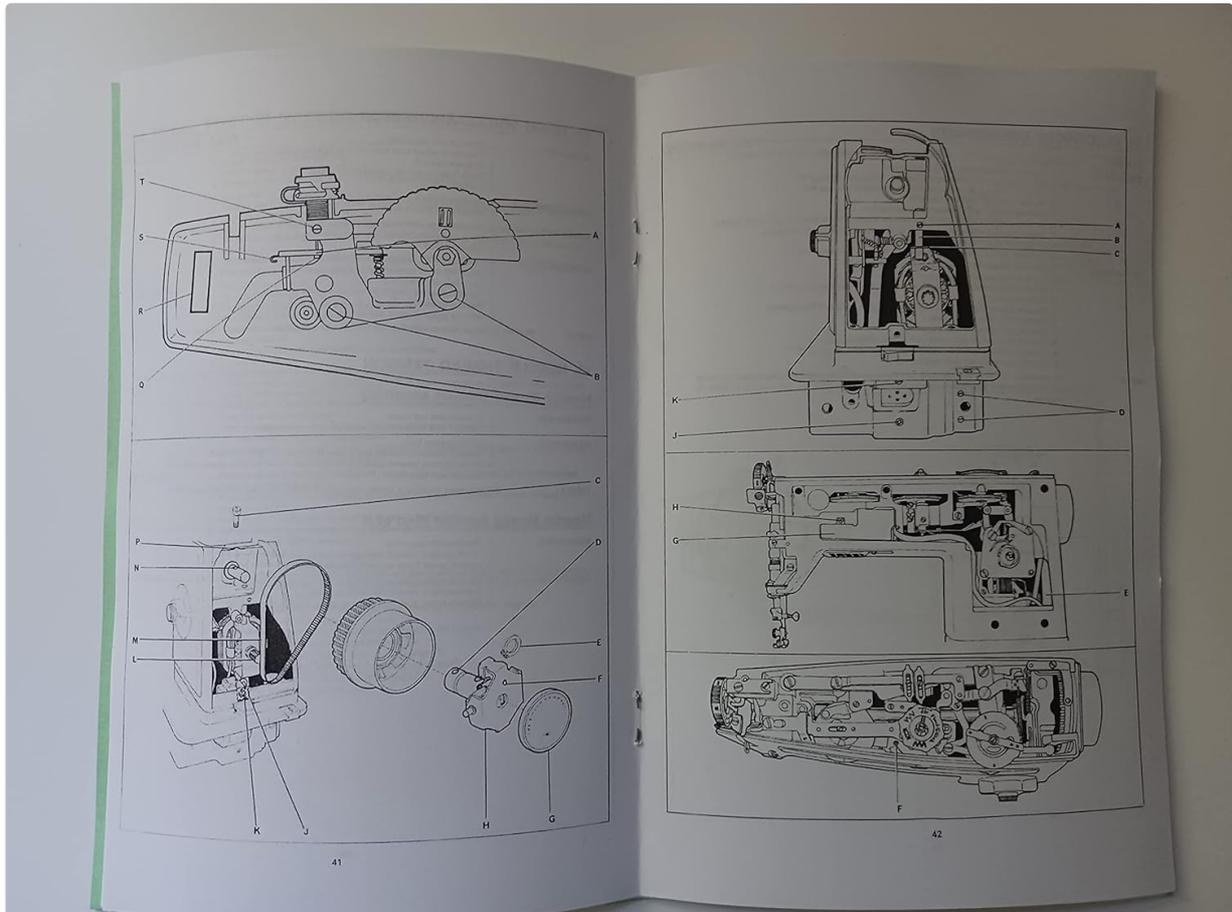


Image: Internal pages of the service manual displaying detailed technical diagrams with labeled components (A, B, C, etc.) for various machine mechanisms, essential for service and adjustment procedures.

Key Adjustment Areas:

- **Shuttle Timing:** Adjusting the timing between the needle and the shuttle hook for proper stitch formation.
- **Needle Bar Timing:** Setting the correct height and timing of the needle bar.
- **Feed Dog Timing and Height:** Ensuring the feed dogs move the fabric correctly.
- **Tension Adjustments:** Fine-tuning upper and lower thread tension for balanced stitches.
- **Zig-Zag Mechanism:** Adjustments for proper zig-zag stitch width and formation.
- **Buttonhole Mechanism:** Calibration for consistent buttonhole creation.
- **Motor and Electrical Connections:** Checks and adjustments for power supply and motor function.

- **Lubrication Points:** Identification and application of lubricants to moving parts.
- **General Disassembly and Reassembly:** Procedures for accessing internal components for repair.

For specific instructions on each procedure, refer to the corresponding page numbers in the complete service manual.

GENERAL SPECIFICATIONS

Feature	Detail
Manual Type	Service and Repair Manual
Covered Models	Singer 513K, 514K, 518K, 533K, 538K Class Sewing Machines
Manual Dimensions	5.5" x 8.25" (approx. 14 cm x 21 cm)
Page Count	80 Pages
Paper Quality	Professionally printed on heavy-weight brilliant-white paper with cardstock cover
Product Dimensions (Manual)	8 x 5 x 0.1 inches (approx. 20.3 x 12.7 x 0.25 cm)
Manufacturer	TabSynth (for this reproduction)

Note: Specific machine dimensions and features are detailed in the "Machine Descriptions" section.

TROUBLESHOOTING GUIDELINES

This service manual provides detailed solutions for common issues encountered with Singer 513K, 514K, 518K, 533K, and 538K sewing machines. Refer to the relevant sections for specific diagnostic and repair steps.

Common Issues Addressed:

- Skipped stitches (often related to needle bar or shuttle timing).
- Thread breakage (can be due to incorrect tension, burrs, or needle issues).
- Bobbin problems (improper winding, tension, or case issues).
- Uneven feeding of fabric (feed dog height or timing adjustments).
- Machine jamming or seizing (lubrication, foreign objects, or timing issues).
- Noise or vibration (loose parts, lack of lubrication, or worn components).
- Electrical malfunctions (motor issues, wiring checks).

Always disconnect the machine from the power supply before attempting any troubleshooting or repair procedures.

