

Student's Manual

BY

SINGER

How To Care For and Regulate Your
Sewing Machine

CONTENTS

To Clean the Machine
To Oil the Machine
To Lubricate the Motor
To Change the Light Bulb
To Regulate Tension
To Adjust Pressure

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Memos

CARE AND MAINTENANCE OF THE SEWING MACHINE

If the machine is used continuously, it should be oiled daily. If moderately used, an occasional oiling is sufficient. The care with which the sewing machine is handled determines to a great extent the pleasure and satisfaction derived from its use, as well as the service it renders. Many fabrics, when sewn, drop lint around the feed dog and bobbin case. Dust collects around the moving parts of the machine. Always remove dust, lint, thread, etc., before oiling the machine.

To Remove the Dust and Lint

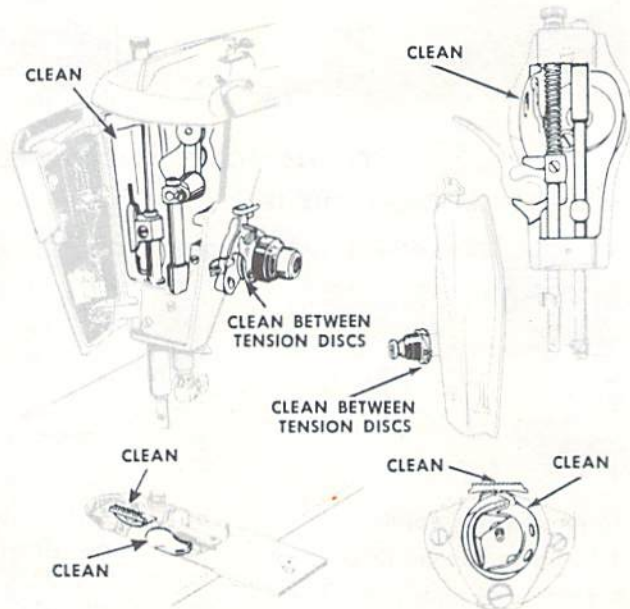
A special lint brush and a piece of cheesecloth are ideal for cleaning the dust and lint from the machine.



Procedure—

- Remove or open face plate in one of the following three methods.
 1. Open hinged face plate on machines 301 and of the 400 series.

2. Loosen screw and remove the face plate on machine 15-91.
 3. Remove thumb screw and lift off face plate on machines 201, 221, 66, 99 and 185.
- Remove throat plate (Pages 3 and 4) and open slide plate.
 - Brush the lint and dust from the feed and bobbin case with the lint brush.



TO REMOVE AND REPLACE THE THROAT PLATE



TAKE-UP LEVER
MUST BE IN
LOWEST POSITION



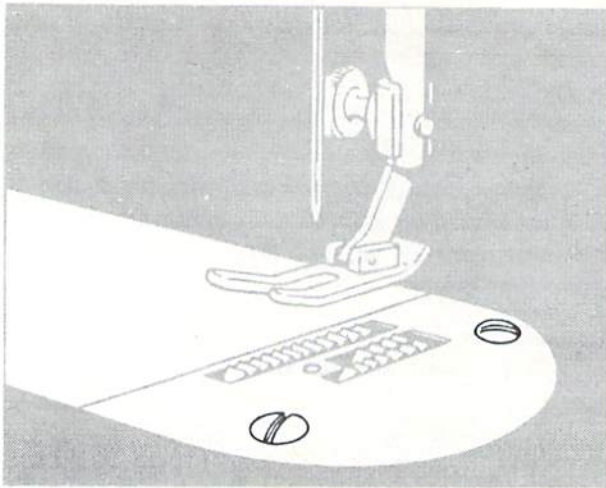
Machines of the 400 Series

- Raise presser bar.
- Turn hand wheel to drop take-up lever to its lowest point.
- Set throat plate lever to "Unlock" position.
- Remove throat plate by sliding it back.
- Replace throat plate by sliding it on from the rear.
- Lock in position.

Presser foot need not be removed.



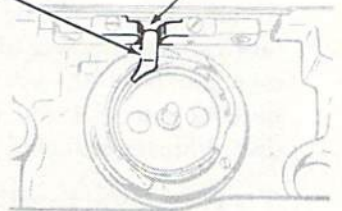
Throat plate in "Down" position for general sewing.



- Raise presser bar.
- Raise take-up lever to its highest point.
- Remove two screws and lift out throat plate.
- Replace throat plate and tighten screws, alternating from one screw to the other until they are set tight.

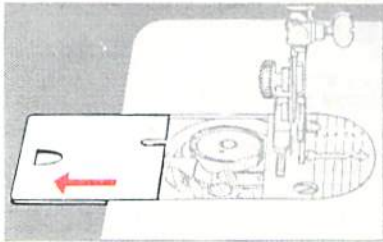
POSITION FINGER NOTCH

CAUTION When replacing the throat plate on the 301 and 221 machines, make certain that the position finger of the bobbin case base enters the notch of the position plate attached to the underside of the throat plate.



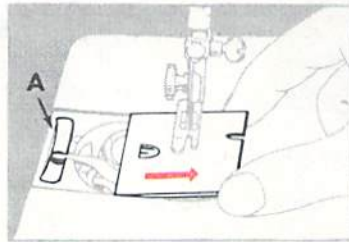
TO REMOVE AND REPLACE THE SLIDE PLATE

Machines 66, 99 and 185

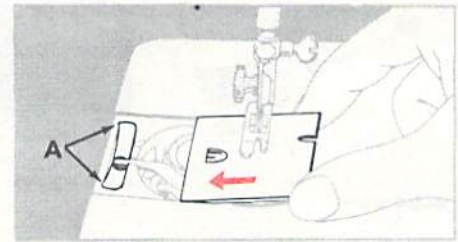


To remove slide plate—

- Raise needle and presser foot.
- Draw slide plate to the left.



- Lift right edge of slide plate and draw it to the right until it is disengaged from spring **A**.

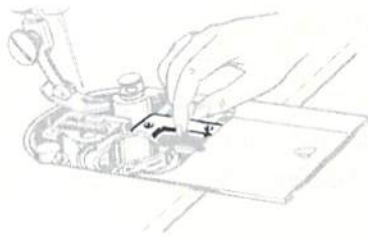


To replace slide plate—

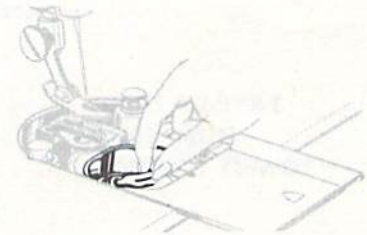
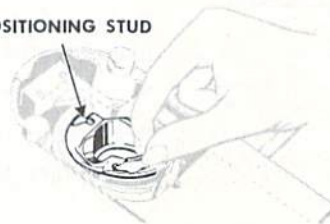
- Insert slide plate from the right. Make certain that the two ends of spring **A** enter grooves in underside of slide plate.

TO REMOVE AND REPLACE BOBBIN CASE

Machines of the 400 Series



POSITIONING STUD

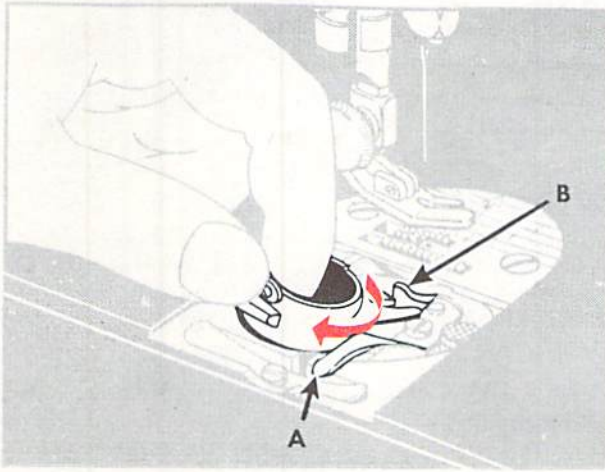


To clean stitch forming mechanism, remove bobbin case as follows—

- Remove throat plate (Page 3) and open slide plate.
- Unlock bobbin case by lifting and pulling holder to right as shown.
- Remove bobbin case from machine.
- Remove all lint, fluff, loose thread ends or any

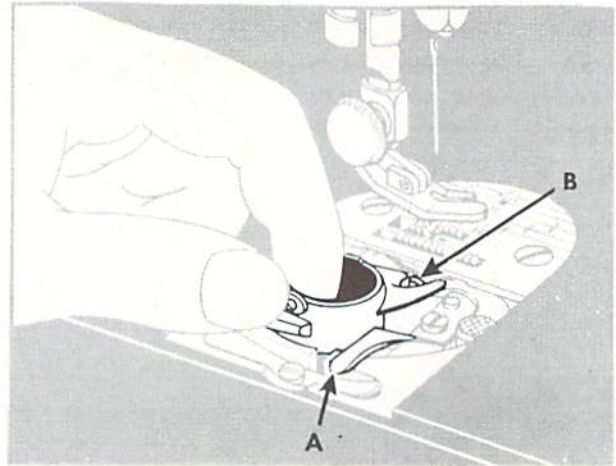
other foreign matter which might clog the machine.

- Replace bobbin case so that groove under tension spring fits on hook raceway and fork of case straddles positioning stud.
- Push bobbin case holder to left until it snaps down into lock position.
- Replace throat plate and close slide plate.



To clean stitch forming mechanism, remove bobbin case as follows—

- Raise the needle and presser foot.
- Remove slide plate—(Page 4).
- Lift and move latch **A** to position shown.
- Grasp bobbin case as shown.
- Tilt case to the left to raise the forked end above bracket **B**.
- Turn forked end toward you, then lift out bobbin case.



- Remove all lint, fluff, loose thread ends or any other foreign matter which might clog the machine.
- Replace bobbin case with its fork straddling bracket **B**.
- Twist case to the left, then gently press down and back until edge of sewing hook engages groove under rim of bobbin case.
- Return latch **A** to its original position.
- Replace slide plate—(Page 4).

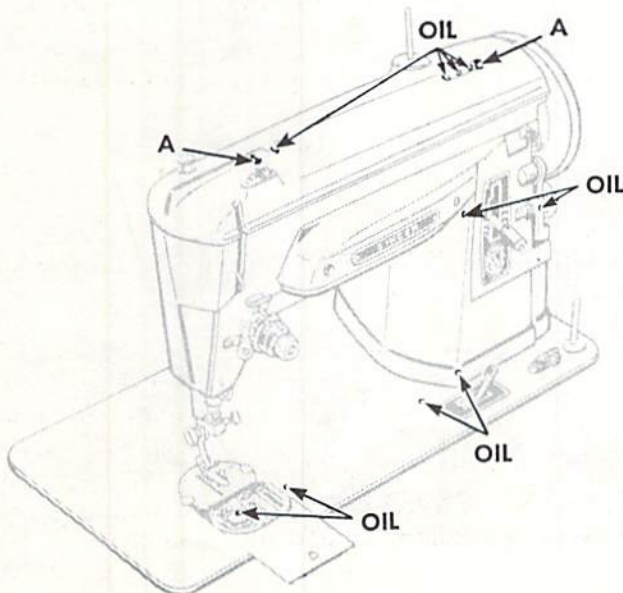
TO OIL THE MACHINE

There are general rules for oiling all sewing machines. Always use SINGER* oil on SINGER machines.

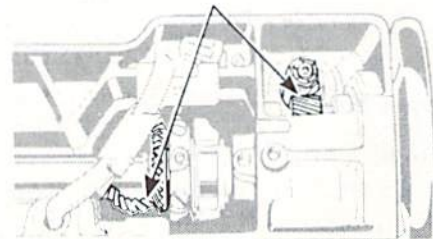
Arrows indicate oiling points. Where metal

works against metal, oil is necessary to reduce friction. One drop of oil is sufficient for most oiling points. Oil is placed sparingly on the threads of all adjustable thumb screws.

Machines of the 400 Series

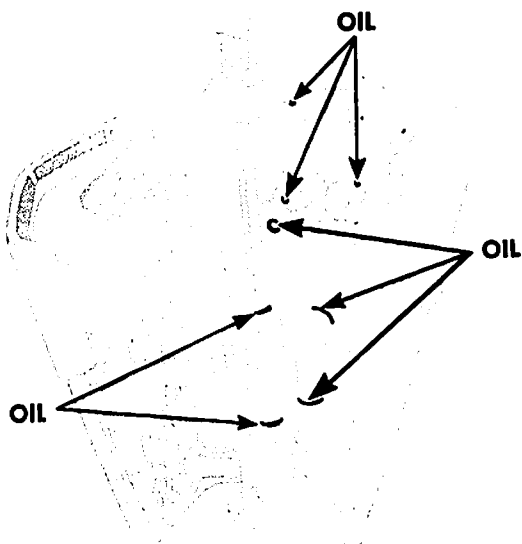


LUBRICANT

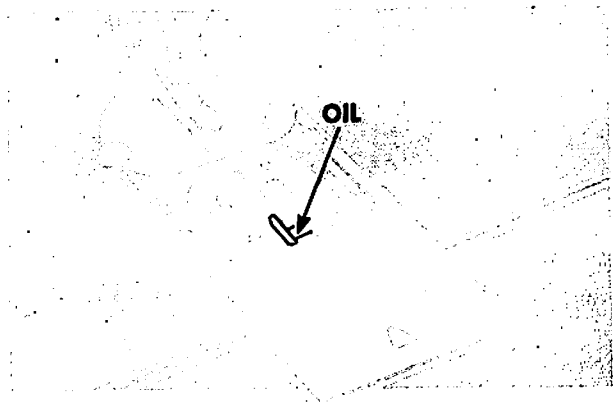


- Clean the machine periodically as instructed on page 3.
- Apply a drop of oil to each place indicated.
- Remove screws **A** and lift off arm top cover.
- Apply a small amount of lubricant to the gears as shown. A tube of this lubricant can be purchased at your SINGER SEWING CENTER.

NEVER APPLY OIL TO THE GEARS



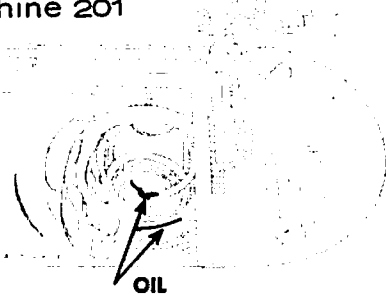
- Swing face plate to left and oil the places indicated.



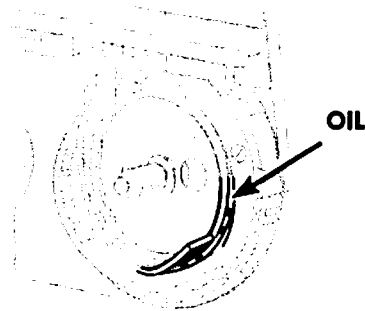
- Open slide plate and apply a drop of oil to the hook raceway as indicated.
- Close slide plate, replace arm top cover and close face plate.

Oiling points in sewing hook

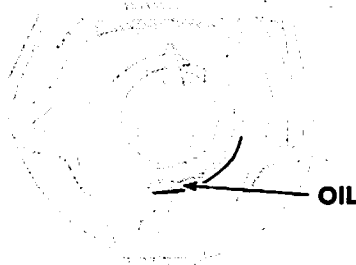
Machine 201



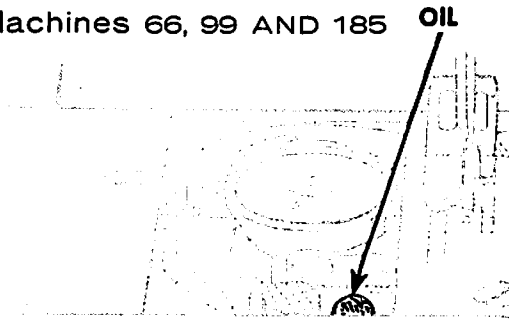
Machines 301 and 221



Machine 15-91



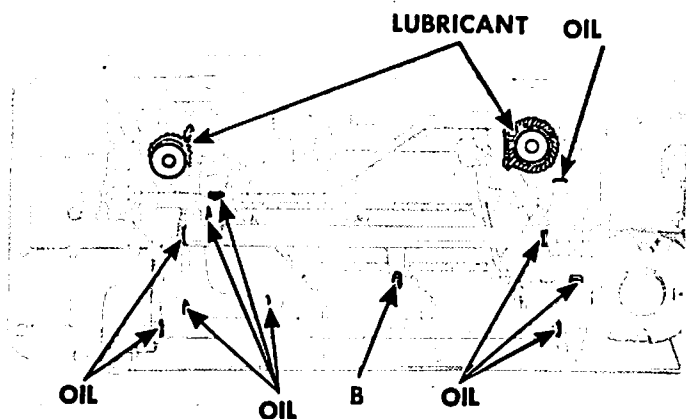
Machines 66, 99 AND 185

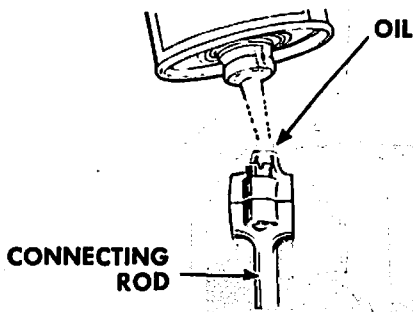


Oiling points in base of machine

Several models of machines have a cover plate underneath to protect parts from dust and lint. To reach these parts, tilt machine back and remove thumb nut from screw **B**, being careful not to lose felt washer, then remove cover plate from underside of machine.

- Oil each of the places indicated by arrows and occasionally apply a small quantity of lubricant to the teeth of gears as shown.
- Replace bottom cover plate.





Many machines have a round inspection plate at the back of the machine. When turned upward it reveals moving parts.

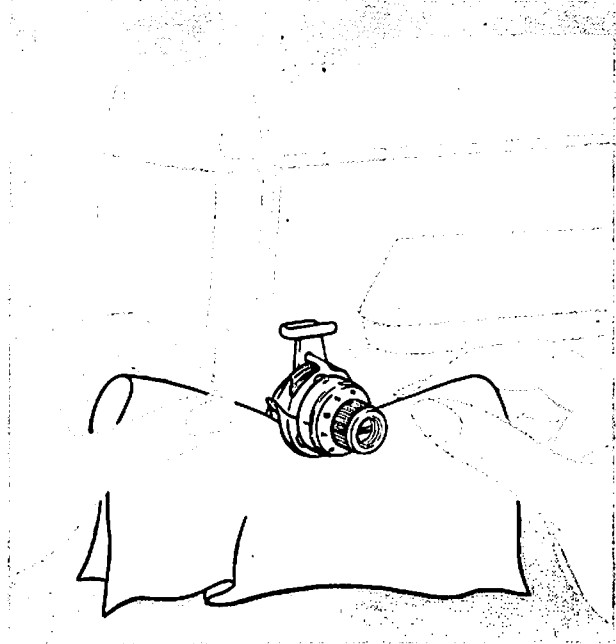
- Turn hand wheel until connecting rod is at its highest position. Oil as shown.

When the machine has been thoroughly oiled, run it slowly for several minutes to allow the oil to work into the moving parts. Then remove the excess oil with a clean cheesecloth, or any other soft lintless fabric.

To remove the dust and oil from the thread handling parts, use a clean cheesecloth. Pass the cheesecloth between the tension discs; avoid

catching the take-up spring in the cloth. Polish the take-up lever, the thread guides on the face plate, the area around the needle and the presser foot.

To locate the oiling and lubricating points on each class machine, refer to the instruction book.



TO LUBRICATE THE MOTOR AND GEARS

Never use oil or ordinary grease for lubricating the motor and gears as they are harmful for this purpose. Use only SINGER* Motor Lubricant.

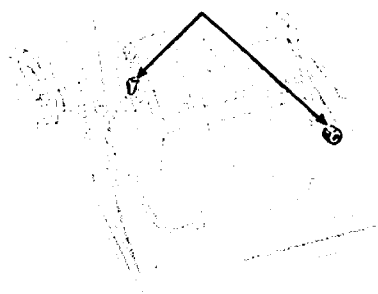
When machines are shipped from the factory, the motors having grease tubes are filled for approximately six months' use. Refill these grease tubes at least once every six months.

When machines having motors equipped for gear

drive are shipped from the factory, the two motor grease cups are filled with sufficient motor lubricant for approximately one year's use. Refill these grease cups at least once a year thereafter.

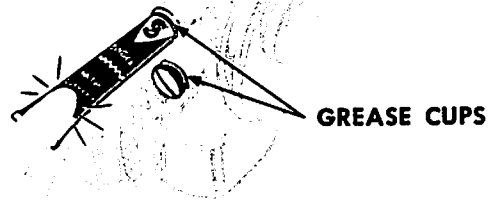
On many of the later model SINGER machines, the motor is sealed and **REQUIRES NO LUBRICATION** as on machine 185, some 301 machines and all machines of the 400 series.

GREASE TUBES



Motor for belt drive with grease tubes. Machines 66, 99 and 221.

NEVER APPLY OIL TO THESE GREASE TUBES.



Motor for gear drive with grease cups. Machines 201 and 15-91.

NEVER APPLY OIL TO THESE GREASE CUPS.

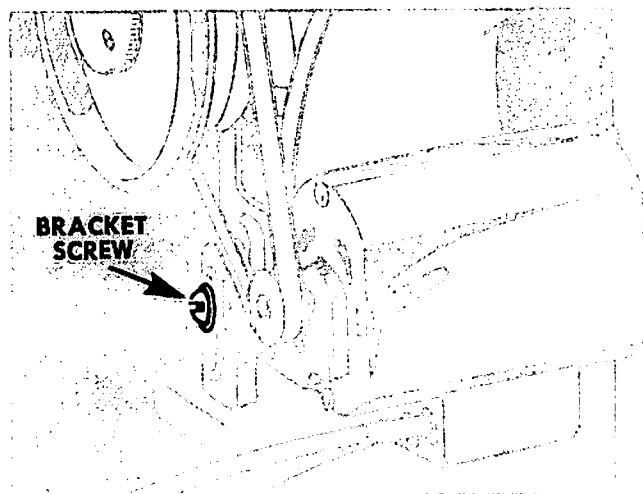
TO ADJUST TENSION ON MOTOR BELT

Sometimes it is necessary to adjust the **belt tension**

The tension should be only heavy enough to keep the belt from slipping.

To adjust—

- Loosen bracket screw a full turn.
- Allow weight of motor to supply correct belt tension.
- Tighten bracket screw.



SINGER* LIGHT

The light is turned "on" or "off" by the light switch.

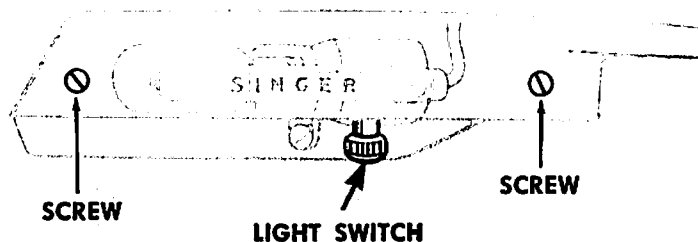
The light shade or cover may vary on SINGER Sewing Machines. On some machines, it is neces-

sary to remove the cover before removing and replacing the light bulb, while on others it is not. The three styles of light shades or covers are shown in the following illustrations.

The Light Shade or Cover

Machines 301 and 400 series.

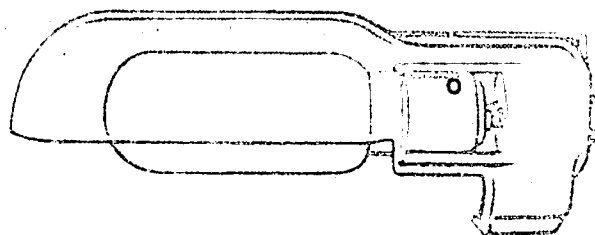
- Remove the cover by removing two screws.
- On some machines of the 400 series, only one screw holds the light shade in position.



Machines 201 and 221.

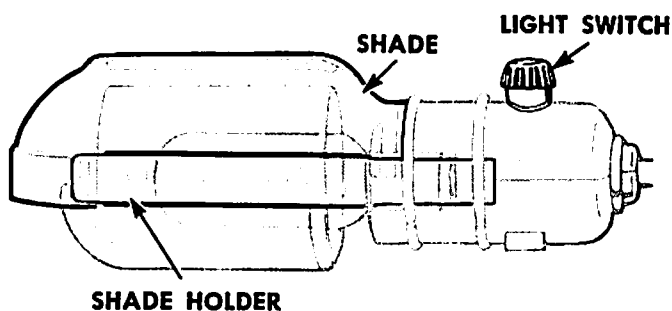
You need not remove shade.

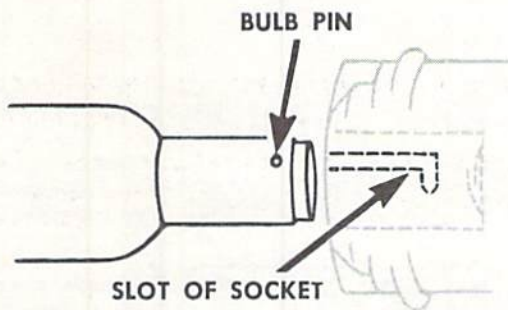
Light switch is located at the lower right of machine bed.



Machines 15-91 and 66.

- Grasp light socket so that thumb extends over switch.
- Press shade with thumb to release shade from two catches and slide it **half way out** of shade holder.

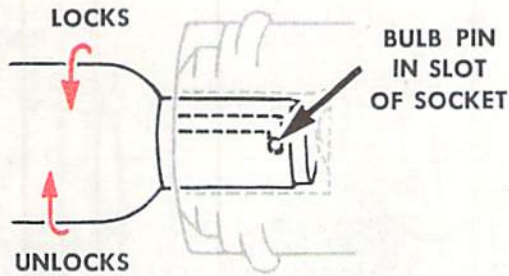




To Remove the Bulb

Do not attempt to unscrew bulb. It is of the bayonet and socket type and does not unscrew.

- Press bulb into socket and at the same time, turn it over in the direction shown to unlock bulb pin.
- Withdraw bulb.

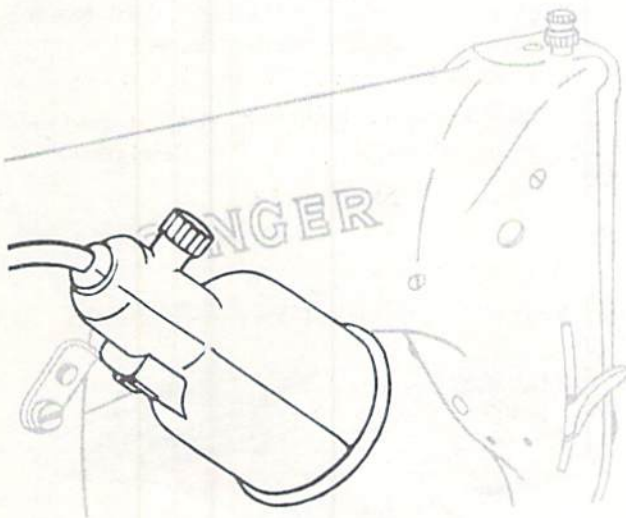


To Replace the Bulb

• Press new bulb into socket with bulb pin entering slot of socket and turn it over in direction shown to lock bulb pin in position.

- Replace lamp cover on machines 301 and of the 400 series and securely fasten it in position with screws.
- Return shade to its normal position on 15-91, and 66 machines.

SINGER* SPOTLIGHT



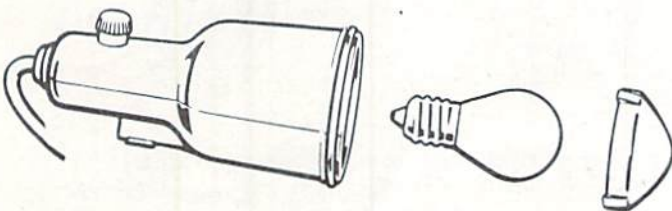
The Spotlight is turned "on" and "off" by the light switch.

To Remove the Bulb

- Press in lens.
- Turn lens approximately $\frac{1}{3}$ of a turn and it will drop out.
- Unscrew bulb.

To Replace the Bulb

- Screw bulb into socket.
- Insert lens and turn it approximately $\frac{1}{3}$ of a turn until it slips behind the lens stops and is secure.



TO REGULATE THREAD HANDLING PARTS

Tension Adjustments

Tensions control the threads that interlock to form the sewing machine stitch.

There are two tensions, the upper and lower. The upper tension controls the needle thread while the lower tension controls the thread from the bobbin case or shuttle.

A perfectly locked stitch can be formed only when the tensions on the needle and bobbin threads are in balance so that the two threads are drawn into the fabric to the same degree as illustrated below.



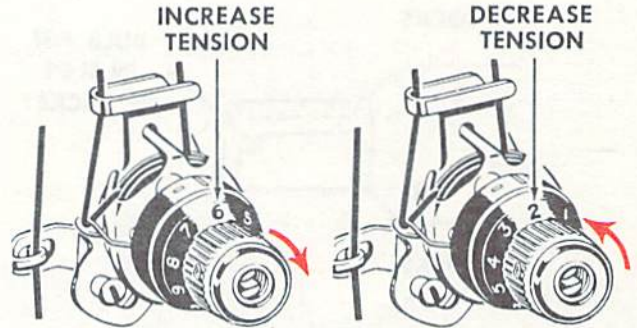
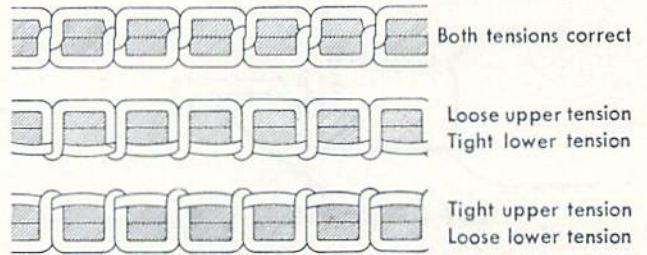
The tensions should be heavy enough to pull the threads to the center of the fabric and make a good stitch.

To Regulate Needle Thread Tension

The tension on the needle thread can be tested only when the presser foot is down.

The upper or needle thread tension is exerted by the closely fitted discs between which the upper thread passes.

The numerals "0 to 9" on dial indicate degrees of tension that can be obtained. The numbers do not denote size of thread or ounces of tension.

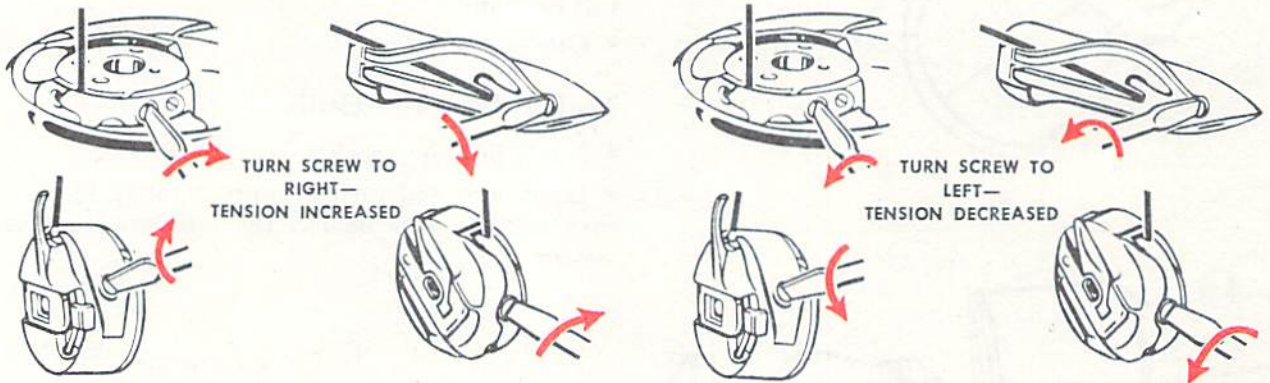


- To **increase** tension, turn the thumb nut to the **right** (clockwise) until required tension is obtained. Each **higher** number denotes increased tension.
- To **decrease** tension, turn the thumb nut to the **left** (counter-clockwise) until the required tension is obtained. Each **lower** number denotes less tension.

Once the tension is properly adjusted, it is seldom necessary to change it.

To Regulate Bobbin Thread Tension

The tension on the bobbin thread is regulated by the small screw on the bobbin case or shuttle.



When the tension on the bobbin thread has been properly adjusted, it is seldom necessary to change it, as a correct stitch can usually be obtained by varying the tension on the needle thread.

Inspection of the line of stitching is the only proof of correct tension adjustment. It must be remembered that none of the factors that influence the stitch actually stand alone. All work together

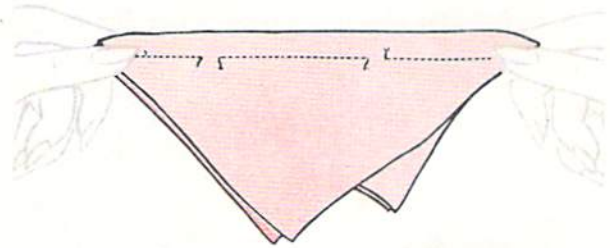
to produce an appropriate line of stitching.

It is good practice to test the stitch on a scrap of the fabric to be used, and with the needle and thread with which the garment is to be made.

A seam stitched with balanced tensions is doubly strong in comparison with a seam stitched with unbalanced tensions. The point is easy to verify by using the following method.

Stitch diagonally across a folded square of material. Holding the stitch tightly at each end between the thumb and finger, pull with an even and gradual force until the thread breaks. The

broken thread is always the one with the heavy tension. When the tensions are balanced, both threads break together and require more force to break.



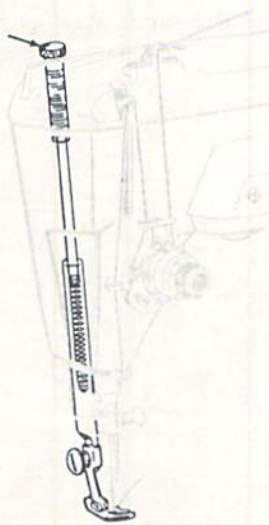
TO REGULATE THE FABRIC HANDLING PARTS

Pressure Adjustments

Pressure is the force the presser foot exerts on the fabric when it is being stitched. The pressure should be regulated according to the fabric.

The amount of pressure influences the ease with which you achieve a straight seam and uniform stitching. The pressure should be heavy enough to prevent side creepage of material and light enough to carry the material without marking.

THUMB
SCREW



• To **increase** pressure, turn thumb screw to the right (clockwise).



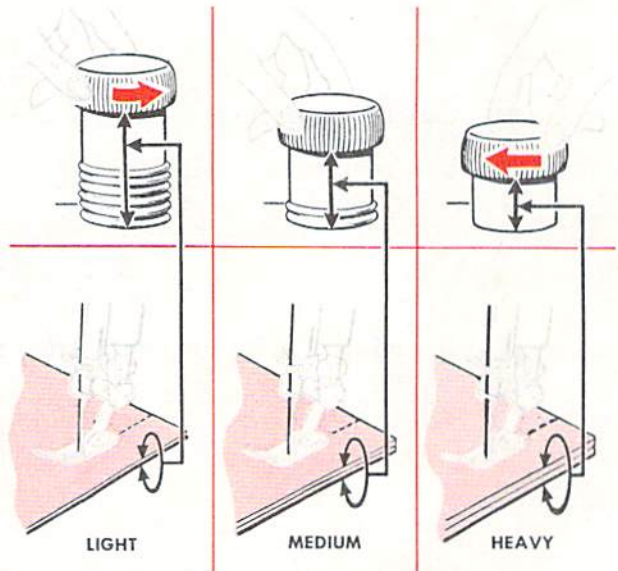
• To **decrease** pressure, turn thumb screw to the left (counter-clockwise).

Adjustment of the thumb screw regulates the amount of pressure exerted on the material while it is being stitched.

Too light a pressure will result in irregular feeding which affects both quality of stitch and evenness of seams.

Too heavy a pressure not only affects stitch and seam quality but will mar smooth surfaces and pile fabrics.

Surface finish, as well as the weight and texture of the fabric, must be considered in determining the amount of pressure needed.



- Light fabrics require a light pressure.
- Medium weight fabrics require a pressure midway between the light and heavy extremes.
- Heavy fabrics require a heavy pressure.

It is advisable to test for pressure on a lengthwise scrap of fabric by stitching without thread and turning the thumb screw until the fabric moves easily under the presser foot without showing feed marks.

When all seam edges are handled evenly, the correct pressure adjustment has been reached.

Stitch Length Adjustment

The feed dog is a Fabric Handling Part. The distance the feed dog moves is regulated by the stitch regulator. Instructions for regulating the stitch length may be found in "Student's Manual of Straight Stitch Machine Sewing", pages 19 and 20.

For Your Review

Q. How often should a machine be oiled?

A.

Q. How often should the motor be lubricated?

A.

Q. Should the machine be oiled before or after cleaning?

A.

Q. Are all light bulbs the same? Are they removed and replaced in the same way?

A.

Q. When is it necessary to adjust the tension?

A.

Q. When is it necessary to adjust pressure?

A.

Q. Which fabric requires the greatest pressure?

A. Heavy Medium Light