SINGER
591/601

SINGER*
INDUSTRIAL PRODUCTS

591
601

Operator's Guide

Single Needle High Speed Lockstitch Machines

* A Trademark of THE SINGER COMPANY

Introducing the NEW SINGER* Sewing Machine Model 591, 601!

The most dependable, lightest running machines of their kind. These machines will produce top quality straight-line single-needle lock stitching.

With an oil reservoir, a pump and a minimum of wicking, all parts requiring oil are kept constantly lubricated. Oil flow can be checked easily through a "window" on arm top cover.

For best sewing results, we suggest you take a few moments to read through this operator's guide as you sit at your new machine.

OILING THE MACHINE

Oil your machine! For best results, use SINGER* TYPE "A" or "C" Oil. TYPE "C" Oil is used when an oil is desired which will produce minimum staining of fabrics even after a long period of storage.

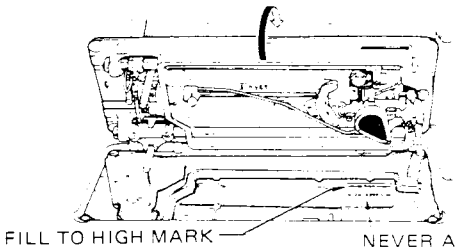


Fig.1

Tip machine back on its hinges and fill the oil reservoir as illustrated in Fig. 1.

When a machine is NEW or has been idle for several weeks, it is advisable to oil the needle bar, take-up bearings, and all other parts which are in movable contact. The automatic lubricating system will function efficiently after running the machine at 2500 to 3000 revolutions per minute for 10 to 15 minutes and continue to lubricate all bearings.

CAUTION: Correct lubrication is indicated by a continuous steam of oil passing the oil flow window while machine is running, as shown in Fig. 2.

Should this oil flow become erratic, STOP the machine and check the reservoir oil level. Fill if needed.

At least twice each month, check the oil level in the reservoir. Never allow the oil level to drop below LOW mark, shown in Fig. 1.

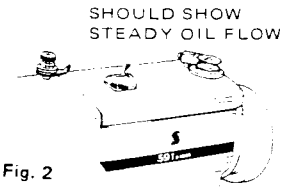


Fig. 2

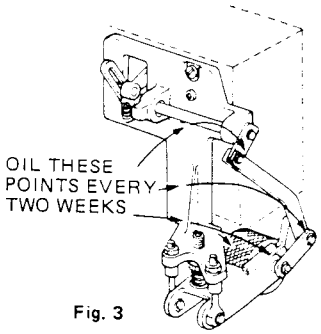


Fig. 3

OILING THE PULLER FEED (591D203AD/AF and 591D303AD/AF), the automatic oil wicking system, it is recommended that a few drops of SINGER TYPE "C" oil be applied every two weeks to the location shown in Fig. 3.

ADJUSTING THE ROTATING HOOK OIL FLOW

Run machine for one minute to eliminate accumulated oil in the rotating hook. Then hold a piece of paper under the hook and run machine approximately 10 seconds to check oil flow. A fine line of oil spray should show on the paper. Depending on the oil spray pattern on the paper, increase or decrease oil flow by turning the oil flow regulating thumb screw as shown in Fig. 4.

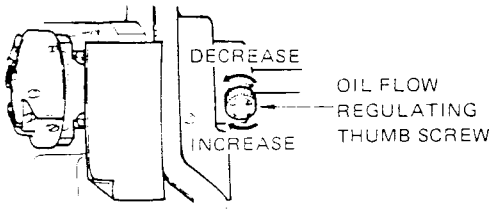


Fig. 4

NEEDLES

The needles you use have a very direct effect on the quality, strength and appearance of the stitching produced by your machine. This is why it is so important to use SINGER needles according to the following chart.

NEEDLES	
CATALOG NO.	SIZES
1955-01	8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19, 20, 21, 22, 23 and 24

Note:
For 591D205/305AD/AF, 591D215/315BD/BF and 591D 215/315GD/GF, use needle catalog number 1515-01 and corresponding needle bar for the 1/16" and 3/32" trim margins.

A bent needle will cause your machine to skip stitches and drift away from a desired sewing direction.

A hook or burr on the needle point will result in a blurred finish and may cut the material.

INSERTING THE NEEDLE

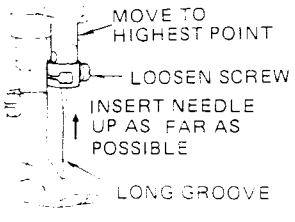


Fig. 5

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

After loosening the needle clamping screw, insert needle UP into needle bar AS FAR AS IT WILL GO, as instructed in Fig. 5.

The long groove of the needle MUST face the left end of the machine, as shown in Fig. 5.

Securely tighten the needle clamping screw.

THREAD

In the Class 591 and 601, use ONLY left twist thread in the needle. Either right to left twist thread can be used in the bobbin. To determine the thread twist, hold the thread as shown below. Then roll the thread held by the right hand over toward you – if the strands of the thread wind tighter, the thread is left twist; if the strands unwind or separate, the thread is right twist.

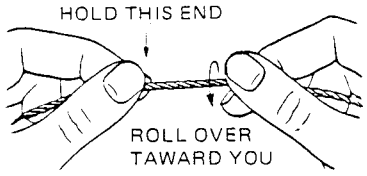


Fig. 6

THREADING THE THREAD UNWINDER

For machines with bobbin winder on arm top cover, thread as shown in Fig. 7 (A). For machines without bobbin winder, thread as shown in Fig. 7 (B).

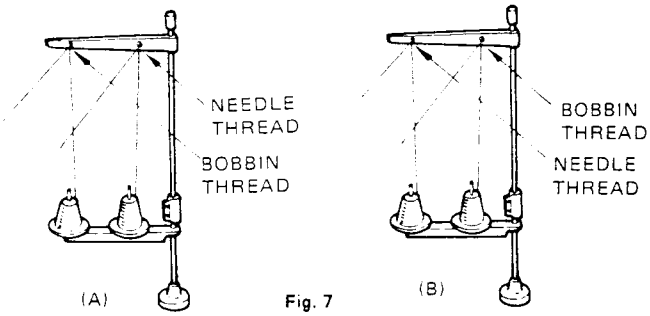
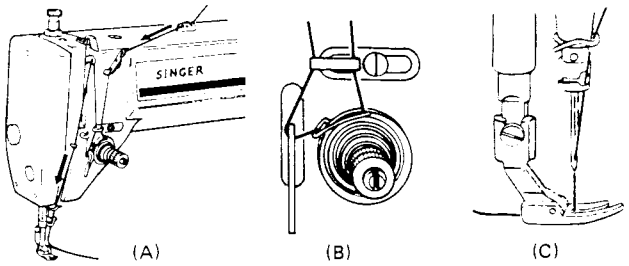


Fig. 7

THREADING THE MACHINE



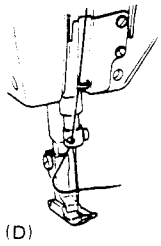


Fig. 8

First, turn machine pulley over toward you until needle is at its highest point, then pass the needle thread from the thread stand through the threading points in the order shown in Fig. 8 (A)-(B)-(C).

For threading the 591C200/240/300/308AD/AF, 591C200/210/240/300/310/318BD/BF and 591C200/210/240/300/310GD/GF machines, see Fig. 8(D).

Draw about two inches of thread through the eye of needle with which to start sewing.

WINDING THE BOBBIN

BUILT-IN BOBBIN WINDER

591D200/203/205/240/300/303/305/308AD, 591D200/210/215/240/300/310/315/318BD, 591D200/210/215/240/300/310/315GD, 591C200/240/300/308AD, 591C200/210/240/300/310/318BD, 591C200/210/240/300/310GD, 601D100AD, 601D100BD and 601D100GD

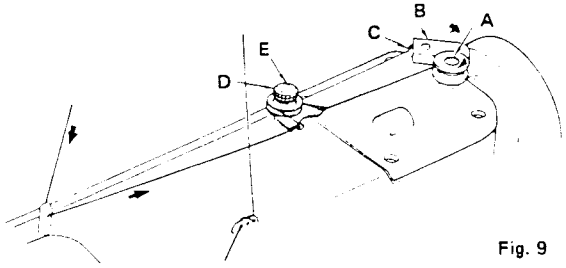


Fig. 9

Place bobbin on spindle **A** of bobbin winder pushing it on as far as it will go and pass thread from the thread stand through threading points as shown in Fig. 9.

Wind end of thread around the bobbin a few times. Press latch **B** against bobbin, pushing driving pulley over against machine pulley, then start the machine.

The 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, loosen screw **C** and swing latch **B** away from you: for less thread on bobbin, swing latch **B** toward you. Tighten screw **C**.

When winding a bobbin with fine thread, a light tension should be used. Adjust the knurled nut **D**, Fig. 9, to regulate the tension.

If thread winds unevenly on bobbin, loosen set screw holding pre-tension stud **E** and move tension bracket up or down, as required. Tighten the set screw.

TABLE TOP BOBBIN WINDER

591D200/203/205/240/300/303/305/308AF, 591D200/210/215/240/300/310/315/318BF, 591D200/210/215/240/300/310/315GF, 591C200/240/300/308AF, 591C200/210/240/300/310/318BF, 591C200/210/240/300/310GF, 601D100AF, 601D100BF and 601D100GF

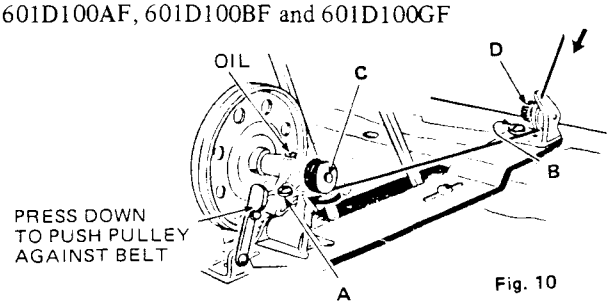


Fig. 10

Place bobbin on spindle **C** of bobbin winder pushing it on as far as it will go and pass thread through threading points as shown in Fig. 10.

Wind end of thread around the bobbin a few times. Press down on thumb latch and start machine.

The bobbin winder will stop automatically. For more thread on the bobbin, turn screw **A** clockwise; for less thread on the bobbin, turn screw **A** counterclockwise. When winding a bobbin with fine thread, a light tension should be used. Adjust the knurled nut **D** to regulate the tension.

If thread winds unevenly on bobbin, loosen screw **B** and move tension bracket to the left or right, as required. Tighten screw **B**.

Bobbins can be wound while the machine is stitching!

Note: Oil your bobbin winder occasionally. Apply a few drops of oil to the oil well in bobbin winder as shown in Fig.10.

REMOVING THE BOBBIN CASE AND BOBBIN

Turn machine pulley over toward you until the thread take-up lever is at its highest point.

Open slide plate and reach under the bed of the machine with left hand and remove the bobbin case as shown in Fig. 11.

Releasing the latch will allow bobbin removal as shown in Fig. 12.

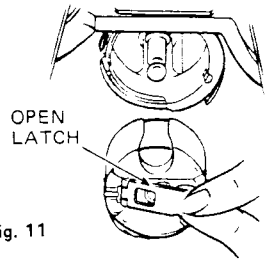


Fig. 11

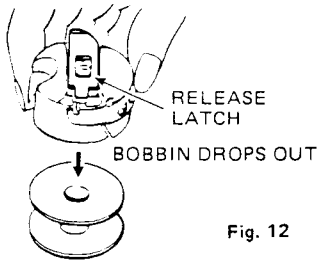


Fig. 12

THREADING THE BOBBIN CASE

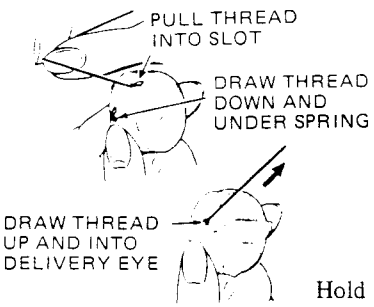


Fig. 14

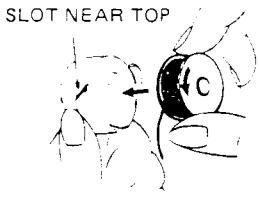


Fig. 13

Hold the bobbin so that thread will unwind in the direction shown in Fig. 13.

Hold the bobbin case as shown in Fig. 13 and place the bobbin into it and thread as shown in Fig. 14.

REPLACING THE BOBBIN CASE

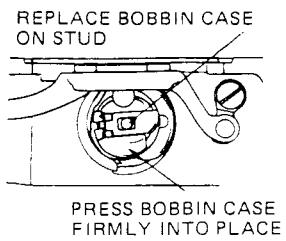


Fig. 15

After threading, take bobbin case by latch in left hand and place bobbin case on center stud of bobbin case holder, as shown in Fig. 15, and release latch. Press bobbin case firmly into place. Allow about two inches of thread to hang free.

SETTING THREAD TENSIONS

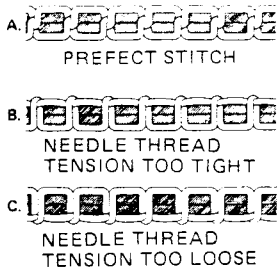


Fig. 16

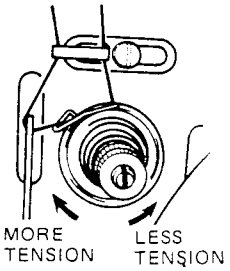


Fig. 17

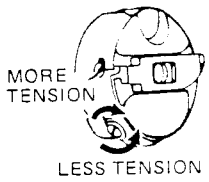


Fig. 18

Normally, tension on the needle and bobbin threads should be balanced so that if you were to look at a cross section of a line of stitching, the needle and bobbin threads would be locked in the center of the thickness of the material as shown in Fig. 16-**A**. Incorrect settings will produce the conditions as shown in Figs. 16-**B** and 16-**C**.

Regulate the needle thread tension as shown in Fig. 17. Be sure the presser foot is down when making tension adjustments.

Tension on the needle thread should be just enough to set the stitch properly in the material. See 16-**A**.

For average sewing, the tension on the bobbin thread should be very light.

Should regulation of the tension on the bobbin thread be necessary, remove the bobbin case and adjust as shown in Fig. 18.

ADJUSTING THE TAKE-UP SPRING

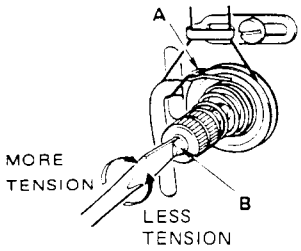


Fig. 19

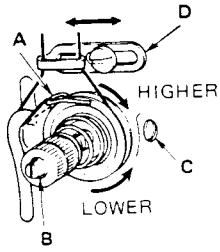


Fig. 20

The tension and the range of movement of the take-up spring **A** may require different settings depending upon the size of thread and material used. Heavier thread or material require more tension; delicate materials require less tension. Also the movement of take-up spring should be increased to ensure correct thread control.

Using a large screwdriver in slot of stud **B**, turn stud either over toward left to decrease tension, or over to right to increase tension, as shown in Fig. 19.

To set the take-up spring height, loosen screw **C** (Fig. 20) and turn entire tension assembly either over toward left to lower take-up spring and decrease its movement, or over toward right to raise take-up spring and increase its movement. Securely tighten screw **C**.

ADJUSTING THE THREAD GUARD

To obtain perfectly locked stitches depending upon the thickness of material or the length of stitch, it may be necessary to adjust the thread guard **D** either to the left or to the right, as shown in Fig. 20.

* For heavy material or long stitches, move thread guard to the right.
* For lightweight material or short stitches, move thread guard to the left.

PREPARING TO SEW

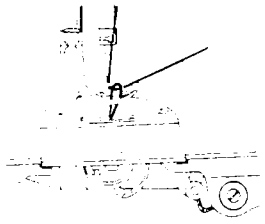


Fig. 21

Hold end of needle thread with left hand very lightly. Then turn the machine pulley over toward you slowly until the needle moves down and up. Pull on the needle thread and the bobbin thread will come up through the hole in the throat plate as shown in Fig. 21. Place both threads under the presser foot prior to sewing.

SEWING

Place the material under the presser foot and lower the presser foot. You are now ready to sew – quickly, smoothly and easily.

Stop the machine when the needle bar has just started to come down for best material removal. Raise the presser foot, draw the work behind the presser foot and cut the threads close to the work.

ADJUSTING PRESSER FOOT PRESSURE

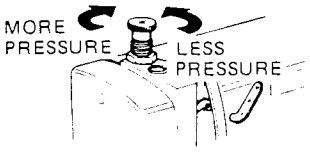


Fig. 22

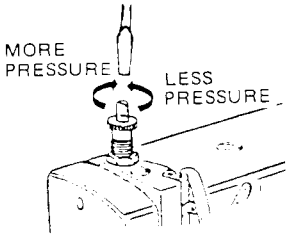


Fig. 23

Correct presser foot pressure helps feed the work properly.

The pressure on the material should be as light as possible, while still sufficient to insure proper feeding.

Adjust the pressure as shown in Fig. 22 and tighten nut firmly, with the exception of 601 machine.

In the Class 601/591D240AD /AF/BD/BF/GD/GF. Adjust the pressure as shown in Fig. 23.

ADJUSTING STITCH LENGTH

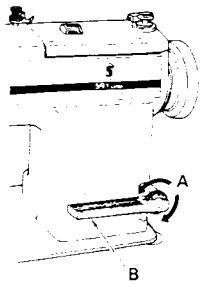


Fig. 24

The stitch length regulating dial **A** controls the number of stitches per inch. The numbers on the dial represent the number of stitches per inch. To regulate the length of stitch, turn dial **A** as shown in Fig. 24.

To change the direction of feed for back tacking, depress feed reverse lever **B** quickly to lowest position until back tack is completed.

AMOUNT OF FEED OF THE FEED ROLLER

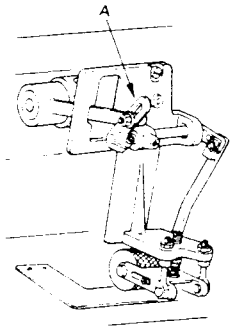


Fig. 25

591D203AD/AF &
591D303AD/AF

Adjust the machine to the desired stitch length, then set the adjustable crank **A** on the puller feed device to a matching stitch length or slightly larger if required by the application. (Fig. 25).

PRESSURE OF THE FEED ROLLER

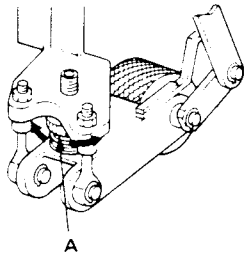


Fig. 26

591D203AD/AF &
591D303AD/AF

Pressure of the feed roller should be as light as possible, while still sufficient to insure proper feeding.

Adjust the pressure by turning the feed roller pressure spring adjusting seat **A** as shown in Fig. 26.

DISENGAGING THE EDGE TRIMMER KNIFE

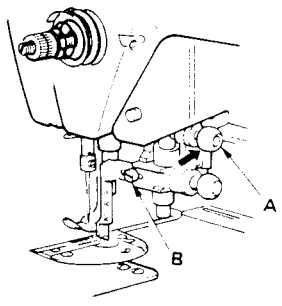


Fig. 27

591D205/305AD/AF, 591D 215/315BD/BF & 591D215/ 315GD/GF

The trimmer knife can be disengaged for sewing operations which do not necessitate edge trimming.

To disengage, push pivot pin **A** in the direction shown in Fig. 27 until the knife mounting block **B** is held immovable by the disengagement spring **C**.

Machines with U.T.T., Wiper and Back Tack

CORDS AND CONNECTIONS

- Connect motor cord ① to terminal ⑤ on motor.
- Connect sensor cord ② to terminal ⑧ on control box.
- Connect trimmer solenoid and back tack solenoid cord ③ to terminal ⑦ on control box.
- Connect push button switch cord ④ (fastened to wiper solenoid cord) to terminal ⑥ on control box.

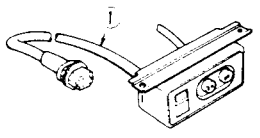


Fig. 28

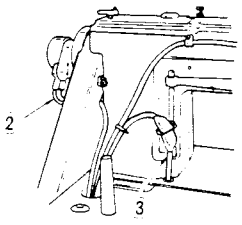


Fig. 29

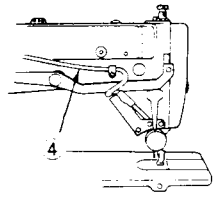


Fig. 30

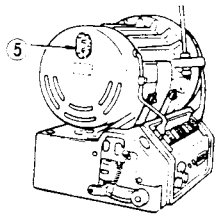


Fig. 31

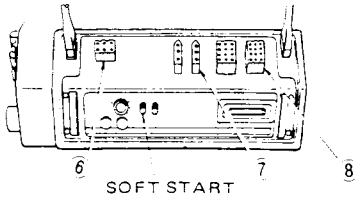
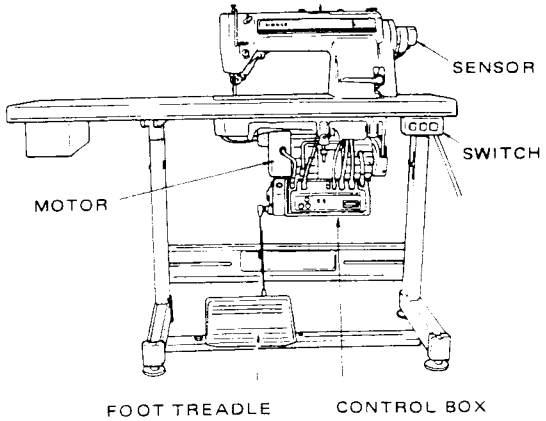


Fig. 32



SPEED

Relations between sewing speed, motor pulley (O.D.) and frequency:

O.D. of Motor Pulley (mm)		65	70	85	100	115	135	140	150
Sewing Speed	50Hz	2.560	2.760	3.350	3.950	4.540	5.330	5.520	5.920
	60Hz	3.070	3.310	4.020	4.730	5.430	6.380	—	—

OPERATING THE FOOT TREADLE

The foot treadle is operated in four steps as explained below and the sewing speed can easily be controlled by the amount of pressure applied on the treadle. (Fig. 33).

① For low speed sewing, depress the foot treadle lightly.
② For high speed sewing, depress the foot treadle all the way.
③ The machine will stop with needle down when foot treadle is returned to its neutral position.
④ The machine will stop with needle up after trimming the thread when foot treadle is heeled.

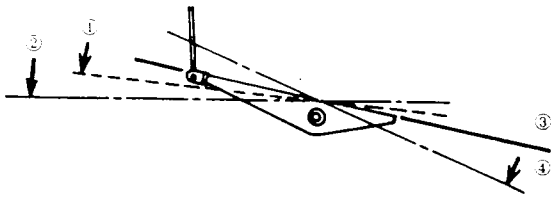


Fig. 33

- Quick heeling of the foot treadle from either high or low speed sewing will not affect the thread trimming performance.
- Once the trimmer starts its trimming cycle, it will complete the cycle even if the foot treadle is released to return to its neutral position. Consequently, you need not continue to heel the foot treadle until the thread is trimmed.
- The foot treadle, even when depressed, will not start the machine for normal sewing immediately after it has been heeled for thread trimming. This is because the safety device provided in the control box has been activated to hold the machine from being started until the thread trimming cycle has been completed.

USING THE SOFT START SWITCH

This soft start feature makes it possible to trim the needle thread end as short as possible and also prevent the thread end from being pulled out of the needle eye at start of sewing.

When the soft start is required at the start of sewing, turn the soft start switch "ON" shown in Fig. 32.

THREADING THE MACHINE

Lead thread from the thread stand through threading points in the order shown in Fig. 34.

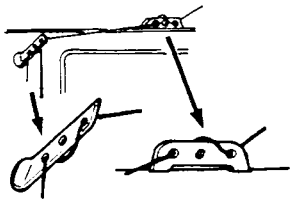


Fig. 34

Fig. 35

- When using cotton threads or threads that do not slip easily, pass the thread through eye of thread guide as shown in Fig. 35.

ADJUSTING THE THREAD TENSIONS

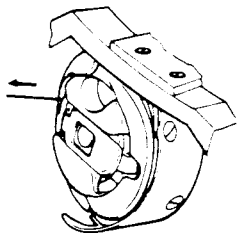


Fig. 36

NOTE:

1. In addition to the regular tension spring, a special spring to prevent spillage of the bobbin is provided on the bobbin case used on this machine, therefore the tensions of the two springs should be adjusted to give 20 to 25 gram thread tension when thread is pulled in the direction shown in Fig. 36.
2. The needle thread may not be cut if looping or skip stitching occur. In such case, the needle thread tension requires adjustment.

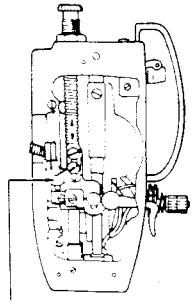
WINDING THE BOBBIN

Bobbin winding is performed in the same way as for regular machines.

- Winding should be held to approximately 80% of winding capacity.
- Tetron and Nylon threads should be wound loosely.
- The aluminum bobbin should be used.

ADJUSTING THE LENGTH OF NEEDLE THREAD END

The legnth of needle thread end should be adjusted so that sewing can be started without the thread end being pulled out of needle eye or without excessive thread end showing on the underside of the fabric. This adjustment can be done by adjusting the movable slack thread regulator action plate.



SLACK THREAD REGULATOR ACTION PLATE

Fig. 37

- To adjust length of thread end with slack thread regulator action plate. (Fig. 37)

  a. Move slack thread regulator action plate up to shorten the thread end.

  b. Move slack turead regulator action plate down to lengthen the thread end.

ADJUSTING THE TRIMMER

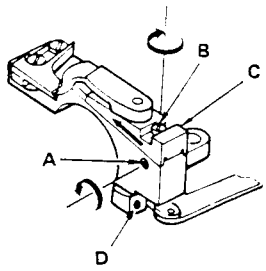


Fig. 38

If the curring quality of the knife appears poor, remove the throat plate and adjust the pressure on the cutting knife as instructed below.

a. Loosen screw **A** and **D** shown in Fig. 38.
b. Turn eccentric stud **B** clockwise to move the wedge shaped slide block **C** in the direction shown in Fig. 38.

The pressure on the cutting knife should be only heavy enough to ensure clean cut. Excessive pressure may result in malfunction of the trimmer.

SHARPENING THE STATIONARY KNIFE

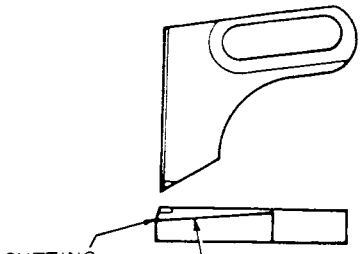


Fig. 39

If cutting quality can not be improved by making the above adjustments, the stationary knife should be removed and resharpened. (Fig. 39)

When replacing the stationary knife, set the knife so that its cutting edge is parallel to the feed dog with 0.3mm (.012 in.) clearance.

The movable knife need not be resharpened.

ADJUSTING THE SENSOR

If the tension releasing mechanism is not released when the needle stops in its upper stop position, adjust the position of the sensor as instructed below. (Fig. 40)

a. Loosen the two set screws and while holding the sensor with one hand, turn machine pulley over toward front of machine until the tension releasing mechanism in released.
b. Hold the sensor in this position and tighten the two set screws.

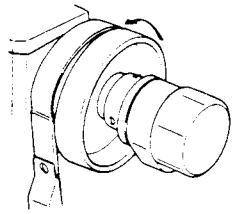


Fig. 40

USING THE PUSH BUTTON BACK TACK

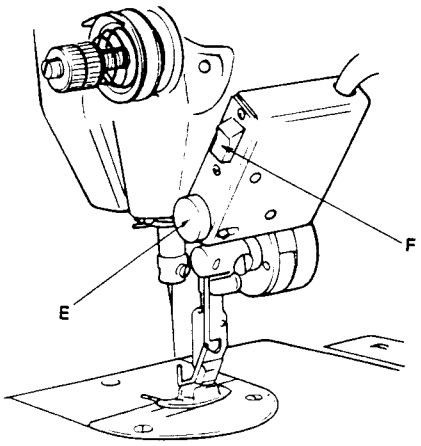


Fig. 41

- When push button **E**, Fig. 41 is depressed, the machine will immediately change from forward to reverse feed for back tacking and return to forward feed when released.
- The machine will continue to sew in reverse while the push button is depressed, however, when the machine is stopped, the protective circuit automatically cuts off the current supply to the solenoid after 1–2 seconds even when the push button is continuously depressed.

USING THE WIPER

- The wiper is very convenient for sewing operation such as sewing the needle thread end into the stitches on the underside of the fabric.
- Turn the wiper switch **F** off when sewing operation does not require the wiper. (Fig. 41)

CARING FOR YOUR MACHINE

How often you will need to clean and lubricate the machine will depend on how often you will use it. When in regular use the machine should be cleaned periodically to remove lint and fluff which may have accumulated around the working parts.

- Remove throat plate and clean feed dog, sewing hook and trimmer area.
- Clean out any lint or other waste in the oil reservoir and on the filter screen of the oil pump.

HINTS FOR PERFECT OPERATION

* Keep the oil level in the oil reservoir at the HIGH mark.
* When turning the machine pulley, always turn it over toward you.
* Always keep the bed slide closed when the machine is in operation.
* Clean out any lint or other waste around the hook and between the feed rows on the underside of the throat plate.
* Don't try to "help" the machine by pulling the fabric.
* Don't press the knee lifter while the machine is running.
* Don't run the machine when threaded unless there is material under the presser foot.
* Be sure to turn off the power switch before tipping the machine back for cleaning and oiling.

Machines with U.T.T., Wiper and Back Tack

* Turn off the power switch if the needle does not rise and stop even when the trimmer solenoid is activated by heeling the foot treadle.
* The needle will not descend and the trimmer will not operate when the foot treadle is heeled immediately after turning on the power switch or immediately after completion of a thread trimming cycle. The needle will stop in down position and the trimmer will operate once the foot treadle is depressed for normal sewing.

SPECIFICATIONS (Regular Machines)

Machine	591D							591C				601D100 AD/AF
	200 AD/AF	203 AD/AF	205 AD/AF	240 AD/AF	30[illegible] AD/AF	303 AD/AF	305 AD/AF	308 AD/AF	200 AD/AF	240 AD/AF	300 AD/AF	308 AD/AF	
Type of Feed	Drop Feed								Compound Feed				Drop Feed
Equipped with		Puller Feed	Vertical Trimmer	Low Inertia presser Foot		Puller Feed	Vertical Trimmer			Low Inertia Presser Foot			Low Inertia Presser Foot
For Sewing	Light to Medium				Medium to Medium Heavy			Heavy	Light to Medium		Medium to Medium Heavy	Heavy	Light
Needle Bar Stroke	30.5 mm (1.20")				36.5 mm (1.44")				30.5 mm (1.20")		36.5 mm 1.44"		29.2 mm (1.15")
Max. Speed*	5,500 SPM		5,000 SPM	5,500 SPM	5,000 SPM			3,000 SPM	5,000 SPM		4,500 SPM	3,000 SPM	6,000 SPM
Max. Stitch Length	4.2 mm 6 SPI				5.1 mm 5 SPI			8.0 mm 3.2 SPI	4.2 mm ** 6 SPI			8.0 mm 3.2 SPI	4.2 mm 6 SPI
Presser Bar Lift (By Hand)	7.2 mm (0.28")		5.6 mm (0.22")	6.7 mm (0.26")	7.9 mm (0.31")		6.4 mm (0.25")	7.9 mm (0.31")	7.2 mm (0.28"	6.7 mm (0.26"	7.9 mm (0.31"		6.7 mm (0.26")
Presser Bar Lift (By Knee)	12.7 mm (0.50")			12.2 mm (0.48"	12.7 mm (0.50"					12.2 mm (0.48"	12.7 mm (0.50"		12.2 mm (0.48"

Note : *The machine should be operated at a speed slower than the maximum recommended speed depending on the material being sewn and the type of work being done.

**When sewing at maximum stitch length of 5 SPI on the 591C300AD/AF machines, use presser foot P/N 410922 and operate at a speed of 4000 SPM.

SPECIFICATIONS (Machines with U.T.T., Wiper and Back Tack)

Machine	591D						591C				601D
	200BD BF 200GD GF 210BD BF 210GD GF	215BD BF 215GD GF	240BD BF 240GD GF	300BD BF 300GD GF 310BD BF 310GD GF	315BD BF 315GD GF	318BD BF	200BD BF 200GD GF 210BD BF 210GD GF	240BD BF 240GD GF	300BD BF 300GD GF 310BD BF 310GD GF	318BD BF	100BD BF 100GD GF
Type of Feed	Drop Feed						Compound Feed				Drop Feed
Equipped with		Vertical Trimmer	Low Inertia Presser Foot	Vertical Trimmer				Low Inertia Presser Foot			Low Inertia Presser Foot
For Sewing	Light to Medium			Medium to Medium Heavy		Heavy	Light to Medium		Medium to Medium Heavy	Heavy	Light
Needle Bar Stroke	30.5 mm (1.20")			36.5 mm 1.44"			30.5 mm 1.20"		36.5 mm (1.44"		29.2 mm 1.15"
Max. Speed*	5,500 SPM	5,000 SPM	5,500 SPM	5,000 SPM		3,000 SPM	5,000 SPM		4,500 SPM	3,000 SPM	6,000 SPM
Max. Stitch Length	4.2 mm 6 SPI			**5.1 mm 5 SPI		8.0 mm 3.2 SPI	4.2 mm 6 SPI			8.0 mm 3.2 SPI	4.2 mm 6 SPI
Presser Bar Lift (By Hand)	7.2 mm 0.28"	5.6 mm 0.22"	6.7 mm 0.26"	7.9 mm 0.31"	6.4 mm 0.25"	7.9 mm 0.31"	7.2 mm 0.28"	6.7 mm 0.26"	7.9 mm 0.31"		6.7 mm 0.26"
Presser Bar Lift (By Knee)	12.7 mm 0.50"		12.2 mm 0.48"	12.7 mm 0.50"				12.2 mm 0.48"	12.7 mm 0.50"		12.2 mm 0.48"
Trimming Speed	200 SPM										
Sewing Hook	≠ 544784 for 591D U.T.T. Machines. ≠ 414070 for 591C U.T.T. Machines.										
Bobbin Case	≠ 540735 for U.T.T. Machines except 591C 318BD BF. ≠ 544783 for 591C 318BD BF Machine.										
Bobbin	≠ 272152 Aluminum must be used.										
Thread Trimmer	Scissor type, capable of cutting up to ≠8 cotton.										
Trimmer Driving System	Solenoid and cam controlled.										
Back Tack Speed	From 1300 to 1700 SPM										

Note : *The machine should be operated at a speed slower than the maximum recommended speed depending on the material being sewn and the type of work being done.

**Maximum stitch length for 591D300GD GF, 591D310GD GF and 591D315GD GF machines is 4.2 mm (6 SPI).

Form U3688 (1086)
Part No. 379072-002 (Rev. 1)