SINGER
246K42, 246K43 AND 246K45

Form K6430
(961)

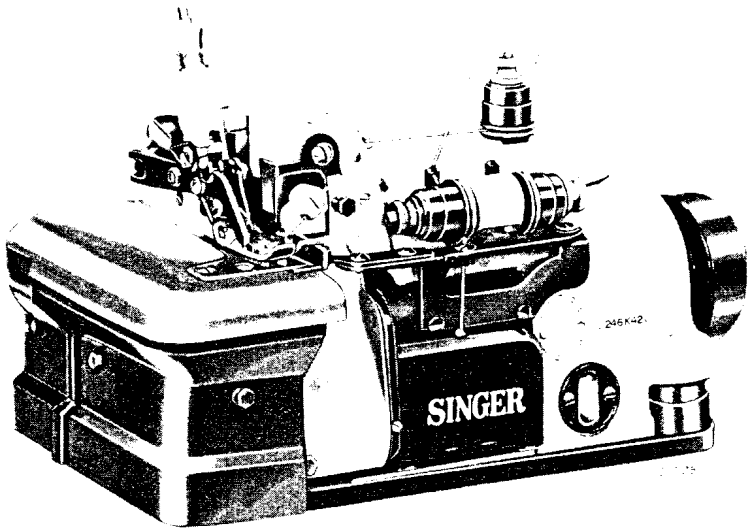
SERVICE MANUAL

AND PARTS LIST

FOR

SINGER*

OVEREDGING MACHINES
246k42, 246k43 and 246k45



Machine 246K42

CAUTION—See that machine reservoir is filled with oil, as instructed on **page 6** before using machine.

THE SINGER MANUFACTURING COMPANY

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DESCRIPTION

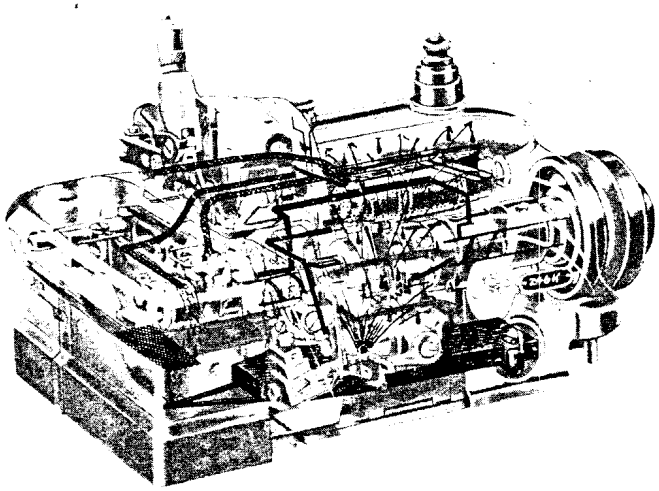


Fig. 2. X-ray View of Class 246K Machine (Lubricating System Shown in Solid Black)

Machines 246K42, 246K43 and **246K45** produce high speed overedging and simultaneous trimming on materials ranging from lace to canvas.

Available for **single needle** operations, these powerful but compact machines are capable of producing three different overedge stitches. **Stitch Types 503, 504** and **505.**

Adaptable for gathering, stretching or feeding the work uniformly, these machines of **Class 246K** have proven themselves in an almost endless list of overedge operations including serging, intermittent gathering, ruffling, binding, scalloping, cuffing, side-seaming, yoking, closing, cording, welting and inserting.

GENERAL CHARACTERISTICS

Curved needles:

Catalogue #**1265 (151 x 7)** regular.

Catalogue #**1263 (151 x 3)** tapered blade.

Loopers (or looper and spreader) **independently** driven, permitting variations in their adjustment in relation to each other and to the needle, to suit the work required.

Either left or right twist of thread may be used in needle and in loopers.

Adjustable trimmer cuts cleanly; operating in advance of needles. Trimmings guided into chip chute to avoid interference with work and with mechanism.

Presser foot can be swung toward left to facilitate threading or replacement of needle.

Tubular operation is accommodated by a small "horn" extension of the throat plate support.

Cloth plate can be swung to the left for convenience, when stitching tubular pieces or when making machine adjustments.

Fittings for Machine 246K42 are designed to retain control of thread-chain as long as presser foot is engaged with feed dog, enabling operator to break the thread chain manually, without losing control of chain or distorting the thread loops.

Splash lubricating system, shown in **Fig. 2,** automatically and continuously oils principal bearings during operation.

Oil cooling reservoir in rear of machine.

Oil level indicator gauge in direct view of operator.

Oils recommended, see inside front cover.

Machine pulley 164231 for **3/8** inch V-belt; also used for **5/16** inch round belt.

Machine pulley should always turn over away from operator when machine is in motion.

ACCESSORIES AND TOOLS

Foot lifter. Knee lifter supplied instead, when specified on order.

Threading wire 164196.

Tweezers 164204.

Socket wrench 164197 (for needle clamping nut).

Flat, open-end wrench 10875 (for feed eccentric nut).

Screwdriver 85318.

Wrench 164831 (for right looper carrier guide bar oil plug screw nut).

Thread unwinder 151031 (for two- or three-thread).

Thread unwinder 228705 (two-thread) or **228706** (three-thread) for nylon threads will be supplied instead of regular unwinder, upon specific order.

SPECIAL FEATURES

Machine 246K42

. . . **pants serging**

. . . **light** and **medium weight** fabrics

. . . **drop feed**

. . . **one needle**, one looper, one spreader

. . . **two-thread** serging stitch (**Stitch Type #503**, shown in **Fig. 3**). See **page 12** for instructions on threading.

. . . **trimmer** adjustable to cut **1/16** inch to **1/4** inch from needle

. . . **bight limit, 1/16** inch to **7/32** inch

. . . **feed eccentric 164915**, bronze, regularly supplied for **5** stitches to the inch.

. . . **maximum speed 6000** stitches per minute

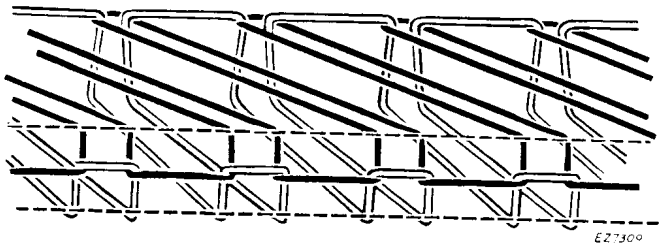


Fig. 3 Stitch Formation (Stitch Type #503)

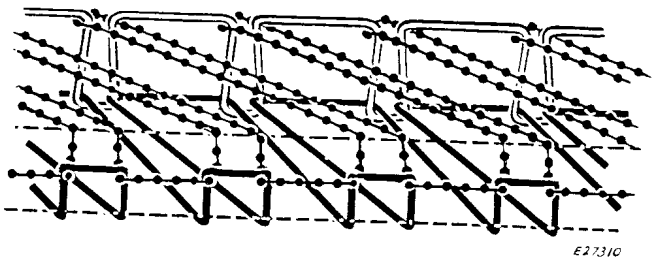


Fig. 4. Stitch Formation (Stitch Type #504)

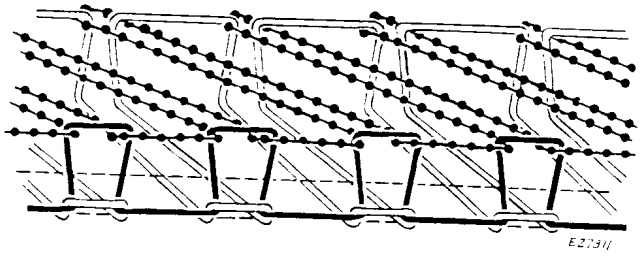


Fig. 5. Stitch Formation (Stitch Type #505)

Machine 246K43

. . . **general overedging; gathering, stretching** or **uniform feeding**

. . . **light** and **medium weight** fabrics

. . . **differential feed**

. . . **one needle**, two loopers

. . . **three-thread tight needle thread** stitch (**Stitch Type #504** shown in **Fig. 4**). See **pages 10** and **11** for instructions on threading.

. . . machine is frequently fitted to produce the three-thread purl-on-the-edge stitch (**Stitch Type #505** shown in **Fig. 5**), **upon specific** order. See **page 11** for instructions on threading.

. . . **trimmer** adjustable to cut **1/16** to **1/4** inch from needle

. . . **bight limit, 1/16** inch to **7/32** inch

. . . **two feed eccentrics 164915**, bronze, regularly supplied for **14** stitches to the inch

. . . **maximum speed, 6000** stitches per minute

Machine 246K45

Similar to Machine 246K43, except—

. . . **more** looper stroke, **higher** feed lift, **higher** knife stroke

. . . adapted for **medium** and **medium - heavy** weight fabrics

. . . **trimmer** adjustable to cut **1/8** to **1/4** inch from needle

. . . **bight limit, 1/8** inch to **1/4** inch

. . . **Maximum speed 5500** stitches per minute

INSTALLATION OF MACHINE AND BASE ON TABLE

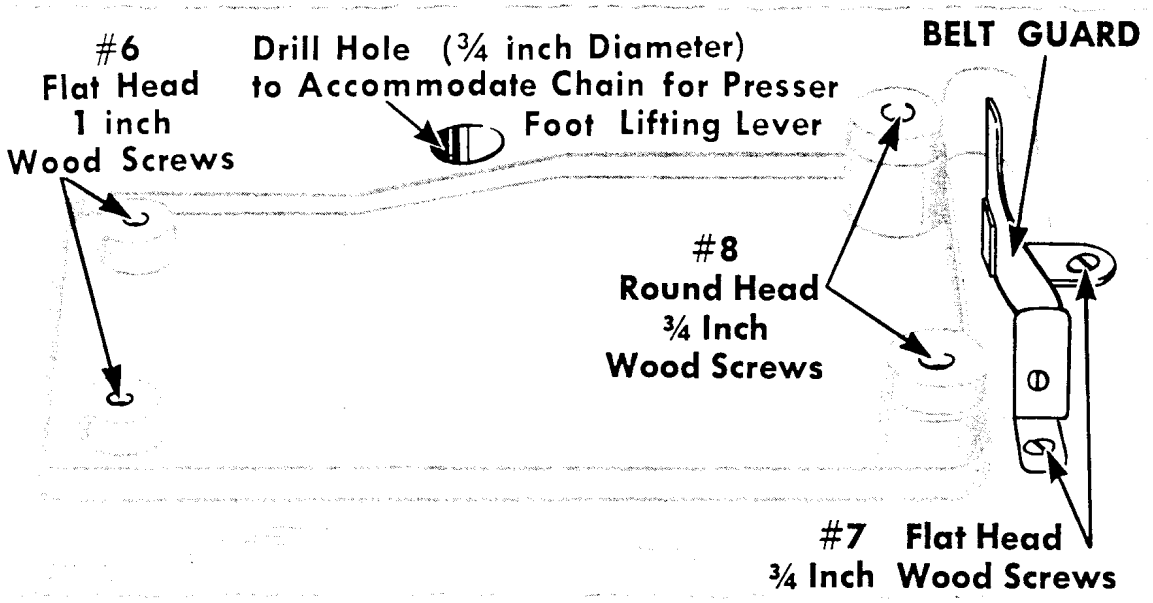


Fig. 6. Machine Base on Table, Showing Position and Drill Sizes of Holes Required for Installation

Place machine and base on table top with belt groove of machine pulley in line with belt groove of driving pulley.

Spot position of hole behind machine base, directly below chain slot on presser foot lifting lever.

Remove machine from base. Draw outline of machine base in position on top of table.

Drill hole spotted earlier, **3/4** inch in diameter, to accommodate chain.

Using base and belt guard as template, spot and drill six holes in table for wood screws, as shown in **Fig. 6.**

Fasten machine base and belt guard to table with the six wood screws, described in **Fig. 6.**

Set machine on rubber cushions at four corners of base.

FOOT LIFTER: As the stand recommended for **Class 246K Machines** with foot lifter includes a suitable foot lifter treadle, foot lifter chain **6439,** without the treadle, will be sent with the machine. If, however, the machine is fitted to a stand or other equipment which does not have a suitable treadle, orders should state that foot lifter treadle **4885** is required and it will also be supplied, without extra charge.

CAUTION

All of the oil is drained from the machine before it is shipped from the factory.

DO NOT START THE MACHINE UNTIL IT HAS BEEN THOROUGHLY LUBRICATED AS INSTRUCTED ON PAGE 6.

LUBRICATION

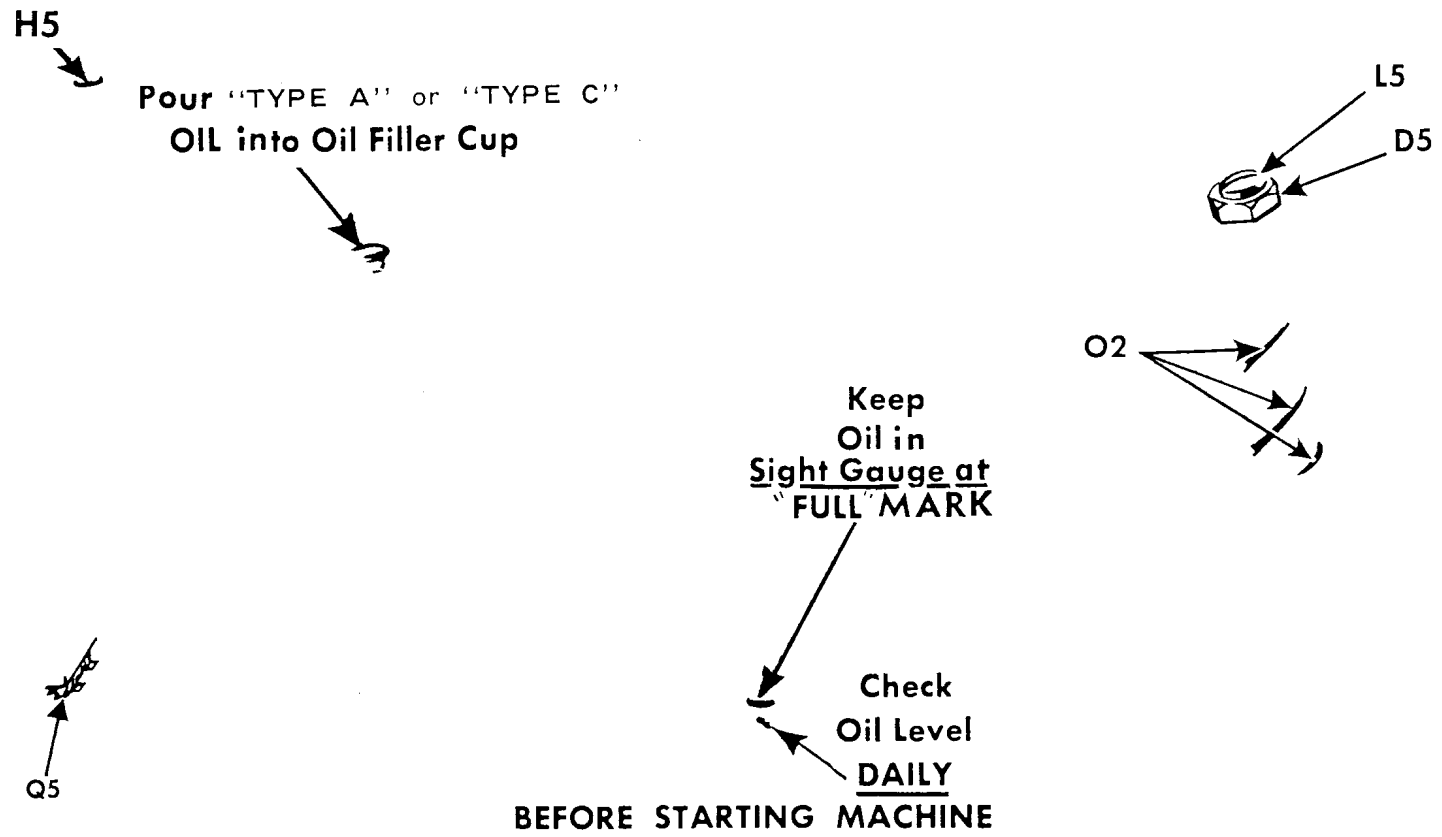


Fig. 7. Filling Oil Reservoir

Fig. 8. Oil Flow Adjustment

Use "TYPE A" or "TYPE C" OIL, sold by Singer Sewing Machine Company.

Apply this oil to oil filler cup on top of machine, pouring oil into reservoir until oil in the sight gauge is at **"FULL" mark,** as indicated in **Fig. 7.**

Check oil sight gauge daily before starting machine and oil machine, when necessary, as instructed in **Fig. 7** above.

WHEN A MACHINE HAS BEEN IDLE FOR A CONSIDERABLE TIME (OR AFTER A MAJOR INSTALLATION OF PARTS). Clean the machine **thoroughly.** Then apply **a few drops of oil** to oil grooves of feed bar connections **Q5** (see inset at bottom left of **Fig. 7**) and to looper carrier connection guide bar at **O2, Fig. 8** behind upper knife carrier and chip guard. Apply a drop of oil to presser bar at **H5, Fig. 7. Check oil level in reservoir,** as instructed in **Fig. 7.**

AFTER MACHINE IS INSTALLED AND BEFORE STARTING THE MACHINE:

Remove the chip guard from the front of the machine.

Check the oil flow on right hand looper carrier connection guide bar at **O2, Fig. 8.**

To adjust amount of oil flow on guide bar at **O2,** loosen lock nut **D5** and turn adjusting screw **L5, Fig. 8** clockwise as far as possible. **Oil flow is now shut off, completely.**

Back off screw **L5** (turning screw anti-clockwise) **1/2** turn. Check lubrication again.

To increase oil flow, turn screw **L5** anti-clockwise a small amount and recheck lubrication.

If oil flow is too great turn screw **L5** clockwise about 1/4 turn and recheck.

Never operate machine when oil flow is SHUT OFF at L5.

When correct oil flow is obtained, lock the nut **D5, Fig. 8.** Replace the chip guard.

Remove belt and check freeness of machine by turning machine pulley by hand. Replace belt.

Finally, **"run-in" the machine** for approximately 15 minutes at a moderate speed.

SPEED

MACHINE	MAXIMUM SPEED† (Stitches per minute)	Speed recommended for Long Runs or while sewing long stitches
246K42	6000	5500
246K43	6000	5500
246K45	5500	5000

†Maximum **efficient** speed is dependent upon the ability of the operator, the nature of the operation and the type of material being sewn.

It is advisable to operate these machines at more moderate speeds the first few days, after which they can be run at top speed.

When the machine is in operation, top of **machine pulley must always turn over away from operator.**

NEEDLES AND THREAD

Needles are of curved blade, Catalogue #**1265 (151 x 7)** regular, in sizes **9** to **12, 14, 16, 18, 19** and **21.** Needles of Catalogue #**1263 (151 x 3)** with tapered blade, in sizes **5, 6, 7, 9** and **11** are available.

Selection of needles can make a great difference in the ease and quality of the work. It is important that each needle be just right for machine, thread and work being done.

Choose your needle carefully. The correct size will permit thread to pass freely through needle eye; avoiding strain and breakage of thread.

Either right twist or left twist thread may be used.

If trouble occurs during sewing:
Inspect needle point. A hook or burr may cause poor stitching or some materials may be cut when short stitches are used.

Check curvature of each needle, as instructed below. Unless the needle has the correct curvature, it may cause skipping of stitches.

Orders for needles must specify the Quantity required, the Size number, also the Catalogue number . . .

For example . . .

"100 Size 9, Catalogue #1265 (151 × 7) Needles."

The best stitching results will be obtained when using needles sold by Singer Sewing Machine Company.

CURVATURE OF NEEDLE BLADE

(Gauge 164588, for needles of Sizes 7 to 16 only)

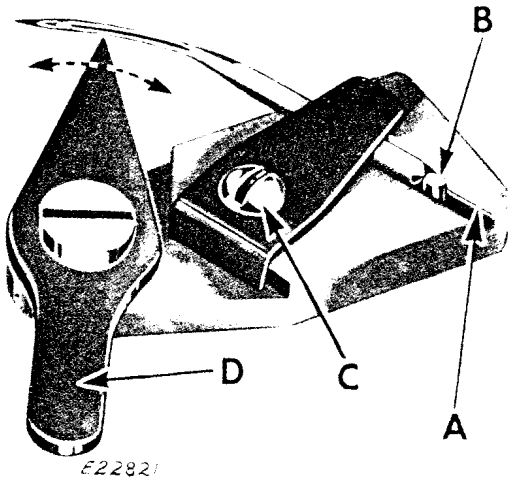


Fig. 9. Checking Needle Curvature

Before making any stitching adjustments, the curvature of each needle blade should be checked in the following manner:

Using Gauge **164588,** shown in **Fig. 9,** insert shank of needle, with its **flat side up,** in the groove **A.** Push the needle along the groove as far as it will go against stop **B.** Tighten clamping screw **C.**

Swing the indicator **D,** slowly to and fro, along the curve of the needle blade, observing the distance between the needle blade and the tip of the indicator.

The tip of the indicator should just make contact at the needle eye and should clear needle blade, at upper end of curve, by approximately **.005** to **.006** inch. Use feeler gauge.

Reject any needle that cannot pass this test.

SETTING THE NEEDLE

Move needle clamp up to its **highest** position.

Insert needle, as instructed in **Steps 1** to **5** in **Fig. 10.**

When needle is correctly inserted in needle clamp, securely tighten needle clamping nut. (See **Step 6, Fig. 10.**)

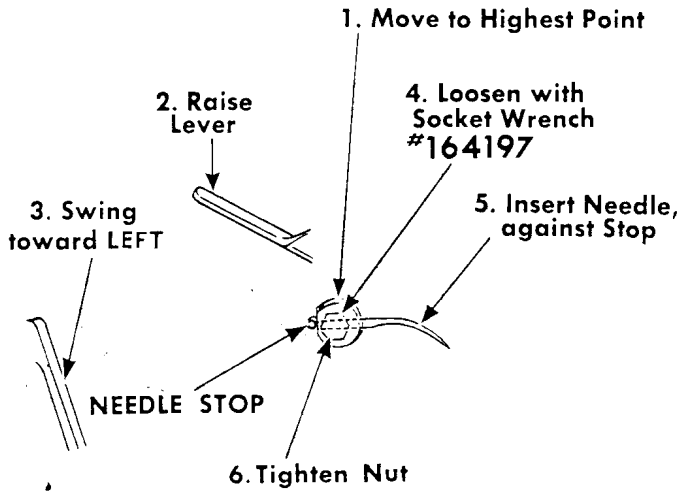


Fig. 10. Needle Correctly Set in Needle Clamp

PREPARATION FOR THREADING

For convenience in threading . . .

. . . **Machine 246K42:** Swing edge guide out of position, as instructed in **Step 1, Fig. 11.**

. . . **All Machines:** . . . Raise bench stand flap and open front cover plate.

. . . Swing cloth plate toward left.

. . . Release presser bar as instructed in **Step 5, Fig. 11** and swing presser bar toward left.

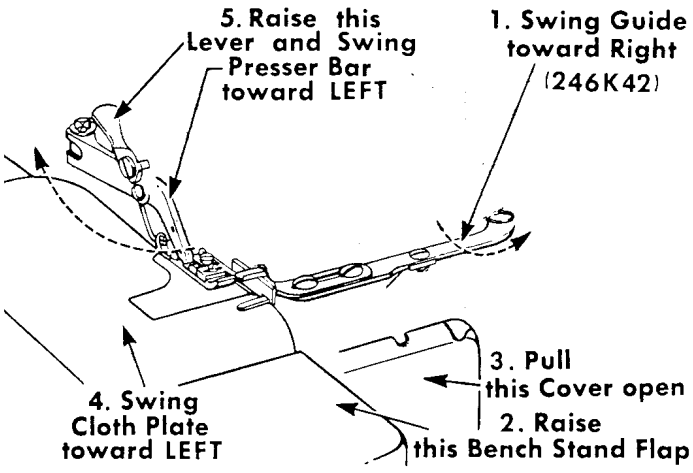


Fig. 11. Preparation for Threading

TO THREAD UNWINDER

Select the unwinder suitable for the type of stitch and work to be accomplished.

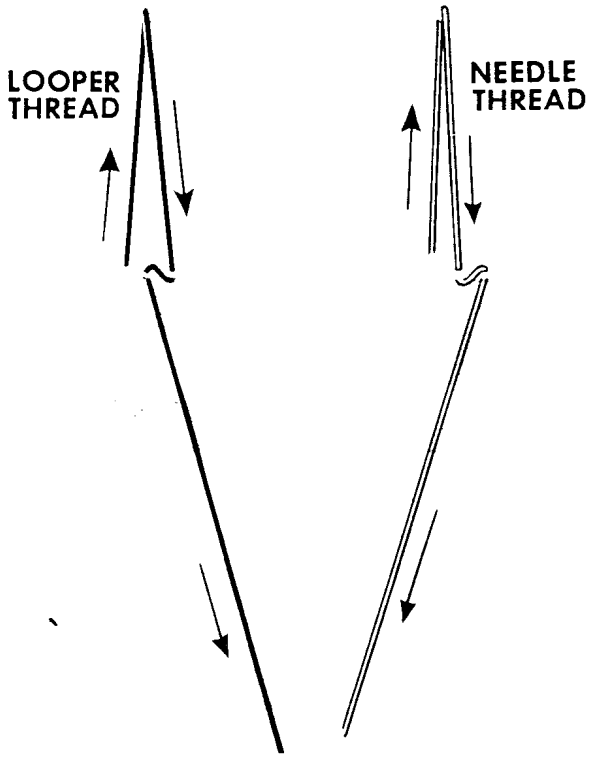


Fig. 12. Unwinder 151031 Threaded for Two-Thread Stitch

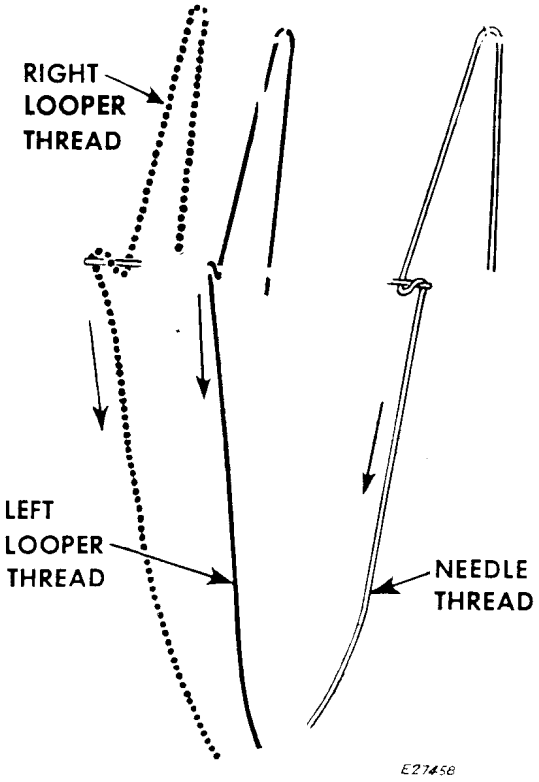
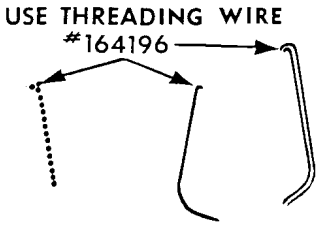


Fig. 13. Unwinder 151031 Threaded for Three-Thread Stitch



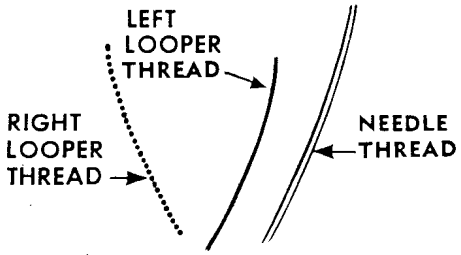


Fig. 14. Unwinder 228706 (for Nylon Thread) Threaded for Three-Thread Stitch

TO THREAD THE MACHINE
FOR THREE-THREAD TIGHT NEEDLE THREAD STITCH (TYPE #504)
(Regular for Machines 246K43 and 246K45)

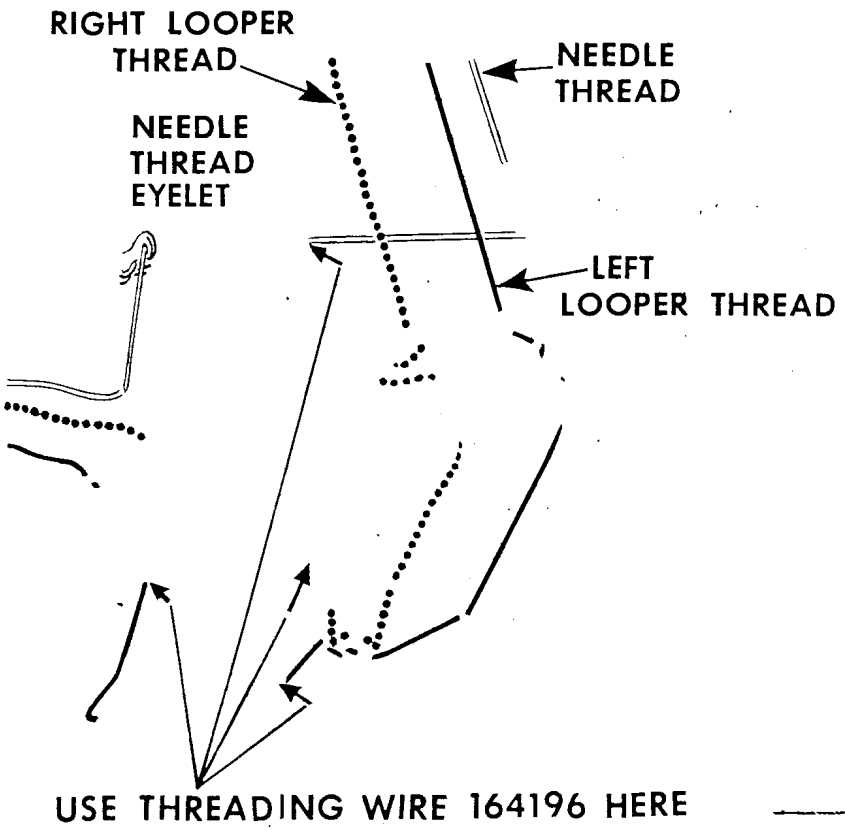


Fig. 15. Threading the Machine
(Three-thread Tight Stitch)

Fig. 16. Threading Needle Thread Eyelet (Tight Stitch)

Fig. 17. Threading Wire 164196

Machine should be equipped with needle thread controller **164151, Fig. 33, page 18,** looper thread take-up **164175** and looper thread stripper-and-take-up **164091,** shown in **Fig. 19.**

Pass each thread through threading points as shown in **Figs. 15, 16** and **19.**

IMPORTANT:

Thread the **needle** thread **(double line)** completely **first.**

Thread **right** looper thread **(dotted line)** completely **next.**

Thread the **left** looper thread **(solid line) last.**

Use threading wire **164196,** shown in **Fig. 17,** to pass threads through threading tubes, at points indicated in **Fig. 15.** Draw four or more inches of thread through eyelet in threading wire and pass threaded wire through required threading tube.

NEEDLE THREAD: Before passing needle thread (see **double line**) through its threading tube, turn machine pulley over toward you until needle is at its **lowest position.**

Observe the correct position and method of threading needle thread eyelet as shown in **Fig. 16.**

After threading needle thread eyelet, raise needle to its highest position and pass the thread from front to rear through needle eye.

When threading needle, double back the end of the thread and twist it; making thread stiff enough to thread the needle eye easily.

TO THREAD THE MACHINE
FOR THREE-THREAD TIGHT NEEDLE THREAD STITCH (CONTINUED)

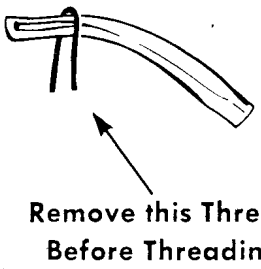


Fig. 18. Right Looper

LOOPER THREADS: Before threading left looper, turn machine pulley over from you until the **eye of left looper is directly in line** with the threading tube underneath throat plate.

Pass each looper thread through its threading points, as shown in **Figs. 15** and **19.**

When threading right looper, be sure that there is no loose loop of thread on end of looper (see **Fig. 18**) **to cause thread breakage.**

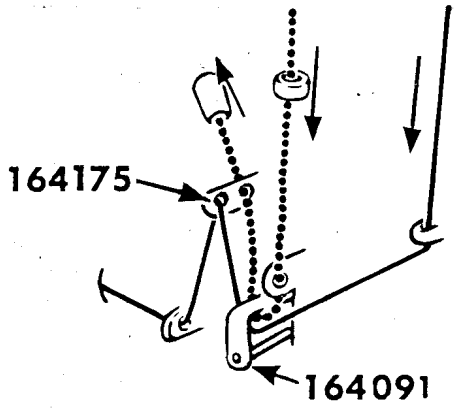


Fig. 19. Threading Looper Take-up (Three-thread Tight Stitch)

Draw about two inches of thread through needle eye and through each looper eye, with which to start sewing.

TO THREAD THE MACHINE
FOR THREE-THREAD PURL-ON-THE-EDGE STITCH (TYPE #505)

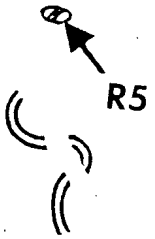


Fig. 20. Threading Needle Thread Eyelet (Purl Stitch)

Machine should be equipped with **left** and **right loopers,** with needle thread controller **164381, Fig. 34, page 18,** and with take-up parts **164857** and **164288,** shown in **Fig. 21.**

Needle thread eyelet, shown in **Fig. 20,** may be raised or lowered, as required. To change position of eyelet, loosen screw **R5, Fig. 20,** move eyelet to desired position and securely retighten screw **R5.**

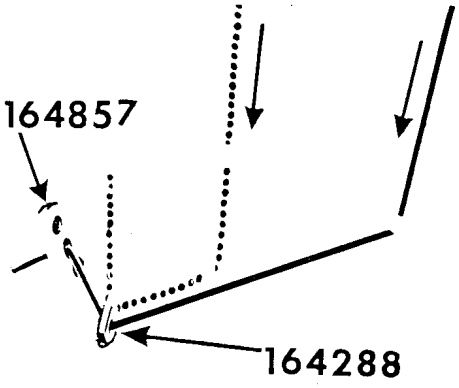


Fig. 21. Threading Looper Take-up (Purl-on-the-Edge Stitch)

The machine is threaded for three-thread purl-on-the-edge stitch in the same manner as for three-thread tight stitch (see **Fig. 15** and instructions on **page 10**) with the following exceptions:

The needle thread eyelet must be threaded as shown in **Fig. 20.**

The looper thread take-up must be threaded as shown in **Fig. 21.**

TO THREAD THE MACHINE
FOR TWO THREAD STITCH (TYPES #502 AND #503)
(Stitch Type #503, Regular for Machine 246K42)

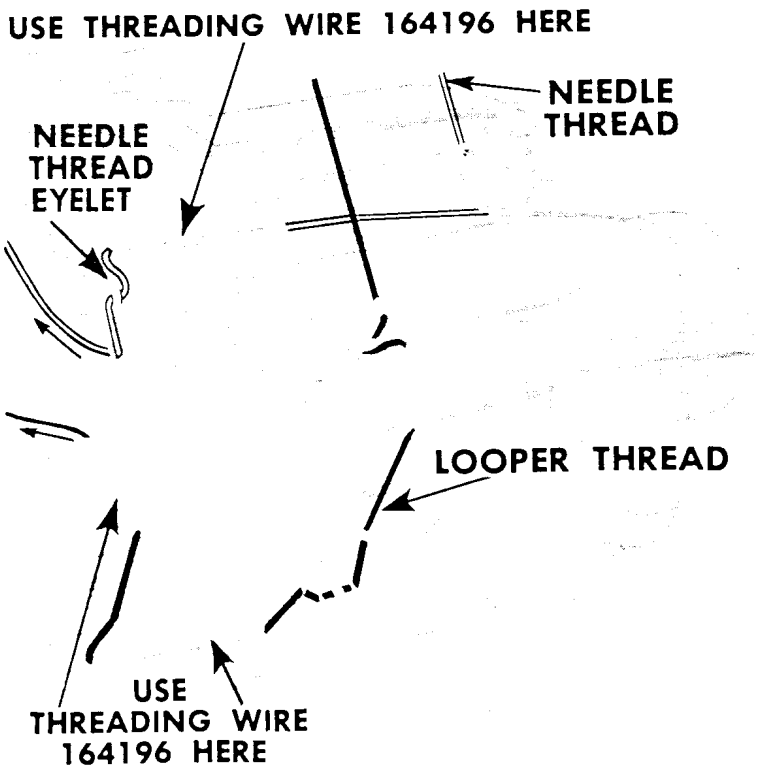


Fig. 22. Threading the Machine (Two-Thread Stitch)

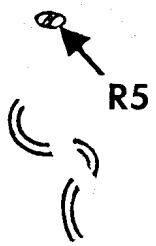


Fig. 23. Threading Needle Thread Eyelet

Fig. 24. Threading Wire 164196

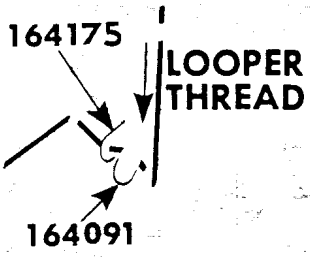


Fig. 25. Threading Looper Take-up

Machine should be equipped with needle thread controller **164381, Fig. 34, page 18,** and with looper thread take-up **164175** and looper thread stripper-and-take-up **164091,** shown in **Fig. 25.**

Needle thread eyelet, shown in **Fig. 23,** may be raised or lowered, as required. To change the position of the eyelet, loosen screw **R5, Fig. 23,** move eyelet to desired position and securely re-tighten screw **R5.**

To thread the machine, pass each thread through threading points in the order shown in **Figs. 22, 23** and **25. Double** line indicates needle thread. **Solid** line indicates **looper** thread.

Use threading wire **164196,** shown in **Fig. 24,** to pass threads through threading tubes, at points indicated in **Fig. 22.** Draw four or more inches of thread through eyelet in threading wire and pass threaded wire through required threading tube.

NEEDLE THREAD: Before passing needle thread through its threading tube, turn machine pulley over away from you until needle is at its **lowest position.**

Note method of threading needle thread eyelet as shown in **Fig. 23.**

After threading needle thread eyelet, raise needle to its highest position and pass thread from front to rear through needle eye.

LOOPER THREAD: Before threading looper turn machine pulley over from you until **eye of looper is directly in line with threading tube** underneath throat plate.

Pass looper thread through threading points, as shown in **Figs. 22** and **25.**

Draw about two inches of thread through needle eye and through looper eye, with which to start sewing.

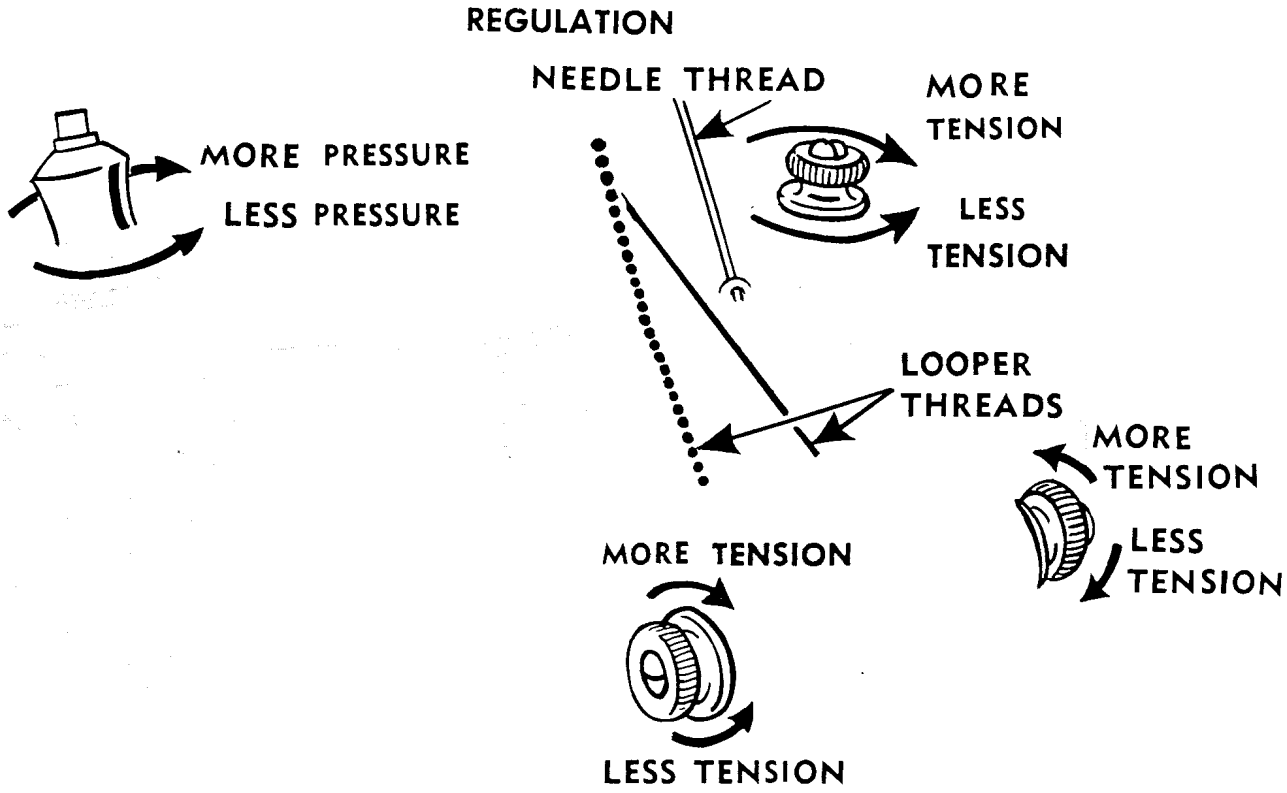


Fig. 26. Regulating Tension of Threads and Pressure of Presser Foot on Material

THREAD TENSIONS

Tension on needle thread should be just sufficient to set stitch correctly. (See **Figs. 3** to **5** on **page 4** for correct stitch formation.)

For average sewing, **tension on looper thread** should be **very light.**

Regulate thread tensions as instructed in **Fig. 26.**

PRESSURE OF PRESSER FOOT

Correct pressure of presser foot helps feed the work properly.

Always use **lightest pressure possible.**

Regulate the pressure of the presser foot on the material as instructed in **Fig. 26.**

NOTE: The instructions on the following pages are for Service Representatives.

To insure proper timing and avoid unnecessary repetition, these instructions should be followed in the order given.

EDGE GUIDE (SWING-OUT) MACHINE 246K42

Edge guide (swing-out) must be adjusted to conform to existing width of bight.

Loosen two screws **U, Fig. 27** and move the guide **V** toward left at end of guide arm to suit narrower bight or toward right for wider bight.

Securely tighten both screws **U.**

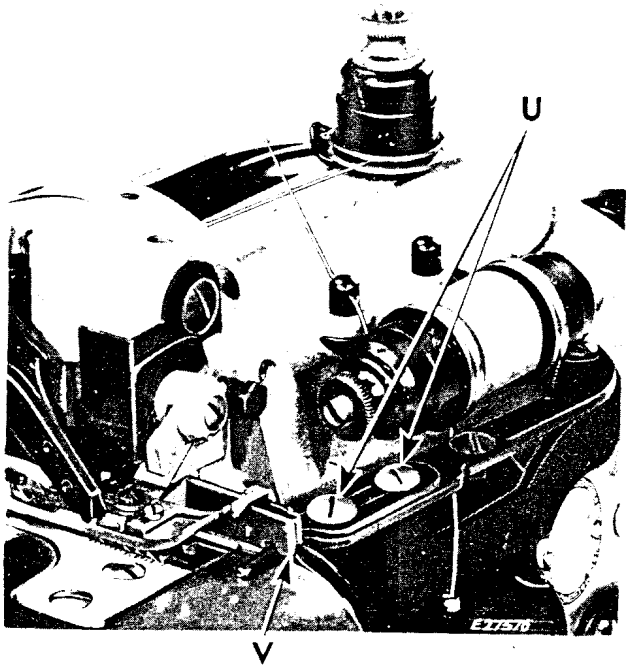


Fig. 27. Edge Guide on Machine 246K12

FEED CONTROLS

DROP FEED (Regular on **Machine 246K42**) consists of a lower feed mechanism that moves above and below the throat plate. It is designed to carry the material evenly toward the needle before stitching and away from the needle after it is stitched. Stitch length can be controlled as instructed at right and on **page 15.**

DIFFERENTIAL FEED (Regular on **Machines 246K43** and **246K45**) consists of **two** feed dogs **R** and **T, Fig. 29, page 15,** independently actuated by **two** feed eccentrics. The **inner** feed eccentric (which is placed on the shaft **first**) controls the movement of the **front** feed dog **T.** The **outer** feed eccentric (which is placed on the shaft **last**) controls the movement of the **rear** feed dog **R.**

TO CONTROL LENGTH OF STITCH

The length of stitch is determined by the **feed eccentrics** in use.

Each feed eccentric is marked with the number of stitches it makes, as shown at **F, Figs. 28** and **29.**

Feed Eccentrics **164915,** bronze, can be supplied to make 4 to 16, 18, 20, 22, 24, 28, 32, 36, 40, 45, 50, 60, 70, 80 and 100 stitches to the inch.

Unless otherwise ordered feed eccentrics will be supplied according to chart at bottom of this page.

To feed the work evenly (on **Machines 246K43** and **246K45**)—use two feed eccentrics marked for the same stitch length.

FEED ECCENTRIC CHART:

MACHINE	ECCENTRICS REGULARLY FURNISHED Quantity	Stitches to the inch	TYPE OF FEED
246K42	one	5	Drop
246K43 and 246K45	two	14	Differential

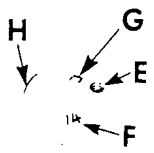


Fig. 28. Feed Eccentric Extractor 164203 and Eccentric 164915, bronze

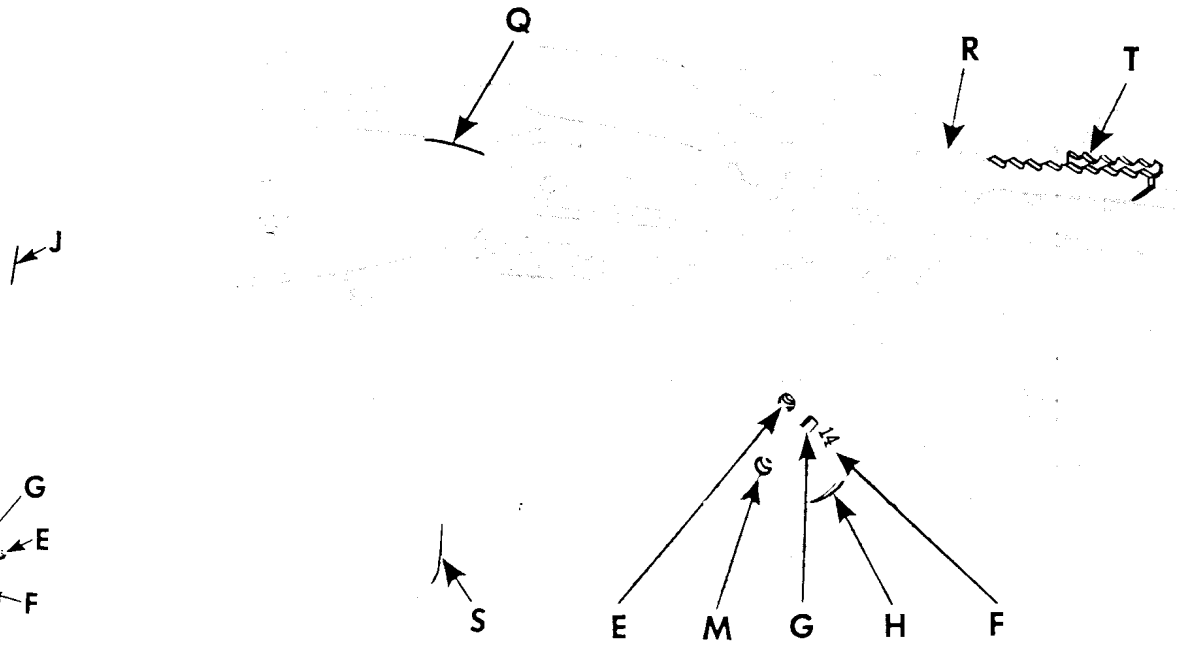


Fig. 29. Changing Length of Stitch

To gather...for **front** feed dog use feed eccentric that is marked for **longer** stitch length than that used for rear feed dog. Place eccentric that is marked for **longer** stitch length on shaft **first.**

To stretch the material while sewing...for **front** feed dog use feed eccentric that is marked for a **shorter** stitch length than that used for rear feed dog. Place eccentric marked for **shorter** stitch length on shaft **first.**

Machine 246K42: Since only one eccentric is required on these machines, the outer roller is NOT AN ECCENTRIC but merely a spacer—listed as feed bar guide roller **164277.** The inner roller **164915** is the only eccentric. It alone determines the stitch length on these machines.

All Machines: Pull gently with extractor **J** to remove outer roller or eccentric **H.** Inner eccentric can then be removed in the same manner.

REMOVING FEED ECCENTRICS:

Swing cloth plate **Q,** presser bar and feed eccentric cover **S, Fig. 29** out to the left.

Using Wrench **10875,** remove the hexagon head nut and washer from the shaft **M, Fig. 29.**

Screw feed eccentric extractor **J, Fig. 28** into threaded hole **E** of outer eccentric **H.**

INSTALLING FEED ECCENTRICS:

When replacing each feed eccentric, be sure that the stamped number is on **outside** face of eccentric, as shown at **F, Fig. 29.**

The keyway on the eccentric should fit over key at **G** on shaft **M, Fig. 29.** Line up front and back feed bars and install eccentrics. When the feed eccentrics are in position, replace the washer and hexagon head nut and screw and the hexagon head nut securely on the shaft **M.**

TO SET THE FEED DOGS AT THE CORRECT HEIGHT

Using Gauge 164592 for Machines 246K42 and 246K43 and Gauge 164460 for Machine 246K45 (See Fig. 30)

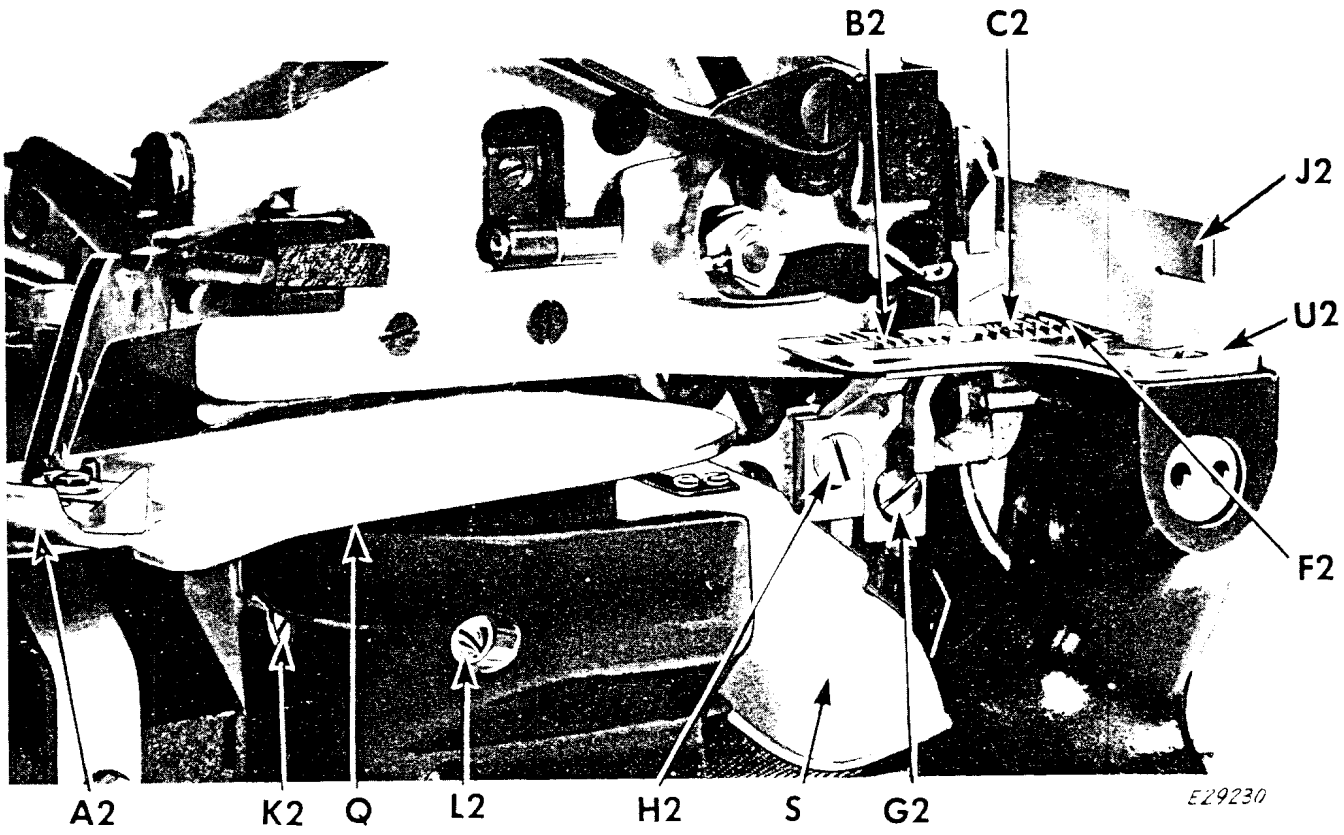


Fig. 30. Setting the Feed Dog

CHECKING HEIGHT OF FEED DOGS:

Swing the presser foot **A2** out to the left, and turn the machine pulley over from you until the feed dogs are at their highest position.

Place the gauge **J2,** over the front feed dog, as shown in **Fig. 30.** Gauge **J2, Fig. 30** must rest firmly upon the throat plate **U2.** At this setting, front feed dog should just touch the bottom face **F2** of the gauge.

Set rear feed dog at the same height as the front feed dog.

ADJUSTMENT:

Swing the cloth plate **Q** and the feed eccentric cover **S** out to the left.

Loosen the adjusting screw **G2** and raise or lower the front feed dog **C2,** as required. Then tighten screw **G2.**

Loosen the adjusting screw **H2** and raise or lower the rear feed dog **B2,** as required. Then tighten screw **H2.**

Machine 246K42 has only one feed dog which may be adjusted after swinging edge guide **V, Fig. 27, page 14** out toward the right and loosening screw **G2, Fig. 30.**

TO TILT THE FEED

See Fig. 30

When it is desired to tilt the feed, first set it at the correct height as described above. Then loosen the hinge pin set screw **K2** at the rear of the machine **just ½ turn.**

To tilt the feed **up in the rear** and **down in the front** of the needle, slowly turn the hinge pin **L2 over toward the rear** of the machine, until the desired amount of tilt is obtained.

To tilt the feed **down in the rear** and **up in the front** of the needle, slowly turn the hinge pin **L2 over toward the front** of the machine until the desired amount of tilt is obtained. Then tighten the screw **K2.**

TO SET THE NEEDLE CLAMP AT THE CORRECT HEIGHT

Using Gauge 164592 for Machines 246K42 and 246K43
and Gauge 164460 for Machine 246K45
(See Figs. 31 and 32)

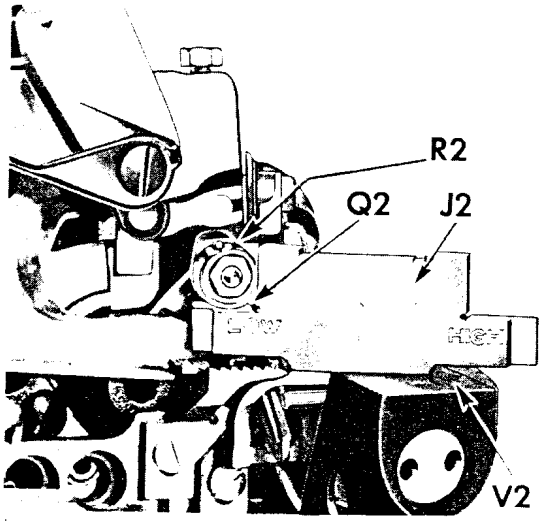


Fig. 31. Checking the Needle Clamp Height

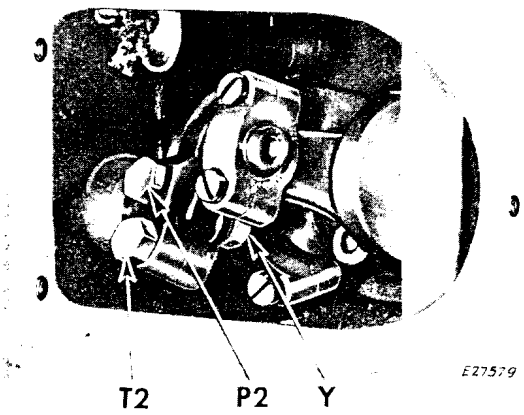


Fig. 32. Adjusting the Needle Clamp

CHECKING HEIGHT OF NEEDLE CLAMP:

Turn the machine pulley over from you until the needle clamp **R2** reaches its highest position.

Swing the presser foot and cloth plate out to the left.

Remove the needle and the throat plate.

On Machine 246K42: Swing edge guide out to right. (See **page 14.**)

On All Machines: Turn the machine pulley over from you until the needle clamp **R2** reaches its lowest position.

Slip the "LOW" end of the gauge **J2** between the needle clamp and the throat plate seat **V2**, as shown in **Fig. 31.**

At this setting, the needle clamp **R2** should just touch the top surface **Q2** on the "LOW" end of the gauge **J2.**

ALTERNATE CHECK: In the absence of a gauge, the distance between bottom of needle clamp and top surface of throat plate **seat,** on all varieties of machines, should be set at **.406** inch.

ADJUSTMENT:

Remove the top frame cover and loosen the clamping screw **T2** and the two screws **P2** and **Y, Fig. 32.**

Raise or lower the needle clamp **R2, Fig. 31,** as required.

To secure the needle clamp in the correct position, first securely tighten the screw **T2,** then tighten the two screws **P2** and **Y.**

TO SET THE NEEDLE THREAD CONTROLLER

(See Figs. 33 and 34)

Needle Thread Controller **164151 (J3, Fig. 33)** is used for **three-thread TIGHT stitch.**

Needle Thread Controller **164381 (J3, Fig. 34)** is used for **two-thread** stitch and for **purl-on-the-edge** stitch.

FUNCTION:

The needle thread controller **J3** should aid in the setting of the stitch by **taking up the slack of needle thread** as the needle finishes its downward stroke; thus setting the stitch as the needle thread loop is shed from the loopers.

When needle is at its highest position, needle thread should run under clearance **U3** of needle thread controller **J3,** shown in **Fig. 33** or in fork **U3** of controller **J3,** shown in **Fig. 34.**

VARIATIONS: The desired setting for needle thread controller may vary with changes in thread, special fittings or materials in use.

ADJUSTMENT:

Swing presser bar **A2** and cloth plate **Q** out to the left.

Remove screws **X5** and oil splash guard **Z5.**

Turn machine pulley over away from operator until needle is at its highest position.

Loosen two screws **V3** and move needle thread controller **J3 toward the front to tighten the stitch** or **toward the rear to loosen the stitch,** as required. Then tighten the two screws **V3** and recheck the stitch setting.

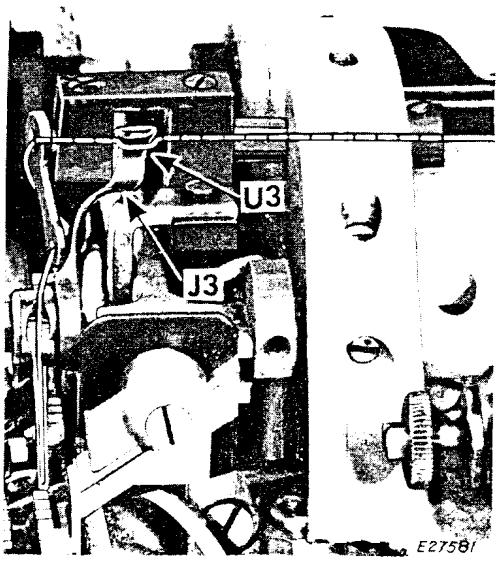


Fig. 33. Needle Thread Controller 164151 in Correct Relation to Needle Thread

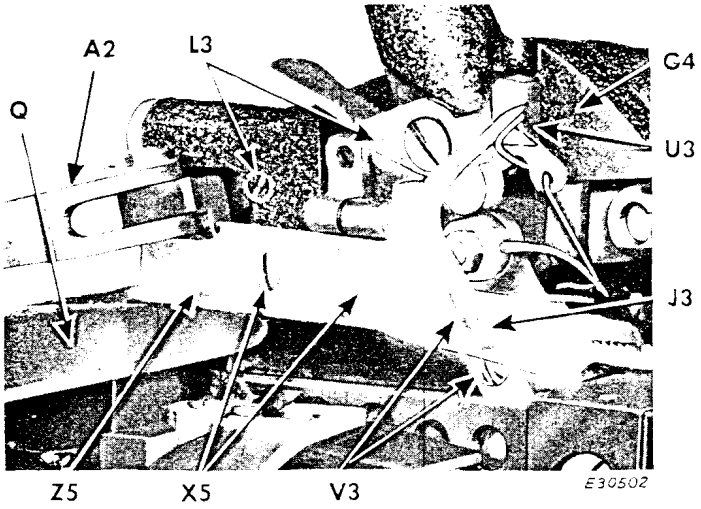


Fig. 34. Needle Thread Controller 164381 in Correct Relation to Needle Thread

Figs. 33 and **34** show the correct position of the needle thread as it passes the needle thread controller **J3.** To check this condition, remove two screws **L3** and presser bar housing **G4.**

After making certain that needle thread is in the correct position, replace presser bar housing **G4** and fasten with two screws **L3.**

Replace splash guard **Z5** with two screws **X5.**

TO SET THE LEFT LOOPER IN RELATION TO THE NEEDLE

Using Gauge 164592 on Machines 246K42 and 246K43 and Gauge 164460 on Machine 246K45
(See Figs. 35 and 36)

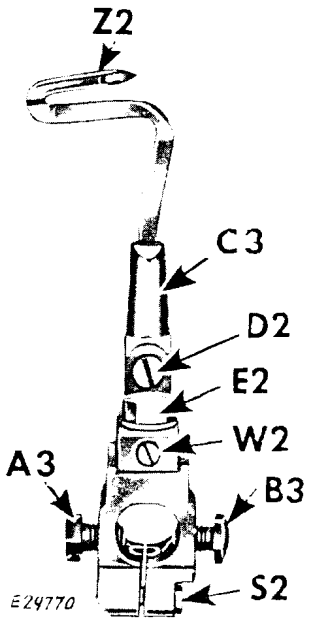


Fig. 35. Left Looper Assembly

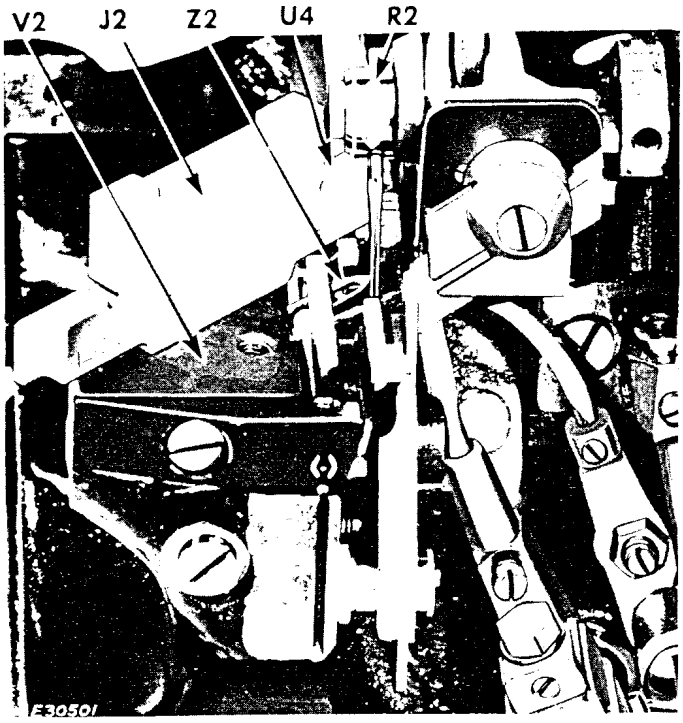


Fig. 36. Settings

Machine 246K42 is regularly fitted with **ONLY one looper** (the "left" looper).

PREPARATION:

Check the needle with needle gauge **164588**, as instructed on **page 7.**

Set the needle in the machine as instructed on **page 8.**

Remove throat plate and chip guard.

Loosen set screw **D2, Fig. 35** in left looper holder **C3.**

Set left looper **Z2** all the way down into its holder.

Securely tighten set screw **D2.**

CHECKING LEFT TO RIGHT POSITION:

Place gauge **J2** on throat plate seat **V2** as shown in **Fig. 36.**

Turn machine pulley over away from you until needle clamp **R2** reaches its lowest position and then rises sufficiently to permit "HIGH" end of gauge **J2** (.422 inch) to pass between needle clamp **R2** and throat plate seat, as shown in **Fig. 36.**

When needle clamp **R2** just contacts top surface **U4** of gauge, the **tip of left looper Z2 should be between centre and left side of needle.**

SETTING LEFT TO RIGHT POSITION:

Loosen screw **S2, Fig. 35.** (This screw may not be present on some machines.)

To move left looper **Z2** toward **right,** loosen **A3** and carefully tighten screw **B3** an equal amount, as required.

To move left looper **Z2** toward **right, loosen** screw **B3** and carefully tighten screw **A3** an equal amount, as required.

Recheck setting. When correct setting is obtained securely tighten clamping screw **S2.**

CHECKING FRONT TO REAR POSITION:

Turn machine pulley so that loopers move through one complete sewing cycle. Observe looper movement.

The left looper **must rub lightly on the needle** as it passes toward the right.

SETTING FRONT TO REAR POSITION:

Turn machine pulley over away from you until point of looper **Z2** just reaches needle.

Loosen screw **E2 just enough** to allow movement of looper holder **C3.**

Loosen set screw **W2.**

Move looper holder **C3** toward rear of machine. Turn set screw **W2 inward** until proper relation between left looper and needle is obtained.

Securely tighten screw **E2.**

Replace throat plate and chip guard.

TO SET THE RIGHT LOOPER OR THE SPREADER IN RELATION TO THE NEEDLE

Using Gauge 164592 on Machines 246K42 and 246K43
and Gauge 164460 on Machine 246K45
(See Figs. 37 to 39)

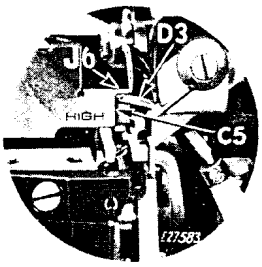


Fig. 37. Right Looper, Three-Thread Machines 246K43 and 246K45

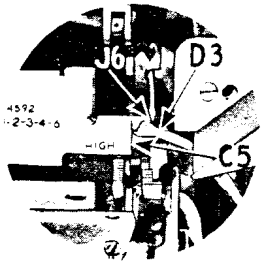


Fig. 38. Spreader, Two-Thread Machine 246K42

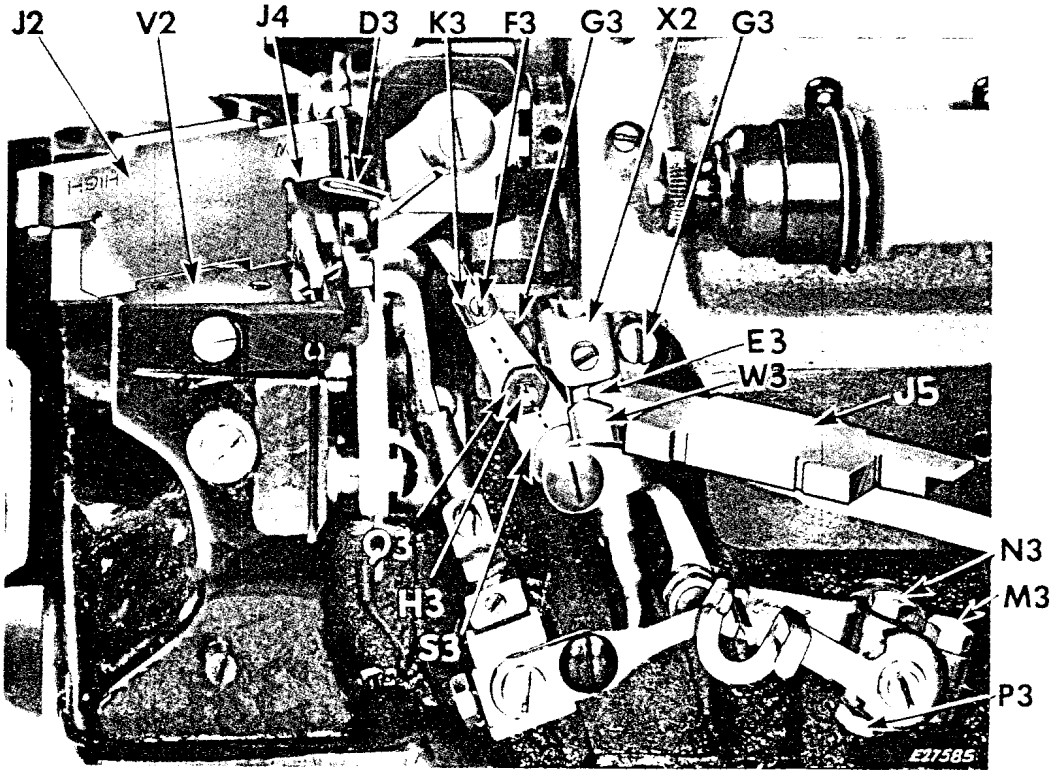


Fig. 39. Adjustments

Right looper **164055 (Fig. 37)** is used for three-thread stitch.

Spreader **164252 (Fig. 38)** is used for two-thread stitch.

PREPARATION:

Machine 246K42 only: Swing edge guide out to right.

On All Machines: Check the needle with needle gauge **164588** as instructed on **page 7.**

Set the needle in the machine as instructed on **page 8.**

Swing presser foot and cloth plate to the left.

Remove chip guard and looper thread plate, complete.

CHECKING CLEARANCE BETWEEN LOOPER CARRIER CONNECTION AND GUIDE BAR BRACKET:

Turn machine pulley until right looper (or spreader) **D3** is at its extreme left position.

Check distance **E3** between looper carrier connection **W3** and guide bar bracket **X2, Fig. 39** with gauge, as shown at **J5, Fig. 39.** Check this distance with "HIGH" and "LOW" ends of gauge.

CLEARANCE ADJUSTMENT:

Loosen clamping screw **M3** and screws **N3** and **P3.**

Raise or lower right hand looper carrier connection **W3,** as required.

Securely tighten clamping screw **M3.** Tighten screws **N3** and **P3.**

TO SET THE RIGHT LOOPER OR THE SPREADER (CONTINUED)

CHECKING RIGHT TO LEFT POSITION:

Hold gauge so that end marked "HIGH" on gauge just touches left side of needle, as shown at **J6** in **Figs. 37** and **38.**

When right looper (or spreader) **D3** is at its extreme left position it should just touch surface **C5** on gauge, as shown in **Figs. 37** and **38.**

At this setting bracket **X2, Fig. 39** should be approximately at midpoint of its extreme left to right positions on casting.

ADJUSTMENT OF RIGHT TO LEFT POSITION:

Loosen the two screws **G3** and move bracket **X2,** as required, to bring right looper (or spreader) **D3** in correct contact with gauge surface **C5.**

Securely tighten two screws **G3.**

CHECKING HEIGHT:

Place gauge **J2** firmly upon throat plate seat **V2** with end marked "LOW" toward needle, as shown in **Fig. 39.**

When right looper (or spreader) **D3** is at its extreme left position its highest point should just touch undersurface **J4** on gauge, as shown.

ADJUSTMENT FOR HEIGHT:

NOTE: When installing a right looper (or spreader), loosen nut **Q3, Fig. 39,** and turn screw **H3 anti-clockwise** to align the screwdriver slot in head of screw **H3** with centre-line of looper carrier **S3,** as shown in **Fig. 39.** Then loosen screw **F3.** Place collar **K3** on looper shank and insert right looper in looper holder **G3,** as shown in **Fig. 39.**

Adjust the height of the right looper (or spreader), in the following manner—

Loosen screw **F3** and nut **Q3, Fig. 39.**

Raise or lower right looper (or spreader) **D3** in carrier as required.

Press collar **K3** firmly against top of carrier **S3.**

Securely tighten screw **F3** and nut **Q3.**

CHECKING FRONT TO REAR POSITION:

Turn machine pulley over away from operator through one full revolution. Observe position of right looper (or spreader) in relation to needle during this full movement.

Right looper (or spreader) **D3** should pass behind left looper head and in front of needle; brushing lightly on needle.

ADJUSTMENT OF FRONT TO REAR POSITION:

Loosen nut **Q3, Fig. 39.**

Turn right looper (or spreader) **D3** in carrier **S3** as required.

Securely tighten nut **Q3.**

Recheck each setting and securely fasten all parts loosened earlier.

TO ADJUST THE LOOPER THREAD TAKE-UP

(See Figs. 40 and 41)

TO ADJUST LOOPER THREAD TAKE-UP (LEFT) X3 FOR MORE OR LESS THREAD

Remove the chip guard **W, Fig. 41** and open the front cover plate **M2.** Loosen the two screws **T3, Fig. 40** and raise or lower the right end of the left take-up **X3,** as required.

Securely tighten the screws **T3** and replace the chip guard **W.**

SETTING LOOPER THREAD EYELET (LEFT):

The looper thread eyelet **F4** should be normally at the **midpoint** of the slot **K4, Fig. 40.**

To adjust the looper thread eyelet, loosen the screw **E4** and raise or lower the eyelet **F4** to the proper location. Then securely tighten the screw **E4.**

SETTING LOOPER THREAD TAKE-UP (RIGHT):

To set the right take-up **A4,** open the front cover plate and loosen the screw **N5, Figs. 40** and **41.** Raise or lower the right take-up **A4,** as required. **Do not permit** take-up **A4** to interfere with other moving parts nor to hit cover **M2.** Then securely tighten the screw **N5** and close the cover plate **M2.**

SETTING LOOPER THREAD STRIPPER:

The looper thread stripper **B4** normally should be at the **midpoint** of the top and bottom extremes of its adjustment, as shown in **Figs. 40** and **41.**

To set the looper thread stripper, open the front cover plate **M2** and loosen the screw **H4.** Raise or lower the stripper **B4,** as required. Then securely tighten the screw **H4** and close the cover plate **M2.**

Make certain that none of the above adjustments cause take-up components to strike one another or the cover M2.

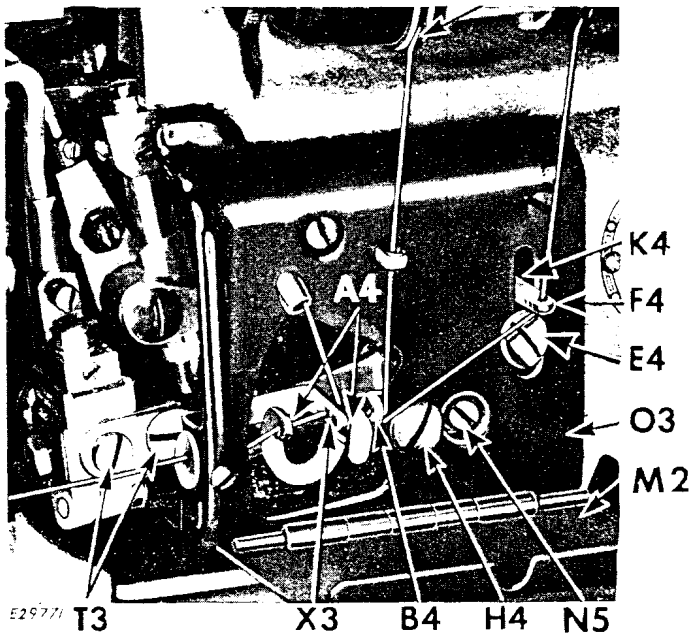


Fig. 40. Adjustments on Take-up for Two-thread Stitch and Three-thread Tight Needle Thread Stitch

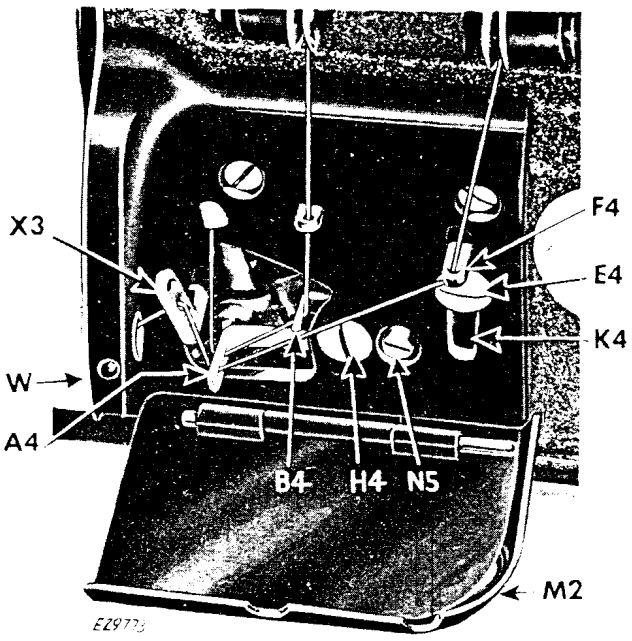


Fig. 41. Adjustments on Take-up for Purl-on-the-edge Stitch

TO REMOVE AND REPLACE THE KNIVES

(See Fig. 44)

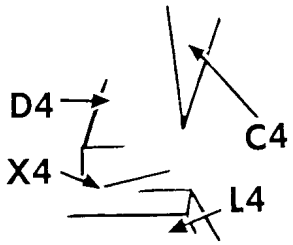


Fig. 42. Contact Point of Knives

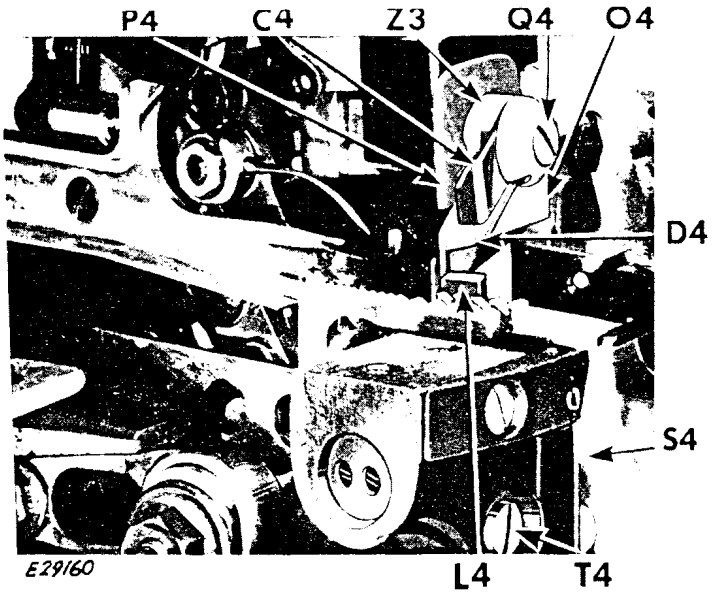


Fig. 43. Removal and Replacement of Knives

REMOVING STATIONARY KNIFE L4:

Loosen screw **V4, Fig. 44, page 24** and draw the knife **L4** upward and out.

REPLACING STATIONARY KNIFE L4:

Push the knife **L4** downward into the knife holder **S4**, until the cutting edge of the knife **L4** is flush with the top surface of throat plate. Then securely tighten the clamping screw **V4, Fig. 44, page 24.**

REMOVING THE MOVABLE KNIFE D4:

Remove the clamp screw **Q4, Fig. 43** with the chip ejector **O4**, the knife guard **C4** and the knife clamp **Z3. Lift the knife D4 from the knife holder P4.**

REPLACING MOVABLE KNIFE D4:

Slip the knife in knife holder **P4**, replace the knife clamp **Z3**, the knife guard **C4**, the chip ejector **O4**, and the clamp screw **Q4**. Press the movable knife **D4** downward against the stationary knife **L4, Fig. 43** and securely tighten the clamp screw **Q4.**

Turn the machine pulley over from you, until the lowest point **X4, Fig. 42**, of the cutting edge of the movable knife **D4**, just reaches the cutting edge of the stationary knife **L4**, as shown in **Fig. 42.** Loosen the set screw **T4** sufficiently to release the spring behind the stationary knife **L4**, permitting the stationary knife to make a tight spring contact with the movable knife **D4.** Then securely tighten the set screw **T4.**

TO ADJUST THE TRIMMER

SETTING HEIGHT OF STATIONARY KNIFE:

Loosen screw **V4, Fig. 44, page 24.**

Raise or lower knife **L4, Fig. 44** in the knife holder **S4**, until the cutting edge of the knife is at the same level as top surface of throat plate.

Then securely tighten screw **V4, Fig. 44, page 24.**

WIDTH OF BIGHT:

The position of the stationary knife blade **L4** in relation to the needle determines the width of bight.

For some types of work, the width of bight must conform to the width of the chaining-off finger.

TO ADJUST THE TRIMMER (CONTINUED)

(See Fig. 44)

Before setting stationary knife L4 for width of bight, loosen screw Q4, Fig. 44 and slide movable knife D4 up in its holder out of possible contact with stationary knife. Tighten screw Q4.

SETTING STATIONARY KNIFE FOR WIDTH OF BIGHT:

To change the width of bight, loosen the screw **T4** and move the stationary knife holder **S4** toward the left or right, as required. Securely tighten the screw **T4.**

Return movable knife **D4** to its correct position; setting it in relation to the stationary knife as described next.

SETTING MOVABLE KNIFE IN RELATION TO STATIONARY KNIFE POSITION:

Remove the clamp screw **Q4,** the chip ejector **O4,** the knife guard **C4** and the knife clamp **Z3.** Loosen the screw **N2** and move the knife holder assembly **P4** toward the right or left as required to bring the cutting edge of the movable knife **D4,** at its lowest position, slightly below the cutting edge of the stationary knife **L4,** as shown in **Fig. 44.** Securely tighten the screw **N2.** Then replace the knife clamp **Z3,** the knife guard **C4,** the chip ejector **O4,** and the clamp screw **Q4.** Then lightly press the movable knife **D4** downward against the stationary knife **L4** and tighten the screw **Q4.**

Loosen the screw **T4** sufficiently to release the spring behind the stationary knife **L4** permitting the stationary knife to make a tight spring contact with the movable knife **D4.** Then securely tighten the screw **T4.**

When knives require sharpening they may be removed as instructed on **page 23** and sharpened as instructed on **page 25.**

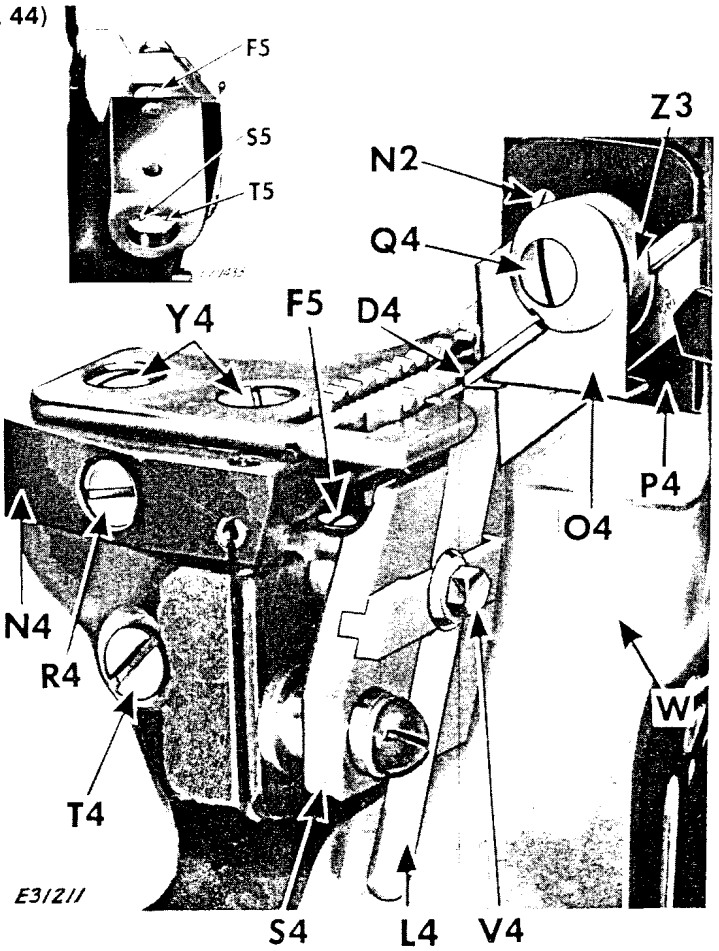


Fig. 44. Trimmer Adjustment

ANGULAR ADJUSTMENT:

To trim efficiently, cutting edge of stationary knife **L4** must contact all points along cutting edge of movable knife **D4.**

To adjust, remove two screws **Y4, Fig. 44** and remove throat plate, screw **R4** and guide **N4.**

> **NOTE: On machines equipped with a needle guard,** this guard must also be removed. When replacing needle guard, set it so that needle will just brush guard as needle descends.

Remove front feed dog.

Loosen screws **S5, T5,** and **F5** (see inset at top left of **Fig. 44**).

Align lower knife **L4** with upper knife **D4** and securely tighten screw **F5.**

Tighten screws **S5** and **T5.**

TO SHARPEN THE TRIMMER KNIVES

(See Figs. 45 and 46)

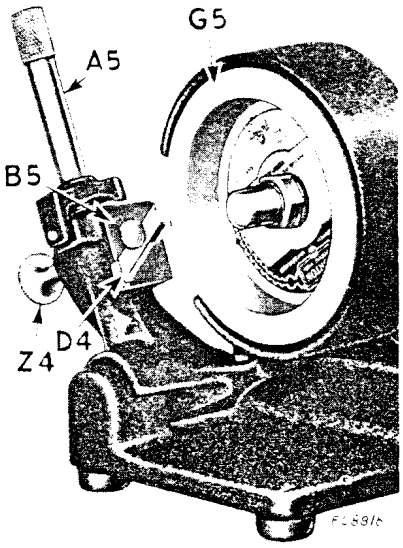


Fig. 45. Sharpening the Movable Knife

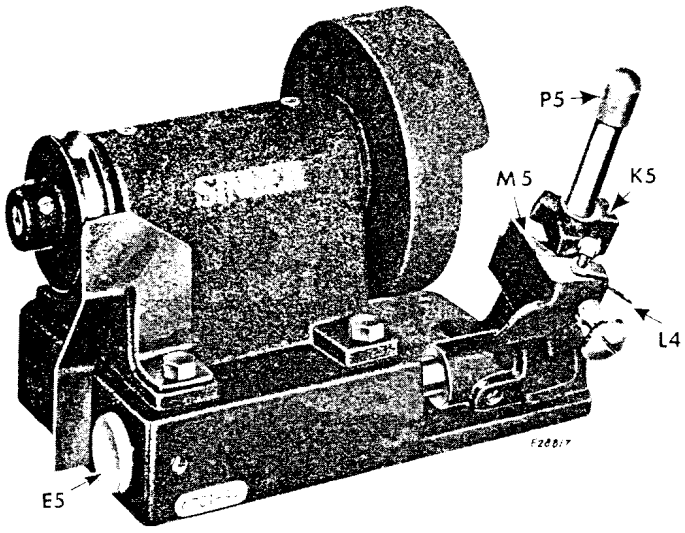


Fig. 46. Sharpening the Stationary Knife

Knife Grinding Machine 701-9 (belt driven), is necessary for sharpening the knives used on **Machines of Class 246K.** The use of this grinder insures the correct bevel of the cutting edge of each knife.

If this Knife Grinder is not available, knives that require a new edge **should be returned to your SINGER Service Representative** or to a **SINGER factory** for sharpening.

Do not attempt to sharpen these knives by hand.

SHARPENING MOVABLE KNIFE D4:

Insert knife **D4, Fig. 45** in knife holder **B5, Fig. 45** on front of lever arm **A5, Fig. 45.** Allow approximately **1/16** inch of the knife to extend beyond holder, for grinding. Then tighten thumb screw **Z4, Fig. 45.**

Turn thumb nut **E5, Fig. 45** over from you until the knife **D4** clears the grinding face **G5, Fig. 45.** While moving lever arm **A5** alternately back and forth, turn thumb nut **E5** as required, to bring the cutting edge of the knife **lightly** against the grinding face of the wheel.

Continue the back and forth motion of the lever arm, grinding off only enough to sharpen the cutting edge.

The movable knife is thus ground to a shearing edge, requiring no special setting in the machine to shear.

SHARPENING STATIONARY KNIFE L4:

Insert knife **L4, Fig. 46** in knife holder **K5,** on rear of lever arm, so that its bevel **M5** is parallel with grinding face **G5** of grinding wheel. Allow approximately **1/16** inch of the knife to extend beyond holder, for grinding. Then by turning knurled end **P5, Fig. 46** of lever arm, screw lever arm into knife holder **K5,** securing the knife. Sharpen the stationary knife as instructed above.

SUGGESTIONS FOR EFFICIENT OPERATION

Always turn machine pulley over away from you.

Never allow oil level in oil reservoir to drop below the **"FULL"** mark on the oil sight gauge.

Clean out any lint around the loopers and between the feed rows of feed dog.

Frequently inspect area beneath presser bar housing and behind upper knife lever cover and remove accumulation of lint.

Always use lightest tensions and lightest pressure possible on material.

Don't forget to remove loop of thread from right looper **before threading.**