

INSTRUCTIONS  
FOR USING AND ADJUSTING  
**SINGER\***  
SEWING MACHINE

**16U288**

THE SINGER COMPANY

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## DESCRIPTION

Machine 16U288 have one needle, a central bobbin and oscillating shuttle, and make the lock stitch.

Machine 16U288 is designed for sewing cloth or light or medium weight leather and is used in the manufacture of automobile curtains, waterproof covers, bags, tarpaulins, leather leggings, carriage trimmings, etc. This machine is equipped with upper and under feeding mechanism, each of which can be adjusted independently. By this means, the upper or lower plies of fabric can be fed faster or slower as may be desired.

## TO OIL THE MACHINE

When the machine is received from the factory, it should be thoroughly cleaned and oiled.

Oil should be applied at the places indicated by arrows in Figs. 1, 2, 3 and 4, and when the machine is in continuous use, it should be oiled at least twice each day.

Use "TYPE B" or "TYPE D" OIL, sold by the Singer Company.

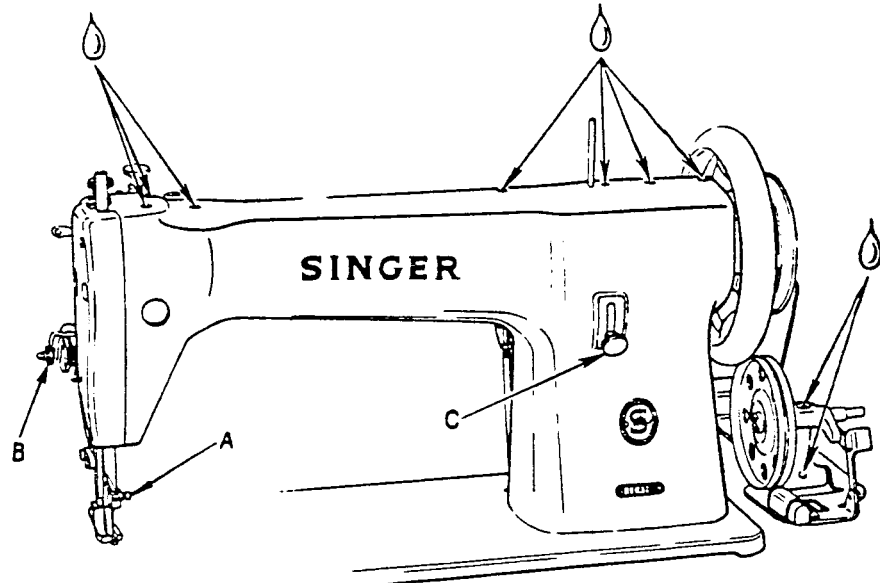


Fig. 1 Oiling Points at the Front of the Machine

Remove the square cover plate on the back of the machine, and oil the bearings which are thus uncovered, then replace the cover.

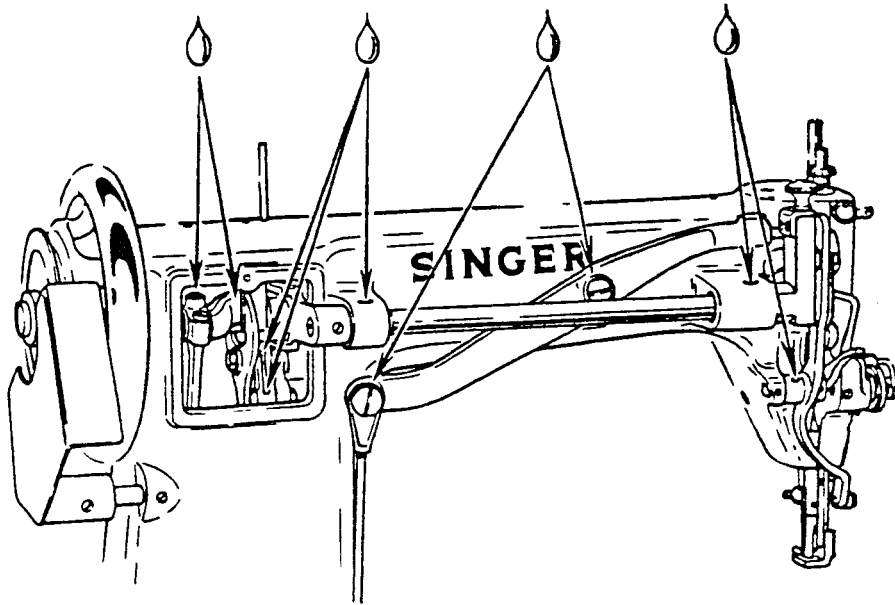


Fig. 2 Oiling Points at the Back of the Machine

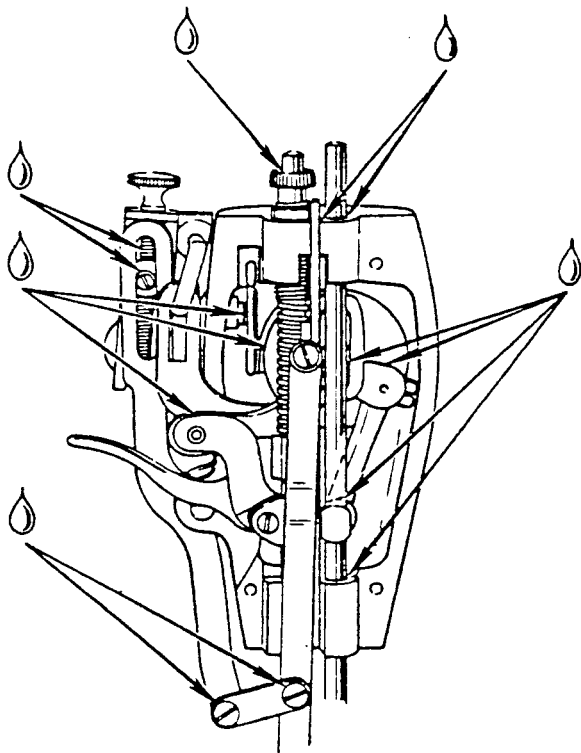


Fig. 3 End view of Machine,  
Showing Oiling Points

Take out the three screws (R, Fig. 13, Page 8) which hold the face plate in position and remove the face plate; apply oil at the places designated by arrows in Fig. 3, then replace the face plate and fasten it as before.

Turn back the machine on its hinges and apply oil at the places shown by arrows in Fig. 4.

Apply a drop of oil to the shuttle bearing in the shuttle race each time a bobbin is replaced.

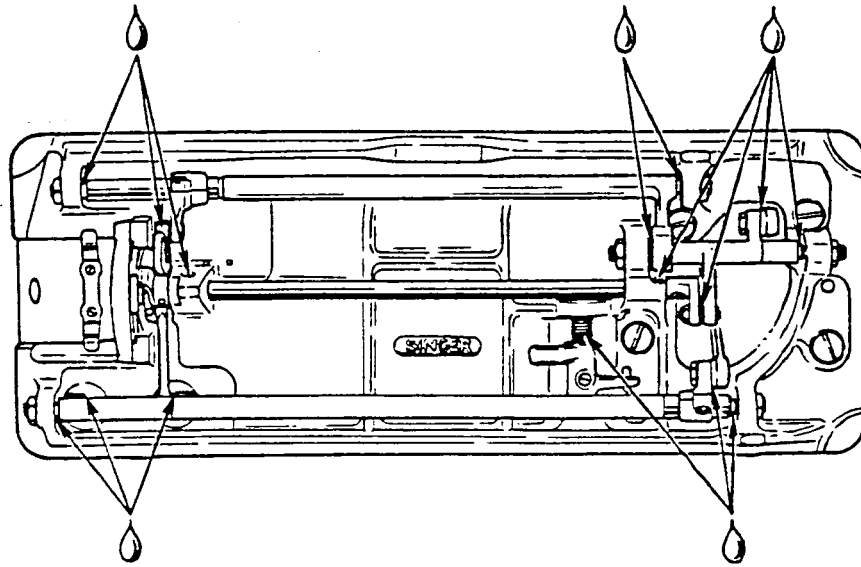


Fig. 4 Base View of Machine, Showing Oiling Points

#### SPEED

The maximum speed recommended for Machine 16U288 is 1,400 stitches per minute.

Run the machine slower than the maximum speed until the parts which are in movable contact have become glazed by their action upon each other.

#### INSTRUCTIONS FOR OPERATING THE MACHINE

Raise the presser foot (D, Fig. 5) by means of the presser bar lifter (E, Fig. 5) to prevent injury to the foot (D) and feed (F, Fig. 5).

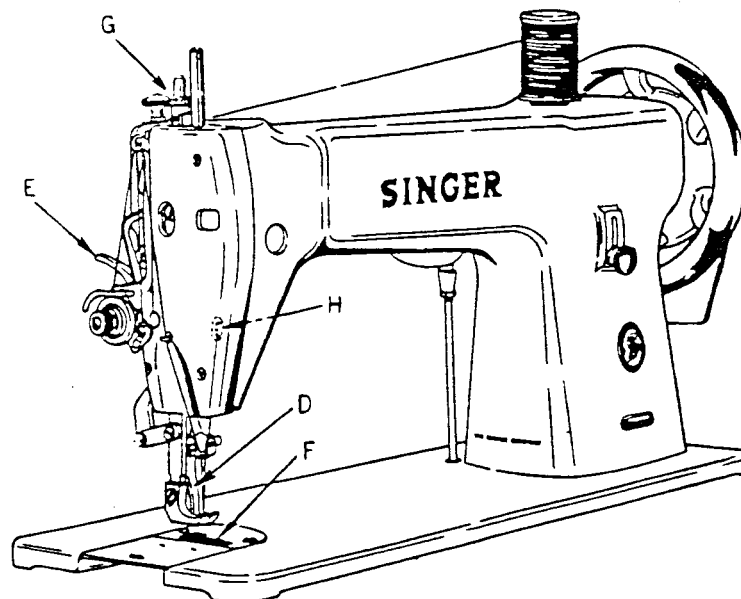


Fig. 5 Front View of the Machine

Place a piece of cloth under the presser foot, let down the presser bar, and operate the machine in this way without being threaded, until you have become accustomed to guiding the material.

### TO ENSURE PERFECT ACTION OF THE MACHINE

The machine pulley must always turn over toward the operator.

Do not run the machine with the presser foot resting on the feed without cloth under the presser foot.

Do not run the machine when both bobbin case and needle are threaded unless there is material under the presser foot.

Do not try to help the machine by pulling the fabric, lest you bend the needle; the machine feeds the work without assistance.

The slide over the bobbin case should be kept closed when the machine is in operation.

### NEEDLES

Needles for Machine 16U288 are of the following class and variety numbers;

<u>Cat. No.</u>	<u>Class and Variety Nos. of Needles</u>	<u>Style of Point</u>	<u>Sizes</u>
3861-01	16 X 63	Cloth	14, 16, 18, 20, 21, 22, 23, 24, 25.
3861-82	16 X 64	Leather	16, 18, 20, 21, 22, 23, 24, 25.

The size of the needle to be used should be determined by the size of the thread which must pass freely through the eye of the needle. Do not use rough or uneven thread, or thread which passes with difficulty through the needle eye, as such thread interferes with the successful use of the machine.

Orders for needles must specify the Quantity required, the Size number, Catalog number, also the Class and Variety numbers separated by the letter X.

The following is an example of an intelligible order:

"100 No. 22, Catalog No.3861-01.16 X 63 Needles".

The best results will be obtained in using the needles sold by The Singer Company.

### THREAD

Left twist thread should be used in the needle. Either right or left twist thread can be used in the bobbin.

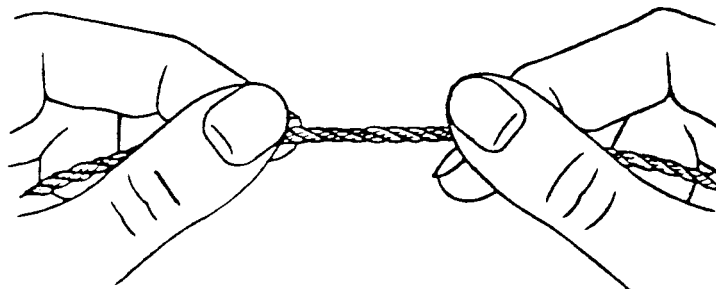


Fig. 6 How to Determine the Twist

Hold the thread as shown in Fig. 6. Turn the thread over toward you between the thumb and forefinger of the right hand; if left twist, the strands will wind tighter; if right twist, the strands will unwind.

#### TO REMOVE THE BOBBIN

Turn the machine pulley over toward you until the needle moves up to its highest point. Draw out the slide in the bed of the machine, reach down with the thumb and forefinger of the left hand, open the bobbin case latch (I, Fig. 7) and lift out the bobbin case. While the latch remains open, the bobbin is retained in the bobbin case. Release the latch, turn the open end of the bobbin case downwardly and the bobbin will drop out.

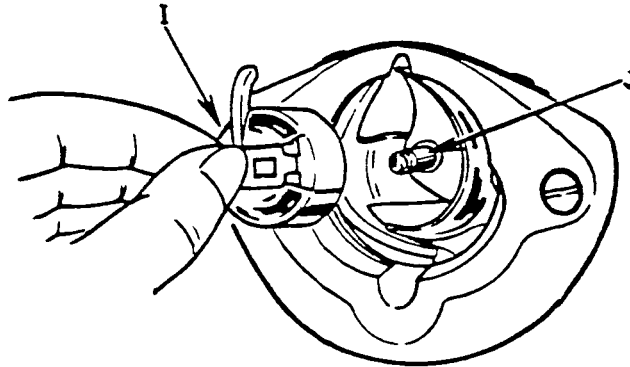


Fig. 7 Removing the Bobbin Case

#### TO WIND THE BOBBIN

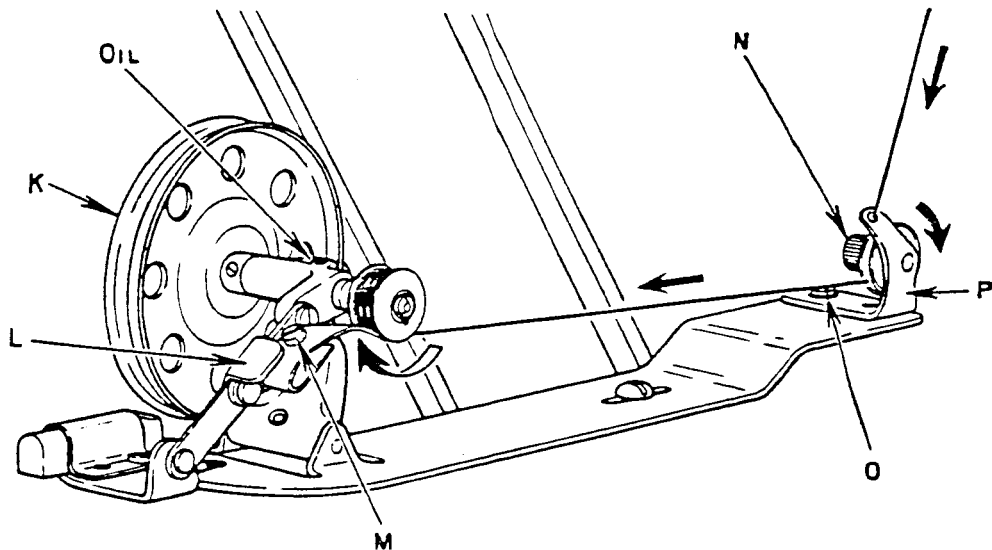


Fig. 8

Fasten bobbin winder to table with its driving pulley in front of the machine belt (see Fig. 8), so that bobbin winder driving pulley (K) will make firm contact with machine belt when thumb latch (L) is pressed down and pulley will be released from contact with belt when sufficient thread has been wound upon the bobbin.

Place bobbin on spindle, pushing it on as far as it will go and pass thread through threading points, as shown in Fig. 8.

Wind end of thread around the bobbin a few times. Press down on thumb latch (L), pushing driving pulley (K) over against belt, as shown in Fig. 8. Start machine.

Bobbin winder will stop automatically, when the amount of thread for which it is regulated is wound upon the bobbin. For more thread on bobbin, turn screw (M) inward; for less thread on bobbin, turn screw (M) outward.

When winding a bobbin with fine thread, a light tension should be used. Adjust the knurled nut (N, Fig. 8), to regulate the tension.

If thread winds unevenly on bobbin, loosen screw (O) and move tension bracket (P) to the left or right, as required. Tighten screw (O).

Bobbin can be wound while the machine is stitching.

Note: Occasionally apply a few drops of oil to the oil well, shown in Fig. 8, on top of the bobbin winder frame.

#### TO THREAD THE BOBBIN CASE

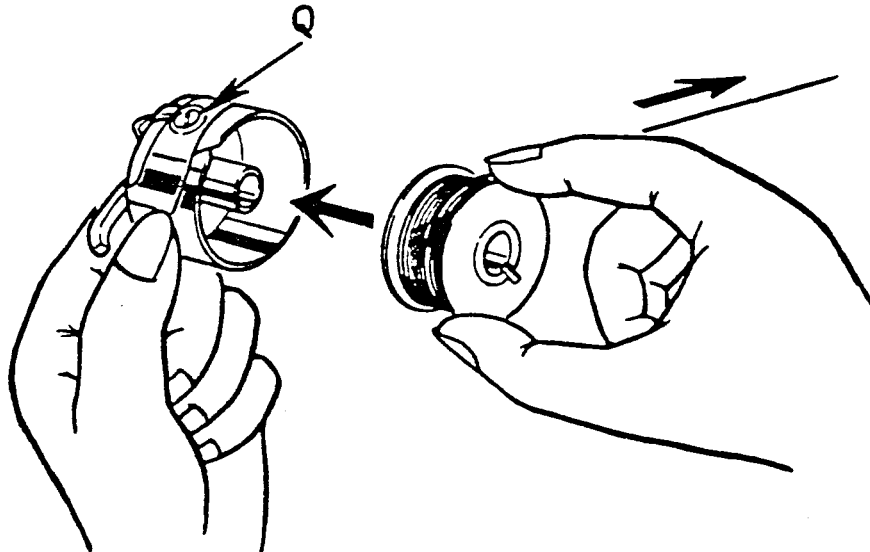


Fig. 9

Hold the bobbin between the thumb and forefinger of the right hand, the thread drawing on top from the left toward the right (see Fig. 9).

With the left hand hold the bobbin case as shown in Fig. 9, the slot in the edge being near the top, and place the bobbin into it.



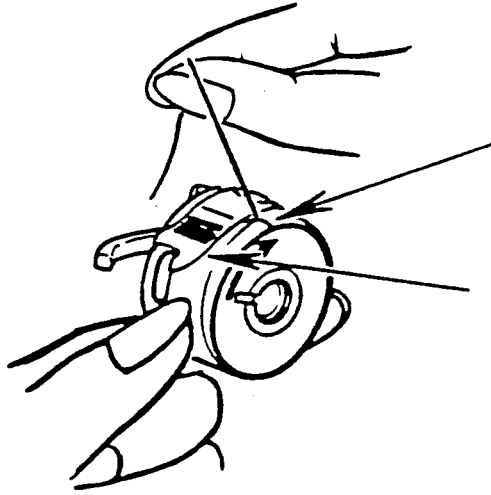


Fig. 10

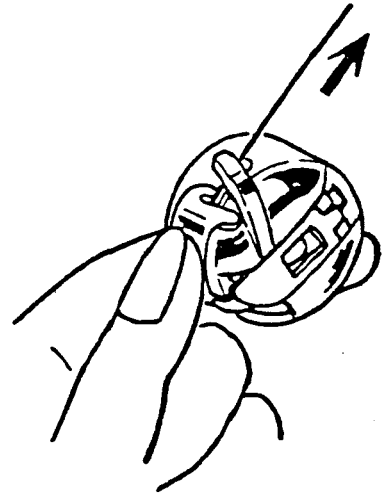


Fig. 11

Then pull the thread into the slot in the edge of the bobbin case (see Fig. 10), draw the thread down under the tension spring and into the delivery eye at the end of the tension spring (see Fig. 11).

#### TO REPLACE THE BOBBIN CASE

After threading, take the bobbin case by the latch holding it between the thumb and forefinger of the left hand; place the bobbin case on the center stud (J, Fig. 7, page 5) of the shuttle body with the position finger opposite the notch at the top of the shuttle race, release the latch and press the bobbin case back until the latch catches the groove near the end of the stud (see Fig. 12). Allow about two inches of thread to hang free.

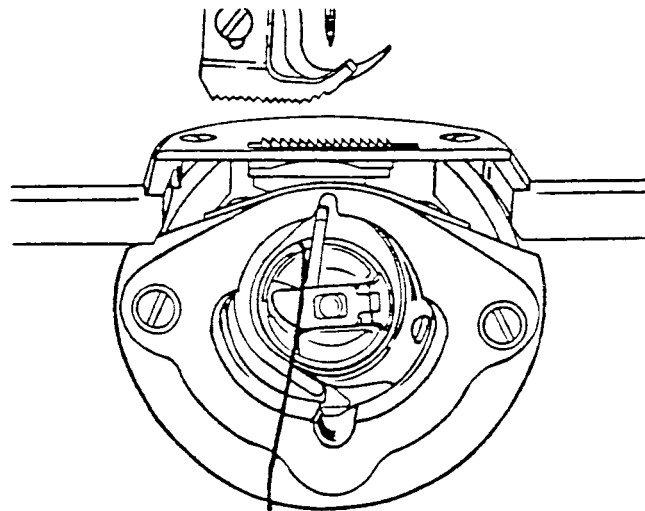
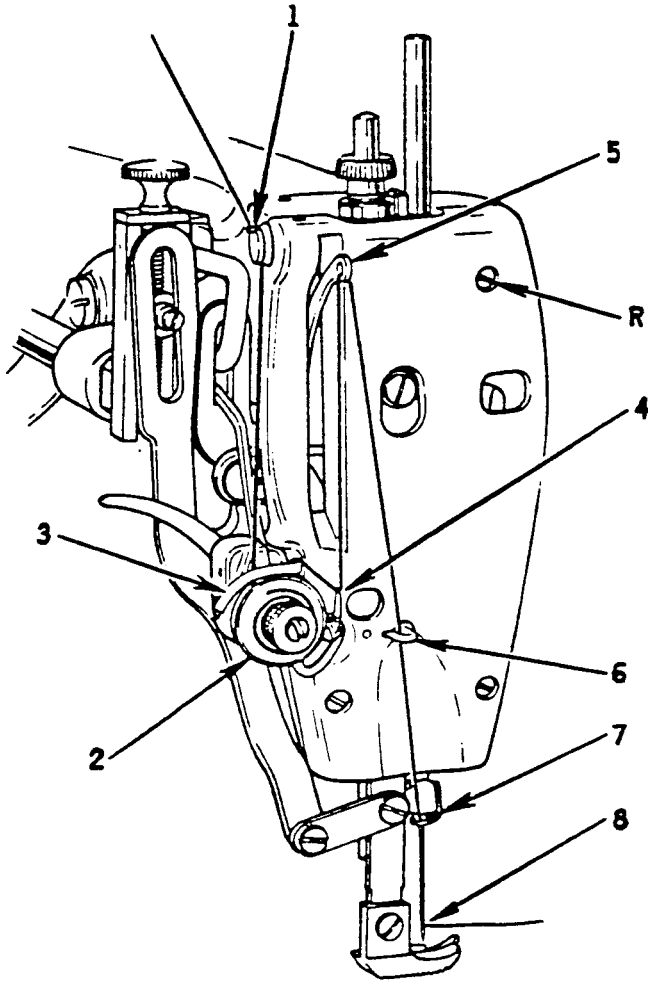


Fig. 12

#### TO SET THE NEEDLE

Turn the balance wheel over toward you until the needle bar moves up to its highest point; loosen the screw (A, Fig. 1, page 1) in the needle clamp and put the needle up into the clamp as far as it will go, with the long groove of the needle toward the left and the eye of the needle directly in line with the arm of the machine, then tighten the screw (A).

TO THREAD THE NEEDLE  
(See Fig. 13)



Place the spool of thread on the spool pin on top of the machine or pass the needle thread from the unwinder through the thread hole on the spool pin, then pass the thread from the spool over between the thread retaining discs (1) at the rear of the upper end of the face plate, down under from back to front between the tension discs (2) at the front of the face plate, over the tension thread guard (3) above the tension discs, into the hook of the thread take-up spring (4), up and toward you through the hole in the end of the thread take-up lever (5), down through the face plate thread guard (6) at the front of the face plate, into the needle clamp thread guide (7) at the lower end of the needle bar and from left to right through the eye of the needle (8). Draw about two inches of thread through the eye of the needle with which to commence sewing.

Fig. 13 Threading the Needle

TO PREPARE FOR SEWING

With the left hand hold the end of the needle thread, leaving it slack from the hand to the needle, turn the balance wheel over toward you until the needle moves down and up again to its highest point, thus catching the bobbin thread; draw up the needle thread and the bobbin thread will come up with it through the hole in throat plate (see Fig. 14). Lay both threads back under the presser foot.

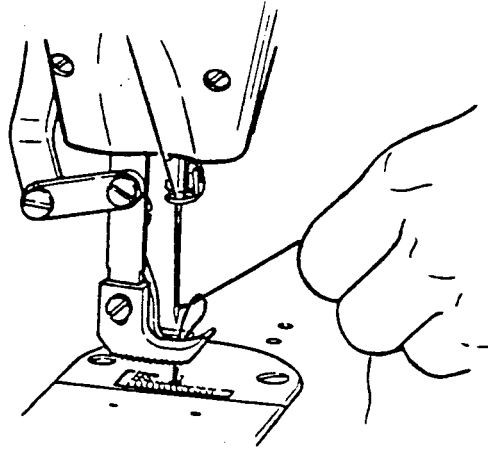


Fig. 14 Drawing up the Bobbin Thread

#### TO COMMENCE SEWING

Place the material beneath the presser foot, lower the presser bar and commence to sew, turning the machine pulley over toward you.

#### TO REMOVE THE WORK

Let the thread take-up lever rest at its highest point, raise the presser bar, draw the work back and cut the threads close to the material.

#### TENSIONS

For ordinary stitching, the needle and bobbin thread should be locked in the center of the thickness of the material, thus:



Fig. 15 Perfect Stitch

If the tension on the needle thread is too tight, or if that on the bobbin thread is too loose, the needle thread will lie straight along the upper surface of the material, thus:



Fig. 16 Tight Needle Thread Tension

If the tension on the bobbin thread is too tight, or if that on the needle thread is too loose, the bobbin thread will lie straight along the under side of the material, thus:



Fig. 17 Loose Needle Thread Tension

#### TO REGULATE THE TENSIONS

The tension on the needle thread should only be regulated when the presser bar is down. Having lowered the presser bar, turn the small thumb nut (B, Fig. 1, page 1) at the front of the tension discs over toward you to increase the tension. To decrease the tension, turn this thumb nut over from you.

The tension on the bobbin thread is regulated by the screw (Q, Fig. 9, page 6) in the bobbin case tension spring. To increase the tension, turn this screw over to the right. To decrease the tension, turn this thumb nut over to the left.

When the tension on the bobbin thread has been once 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.

#### TO REGULATE THE LENGTH OF STITCH

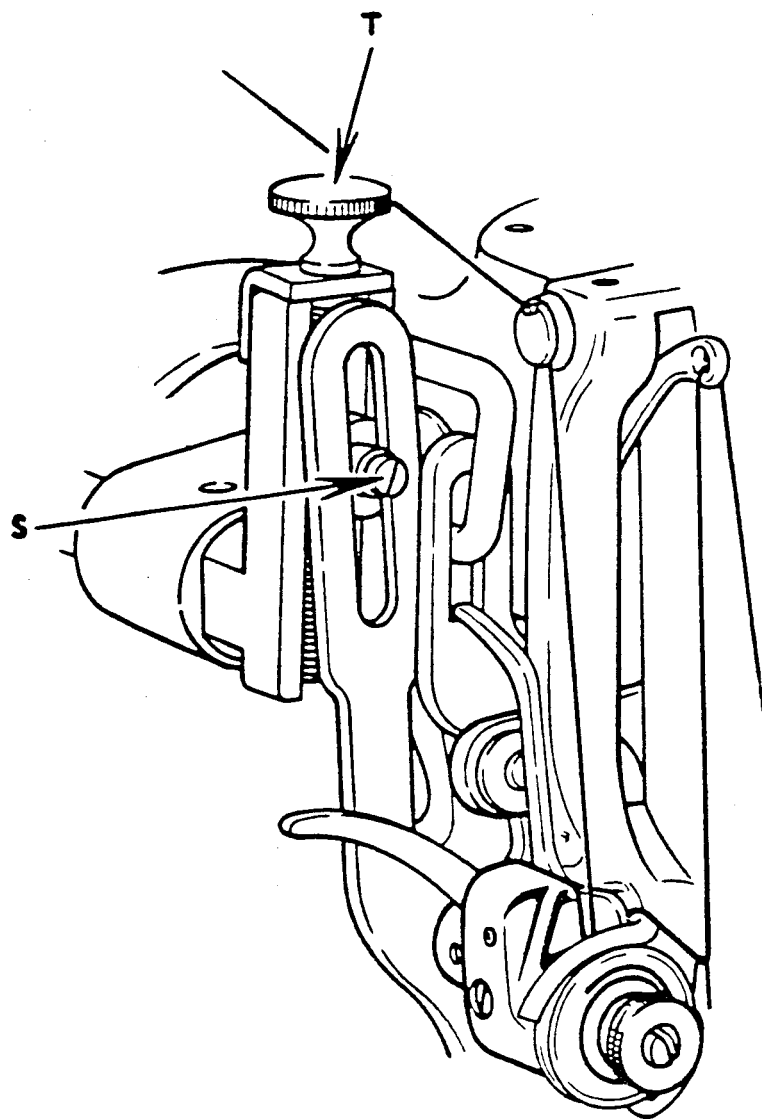
The length of stitch is regulated by the thumb screw (C, Fig. 1, page 1) in the slot on the front of the upright part of the arm. To lengthen the stitch, loosen the thumb screw (C) and move it downwardly. To shorten the stitch, loosen the thumb screw (C) and move it upwardly. When the desired length of stitch has been obtained, tighten the thumb screw (C).

#### TO REGULATE THE PRESSURE ON THE MATERIAL

The pressure on the material is regulated by the thumb screw (G, Fig. 5, page 3) on the top of the machine. To increase the pressure, turn this thumb screw over to the right. To decrease the pressure, turn this thumb screw over to the left. The pressure should only be heavy enough to enable the feed to move the work along evenly.

#### TO REGULATE THE UPPER FEED

The upper feed is regulated by loosening the lock screw (S, Fig. 18) and turning the large thumb screw (T, Fig. 18) to the left for a shorter stitch, or to the right for a longer stitch. The lock screw (S) should be securely tightened after the adjustment is made.



The upper feed is usually set to work in unison with the lower feed, but it is possible to feed the top ply of material faster or slower than the bottom ply by regulating the upper feed so that its movement is more or less than the movement of the feed dog.

Fig. 18 Regulating Upper Feed on Machine 16U288

INSTRUCTIONS  
FOR  
ADJUSTERS AND MACHINISTS

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TO TIME THE NEEDLE WITH THE SHUTTLE

See that the needle is pushed up into the needle clamp as far as it will go.

Turn the machine pulley over toward you until the point of the shuttle reaches the center of the needle on the upward stroke of the needle bar.

When the shuttle is in this position, the top of the eye of the needle should be  $1/16$  inch below the point of the shuttle, as shown at (U), in Fig. 19.

If the eye of the needle is not the correct distance below the point of the shuttle, loosen the screw which fastens the needle bar in position in the needle bar connecting stud (V, Fig. 19).

(This screw can be reached through the hole (H, Fig. 5, page 3) provided for the purpose in the arm). After loosening the screw, move the needle bar up or down in the needle bar connecting stud until it is at the required height, then securely tighten the screw.

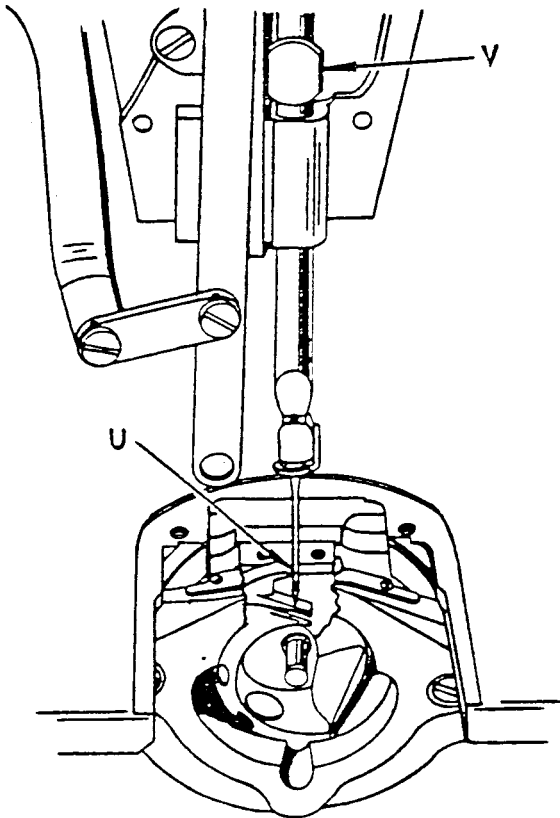


Fig. 19 Needle and Shuttle Correctly  
Timed (Shuttle Race Broken  
to Show Point of Shuttle and  
Needle)

## TO REMOVE AND REPLACE THE SHUTTLE RACE

Turn the machine pulley over toward you until the needle bar moves up to its highest point.

Take out the two screws (W, Fig. 20) which hold the shuttle race in position and remove the shuttle race. Then remove the shuttle from the shuttle race.

When replacing the shuttle race, have the needle bar at its highest point and turn the shuttle in the race so that it correctly engages the shuttle driver, then securely fasten the shuttle race in position by means of the two screws (W).

## TO RAISE OR LOWER THE FEED DOG

The feed lifting rock shaft crank (X, Fig. 20) should be set so that when it raises the feed bar to its highest point, slightly less than the full depth of the teeth project through the slots in the throat plate. To raise or lower the feed dog, loosen the clamping screw (Y, Fig. 20) and move the feed lifting rock shaft crank (X) until the feed dog is set at the required height, then securely tighten the clamping screw (Y).

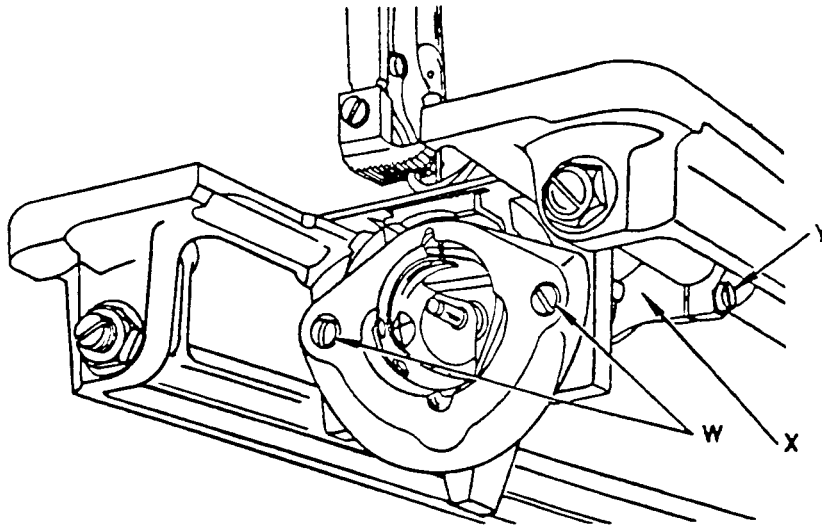


Fig. 20 Adjustment for Raising and Lowering the Feed Dog

## TO TIME THE FEEDING MECHANISM

The feeding mechanism should be timed so that the feed dog starts its feeding movement (away from the operator) when the needle bar commences its downward stroke. The feed should always finish its feeding movement before the needle reaches the goods on its downward stroke.

When it is necessary to time the feeding mechanism, press the thumb screw (C, Fig. 1, page 1) down to its lowest point for the longest stitch and remove the square cover plate at the back of the machine. Loosen the feed cam set screw (Z, Fig. 21) and turn the feed cam (A<sub>1</sub>, Fig. 21) until the feed is correctly timed as instructed above, then securely tighten the set screw (Z).

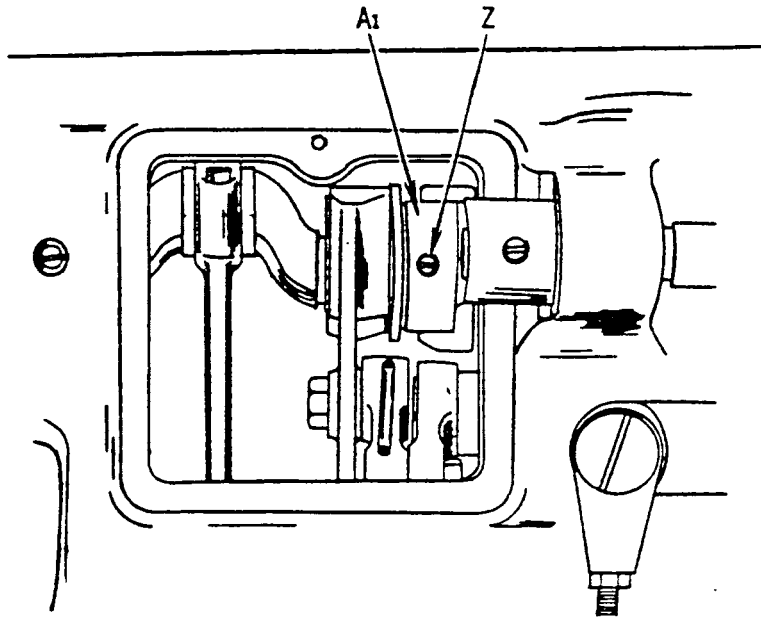
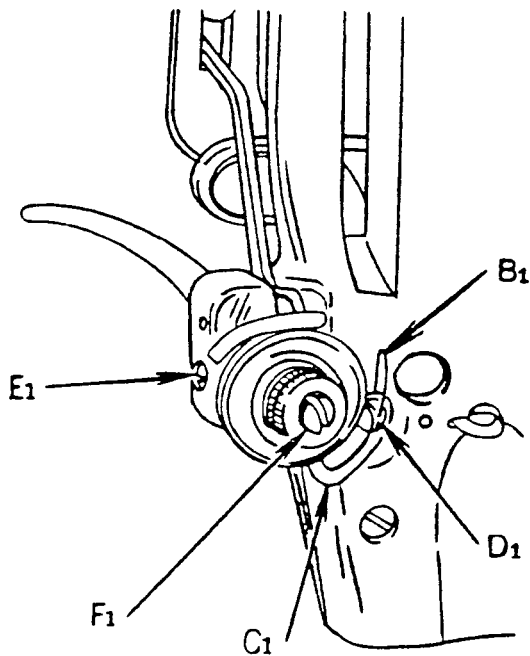


Fig. 21 Adjustment for Timing Feeding Mechanism

#### TO ADJUST THE THREAD TAKE-UP SPRING

The thread take-up spring ( $B_1$ , Fig. 22) should be set so that when the eye of the needle reaches the goods on the downward stroke of the needle bar, the spring will be through acting and will rest against the thread take-up spring regulator plate ( $C_1$ , Fig. 22). If the thread take-up spring is not

correctly set, loosen the set screw ( $D_1$ , Fig. 22) which holds the thread take-up spring regulator plate ( $C_1$ ) in position and lower the plate ( $C_1$ ) for more movement of the spring, or raise it for less movement. When the spring is correctly set, securely tighten the set screw ( $D_1$ ).



The tension on the thread take-up spring ( $B_1$ ) is regulated by loosening the set screw ( $E_1$ , Fig. 22) at the side of the face plate and turning the tension screw stud ( $F_1$ , Fig. 22) over toward you to increase the tension, or over from you to decrease the tension. When the desired tension is obtained, securely tighten the set screw ( $E_1$ ).

The tension on the thread take-up spring should be just sufficient to take up the slack of the needle thread until the eye of the needle reaches the goods in its descent.

Fig. 22 Adjustment of Thread Take-up Spring



