AMF® REECE

Better Ideas, Better Made

SPEEDWELT 1000

POCKET WELT MACHINE

PARTS AND SERVICE MANUAL

PART NUMBER 97. 0032.2.000

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INTRODUCTION

The new Speedwelt 1000 pocket welter features operator ease and safety, faster and more accurate operation, and less meintenance. The microprocessor/keypad operation offers user friendly fingertip control. All programs, selected at the push of a button, feature self directing step by step guides through the program sequences. All systems are electrical of pneumatic, no oil to leak or cintaminate. Controls are solid state electronics. Non-adjustable limit switches and sensors eliminate misadjustments and errors. The new drive train features fewer parts, reduced noise, less wear, and a smoother, more accurate operation. For operator sagery, there is no high voltage above the table top.

This twin needle stitch type 101 chainstitch machine is designed to make welt pocket openings in various types of garments. It will produce single and double welts, with simple variations in the automatic folding system. Pocket bags can be sewn in the pocket opening. The Speedwelt 1000 will sew the pocket openings at 1400 S.P.M. Automatic seam end dense stitching locks in the seams, and the threads are trimmed at the ends of the seams.

The operable pocket opening range is 52.0 mm to 188.0 mm (2 1/16 to 7 7/16 inches) in length, and 9.52 mm to 22.22 mm (3/8 to 7/8 inches) in the width of the welted pocket opening. The stitch density may be adjusted to between 9 and 14 stitches per inch.

Optional locating lights may be purchased witch the machine.

The mechanical functions are performed by a system of pneumatic and solid state electronic components. The air supply requirement is 80 P.S.I. The normal electrical supply requirement is 208/ 220/ 230/ 380 or 440 V.A.C, 3 phase, 50 or 60 cycle.

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SPEEDWELT 1000 MODELS

MODEL NO.	DESCRIPTION	PATCH GUIDE SIZE	TYPE OF MATERIAL
32.0000.0.210	3/8" Double Welt	(.725)	Light
32.0000.0.211	3/8" Double Welt	(.661)	Light / Medium
32.0000.0.212	3/8" Single Welt	(.661)	Light / Medium
32.0000.0.220	7/16" Double Welt	(.690)	Heavy
32.0000.0.221	7/16" Double Welt	(.730)	Light / Medium
32.0000.0.222	7/16" Single Welt / Overlap	(.759)	Light / Medium
32.0000.0.230	1/2" Double Welt	(.786)	Heavy
32.0000.0.231	1/2" Double Welt	(.850)	Light / Medium
32.0000.0.232	1/2" Single Welt	(.801)	Light / Medium
32.0000.0.233	1/2" Single Welt	(.945)	Light / Medium
32.0000.0.240	5/8" Double Welt	(1.100)	Heavy
32.0000.0.241	5/8" Double Welt	(1.148)	Light / Medium
32.0000.0.242	5/8" Single Welt	(1.230)	Light / Medium
32.0000.0.250	3/4" Double Welt	(1.350)	Heavy
32.0000.0.251	3/4" Single Welt	(1.470)	Light / Medium
32.0000.0.252	3/4" Single Welt / Overlap	(2.100)	Light / Medium
32.0000.0.260	7/8" Double Welt	(1.655)	Light / Medium
32.0000.0.261	7/8" Single Welt	(1.669)	Light / Medium

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SPEEDWELT 1000 SPECIFICATIONS

DESCRIPTION		Speedwelt 1000 Sewing Machine	
SEWING HEAD		2-Needle Chainstitch	
STITCH TYPE		101 Single Thread Chainstitch	
SEWING SPEED		1.400 Stitch Per Minute	
NEEDLE BITE SIZES		3/8”, 7/16”, 1/2”, 5/8”, 3/4”, 7/8” (9.5, 11.1, 12.7, 15.9, 19, 22.2 mm)	
POCKET LENGTHS		2 1/16 to 7 7/16” (52 to 188 mm)	
STITCH DENSITY	Center End	9 to 14 spi (1.8 to 2.8 mm) 18 to 24 spi (0.9 to 1.3 mm)	
LENGTH OF END DENSITY STITCHES		2 to 8 mm	
WELT STYLES		Single, Double, Offset, Overlapping	
CENTER KNIFE		Scissors Type, Lower Driven	
CONTROL SYSTEM		Microprocessor	
LUBRICATION SYSTEM		Manual Oiling Points	
ELECTRICAL REQUIREMENTS		220 V, 60 Cycle, 3 Phase 380 V, 50 Cycle, 3 Phase	
COMPRESSED AIR	Pressure Consumption	80 psi (5.516 bar) .25 cmf (7 /m)	
NET DIMENSIONS	Length Width Height Weight	32” 28.5” 50” 340 lbs.	812 mm 724 mm 1270 mm 154 kg
GROSS DIMENSIONS	Length Width Height Weight	41” 32” 53” 500 lbs.	1041 mm 813 mm 1346 mm 267 kg

POWER SWITCH:

The power switch controls all power to the machine. It is used to power up and power down the machine. In the "OFF" position, there is no power to any component in the SPEEDWELT 1000.

MOTOR SWITCH:

The motor switch controls all power to the motor. In the "OFF" position, the drive motor does not have power; however, the machine can still have power.

AIR VALVE:

The air valve controls the air supply to the pneumatic system. The system operating pressure is 80 PSI. The thread pickup arms, tab knives, center knife, clamping, and patch folding are pneumatically operated.

ON SWITCH:

The ON switch turns the microprocessor power on.

EMERGENCY STOP SWITCH:

The emergency stop switch turns the microprocessor and the motor power off.

SEW INTERRUPT SWITCH:

The sew interrupt switch immediately stops the sewing operation and activates the keypad. It serves as a reset button when the clamping table is in the front or rear position. IF the table stops in an interim position, the keypad must be used to reset the table position.

THREAD SAFETY SWITCH:

The thread safety switch is used when a thread breakage occurs. This switch, when pressed, prevents the machine from sewing, enabling the operator to re-thread the machine. When the operator is ready to continue sewing, the switch, when pressed again, returns the machine to the sewing position before the thread breakage occurred.

KNEE SWITCH:

The knee switch starts the sewing cycle.

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CONTROLS

TREADLE:

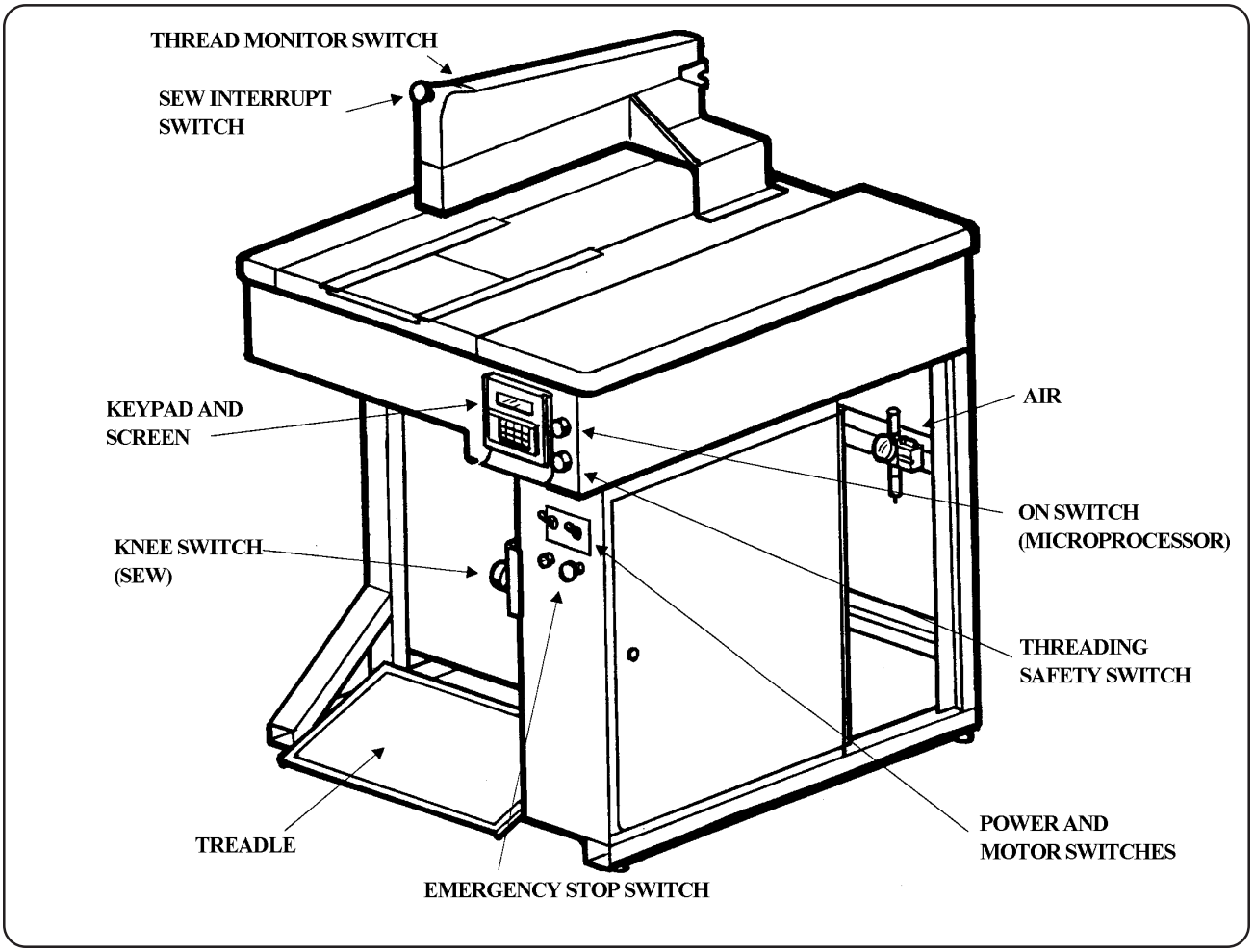
The treadle operates by two different position switches which control the operation of the clamping table, clamps, and brushes. Positions are halfway down (Position Switch # 1), and all the way down (Position Switch # 2).

KEYPAD:

The keypad is locked during normal operation to avoid accidental program changes. The SEW INTERRUPT switch stops the operation and activates the keypad for approximately 30 seconds. Striking a key keeps the keypad active until the [ENT] button is pushed, which returns the screen display to the sew program selected, and locks the keypad.

THREAD MONITOR SWITCH:

This switch, located under the head cover, will detect a slack or broken thread and will stop the machine from sewing and initiate the repair mode.



OPERATOR KEYPAD AND DISPLAY SCREEN

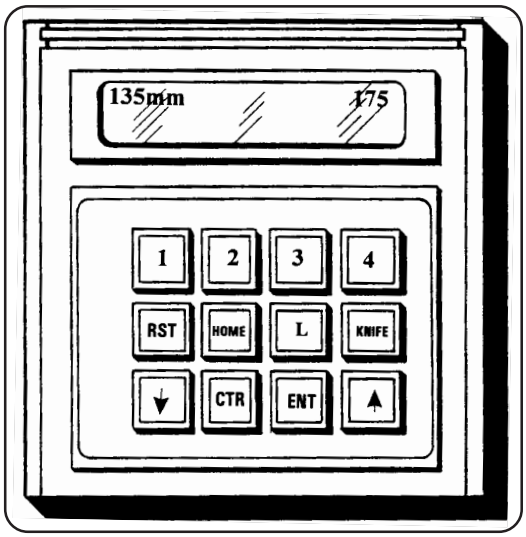
The Keypad / Microprocessor controls all functions of the SPEEDWELT 1000 and displays the active function on the screen. There are INPUT / OUTPUT tests which perform diagnostic checks on component operations. They isolate problems quickly and simply. The tests read each selected input or output, monitor its operation, and displays the results on the keypad screen.

All power to the SPEEDWELT 1000 is controlled by the POWER switch. The microprocessor power is controlled by the ON switch. Both of these switches must be in the "ON" position before the screen will illuminate, displaying the currently selected program. The programs are menu driven and can be easily changed (see pages 1-9 and 1-10).

The keypad is locked during sewing operations to prevent accidental program changes. The SEW INTERRUPT switch accesses the keypad for about 30 seconds. To keep it active, *press* one of the following keys.

[RST]; [L]; [KNIFE]; [CTR] or either of the two arrow keys.

To deactivate the keypad, *press* any of the following keys per screen instructions:



[ENT]; [HOME]; [CTR] or the SEW INTERRUPT switch

The key functions are as follows:

[RST] -Resets the counter to zero.

[HOME] - At start-up, this key returns the clamp table to the LOAD position currently selected (front to back or back to front).

[L] - Selects the loading position, front or back.

[KNIFE] - Turns the TABKNIFE and CENTERKNIFE operation on or off (cut -no cut).

[CTR] - Accesses the Mechanics Diagnostic Programs.

[ENT] - Enters into memory any changes made.

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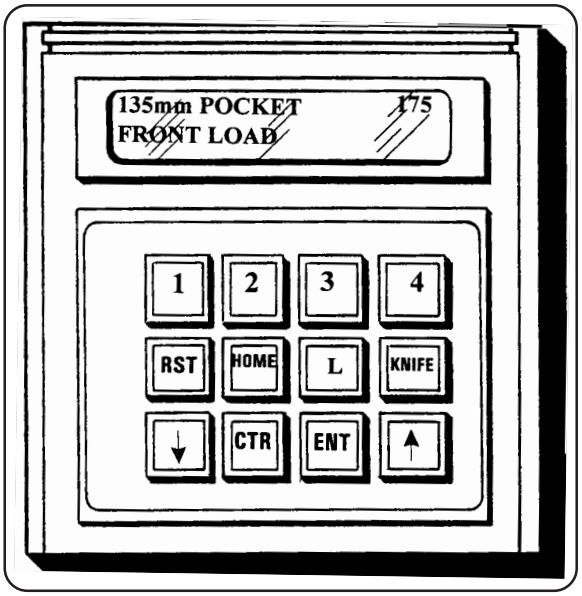
OPERATOR KEYPAD AND DISPLAY SCREEN



Operator Keypad and Display Screen

To enter either the Front or Back Loading Programs:

Press the [SEW INTERRUPT] switch.

Press [L].

FRONT LOADING

Press the TREADLE half way down	Clamps will go down
Release the TREADLE	Clamps will come up
Press the TREADLE all the way down	Clamps will go down, and the table will go back
Release the TREADLE	Brushes will close
Press the KNEE SWITCH	To continue sewing

or

Press the SEW INTERRUPT SWITCH	To cancel, and the brushes will open and clamps will come up

BACK LOADING

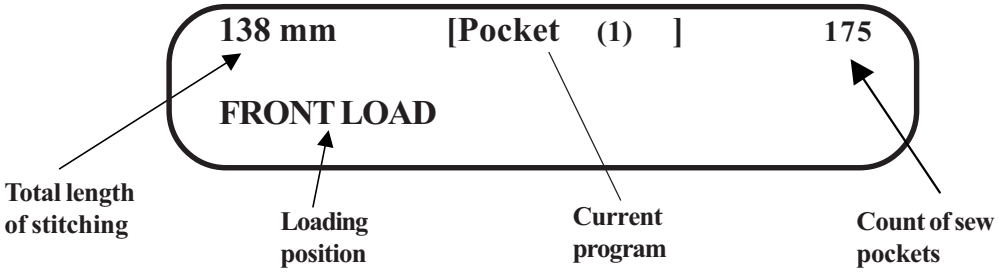
Press the TREADLE all the way down	Table will go back
Release the TREADLE half way up	Clamps will go down
Press the TREADLE all the way down	Clamps will come up
Release the TREADLE	Clamps will go down and the brushes will close
Press the TREADLE half way down	Brushes will open
Release the TREADLE	Brush will close
Press the KNIFE SWITCH	To continue sewing

or

Press the SEW INTERRUPT SWITCH	To cancel, and the brushes will open and clamps will come up

PROGRAMMING THE KEYPAD

1. *Turn* the machine on by turning the POWER and MOTOR toggle switches to the ON position.
2. *Turn* on the air valve.
3. *Push* the ON switch.
4. The screen will display a message similar to the one below.



This screen (pocket program) briefly describes the active program in the machine. It is possible to have 12 different programs. The program being run is locked in memory when the machine is turned off. It will be active when it is turned on again. To sew a pocket welt, *follow* the "OPERATOR INSTRUCTIONS".

THINGS TO REMEMBER

SEW INTERRUPT: This switch is used to access the program by activating the keypad for about 30 seconds. This safety feature prevents accidental changes made through the keypad. This switch can also be used as a "RETURN" to the pocket program screen.

To keep the keypad active, *press* any one of the following keys:
[RST]
[L]
[KNIFE]
[‾]
[-]
[CTR]

To de-activate the keypad, *press* any of the following per screen instructions:

[ENT]
[HOME]
[CTR]
SEW INTERRUPT switch

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TO SET THE SEWING PROGRAMS:

Press the [SEW INTERRUPT] switch.
Press the [CTR] key.
Press [2] to program.

To program sewing, *press* [1].
To program PATCH LOADER, *press* [2].

To turn PATCH LOADER on, *press* [2].

SEMIAUTOMATIC - the operator starts sewing after loading and folding.

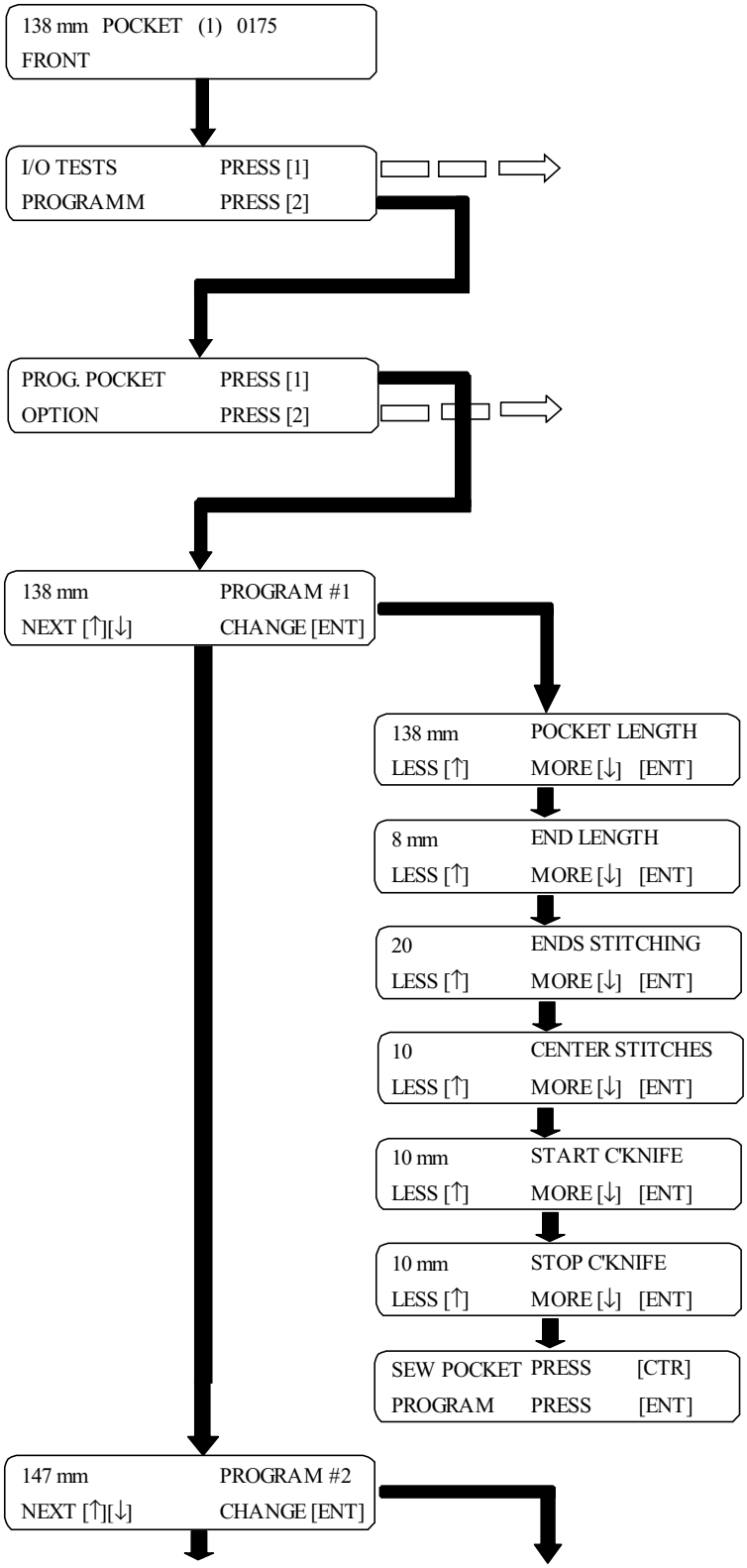
AUTOMATIC - the foot treadle only is used.

The NEXT [-] key will advance to and display the next program. The NEXT [¯] key will display the previous program. The CHANGE [ENT] key allows changes to be made to the current program, and advances to the next screen within the program.

Once in the program, the LESS [¯] key will decrease the number, the MORE [-] key will increase the number. The [ENT] key will confirm any changes made and advance the program to the next screen.

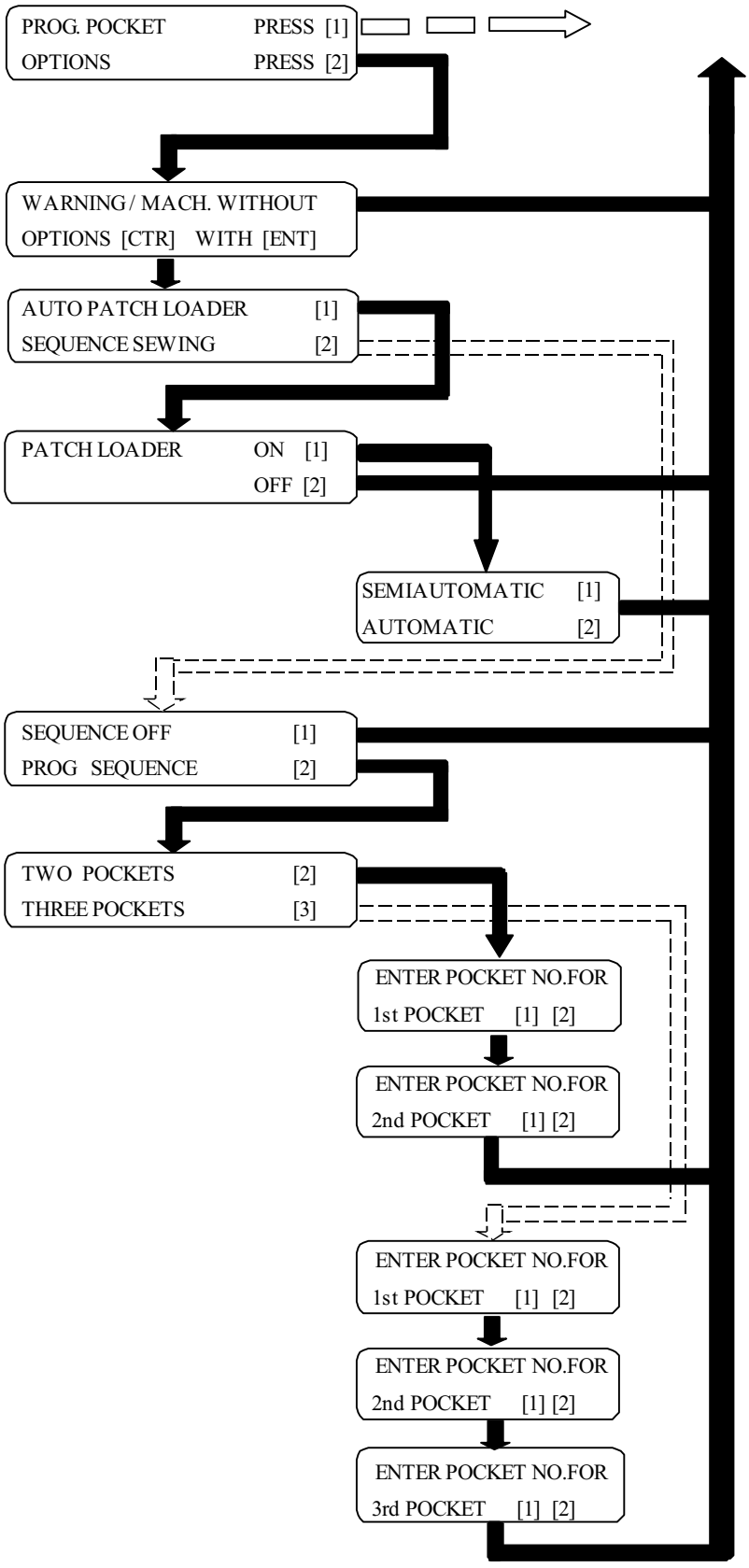
**For programming instructions for options, see the Options section, page 1-44.

To enter the sewing mode, *press* the [CTR] key; to continue in the programming mode, *press* the [ENT] key.



TYPICAL - PROGRAMS 2 THROUGH 8

PROGRAMMING THE KEYPAD



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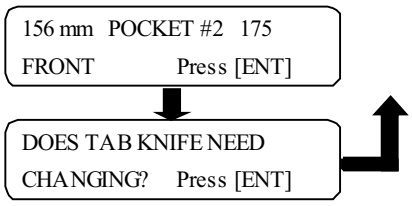
PROGRAMMING THE KEYPAD

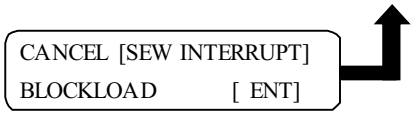
TO CHANGE A POCKET PROGRAM:

Press [SEW INTERRUPT] switch
Press [-] or [ ] to select



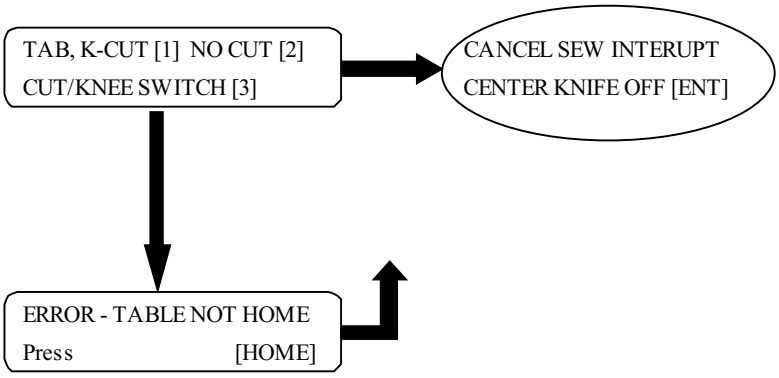
TO CHANGE THE LOADING POSITION:

Press [SEW INTERRUPT] switch
Press [**L**] key



TO CHANGE THE TABKNIFE (CUT-NO CUT):

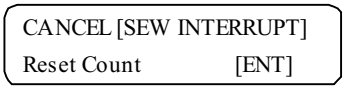
Press [SEW INTERRUPT] switch
Press [KNIFE] key
* (1) Automatic tab knife center cut
(2) No cut center or tab knives
(3) Tab cut w/knee switch



ERROR MESSAGE

Indicates table is not in the Home position
Press [HOME]

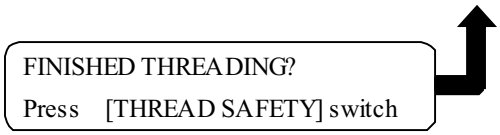
TO RESET THE COUNT OF SEWN POCKETS:



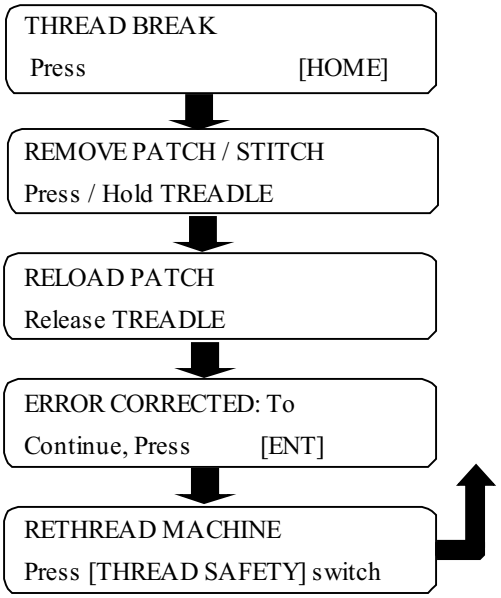
Press [SEW INTERRUPT] switch
Press [RST]

TO THREAD THE MACHINE:

Press the [THREAD SAFETY] switch. *Thread* the machine. *Press* the [THREAD SAFETY] switch to return to the sewing mode.



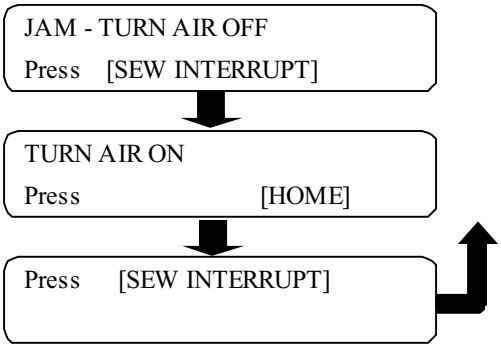
When a thread breaks, the machine will automatically go into the [SEW INTERRUPT] mode.



Press the [THREAD SAFETY] switch to return to the sewing mode.

When the material jams:

Remove the material after turning the air valve OFF.



Press [SEW INTERRUPT] to return to the sewing mode.

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ADJUSTING ROCKER RODS

ROCKER ROD REPLACEMENT

In most cases, only one of the rocker rods ❿ will actually required replacement. However, replace both of the rocker rods. To replace, perform the following steps:

1. Turn the arrow located on eccentric stud ❻ towards the rear of the machine.

2. Remove needle bar ❼, eccentric stud ❻, rear stud ❽, a pin ❶. Be careful not to lose the small key in the eccentric stud. Remove the rocker rod assembly ❾.

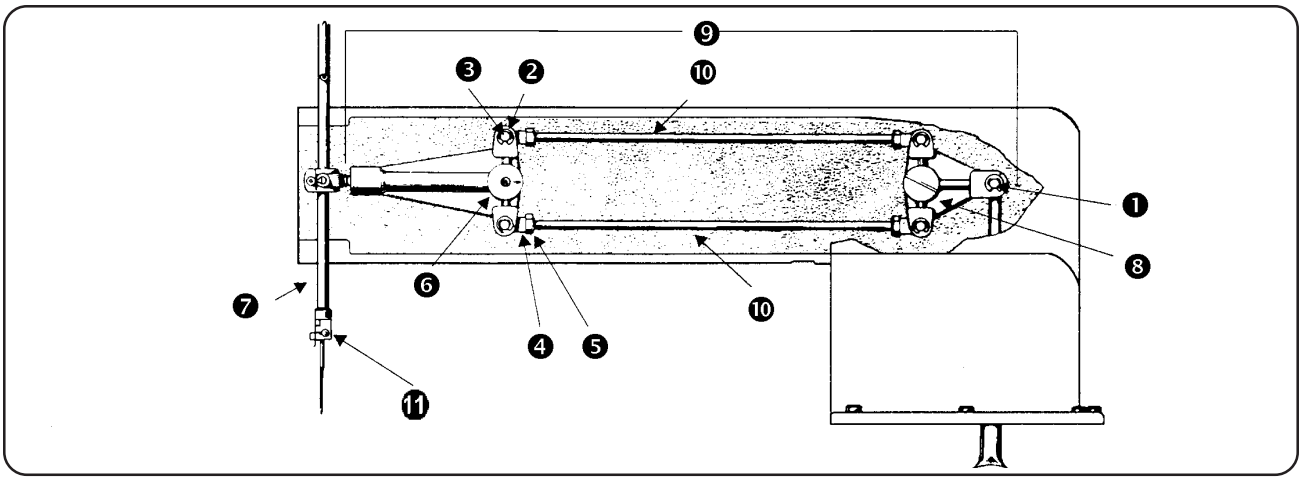
3. Remove the four E-rings ❷ from the pins located on the rocker assembly. Remove the pins ❸. Disassemble the broken rod by loosening locknuts ❺, removing clevis' ❹ and removing locknuts ❺. Place clevis and locknuts on new rod. Re-install eccentric ❻ and rear ❽ studs onto the head. Insert rod ❿ on the head through the opening located on the left hand side of the machine. Clevis on the new rod should slide over the eccentric ❻ and rear ❽ studs. The length of the rod and the clevis should match the distance between the two studs. Repeat for the other rod.

4. Install the new rods onto the front and rear rocker levers using the pins to secure them in place. Re-install E-rings ❷ over the pins ❸. Remove eccentric and rear studs. Re-install the rocker rod assembly ❾ using the studs and pin ❶.

ROCKER ROD TENSION

1. The tension is adjusted on the rocker rods ❿ by rotating the eccentric stud ❻. This is done by removing the needle holder ⓫ and pin ❶.

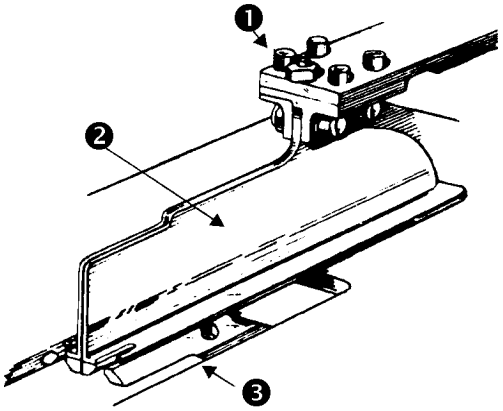
2. Loosen eccentric stud ❻. Rotating the stud so the arrow faces the front of the machine *increases* the tension on the rocker rods; rotating the stud so the arrow faces the rear of the machine *decreases* the tension. Decrease the tension enough so the needle bar ❼ can move up and down freely. Slowly increase the tension until there is a slight drag when the needle bar is moved manually up and down. The arrow will be about at the 1 or 2 o'clock position. Re-tighten stud.



ADJUSTING NEEDLE BAR HEIGHT

1. Move the clamping table to the back load position.

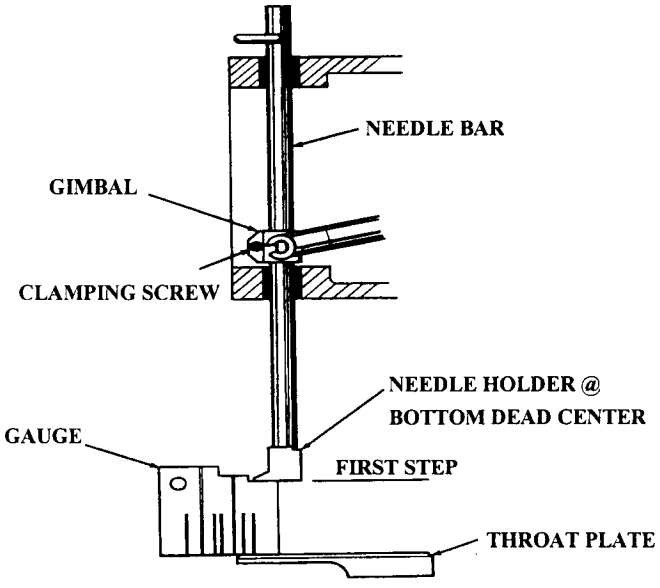
2. Remove the patch guide assembly ❷ by loosening and removing screws ❶.



3. Move the clamping table to the front load position.

4. Set the gauge squarely on the throat plate ❸. The bottom of the needle holder should sit on the first step of the gauge with the needle bar at the bottom, dead center. Adjust the needle bar to this height by loosening the clamping screw in the gimbal and sliding the needle bar into the proper position. Lock the needle bar firmly into the gimbal by re-tightening the clamping screw.

NOTE: Ensure needles are still in alignment with the throat plate (see page 1-15).



NOTE: LOOPERS AT MAXIMUM REARMOST POSITION

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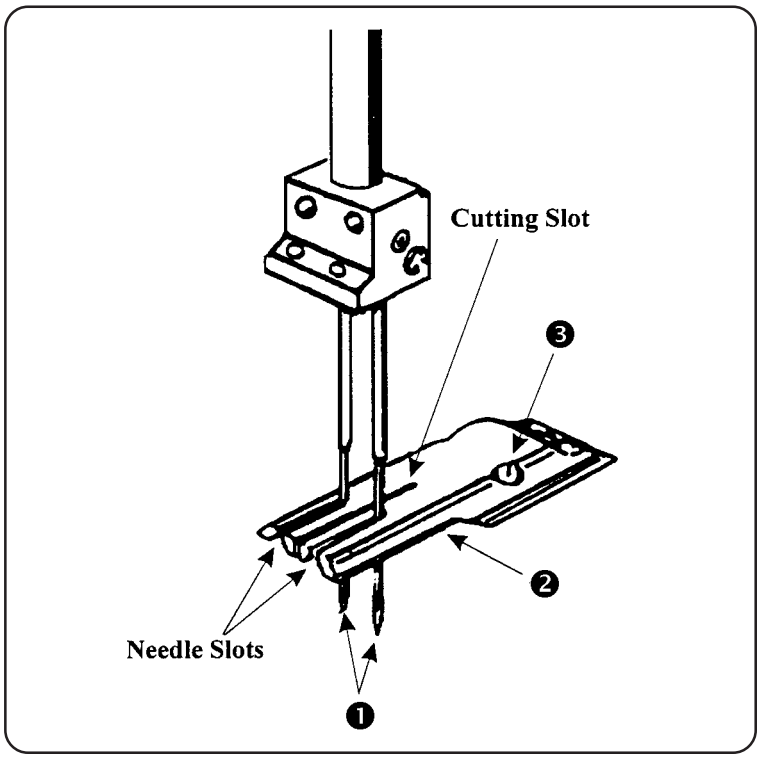
ADJUSTING THE NEEDLE TO THROAT PLATE

Before starting this adjustment, ensure the clamping table is in the back load position.

1. Select OUTPUT TEST (see page 2-4) from the keypad. Bring the clamps down and remove the patch guide.

2. Lift the machine. Manually operate the needle bar by rotating the knob, located on the centerknife shaft, clockwise. Check for a slight clearance between the needles ❶ and the throat plate ❷ openings. If a slight clearance does not exist, loosen screws ❸ and tap the throat plate to the right or left as necessary. Once the clearance has been obtained, re-tighten screws ❸ and re-install the patch guide.

Note: Ensure the needles are straight.



The patch guide is factory set.

Elimination of Side Play

If play exist between the patch guide arm ❶ and hinge brackets, loosen only one hinge bracket. This is done by loosening screws ❷. While pressing brackets together, retighten screws ❷. As long as one hinge bracket remains fixed, the patch guide arm ❶ will remain centralized.

Leveling of Patch Guide

The bottom surface of the patch guide ❸ should rest flatly on the top surface of the throat plate ❹. If an adjustment is required, loosen locknut ❺ and move allen screw ❻ up or down as necessary. Once the adjustment has been made, re-tighten locknut ❺.

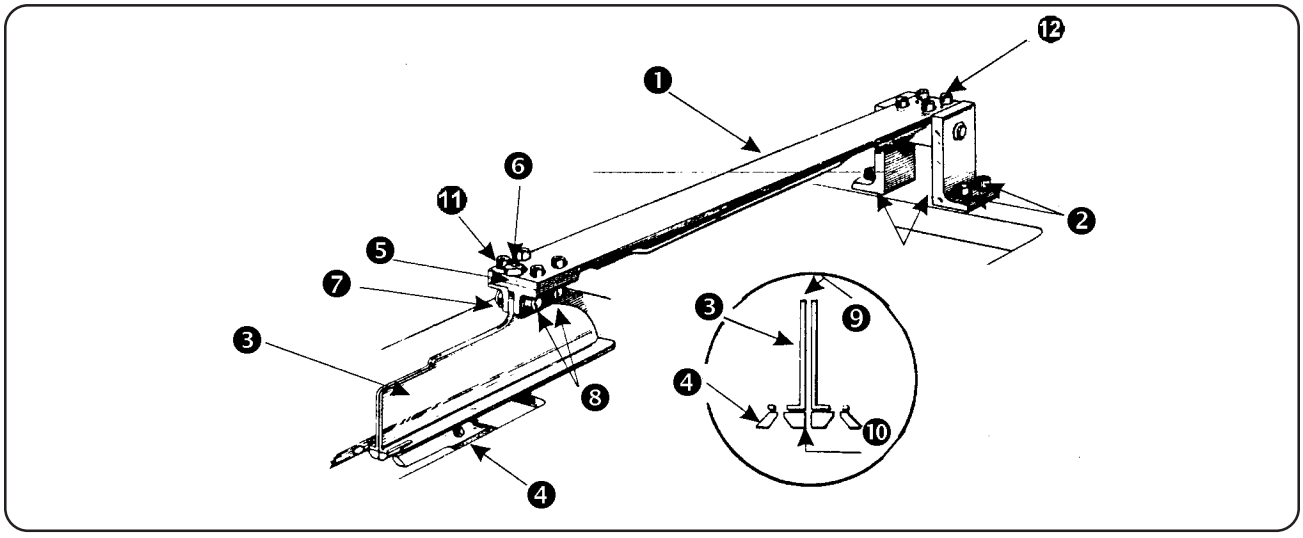
Setting the Tension on the Patch Guide

The patch guide should have a slight drag when it is manually moved up and down. If adjustment is required, loosen locknuts ❼ and move screws ❽ in or out (in tightens the drag; out loosens the drag) as necessary. Once a slight drag is obtained, re-tighten locknuts ❼. Re-check patch guide for slight drag.

Alignment of Patch Guide and Throat Plate

1. The knife slot ❾ of the patch guide must be aligned with the center slot ❿ of the throat plate. To adjust, loosen screws ⓫, and move the patch guide to the right or left as necessary. Once the alignment has been obtained, re-tighten screws ⓫.

2. If the alignment can not be obtained by performing step 1 above, loosen screws ⓬. Move the patch guide arm ❶ to the right or left as necessary. Re-tighten screws ⓬. Repeat step 1 above.



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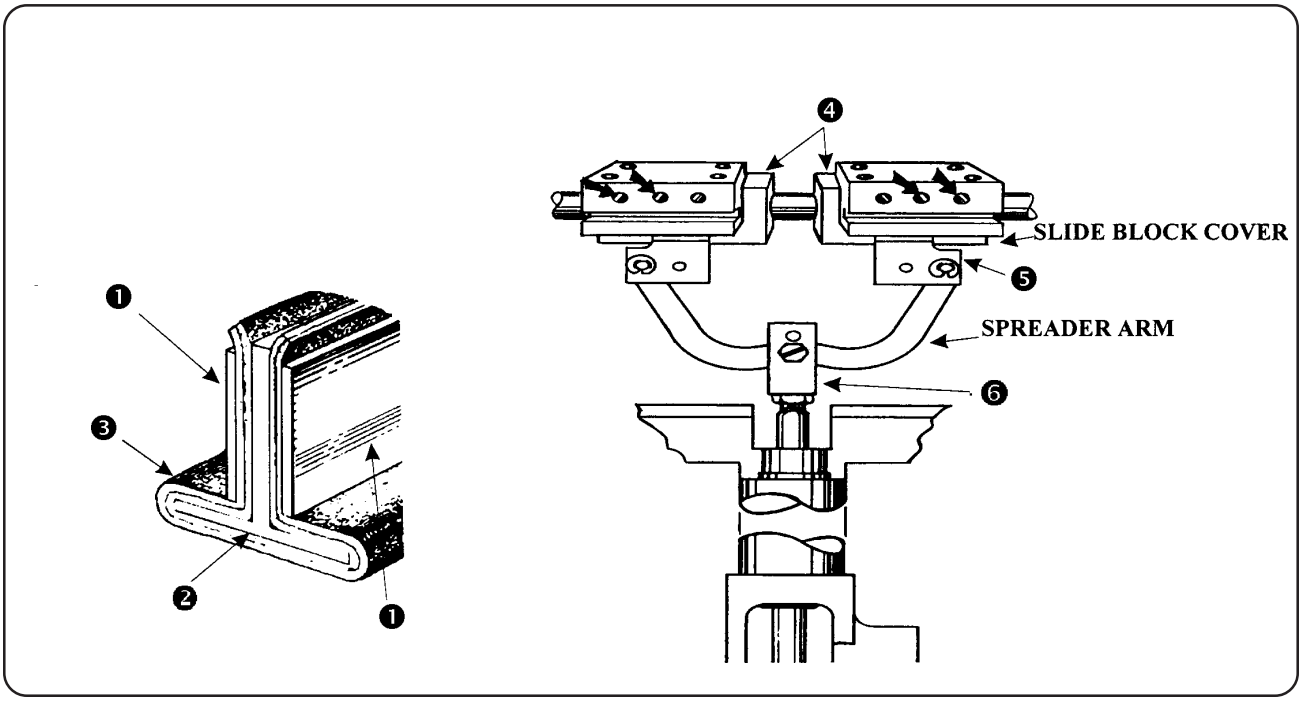
PATCH FOLDING

Horizontal Adjustments

The brush blades ❶ must close parallel to the patch guide ❷, with a clearance on each side of the patch guide equal to the thickness of welting ❸ and backing material. To assure accurate performance, it is essential that the correct adjustments exist between the patch folding arms, slide block ❹, slide bracket ❺ and clevis ❻. Refer to pages 1-13 through 1-16 to ensure the proper machine settings are in place before performing the following patch folding adjustments.



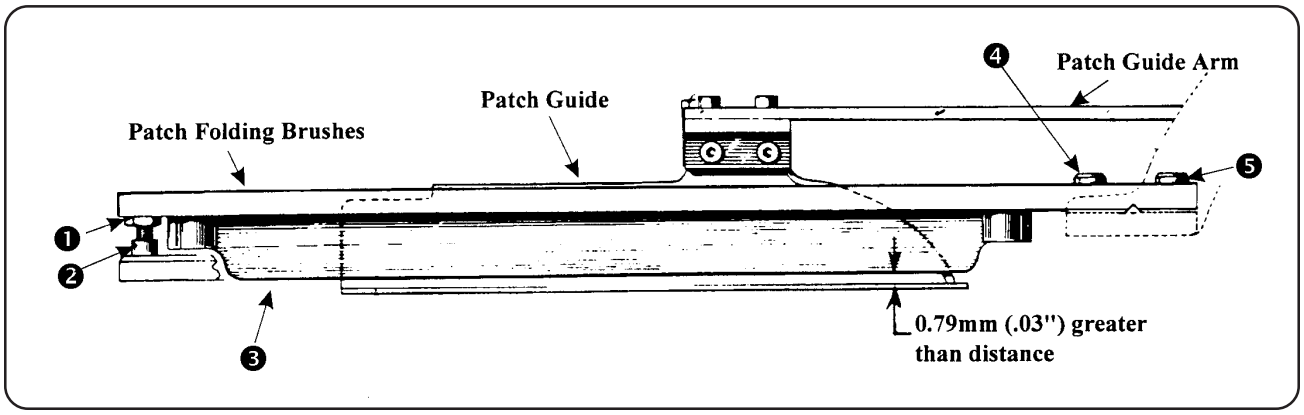
Adjusting the Height of the Front End Brush Blades to the Patch Guide

Loosen nut ❶, and turn screw ❷ in or out (in will lower the height; out will raise the height) as necessary. Once the proper height has been obtained, re-tighten nut ❶.

Adjusting the Height of the Rear End Brush Blades to the Patch Guide

To raise the height of the brush blade ❸, tighten screw ❹, and loosen screw ❺. To lower the height of the brush blade ❸, loosen screw ❹, and tighten screw ❺.

NOTE: The height of the rear end brush blades must be 0.79 mm (.03") higher than the front end brush blades.



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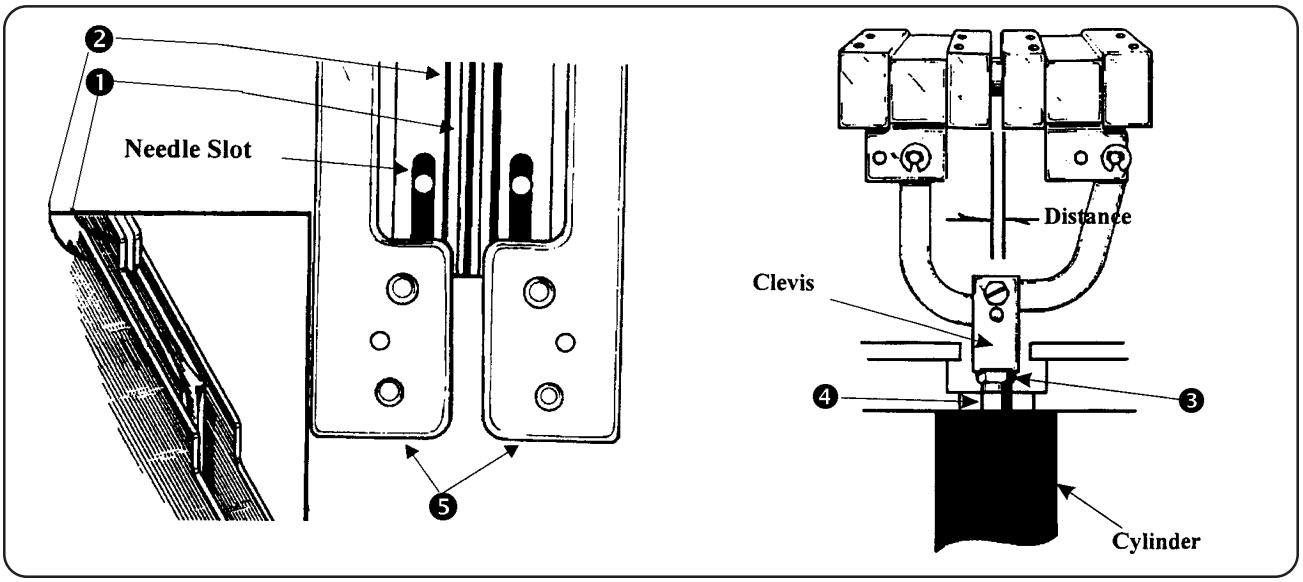
PATCH FOLDING

Setting the Distance between the Patch Guide and Brush Blades

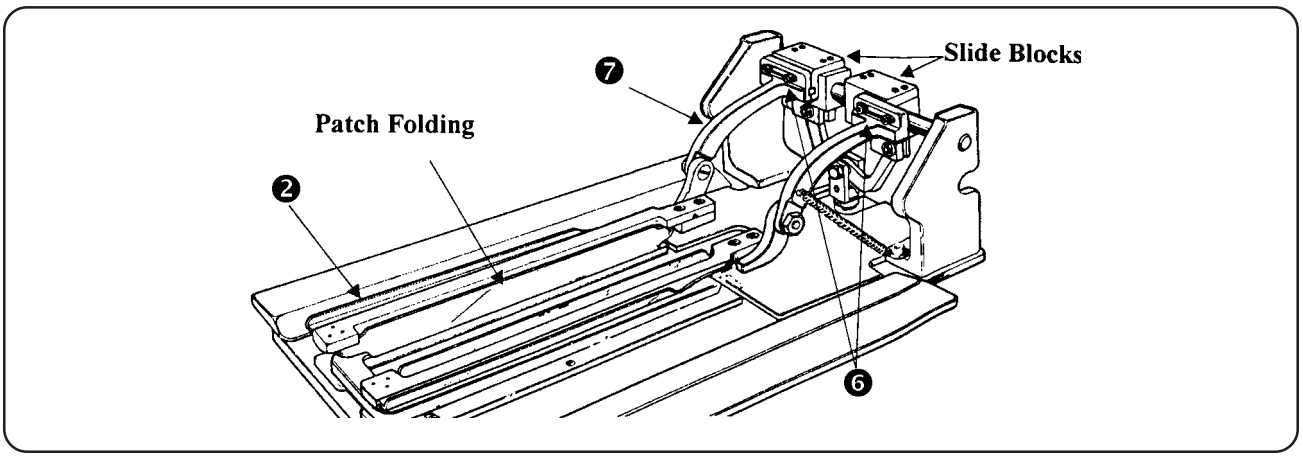
The following adjustment may vary slightly depending on the thickness of the material being used. Heavier material requires more distance between the patch guide ❶ and the brush blades ❷; lighter material requires less distance. If, after performing the following steps, the correct distance has not been obtained, perform the adjustment at the bottom of this page.

To adjust, loosen nut ❸, and screw piston rod ❹ in or out (in will *decrease* the distance; out will *increase* the distance) as necessary. Once the proper distance is obtained, re-tighten nut ❸.



NOTE: Patch folding brushes ❺ must not deflect patch guide when welting and backing material is being folded. If this occurs, uneven welting or needle breakage may result.

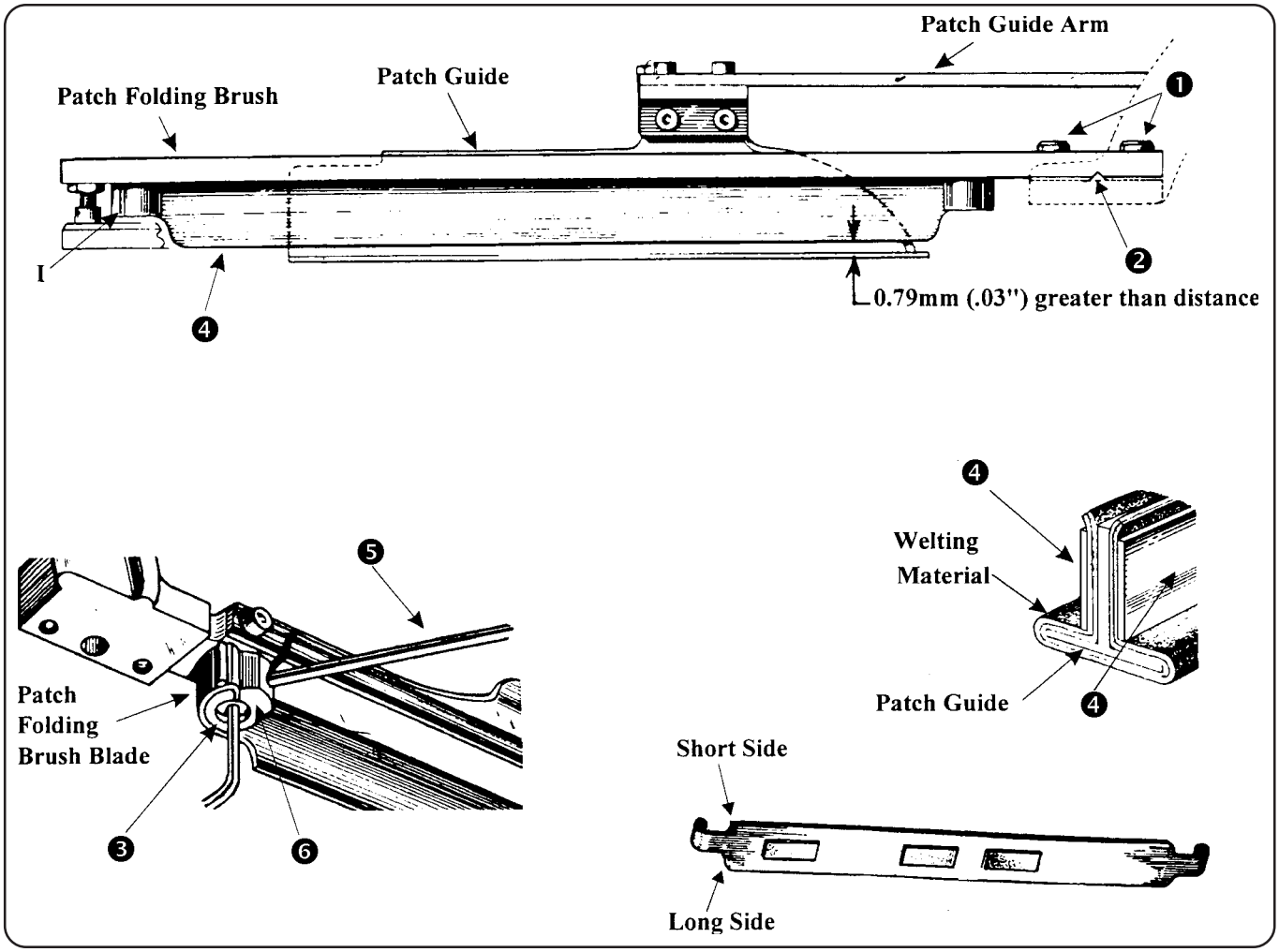
For heavier material, perform the following steps:
Loosen screws ❻, and slide brush arm ❼ in or out as necessary. Once the proper distance has been obtained, re-tighten screws ❻.



Installation of Brush Blades

The brush arm should be removed in order to replace the brush blades. This is done by removing screws ❶ and the pivot block ❷. Lift the brush arm up or out. Loosen screws **I**, located on both ends of the patch folding brush arm, and remove old brush blade. Install the new brush blade to the full depth of the slot in the pivot. Re-tighten screw **I** at *one* end of the arm. Place hex wrench in pivot at the opposite end of the brush arm. Turn the pivot until the brush blade is taut. Once the brush blade is taut, re-tighten screw **I**. Re-install the brush arm and the pivot block. Re-install screws **H** and re-tighten. See page 1-18 for the proper adjustment of the brush arm.

NOTE: The brush blades have a long and short side. The long side down is used for sewing light to medium weight materials. The short side down is used for sewing medium to heavy materials. When installing new brush blades, ensure that both blades are inserted in the same way, either with both blades with the long side down or with both blades having the short side down. There are also several different size blades available for the different weight fabrics.



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PATCH FOLDING

Positioning of the Patch Folding Brushes

The Speedwelt 1000 is available in several modes. As a result, the adjustments of the patch folding brushes will vary with each model. The initial steps are as follows:

1. Loosen nut ❶ and move adjusting screw ❷ up or down until the desired dimension is obtained between the slide blocks. Once the desired dimension has been obtained, re-tighten nut.

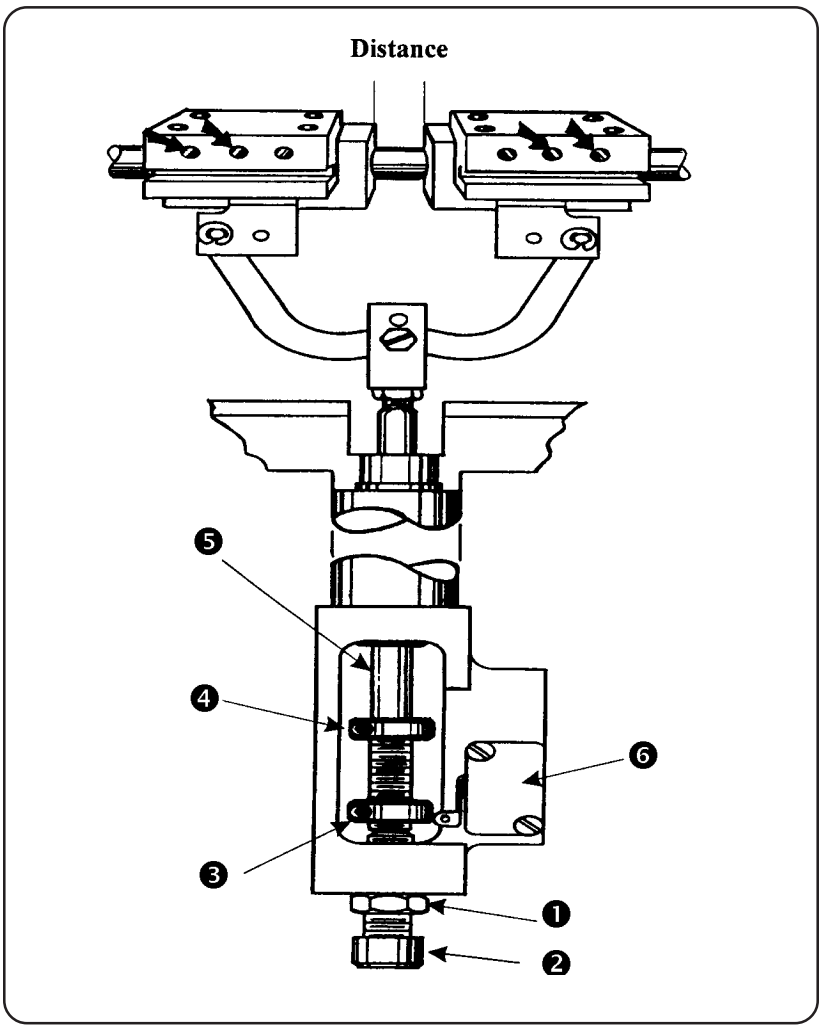
2. Loosen lower clamp collar ❸ by loosening set screw, located in the lower clamp collar. Move the collar up to within 7.94 mm (.312") to the top clamp collar ❹.

3. Pull cylinder rod ❺ down until it touches the adjusting screw.

4. Move the lower clamp collar ❸ down by turning it until it activates the switch ❻.

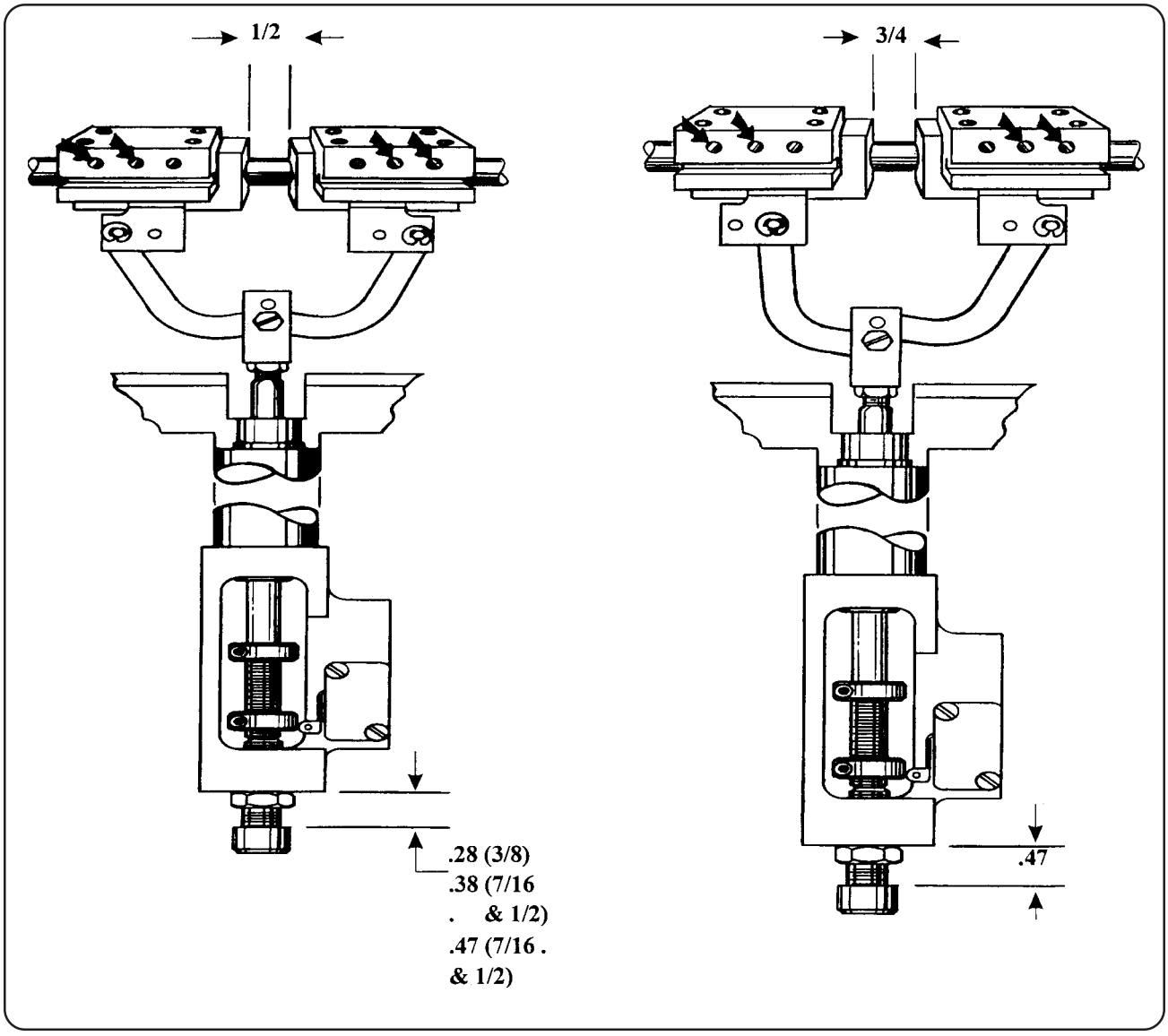
5. Turn the clamp collar one more turn. Re-tighten the set screw.

6. Check the brushes for proper operation, and adjust accordingly.



POSITIONING OF PATCH FOLDING BRUSHES

MODELS		MODELS
3/8” D.W. (.725)	7/16” S.W.O. (.759)	1/2” S.W. (.945)
3/8” D.W. (.661)	1/2” D.W. (.786)	
3/8” S.W. (.661)	1/2” D.W. (.856)	
7/16” D.W. (.690)	1/2” S.W. (.801)	
7/16” S.W. (.730)		



NOTE: The above clearances may vary depending upon the thickness of the material being sewn.

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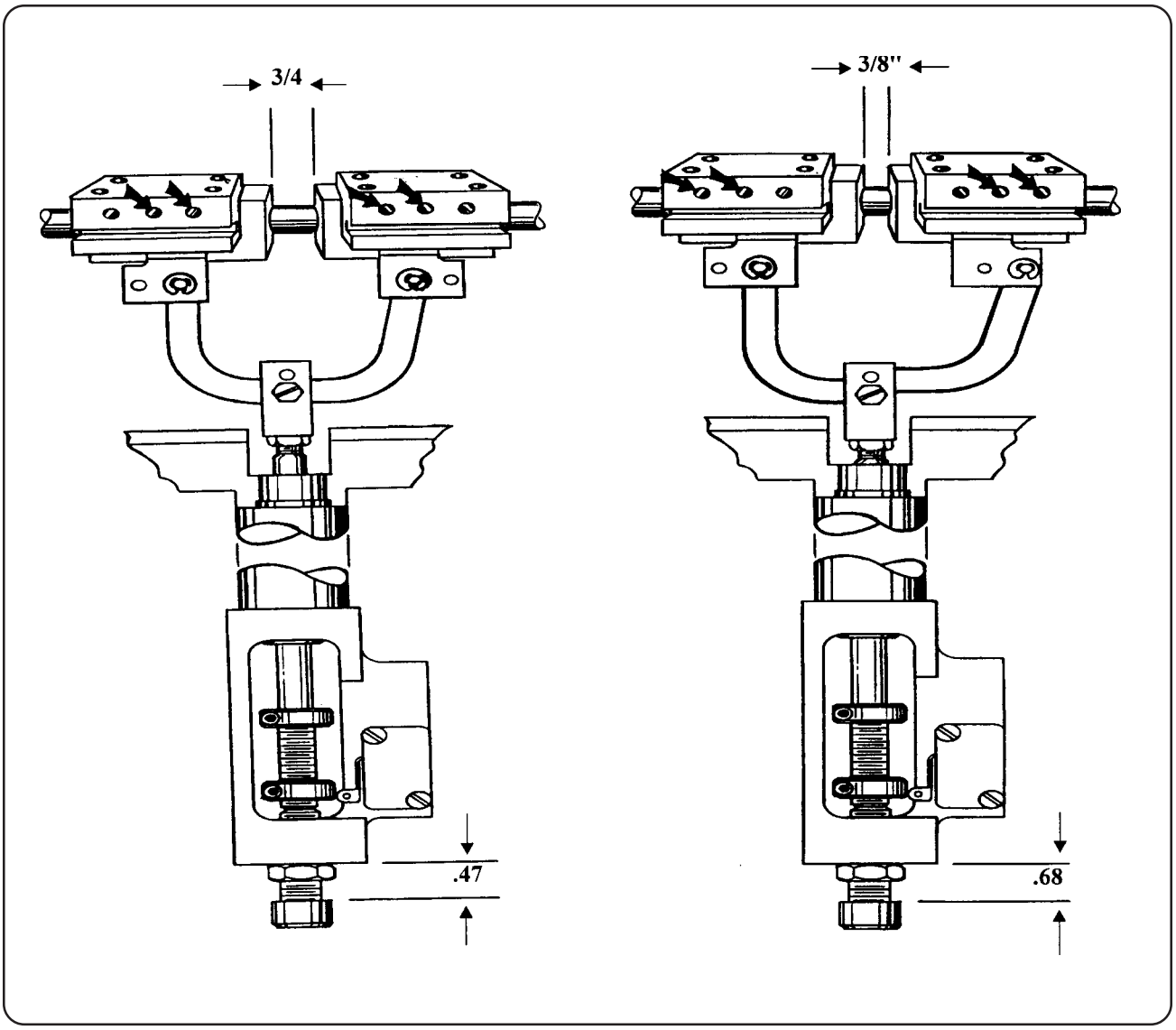
POSITIONING OF PATCH FOLDING BRUSHES

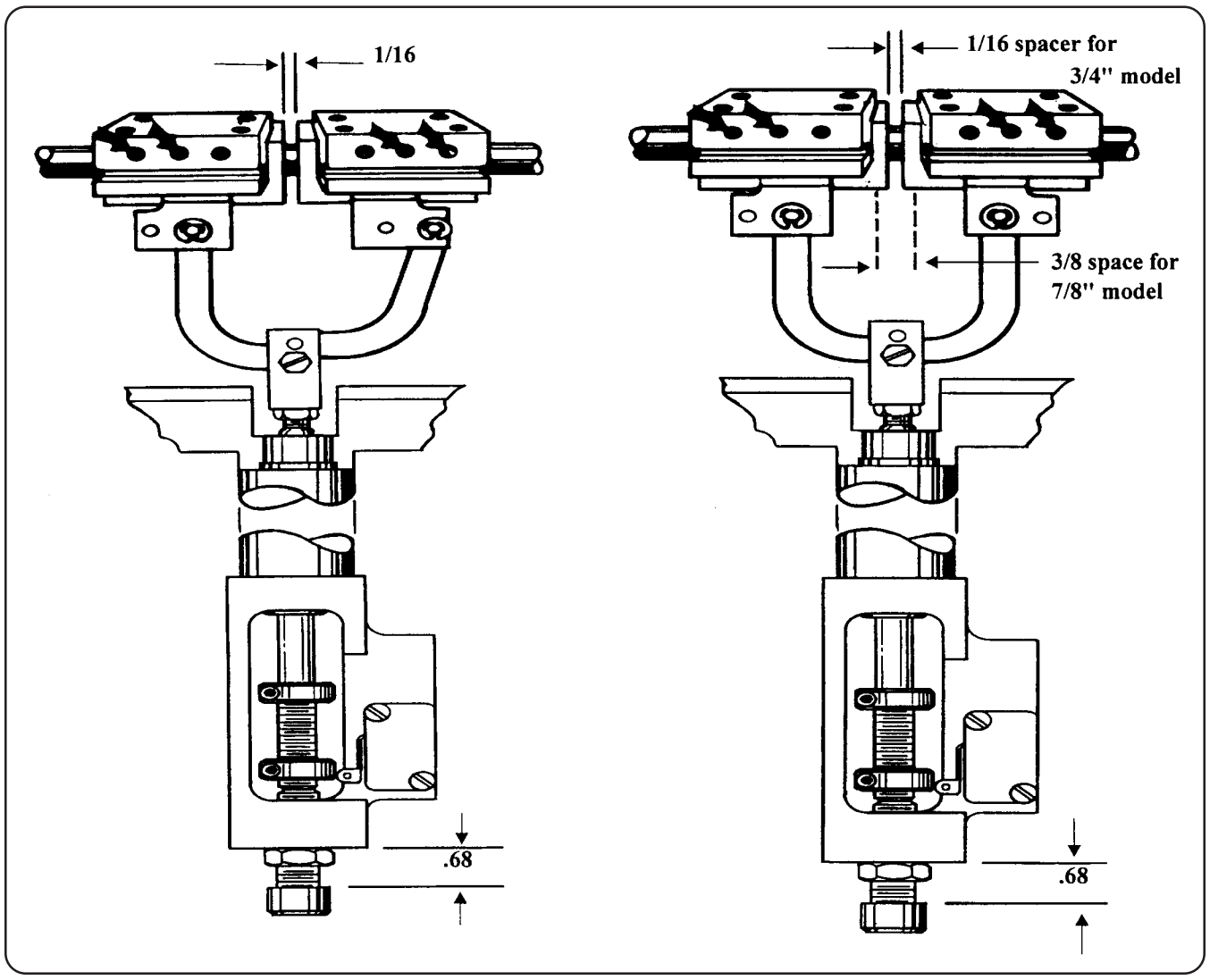
MODELS	MODELS	MODELS
5/8" D.W. (1.100) 5/8" D.W. (1.148)	3/4" D.W. (1.350)	5/8" S.W. (1.230)



NOTE: The above clearances may vary depending upon the thickness of the material being sewn.

POSITIONING OF PATCH FOLDING BRUSHES

MODELS		MODELS	
3/4” S.W. (1.470)	7/8” D.W. (1.669)	3/4” S.W. (2.100)	7/8” D.W. (1.655)



NOTE: The above clearances may vary depending upon the thickness of the material of the being sewn.

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CLAMPING

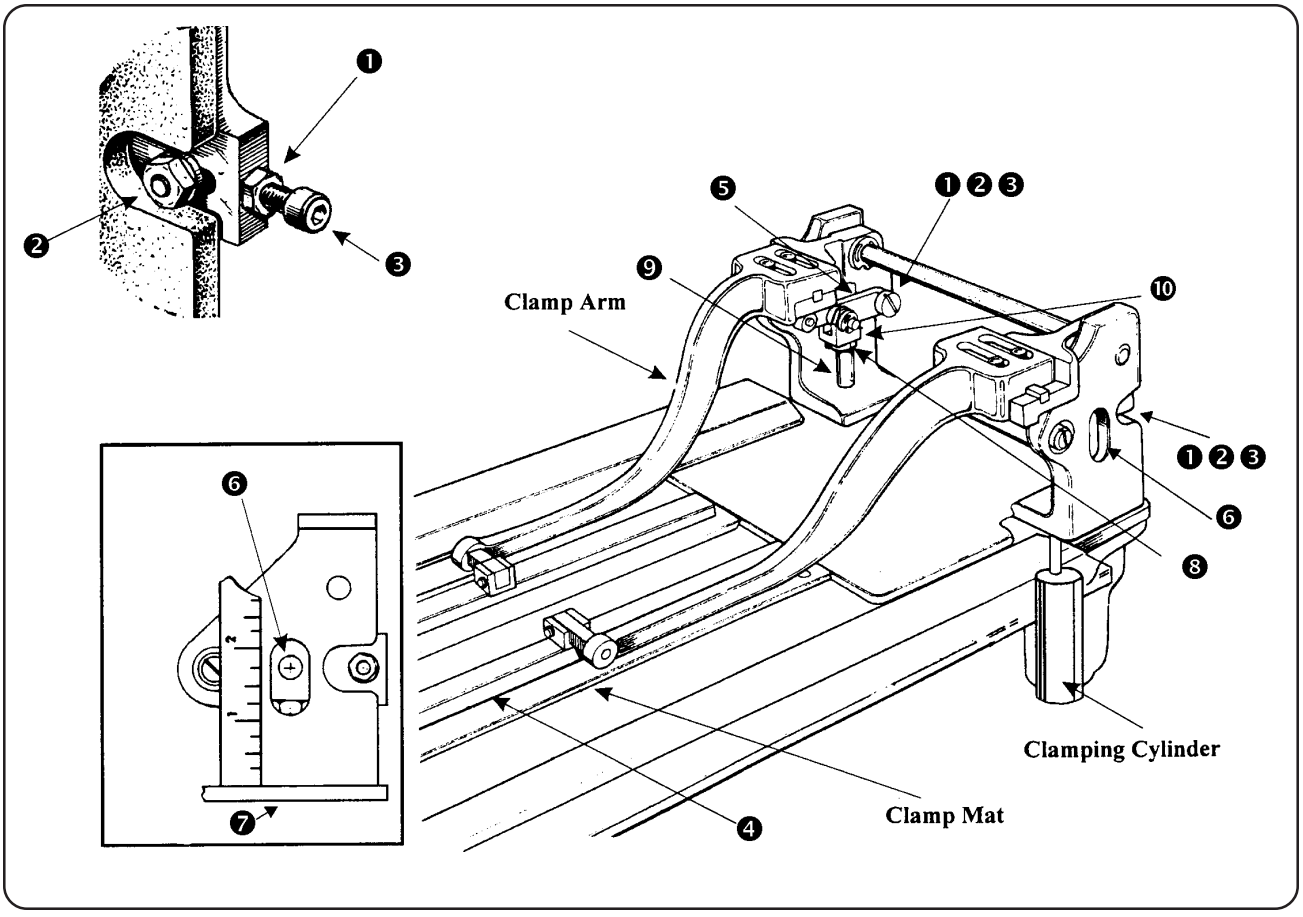
Adjustment should be made with no material under the clamp foot. Both clamp arms must be adjusted at the same time.

1. Release all clamping pressure by loosening nuts ❶ and ❷, and then backing off screw ❸. Ensure the clamp foot ❹ is in the down position, and turn the air pressure on. Re-tighten nut ❷.

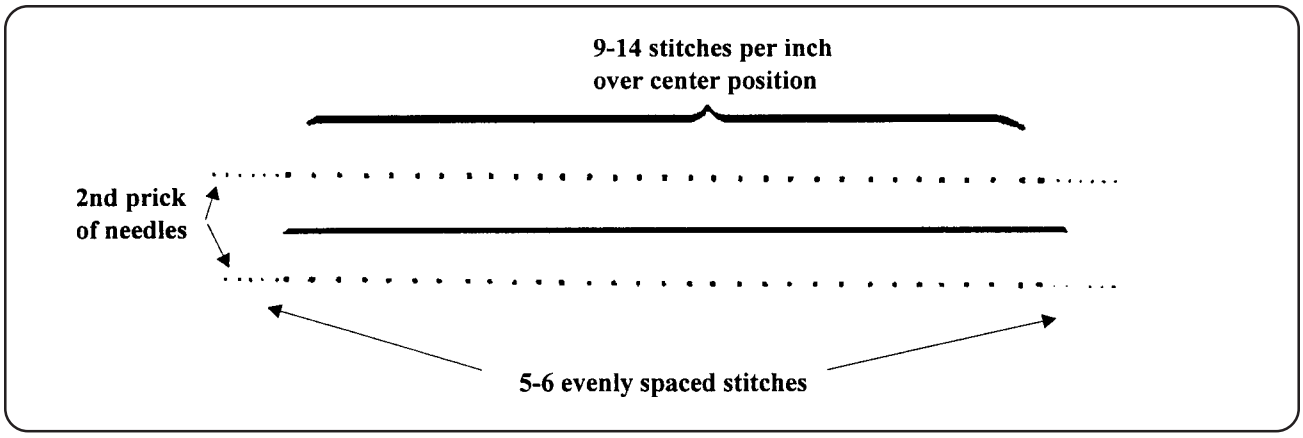
2. Check to ensure that levers ❺ and level and the center pin ❻ is 1 3/4" above clamp plate ❼. If the levers are not level and / or the center of the pin is not 1 3/4" above the clamp plate, adjust by loosening nut ❽. Using a pair of small pliers, turn piston rod ❾ in or out of clevis ❿ until this levers are level and / or pin is correctly centered. Once the adjustments have been made, re-tighten nut ❽.

3. Apply clamping pressure by turning screw ❸ inward until it bottoms. Continue to turn 1/2 of a turn further. Re-tighten nut ❶.

4. Ensure that clamp foot ❹ holds the material firmly at all points. If slippage occurs under either side of the clamp foot, increase pressure to that side. This is done by turning screw ❸ slightly inward. Be careful not to turn the screw too tight as to cause the front of the clamp foot to be raised.



Stitch density is controlled by the speed at which the clamp travels forward. At the beginning and end of each sewing cycle, the clamp table slows briefly to provide closer stitch density which is required at each of the pocket. Beginning and end stitch density is 18 to 22 stitches per inch and should consist of 5 or 6 evenly spaced stitches at the beginning and end of each welt. The clamp table speeds up to provide a center stitch density of 9 to 14 stitches per inch (see diagram).



To verify that the stitch pattern conforms to the diagram, perform the following test:

1. Install "pricking" needles prepared from # 950 class needles shortened to 1 9/16" overall and sharpened to a point.

2. Place a sheet of sturdy paper under the clamp foot and operate the machine through a sewing cycle.

3. Compare that stitching pattern with the diagram above.

4. If the newly created stitching pattern does not match the diagram above, adjustments must be made to end length, end stitching, and center stitches (see Re-programming Instructions on page 1-9).

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CENTER CUTTING

REPLACEMENT OF THE CENTER KNIFE

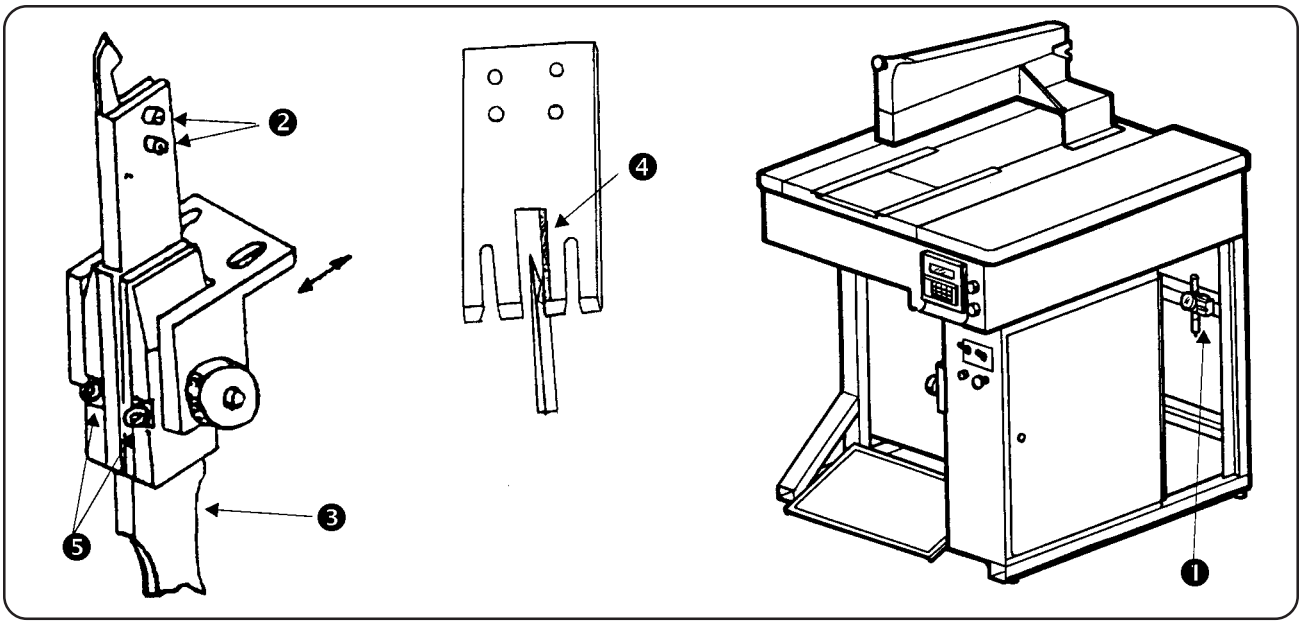
As the knife begins to dull, a ragged center cut will be made. The knife may be sharpened with an oil stone. However, if sharpening the knife does not correct the ragged cut, the knife will need to be replaced. A supply of sharpened and / or new knives should be kept on hand for ready replacement. To replace a knife, perform the following steps:

Lift the machine. Turn the air pressure OFF by turning the air valve knob ❶ a half turn. Loosen screws ❷, and raise the knife up and slide it out. Insert the new knife into the knife holder. The bottom of the new knife must touch the stop screw, located at the bottom of the knife holder. Re-tighten screws ❶. Turn the air pressure ON.

CENTER KNIFE TO THROAT PLATE ADJUSTMENT

Place the clamp table in the rear position. Open the brush blades. Turn the air pressure OFF. Manually lift the patch guide, and keep it up using a small screwdriver. Manually push the knife holder ❸ up so that the center of the knife passes up through the throat plate. It must pass flush with the cutting edge ❹ of the throat plate (which is the right side of the center slot when facing the machine) and not deflect more than .051 mm (.002”). To adjust, perform the following steps:

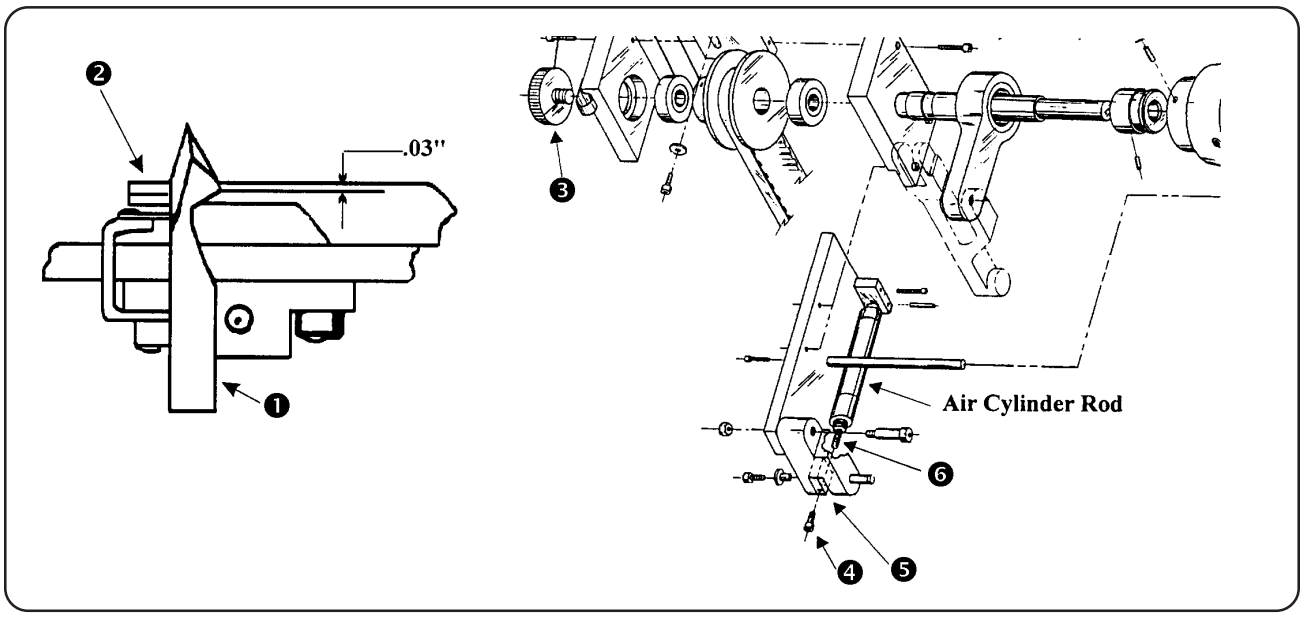
Manually push the center knife up through throat plate. Loosen screws ❺ located on the bearing blocks. Move the center knife from side to side as necessary until the knife is able to pass through the throat plate with no gap on the right side of the knife and the throat plate. Re-tighten screws ❺. At this point, the center knife should be able to cut a single strand of thread. If the knife does not cut, re-check the adjustment, and / or replace the knife. Turn the air pressure ON.



SETTING THE HEIGHT OF THE CENTER KNIFE

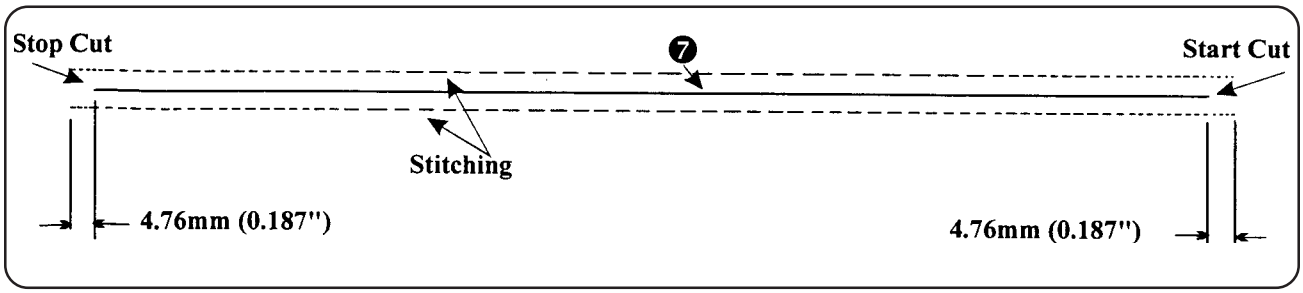
Place the center knife ❶ in the cutting position, at the bottom of its stroke. The leading edge of the knife point should have a clearance of 0.79 mm (.031") below the top surface of the throat plate ❷. To adjust, perform the following steps:

Place the clamp table to the rear position. Turn the air pressure OFF. Manually push the center knife holder up into the cutting position. Rotate the knob ❸ located on the knife shaft until the center knife ❶ is at the bottom of its stroke. Loosen the jam screw ❹ located on the clevis ❺. Turn the piston rod ❻ clockwise or counterclockwise (turning the rod clockwise will raise the knife; turning the rod counterclockwise will lower the knife) as necessary. Once the proper clearance has been obtained, retighten jam screw ❹.



ADJUSTING THE CENTER KNIFE CUT LENGTH

The center cut ❼ starts approximately 4.76 mm (.187") after stitching begins, and ends 4.76 mm (.187") before the stitching stops. Both stitching and the center knife operations are controlled by the microprocessor and can be changed. To change the settings, see page 1-9.



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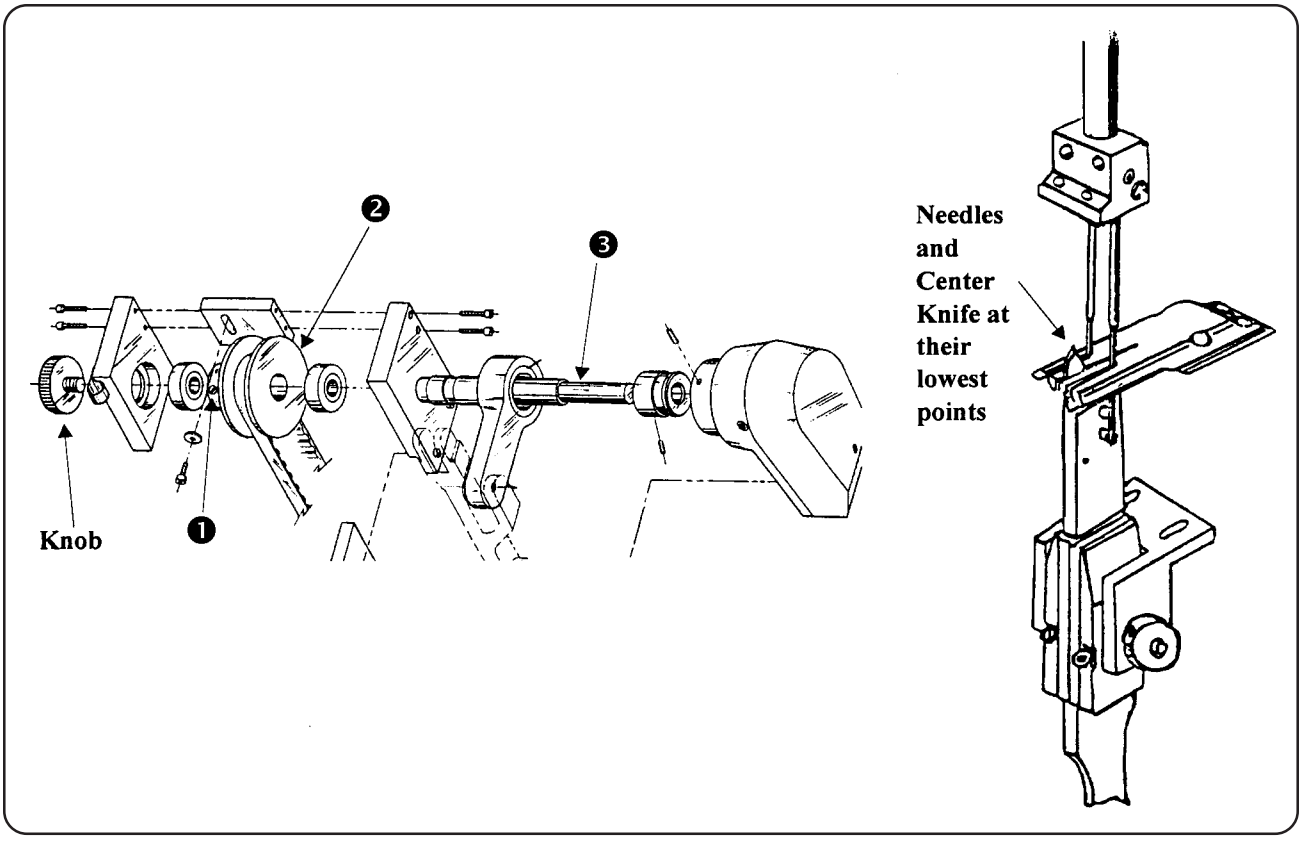
SETTING THE TIMING OF THE CENTER KNIFE

The needles support the material as the center knife cuts. The cutting occurs as the needles and the center knife descend. The center knife and the needles should be at their lowest points once the cutting has been completed. If the center knife is not at its lowest point after the cutting has occurred, the timing of the center knife is not correct. To re-set the timing, perform the following steps"

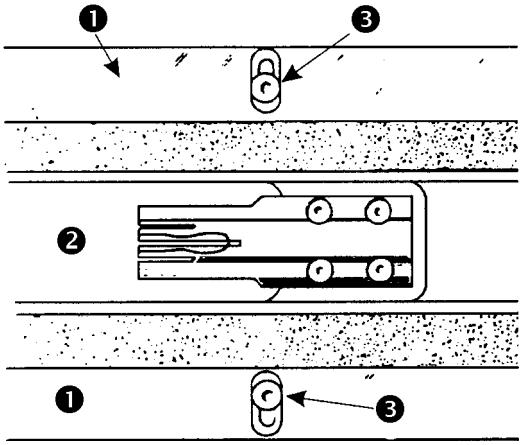
Loosen set screw ❶. Holding the pulley ❷, rotate the shaft ❸ clockwise or counterclockwise (rotating the shaft clockwise will allow the knife to cut *sooner*; rotating the shaft counterclockwise will allow the knife to cut *later*) as necessary. Once the proper timing has been obtained, re-tighten set screw ❶.



ADJUSTING THE CLAMPING MATS

The inner edge of the clamping mats ❶ must be parallel and equal distance from the side of the throat plate. The mats should just clear the sides of the throat plate ❷. To adjust, perform the following steps:

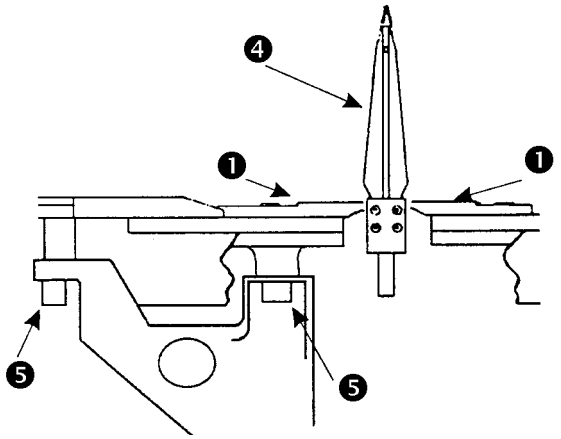
Loosen screws ❸. Slide the clamping mats to the right or left as necessary. Once the proper distance has been obtained, re-tighten screws ❸.



CENTERING THE TAB KNIFE ASSEMBLY

The lower ends of the tab knives should be centrally located between the clamping mats ❶ when the tab knives ❹ are at the top of their stroke. To adjust, perform the following steps:

Loosen screws ❺. Slide the tab knife bracket to the right or left as necessary. Once the tab knife bracket has been centered, re-tighten screws ❺.



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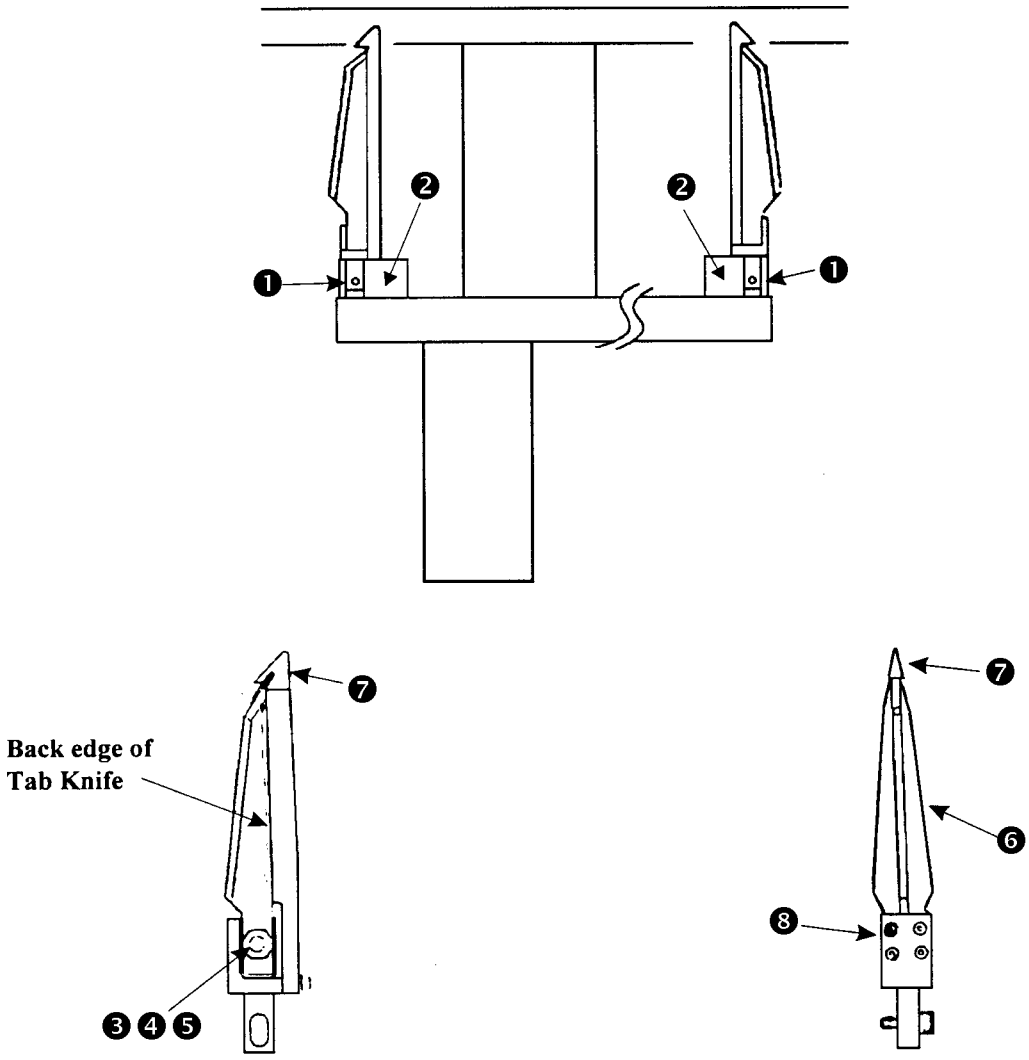
TAB CUTTING

REPLACING THE TAB KNIVES

To replace the tab knives, remove knife holder by removing screw ❶ and removing the tab knife from finger shoe ❷. Remove nut ❸ and washer ❹. Remove the old tab knife by sliding it off threading screw ❺, and then pulling it down and out. Insert the new knife ❻ by tilting the knife up and into knife pointer ❼ and down over threaded screw ❺. Re-install washer ❹ and nut ❸. Re-install the tab knife into the finger shoe, and re-tighten screw **A**. Repeat for the other tab knife.

Sew a pocket on a scrap piece of paper to ensure the tab knives are central to the two rows of stitches. If the tab knives are not central, loosen nut ❸ and turn set screws ❽ in or out (in will produce a larger cut; out will produce a smaller cut) as necessary. Once the tab knives have been centralized, re-tighten nut ❸.



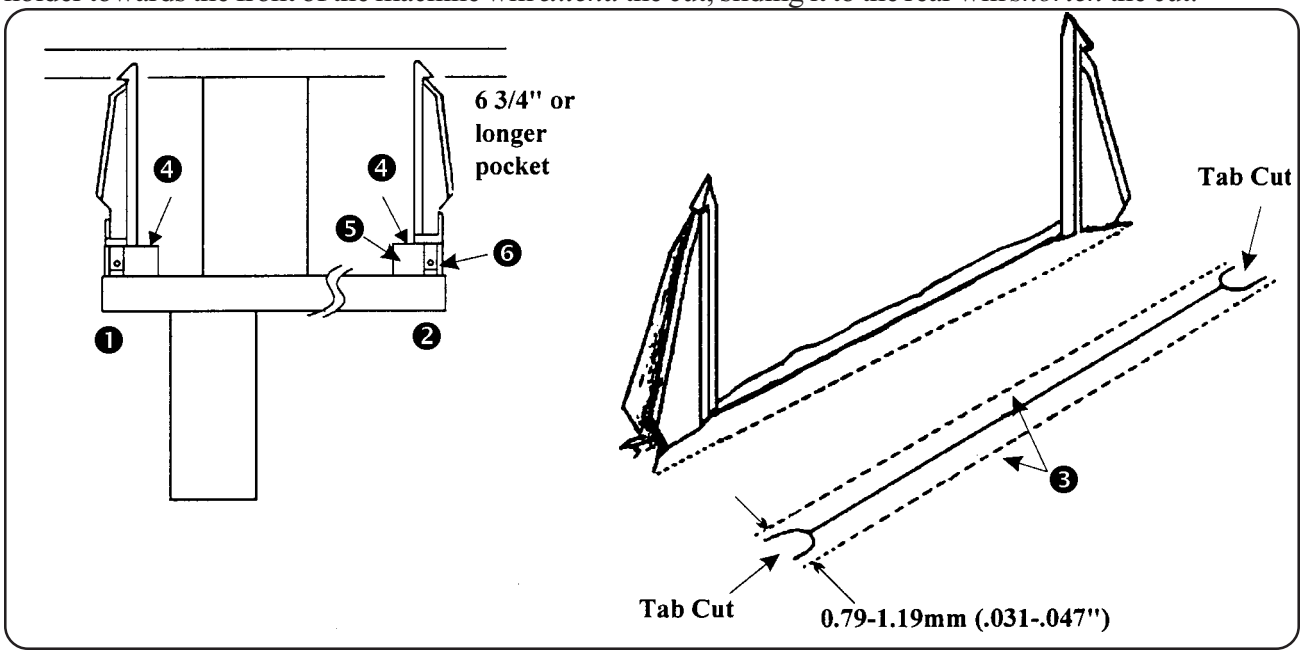
ADJUSTING THE FRONT AND REAR TAB KNIVES

The front ❶ and rear ❷ tab knives should be positioned so that the tab cuts are exactly even with the ends of stitching and also equal in distance from the sides of the stitches. The side clearance between the tab knives and the stitching ❸ may be between 0.79 and 1.19 mm (.031" and .047"). Sew a test pattern on a piece of paper to show the location of the knife cuts. The end of the stitching and the tab knives should be equal. If they are not equal, adjust by performing the following steps (in most cases, the front tab knife will not have to be adjusted; therefore, the adjustment below is from the rear tab knife):

Loosen screw ❹ and slide the rear tab knife holder towards the front or rear of the machine (sliding the holder towards the front of the machine will *shorten* the cut; sliding it to the rear will *extend* the cut) as necessary. Once the correct adjustment has been made, re-tighten screw ❹.

To sew a pocket 6 3/4" or longer, remove the rear tab knife ❷ from finger shoe ❺ by loosening and removing screw ❻. Loosen screw ❹ and remove finger shoe. Flip the finger shoe over and re-install. Re-tighten screw ❹. Re-insert the rear tab knife, and re-tighten screw ❻. Adjust the tab knife holder accordingly.

NOTE: If the front tab knife does require an adjustment perform the steps above; however, sliding the holder towards the front of the machine will *extend* the cut; sliding it to the rear will *shorten* the cut.



The above adjustments are standard for most fabrics and materials. However, if the material or fabric is thin, slippery or stretchy, compensating adjustments may be needed. For example, if the material is of a silky nature, the tab cut to end of stitch may need to be further adjusted.

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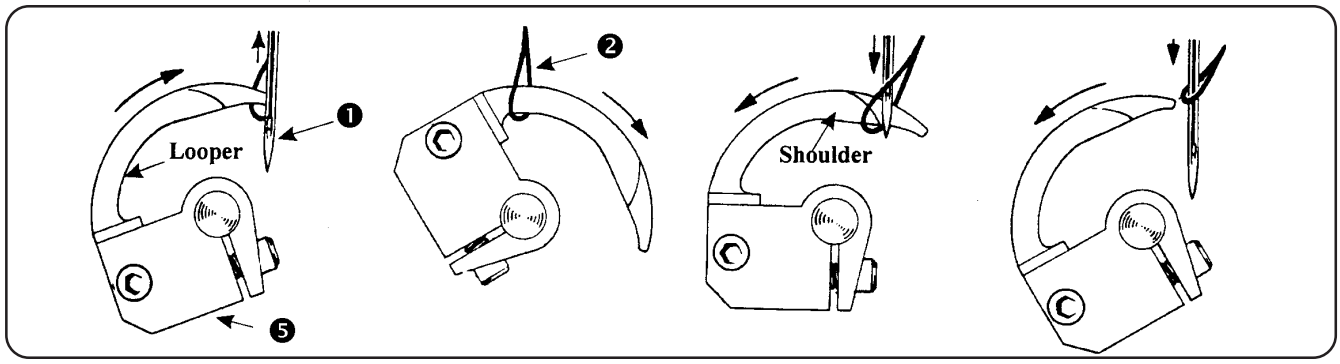
LOOPERS

The following diagrams illustrate the sequence of looper and needle action for each stitch.



When the needles ❶ rise 2.38 mm (.094") from the bottom of their stroke, the looper points should enter thread loops ❷ - -

As action continues, the loops should slide to the heel of the looper - -

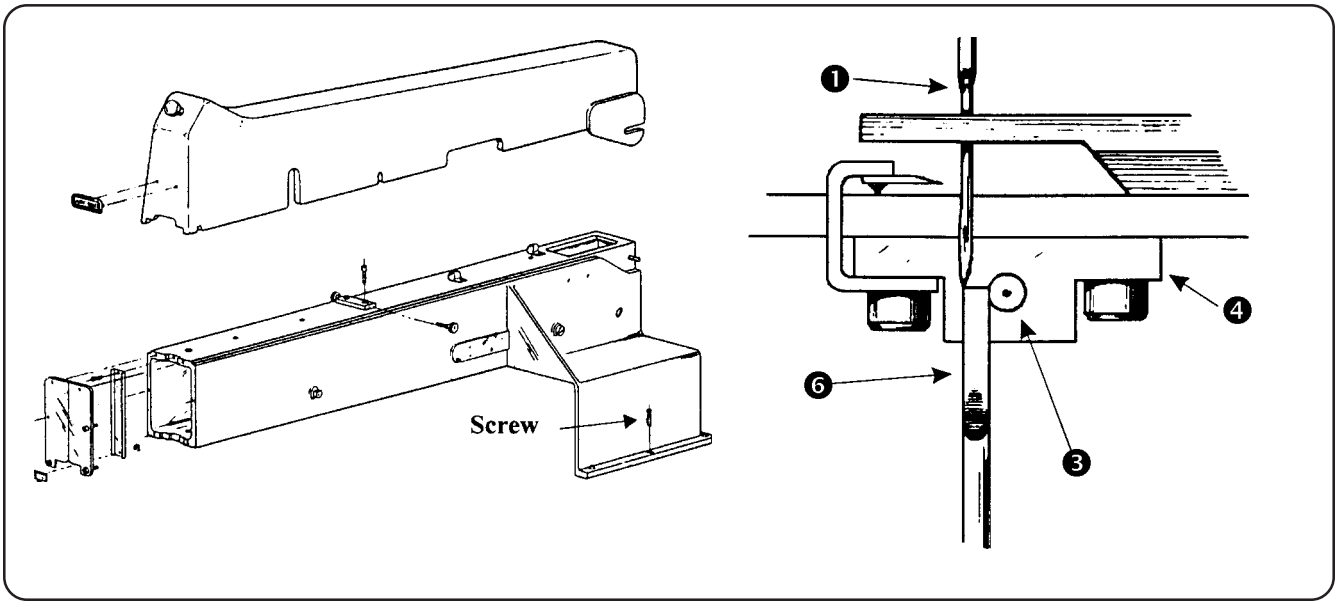
On the down stroke, needle should enter the thread loop ❷- -

Just before being cast on to the needles.

LOOPER SHAFT ASSEMBLY

The front edge of the looper shaft ❸ to the back of the needle points should measure 2.38 mm (.094"). This is a factory setting and **must not** be changed. The looper shaft ❸ is fixed in position when the bearing blocks ❹ are installed. To check this distance, move the looper holders ❺ to one side and measure using the 03.0145.0.000 gauge ❻. If the measurement is not 2.38 mm (.094"), adjust by the following steps:

Loosen the machine head by loosening the 9 screws, located in the back and on both sides of the head. Slide the machine head forward or backward as necessary. Once the proper measurement has been obtained, retighten the 9 screws.



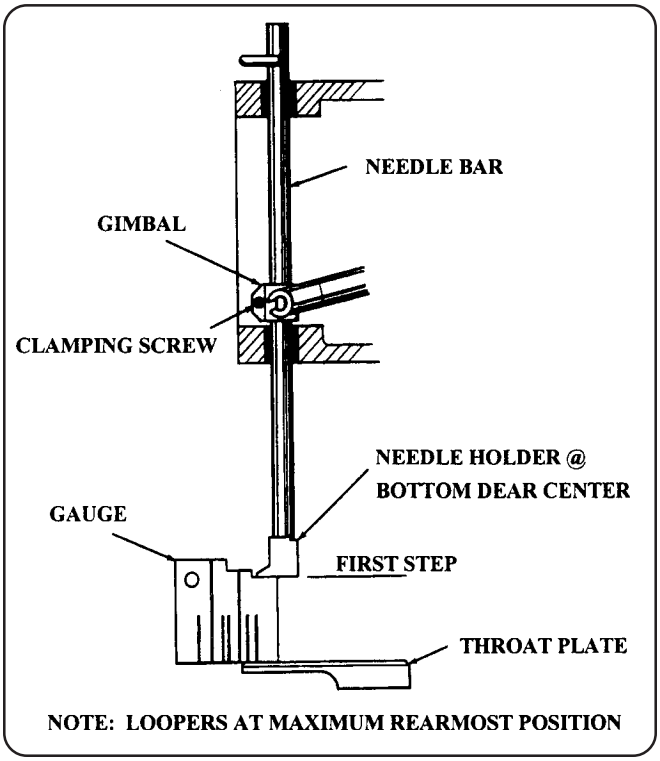
ADJUSTING THE TIMING OF THE LOOPERS TO THE NEEDLE BAR

1. Remove patch guide assembly (see page 1-13).

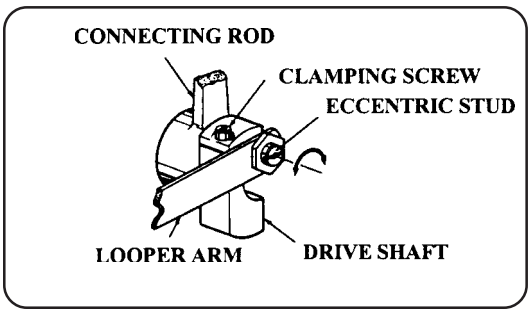
2. Ensure needles are straight.

3. Set the gauge squarely on the throat plate. Position the needle bar at bottom dead center by lifting the machine and rotating the knob clockwise or counterclockwise until the needle bar is at bottom dead center. At this point, the needle holder should rest squarely on the first step of the gauge. To adjust, loosen the clamping screw, and move the needle bar up or down as necessary. Once the needle holder is resting squarely on the first step of the gauge, re-tighten the clamping screw.

NOTE: When making this adjustment, ensure the needles are square with the throat plate at all times.



4. When the needles are at bottom dead center, the loopers should be at their maximum rear most position. To adjust, loosen the clamping screw, located on the drive shaft assembly. Center the eccentric stud with as much movement forward as backward. Once the eccentric stud has been centered, re-tighten the clamping screw.



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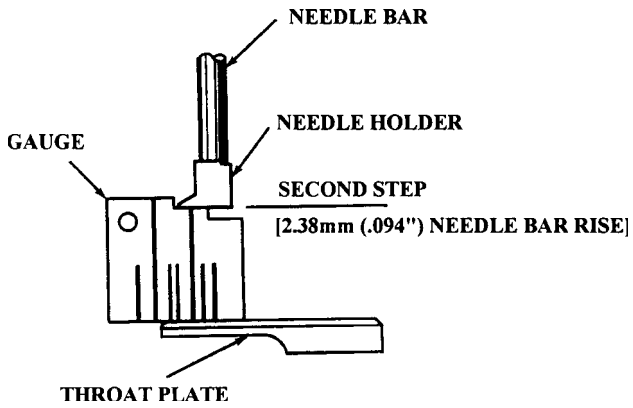
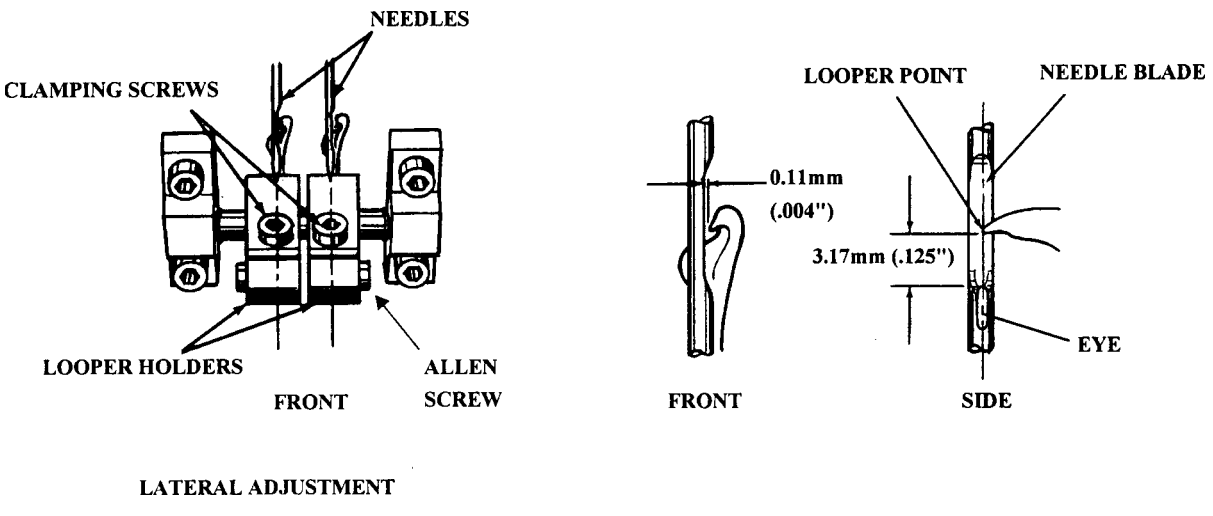
5. Continue turning the knob clockwise until the needle bar rises 2.38 mm (.094") and the bottom of the needle holder sits on the second step of the gauge.



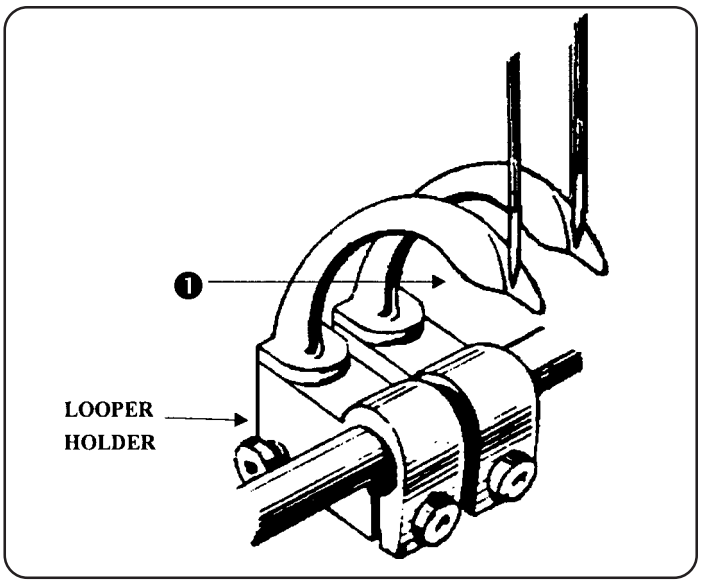
6. The centerline of the needle should be in alignment with the center of the clamping screw. The point of the looper should be on the centerline of the needle, approximately 3.17 mm (.125") above the needle eye. To adjust, loosen the clamping screws and move the looper holder to the right or left as necessary. Once the looper holder is in the proper position, re-tighten the clamping screws.

7. The looper should be as close to the needle as possible without deflecting, with a maximum clearance of 0.11 mm (.004"). To adjust, loosen the allen screw and slide the looper to the right or left as necessary. Once the proper clearance has been obtained, re-tighten the allen screw.

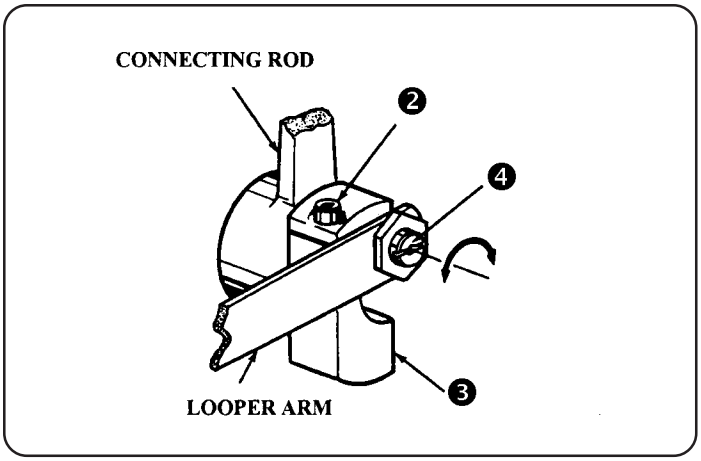


ADJUSTING THE LOOPER HEEL TO NEEDLE SETTING

As the needle passes by the heel ❶ of the looper on both the upward and downward strokes, it should pass as closely as possible to the heel without deflecting. To adjust, perform the following steps:



Loosen the clamping screw ❷, located on the drive shaft assembly ❸. Rotate the eccentric stud ❹ clockwise or counterclockwise (rotating the stud clockwise will move the heel of the looper *away* from the needle; counterclockwise will move the heel *closer* to the needle) as necessary. Once the heel of the looper is in the proper position, re-tighten the clamping screw.



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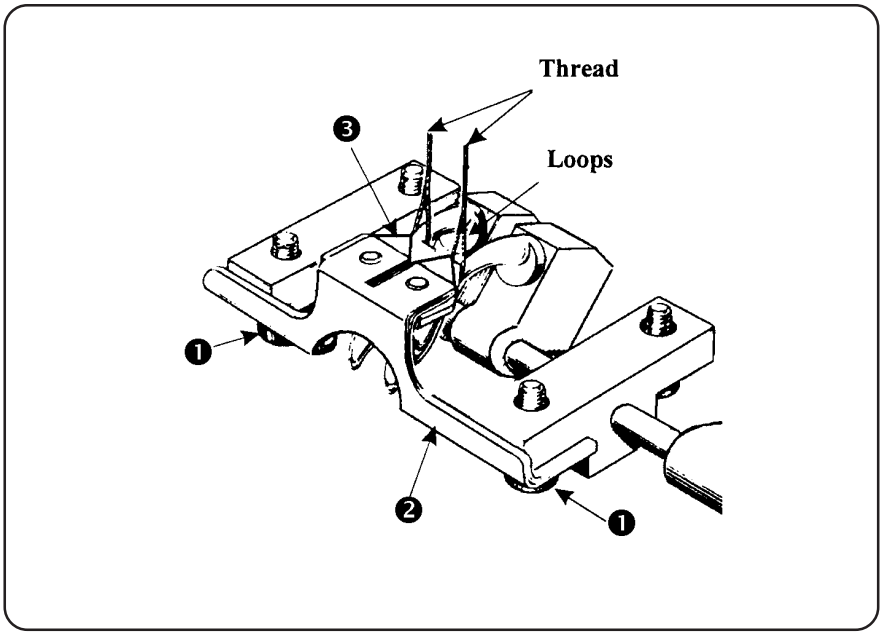
THREAD TRIMMING

At the end of the sewing cycle, the clamp table moves forward. During this movement, the inside legs of the thread loops come in contact with the trimming knife, cutting the thread.

NOTE: Never sew with a dull knife. This will cause the thread to break close to the last stitch, which could cause a ravling back of the stitching.

SHARPENING THE TRIMMING KNIFE

Lift the machine. Loosen screws ❶, and remove the knife holder ❷ from the looper blocks (it is not necessary to remove the knives from the holder). Stone the trimming knife ❸ to a sharp edge. It is **imperative** that the bevel be maintained on the underside of the knife. Once the knife has been sharpened, re-install the knife holder ❷ into the looper blocks, ensuring that the knife points are centered to the loopers. Once they are centered, re-tighten screws ❶.



THREADING THE MACHINE

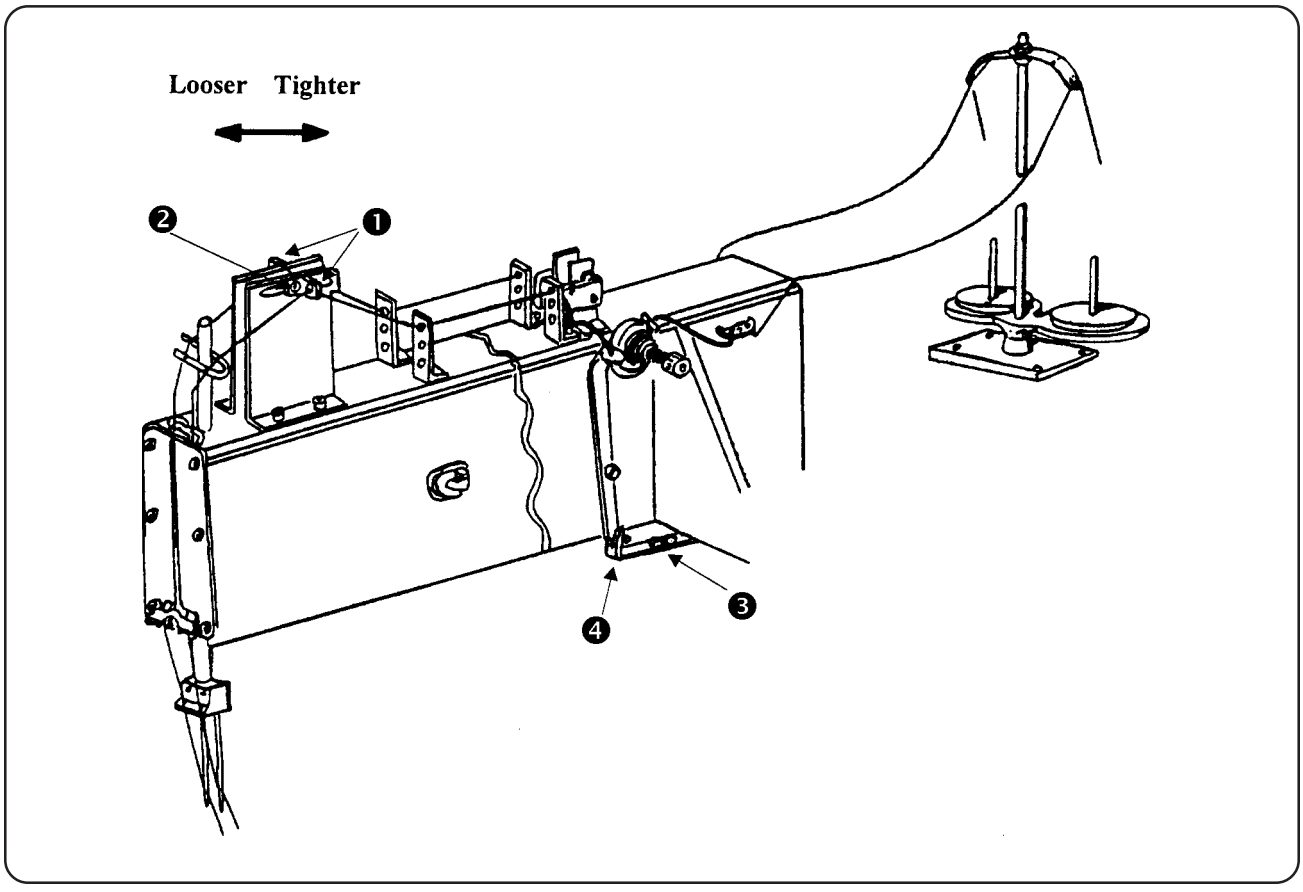
The thread color should be a basic shade of the garment being sewn. Thread both of the needles from left to right.

ADJUSTING THE THREAD TAKE-UP EYELETS

The function of the eyelets ❶ is to provide a looser or tighter stitch, which would be dependent upon the material being sewn. To adjust, loosen nut ❷ and move the eyelet forward or backward (moving the eyelet forward would cause the stitch to be *looser*, moving it backward would cause the stitch to be *tighter*) as necessary. Once the proper stitch has been obtained, re-tighten nut ❷.

ADJUSTING THE STARTING THREAD

Loosen screw ❸ and move actuator ❹ forward or backward (moving the actuator forward will *increase* the amount of starting thread; moving the actuator backward will *decrease* the amount of starting thread) as necessary. Once the correct amount of starting thread has been obtained, re-tighten screw ❸.



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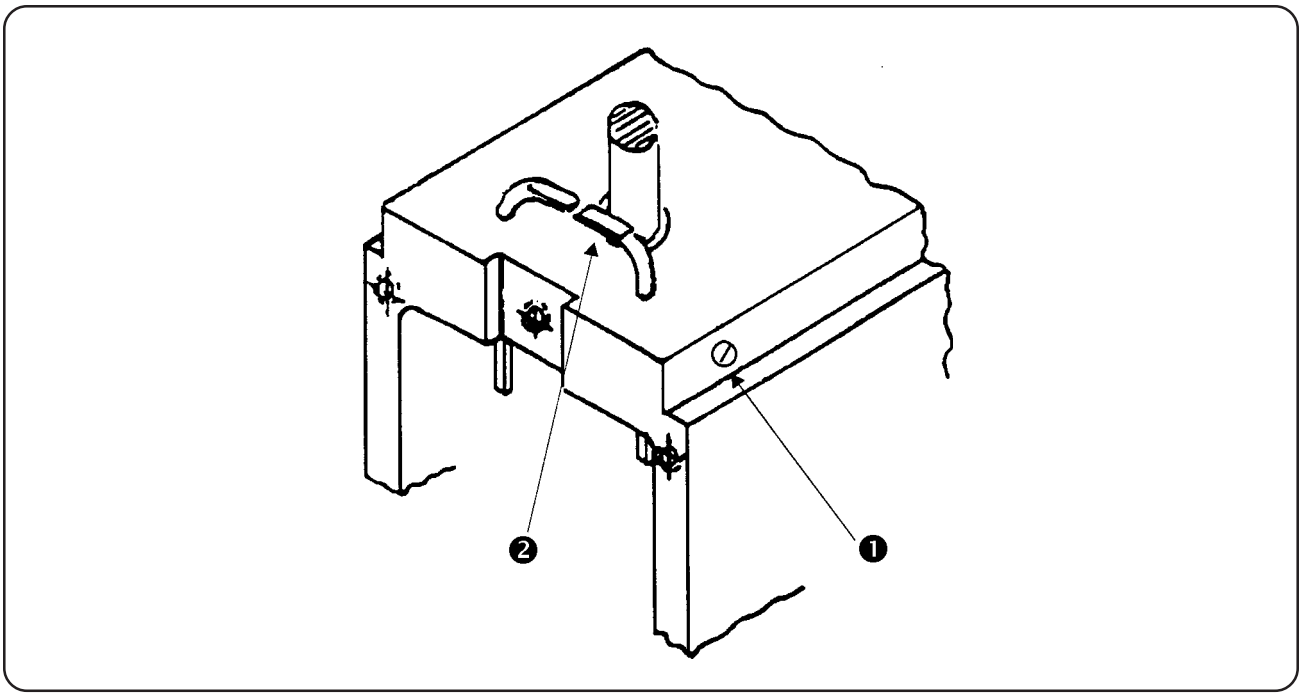
ADJUSTING THE THREAD LOOP SIZE

The proper size of the thread loop for the average sewing conditions is just large enough for the looper to fit into. If the loop is too large, the loop may turn over towards the front, causing the looper to miss it. This is what causes skipping. To adjust, perform the following steps:

Loosen set screw ❶. Raise or lower looper wire ❷ (raising the looper wire will *increase* the loop size; lowering the loop wire will *decrease* the loop size) as necessary. Once the proper loop size has been obtained, re-tighten set screw ❶.



THREAD PICKUP ARMS

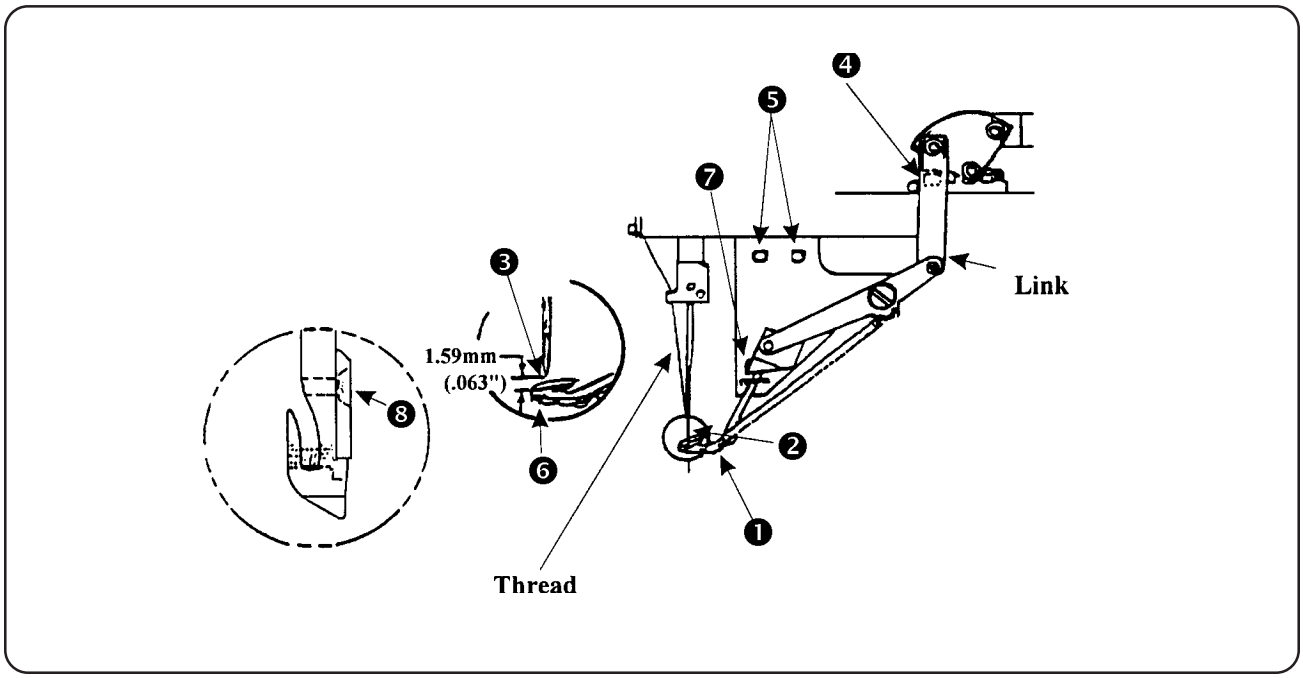
The thread pickup arms ❶ are designed to pass just below and beyond the needles ❷, grasping the thread taut before trimming. Select the OUTPUT Test from the keyboard menu (see pages 2-4 through 2-6). Select the thread holder option by pressing the up arrow. Press the [ENTER] key. The thread pickup arms will extend and hold that position. A minimum clearance of 1.59 mm (.063") is required between each needle point ❸ and its pickup arm. To adjust, perform the following steps:

1. Loosen screw ❹, and move the pickup arms front or back as necessary. Once the proper position has been obtained, re-tighten screw ❹.

2. Loosen screws ❺, and move the pickup arms to the right or left as necessary in order to align with needle thread. Once the proper alignment has been obtained, re-tighten screws ❺.

3. To obtain distance between the needle and pick-up hook ❻, loosen screws ❼, and move the pickup arms up or down as necessary. Once the proper position has been obtained, re-tighten screws ❼.

To replace the spring located inside the pickup arm, loosen screw ❽. Turn the retaining plate carefully to ensure the spring does not pop out. Remove the old spring, and install the new spring. While holding the spring down, turn the retaining plate until it locks into position, and re-tighten screw ❽.



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INSTALLATION AND ADJUSTMENT OF THE SYNCHRONIZER

The synchronizer positions the needle bar up when the sewing is finished. To install a synchronizer, perform the following steps:

1. Place the synchronizer onto shaft ❶. Slide the synchronizer onto retaining bar ❷. Tighten allen screw ❸.

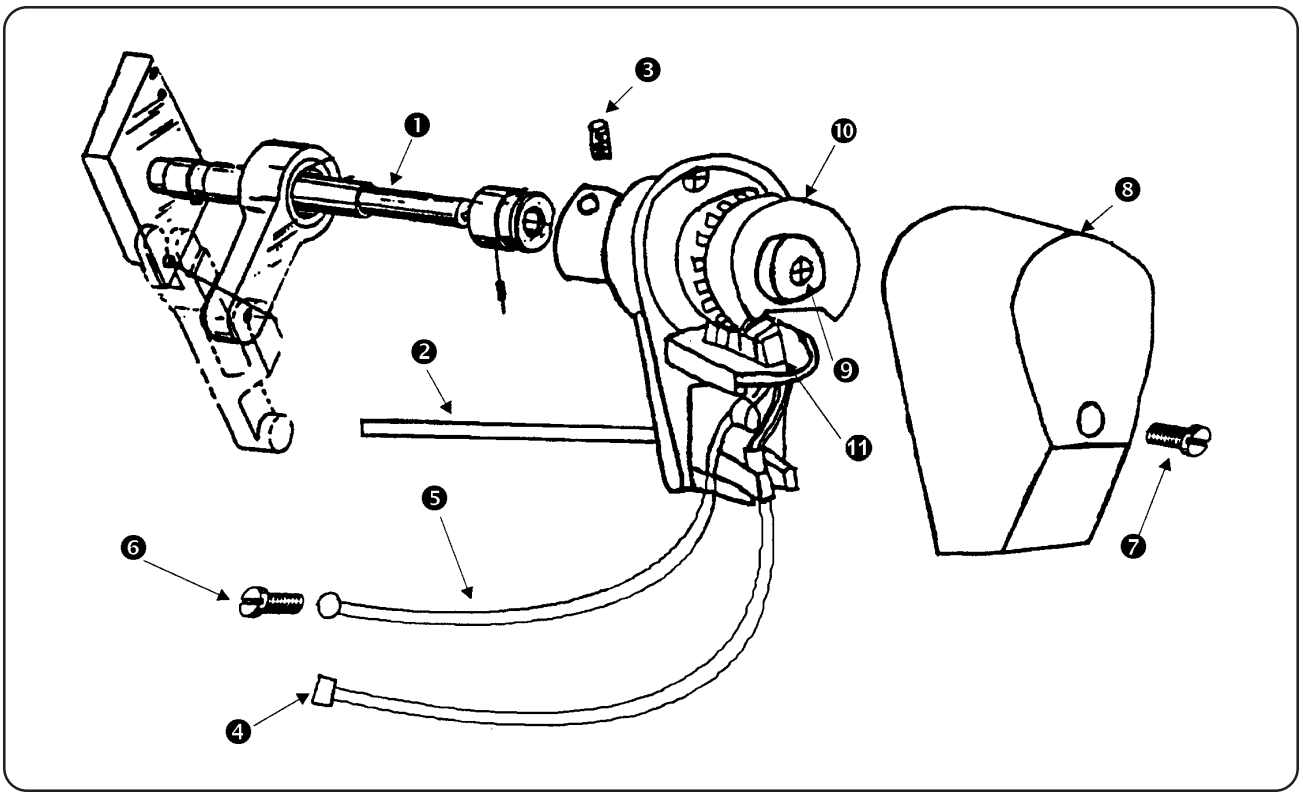
2. Plug synchronizer cable ❹ into the control box located under the motor.

3. Attach grounding terminal ❺ to the sewing machine using screw ❻.

To adjust the synchronizer, perform the following steps:

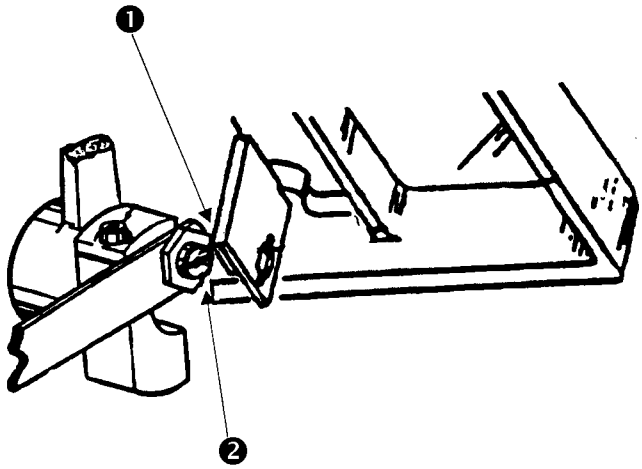
1. Loosen and remove screw ❼. Remove cover ❽. Loosen screw ❾. Holding the needle bar top dead center, rotate disks ❿ so their openings are in alignment with photo eye ⓫. Once they are in alignment with the photoeye, re-tighten screw ❾, re-install cover, and re-tighten screw ❼.

2. Release the needle bar, it should stay at top dead center. Sew a pocket welt to ensure the needle bar is in the up position once the sewing has stopped. If it is not, repeat step 1.



PROXIMITY SENSOR SWITCH

The proximity sensor switch ❶, located under the bedplate near the main shaft, tells the machine whether or not the needle is up at the end of sewing. If the machine does not know the needle is up, it will display an error message on the keypad. The sensor is activated when the eccentric stud ❷ passes in front of it. When the needle bar is at top dead center, the eccentric stud should be in front of the sensor which would activate it. If the eccentric stud is not in front of the sensor, adjust the synchronizer as described on page 1-40.



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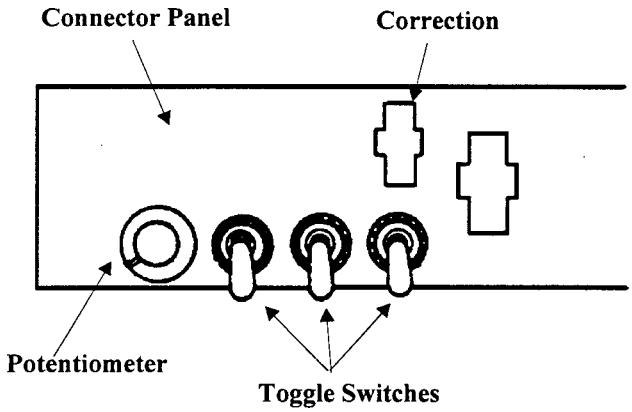
CONTROL BOX

The control box consists of a potentiometer, and three toggle switches, which normally set the functions of the machine (i.e. needle bar position up or down, machine slow start). However, in this case, they have been factory set and can not be changed.



Press [2] to enter to Option section.

Press [ENT].

Press [1] to turn on the patch loader.

Press [2] to return to the sewing screen.

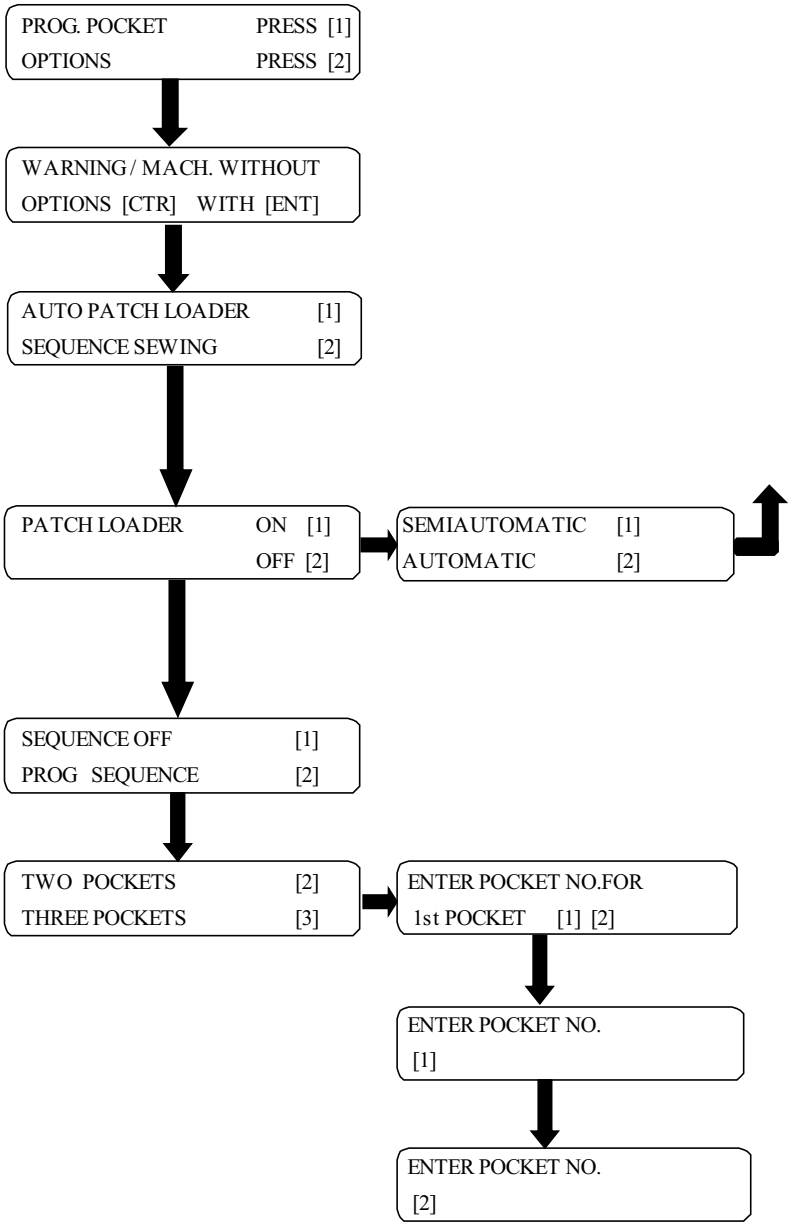
Note: The patch loader can be set for either semi-automatic or automatic sewing.

Press [1] to return to the sewing program.

Press [2] to access sequential programming.

When [1] is pressed, it will blink out and then come back on. Now *press* [2]. When the program has been set, the screen will return to the sewing program.

Note: 1 will be the **long** pocket; **2** ***must be*** the **short** pocket.



Program 1 can programmed from 52 mm to 123 mm. Program 2 can be any size in-between.

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Installing the Short Travel Kit

1. Turn off the power to the machine.

2. Change out the parts shown in Illustration A with those included in the kit.

3. Then exchange the positions of the drive link (P/N 32.7145.0.000) and the link (P/N 32.7146.0.000), as shown in Illustration B.

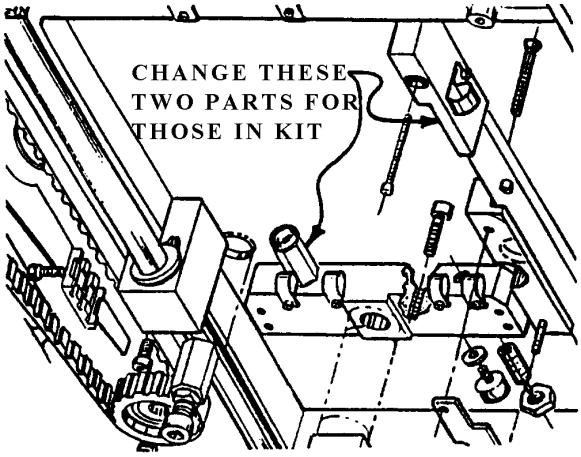

ILLUSTRATION A

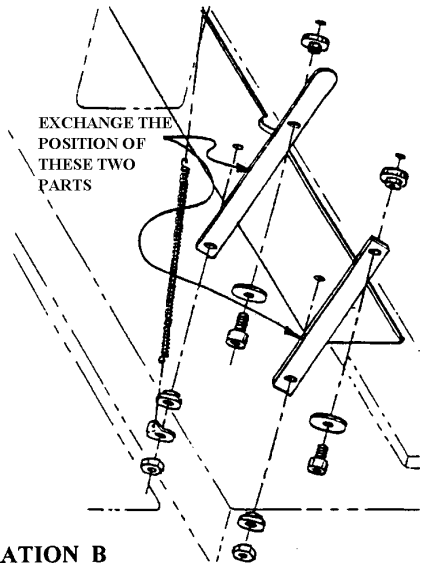

ILLUSTRATION B

4. Remove the existing program chip and *replace* it with the E-Prom chip from the kit, ***making sure the notch in the chip faces to the right.***

5. *Turn on* the power, and then *push* the Sew Interrupt button.

6. *Press* the [CTR] key.

7. *Press* the [1] key, then *press* the [2] key.

8. *Press* the [-] key until the "Encoder Count" message appears.

9. *Press* the [ENT] key (encoder count).

10. *Press* the [HOME] key (encoder count), then *press* the [ENT] key again.

11. *Press* the [1] key to save the count, and then *push* the Sew Interrupt button.

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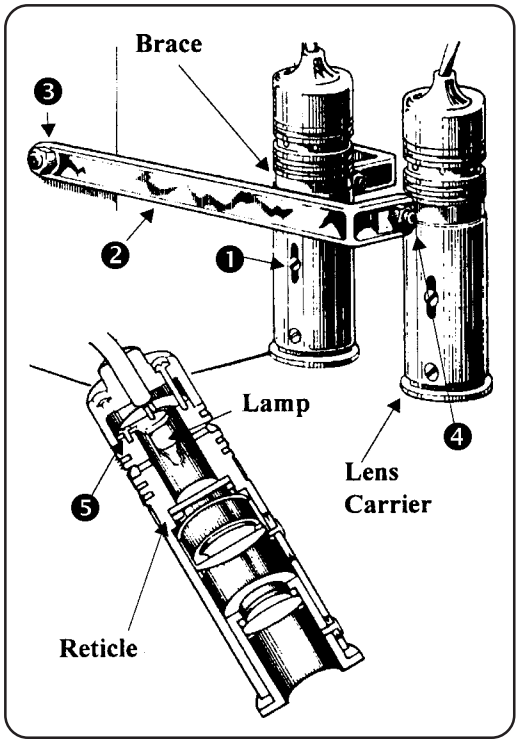
WORK LOCATING AND DRILL HOLE LIGHTS

Lights designed specifically to facilitate work location and increase positioning accuracy are available with the Speedwelt 1000. These lights project light slots on the garment which accurately fix the location for positioning work-locating marks such as drilled holes, which can be applied to garment on the cutting table. Other types of locating marks can also be utilized such as darts, seams, slits and chalk marks.

In the production of double-welt sack coat pockets utilizing drilled holes for locating marks, the forward lantern should be positioned so that when the forward hole is located in the hairline cross-point, it will accurately establish the starting point on every garment. The rear hole will provide accurate pocket alignment as long as it falls anywhere along the vertical light slots of the rear lantern. The same hole drilling pattern may be used on double welt work for all sizes since the pocket length is controlled by the SpeedWelt 1000 machine.

CAUTION: Avoid drilling holes in the tab areas of the welt. The drilling may shred or reduce a tab area so that an effective tab can not be formed.

In single-welt work, the rear hole should also be accurately located because it is the starting point on alternate pocket operations.



To focus the light slots, perform the following steps:

1. Loosen screws ❶, and move the lens carriers up or down as necessary. Once the light slots are focused, retighten screws ❶.

2. The bracket angle ❷ may need to be changed if the folding brushes obstruct light projection when the clamp foot is raised. This is done by loosening nut ❸ and moving the bracket up or down as necessary. The bracket may need to be bend slightly. Once the bracket is in the proper position, retighten nut ❸.

To square light slots with sewing work, perform the following steps:

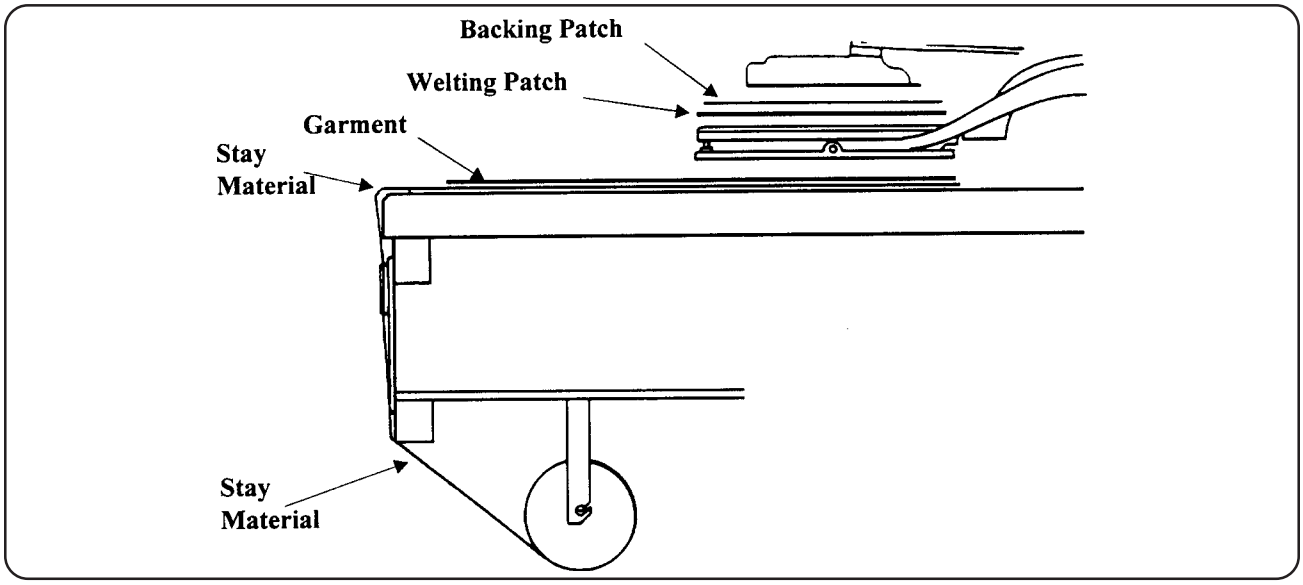
1. Loosen bracket by loosening screws ❹ and rotating the lights as necessary. Once the lights are square with the sewing work, retighten screws ❹.

2. The lamp should be centered over the lens in order to centralize lens projection, and to obtain maximum intensity. To adjust, loosen screw ❺ and move the lamp as necessary. Once the lamp is centralized over the lens, retighten screw ❺.

Note: In some materials, the light slots are clearer as the garment is being moved into position than when the garment rests in position. Therefore, while setting the lights, use material where the light slots are clearly visible when in the resting position.

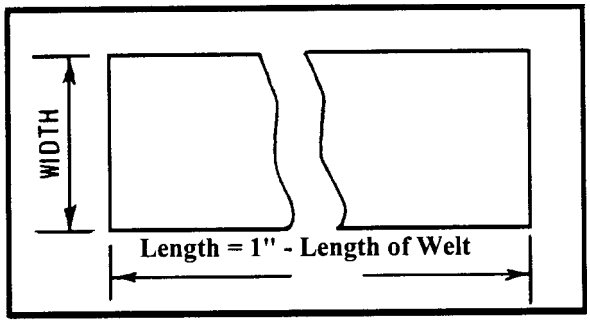
WELTING MATERIAL

Welting material consists of welting patch (garment material), backing patch (pellon L-35), and stay material (cotton silesia).



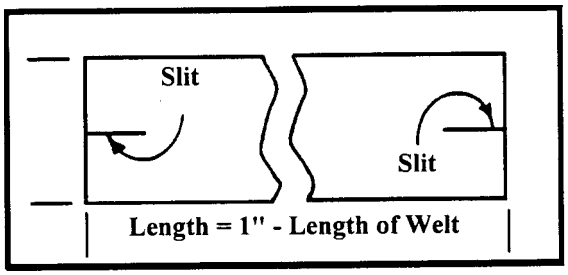
Welting Patch (Garment Material)

Welting patch length is 1" longer than the actual welt. For the best result, patches for horizontal welts should be cut crosswise to salvage, except where stripes in the material are over 1/4" in width; vertical or diagonal welt patches should be cut parallel to the salvage.



Backing Patch (Pellon)

Backing patch length is the same as Welting Patch, 1" longer than the welt. For double welting, use patches with 1/4" end slits. For single welting and knits, use patches without end slits. Pellon L-35 is recommended.



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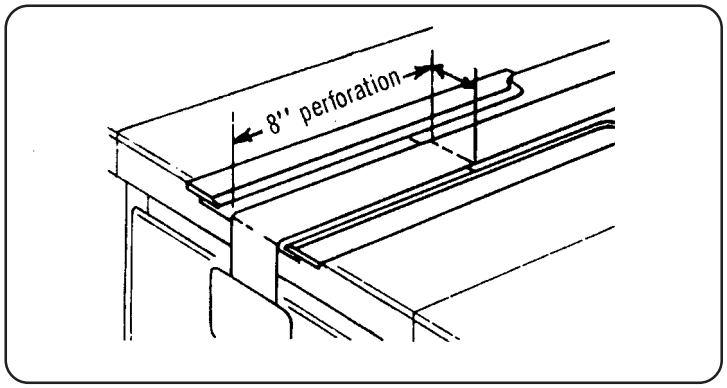
WELTING MATERIAL

Stay material is used for pockets on coats and coat linings. The pocket bag is used in place of the stay material in making trouser pockets. Stay material should be cotton silesia with sizing. This material is available in rolls of various widths, with perforations every 8". The perforations aid in allowing the operator to separate the stay material while the machine is sewing.

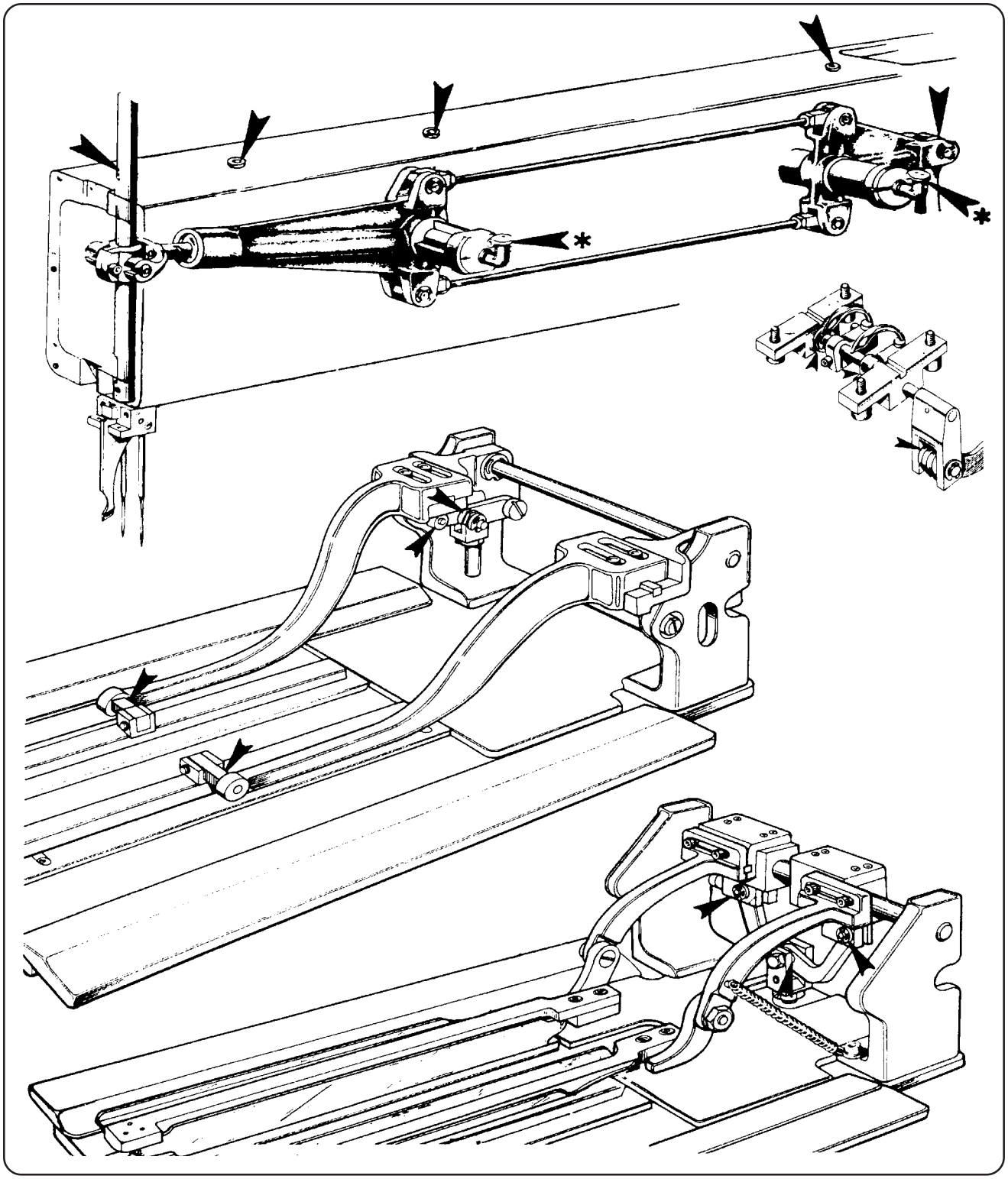


Below is a chart which displays the various widths of welting material.

Size	Welting Patch	Backing Patch	Stay Material
7/16"	2 1/2" to 2 3/4"	2 1/2" 2" for Trouser Application	2"
1/2"	2 3/4" to 3"	2 1/2" 2" for Trouser Application	2"
5/8"	3 1/4" to 3 1/2"	3 1/4"	3"
3/4" Overlapping Welt	4" to 4 41/4" 5 1/4" to 5 1/2"	3 1/2" 5"	2" to 3" 2" to 3 1/2"
7/8" Single Welt	4 1/4" to 4 1/2"	3 3/4" 4"	3" 3 1/2"

LUBRICATION

It is important to oil the machine daily. The table must be in the front loading position in order to reach all oil points. The locations of the oil points are indicated with arrow displayed in the diagram below.



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RECOMMENDED PREVENTIVE MAINTENANCE

Daily:

- Remove all lint from the looper area at least *twice* daily.
- Remove lint and dust from the tabletop.
- Lubricate all pivot points with 2-3 drops of sewing machine oil.
- Check the two oil cups (located on the right hand side of the head on the ends of the front and rear shafts), fill as required.

Weekly:

- Check for excessive play in the needle bar, levers, looper shaft, and center knife pivot points. Adjust as required.

Monthly:

- Check to ensure all hardware is tight and secure.
- Visually check for damage to patch caused by scratches or burrs on the patch guides as necessary.

A variety of optional attachments are available to make the Speedwelt 1000 even more productive and user-friendly. These options include an automatic patch loader, two-position cycle sewing and a work eject system.

Automatic Patch Loader Adjustments

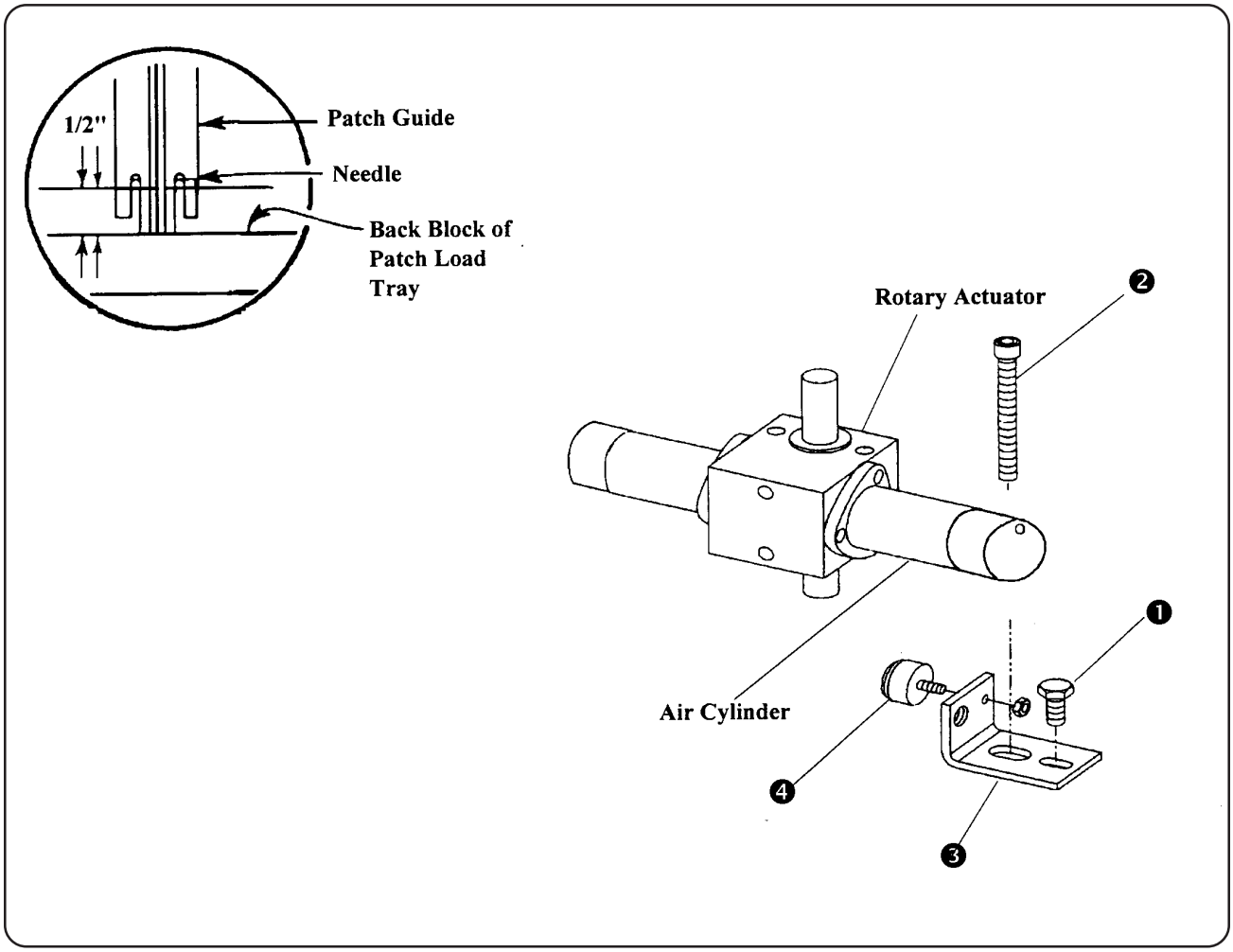
Setting Needle Clearance

When the patch load tray moves into the load position, there should be 1/2" (12.7 mm) clearance from the point of the needle to the inside of the patch load tray. To adjust:

1. *Loosen* the bolt ❶ and the allen screw ❷ on bumper bracket ❸.

2. *Move* bumper ❹ backward or forward, as necessary.

3. *Re-tighten* the allen screw ❷ and the bolt ❶.



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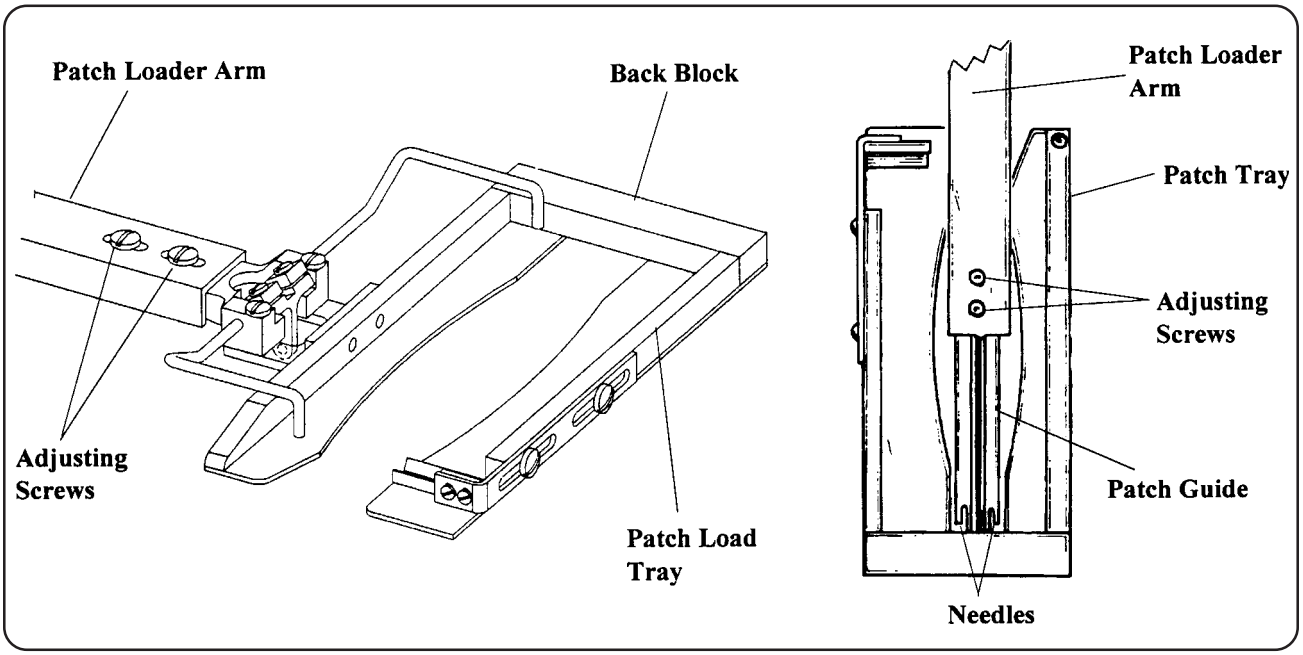
Centering the Patch Load Tray

When the machine is in the load position, the needles should be centered with the patch load tray. To adjust:

1. *Loosen* the two adjusting screws on the patch loader arm.

2. *Move* the arm in or out, as necessary, until the patch load tray is centered.

3. *Re-tighten* the adjusting screws.

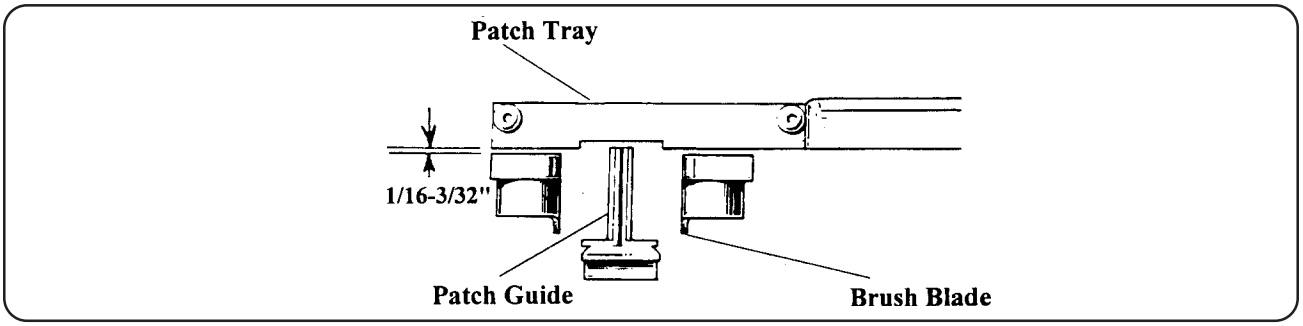


Setting Patch Load Tray Height

Clearance between the underside of the patch load tray and the top of the brushes should be approximately 1/16" (1.5 mm) to 3/32" (2.3 mm). To adjust:

1. *Loosen* screw **C** to raise or lower the loader arm.

2. *Adjust* carefully to prevent losing previous loader arm and stop adjustments.



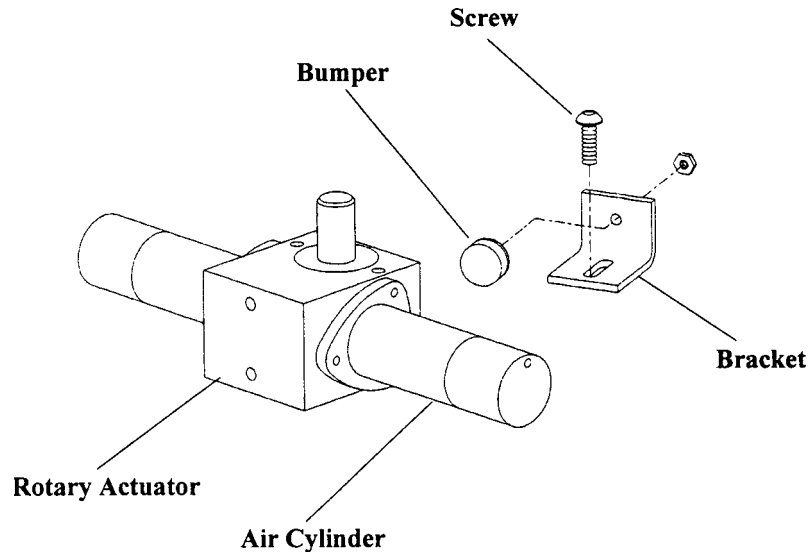
Setting the Patch Load Tray for Home Position

In the Home position, the patch guide tray should be set so that it is comfortable for the operator to reach. To adjust:

1. *Loosen* the button head allen screw on bumper bracket **C**.

2. *Move* bumper **D** backward or forward, as necessary.

3. *Re-tighten* the button head allen screw.



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Adjusting Long and Short Patch Tray Clamps

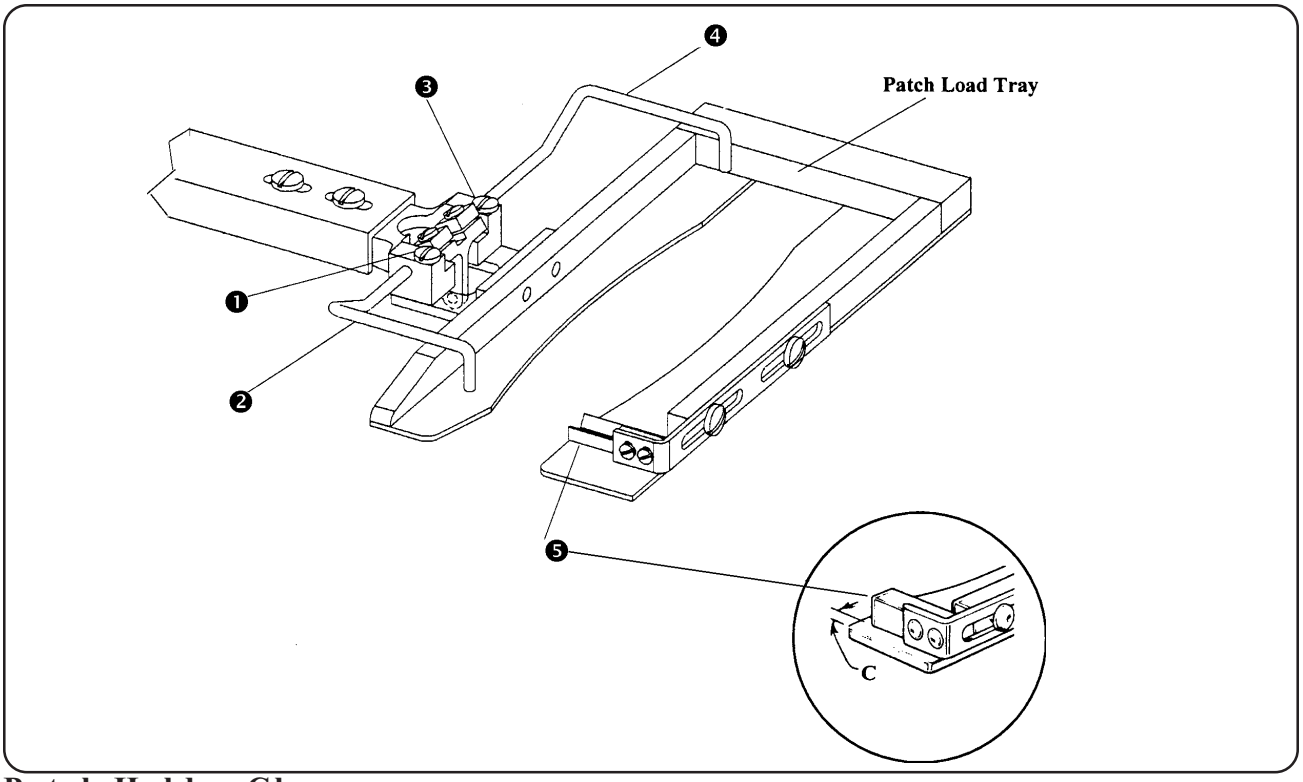
These clamps hold the welt material in plate during the loading process. The patch tray clamps may need to be adjusted to maintain the correct amount of holding pressure. To adjust:

1. *Loosen* screw ❶ and move the short clamp ❷ up or down, as necessary.

2. *Re-tighten* screw ❶.

3. *Loosen* screw ❸ and move the long clamp ❹ up or down, as necessary.

4. *Re-tighten* screw ❸.



Patch Holder Clearance

The patch holder ❺ keeps the welting and backing patches in place as they are being moved into the loading position. For easy inserting of material patches, and to prevent interference with patch folding, ***the distance (C) from the patch holder and the front left edge of the tray plate should be slightly more than the thickness of the material patches.***

Adjusting Patch Tray Speed

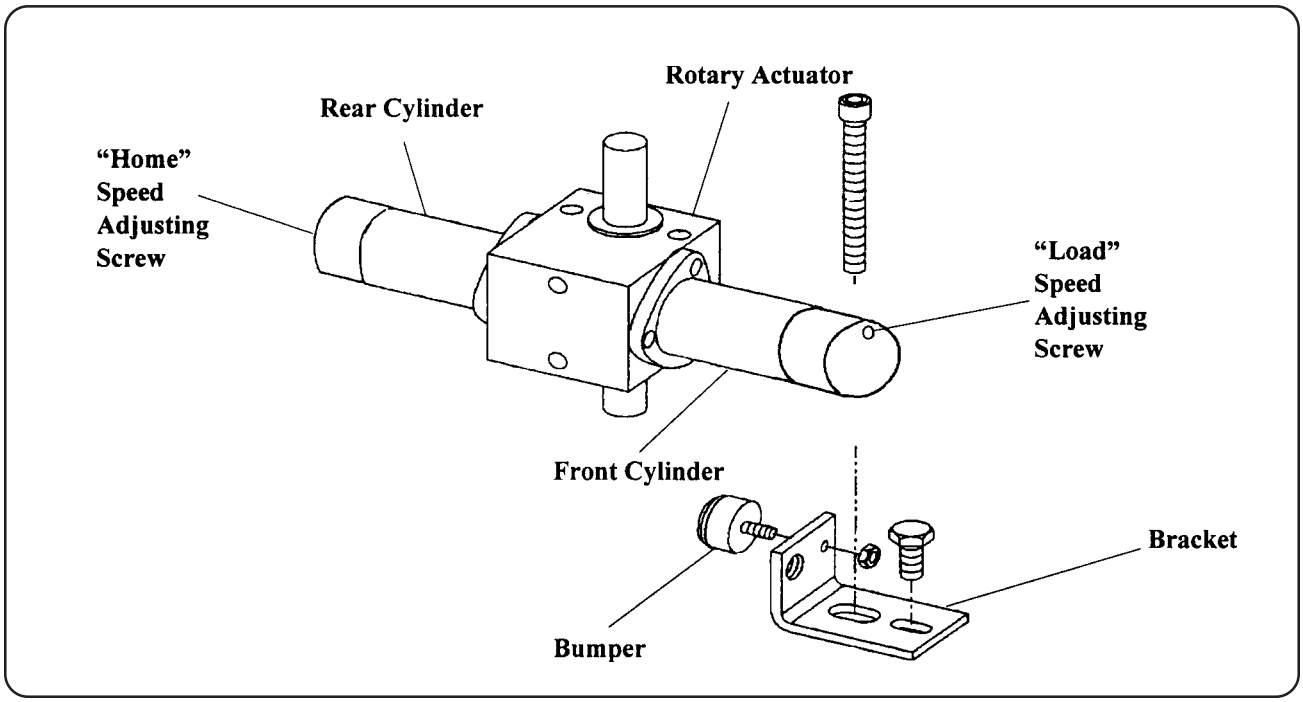
The speed at which the patch load tray travels into the load position and back to its Home position can be adjusted.

To adjust the speed going into the load position:

Use a small screwdriver and *turn* the recessed speed adjusting screw in the air cylinder (located at the ***front*** of the rotary actuator) in for less speed, or out for more speed.

To adjust the speed for moving the patch load tray into its Home position:

Use a small screwdriver and *turn* the recessed speed adjusting screw in the air cylinder (located at the ***back*** of the rotary actuator) in for less speed, or out for more speed.



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Setting the Inside Edge of the Patch Load Tray Back Block

While making the adjustments below, be *sure* to maintain the parallel relationship between the patch guide and the side of the patch load tray. Once adjustments are complete, *run* the patch loader several times and *make sure* there is ***no binding***:

1. *Return* the clamp table to the back position.

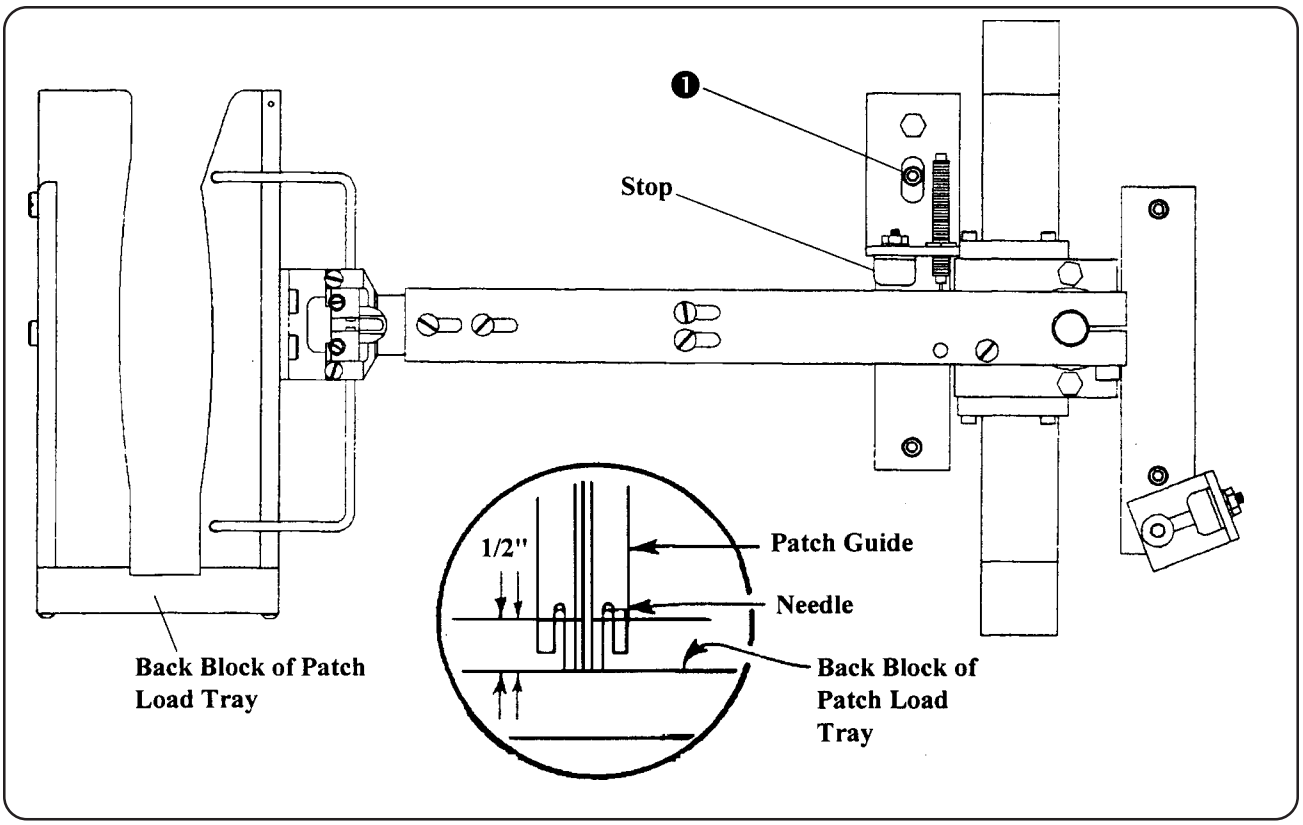
2. *Loosen* screw ❶ to loosen the stop.

3. *Push* the knee control and *determine* the extreme forward movement of the patch load arm. (It is not unusual to have to push the knee control several times to make this determination.)

4. With the patch loader at its ***most forward point***, *set* the patch load arm so that the sides of the patch tray are parallel with the side of the patch guide.

5. *Set* the stop so that it lightly touches the patch load arm while it is in the load position. Then *make sure* no bounce or binding exist when the loader makes contact with the step by manually operating the patch loader several times at this setting.

6. *Hold* the load arm against the stop and *position* the inside edge of the patch tray back block 1/2" (2.7 mm) from the needles.



Turning the Automatic Patch Loader On and Off

To active (or deactivate) the automatic patch loading option:

1. *Press* the sew interrupt switch.

2. *Press* **[CTR]** on the control pad.

3. Press #2.

4. Press #2 again.
The LCD screen message should now read:
Without Options Press [CTR] With Options Press [ENT]

5. If the machine is equipped for this option, *press* **[ENT]**.
The LCD message should now read:
Automatic Patch Press [1]
Sequence Sew Press [2]

6. Press #1.
The LCD message should now read:
Patch Loader On [1]
Patch Loader Off [2]

7. To activate the patch loader, press #1. (To deactivate the patch loader, press #2 and then press **[ENT]**). If the On button is pressed, the LCD message will now give you ***the option of selecting automatic [2] or semi-automatic [1] sewing***. If the automatic option is selected, the patch tray will load the welt and start the machine sewing automatically. If the semi-automatic option is selected, the patch tray loads the welt, and the operator starts the machine sewing using the knee switch.

8. Press #1 for semi-automatic or press #2 for automatic sewing.

9. Press **[ENT]**

The steps for turning the automatic patch loading option on and off are also explained in the Options Section (see page 1-44).

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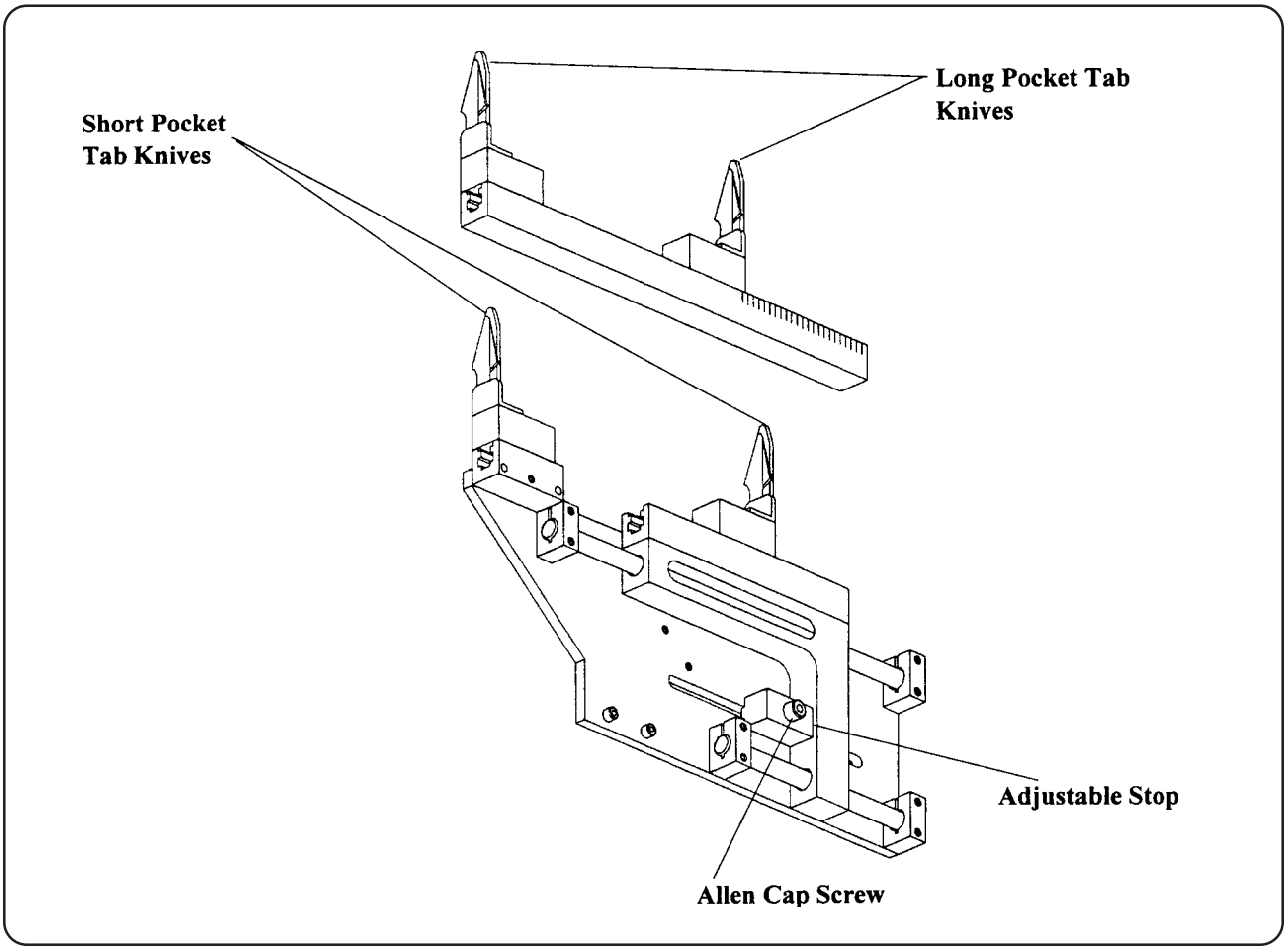
Setting the Tab Knives for Two - Stage (Sequential) Sewing

When setting the tab knives for two-stage sewing, the ***longest pocket length must be set first.***

1. To set the long pocket, *use* the finger screw adjustment on page 1-44.

2. Now *use* the stop with the alle cap screw to set the short pocket length.



a. *Loosen* the allen cap screw and *move* the slide block backward or forward, along the scale, as necessary, to reach the desired length.
b. *Re-tighten* the allen screw.

Note: ***To turn on (and off) the two-stage sewing option, follow the first four steps outlined in Turning On The Automatic Patch Loader. At step number 5, press #2 to enter the sequence sewing set up. Step number 6 allows you to turn sequence sew On [2] or Off [1]***. See the Options section (page 1-44) for further explanation.

Adjusting the Work (Air) Eject Option

The length of the air blast for this option is controlled by a timer which has been factory set. Should your sewing needs require a shorter or longer air blast, the timer may be adjusted from a minimum of 5 to a maximum of 50 milliseconds. To adjust:

1. *Press* the sew interrupt switch.

2. *Press* **[CTR]**.

3. *Press* Input / Output Test.

4. *Advance* to the Work Eject option on the LCD screen. The message should say.
   Work Eject On [1]
   Work Eject Off [2]

5. *Push* #1.

6. *Push* the ***down arrow for a shorter*** air blast, the ***up arrow for a longer*** air blast.

7. Press **[ENT]**.

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TROUBLESHOOTING

POSSIBLE PROBLEM	POSSIBLE CAUSE AND SOLUTION
Clamp fails to hold the work	Check the pads of the clamping mats, and replace if they are worn.
	Check the rubber soles of the clamp foot, and replace if they are worn.
	Check and re-adjust the clamping pressure if necessary.
Clamp fails to respond to treadle	Select INPUT TEST on the keypad. Advance to the FOOTSWITCH #1 and # 2 program screens, and verify that the switches operate. Replace inoperative switches.
Welting and backing patches are not properly folded	Check the patch guide and patch folding brushes adjustments.
Patch folding brushes fail to respond to treadle control	Check the Brushes switch operation. Select INPUT TEST on the keypad. Advance to the BRUSHES screen (by pressing the UP arrow) and verify that the switch is functioning. Replace switch if necessary.
	Check for binding or interference in the patch guide or patch folding brushes mechanism. Remove binding or interference.
	Re-check patch guide and patch folding brushes adjustment.
Welting patch does not travel along patch guide properly	Check patch guide adjustments.
	Check condition of patch guide. There should be no nicks or scratches. This would prevent the welting patch from sliding off the patch guide. The tail end of the patch guide must be sufficient radius to allow the forming of the welt to travel smoothly on to the patch guide. Remove scratches.
	When using material that is slippery and dificult to hold (i.e., lining material), small pads of adhesive-backed urethane foam should be placed on the brush blades. Check that the pads do not extend beyond the length of the patch guide.
Tab knives fail to operate	Check the operation of the Tab Knife Switches. Select INPUT TEST on the keypad and advance (using the UP arrow) to the TAB KNIFE UP and TAB KNIFE DOWN screens. Verify that both switches are functioning. Replace and inoperable switch.

TROUBLESHOOTING

POSSIBLE PROBLEM	POSSIBLE CAUSE AND SOLUTION
Ends of welt not square	Tab knives are dull or unegually positioned. Replace knives, setting back edges flush with back surfaces of knives.
	Rows of stitching uneven at ends. Check that needles are straight and that there is no skipping of stitches when the sewing starts. Replace needles.
	Knives are bent or not properly centered. Re-adjust as required.
Corners of welts open	Tab knives cutting too far. Adjust knives.
	Clamp mats set too close, causing material to clog and tear in the corners. Re-adjust as required.
Short tabs	Tab knives cutting too short. Replace knives if dull; otherwise, adjust knives‘ positions.
	Center cut too long. Adjust center knife.
Stitches showing on front of welt	One stitch will be slightly exposed at each corner of the pocket welt, but side stitching should be well concealed. If not, tensions are too loose or clamp mats are set too close together. The thread should be approximately the same color as the garment material.
Incorrect stitching	Incorrect needle being used. Check needle and change if necessary.
	Needles are not correctly adjusted to the loopers. Adjust if necessary.
	Needle tips are blunt. Replace needles.
	Needles are not straight. Replace the needles.
Thread breakage	Incorrect threding and / or tension is incorrect. Re-thread and / or adjust the thread tension.
	Needles are not straight. Replace needles.
	Looper has not been correctly installed. Re-install the looper.
	Looper is sharp at the point or is worn. Replace the looper.
	Needle bar is not aligned properly. Re-align the needle bar.
	The needle and looper are not adjusted properly. Re-adjust.
	Incorrect clearance between the needle and needle hole slot. Re-adjust the clearance.
	Thread handling components are worn or contain burrs. Replace or repair those components.
	The eye of the needle is sharp. Replace the needle.

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TROUBLESHOOTING

TO PERFORM MACHINE DIAGNOSTICS

The purpose of the input test is to determine whether the component being tested is receiving a signal. The components, if working correctly, will cause the keypad display to toggle between ON and OFF. If there is a problem with the component, the keypad display **will not** toggle between ON and OFF.

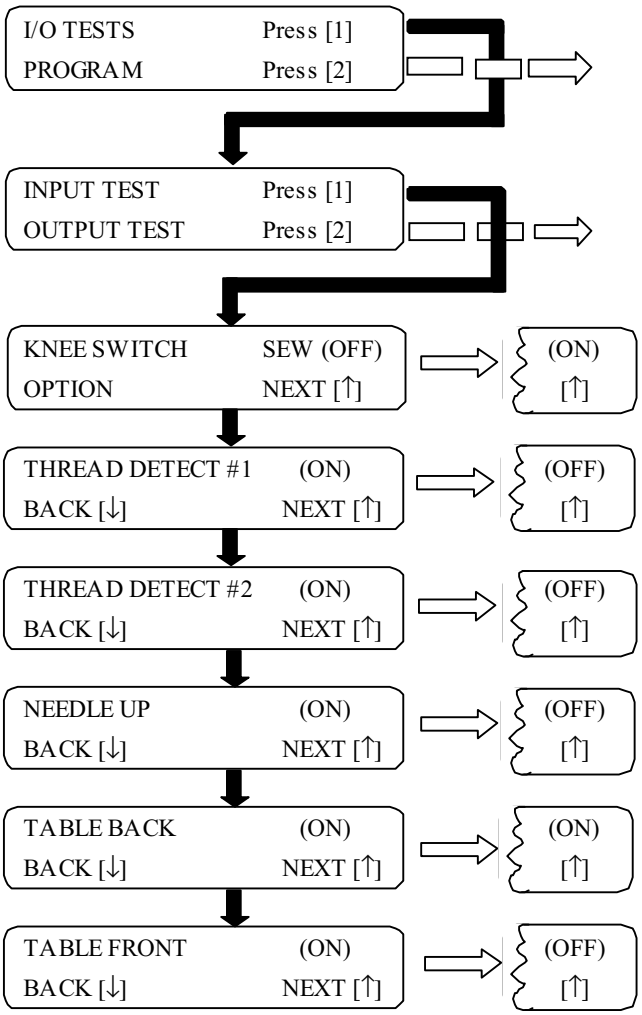
Press the [SEW INTERRUPT] switch.

Press the [CTR] key.

Press [1] to perform input and / or output tests.

Press [1] to perform input tests.

The NEXT [-] key will advance and display the next screen of the test. The BACK [‾] key will display the previous screen of the test.



To test the following components, perform the steps below:

Knee Switch - *Press* the knee switch in and hold, the keypad should display ON; when the switch is released, the keypad should display OFF. If it does not, a problem exist in the switch circuitry.

Thread Detect #1 and **Thread Detect #2** - *Lift* the head cover; located about 3/4 of the way back, micro-switches are located on the right and left hand sides of the head (right side micro-switch tests thread detect #2). *Push* the micro-switch in and hold; the keypad should display ON. When the switch is released, the keypad should display OFF. If it does not, a problem exist in the switch circuitry.

Needle Up - *Lower* the head cover, *lift* the machine and *rotate* the belt located in the rear of the machine on the left hand side. The belt is on a pulley, and as the belt is being rotated, an arm (located on the shaft of the pulley) passes in front of the needle sensor and activates it. During this time, the keypad display will toggle between ON and OFF. If it does not, a problem exists with the sensor.

Table Back and **Table Front** - *Manually move* the table back by gripping the brush arm and sliding to the rear of the machine. The keypad will display ON; sliding the brush arm forward will move the table forward and the keypad will display OFF. If it does not, a problem exists in the switch circuitry. The opposite procedure is used for Table Front. The brush arm must be slit forward, which will move the table to the front. The keypad will display ON; sliding the brush arm to the rear of the machine will move the table back, and the keypad will display OFF. If it does not, a problem exists in the switch circuitry.

TROUBLESHOOTING

Foot switch #1 and **Foot Switch #2** - Step on the threadle using the appropriate foot switch position. The keypad display will toggle between ON and OFF. If it does not, a problem exists in the switch circuitry.

Tab Knife Up and **Tab Knife Down** - *Lift* the machine. Located in the front of the machine are two micro-switches, one on top of the other. To test the Tab Knife Up: *push* the top micro-switch in and *hold*. The keypad will display ON, when released, the keypad will display OFF. To test for the Tab Knife Down: *push* the bottom micro-switch in and *hold*. The keypad will display ON. When released, the keypad will display OFF. If it does not, a problem exists in the micro-switch circuitry.

Brushes In- With the machine still lifted, *push* the micro-switch (located on the air cylinder) in and *hold*. The keypad will display ON; when released, the keypad will display OFF. If it does not, a problem exists in the switch circuitry.

Safety Re-Thread - *Push* the Safety Re-Thread button in and hold. The keypad will display ON; when released, the keypad will display OFF. If it does not, a problem exists with the button switch circuitry.

To exit, and return to the sewing mode, *press* [CTR]. To perform output tests, *press* [2].

The purpose of the output test is to determine whether the component being tested is functioning properly. The components during this test, if working properly, will actually demonstrate their functions. If there is a problem with the component, they will not demostrate their function.

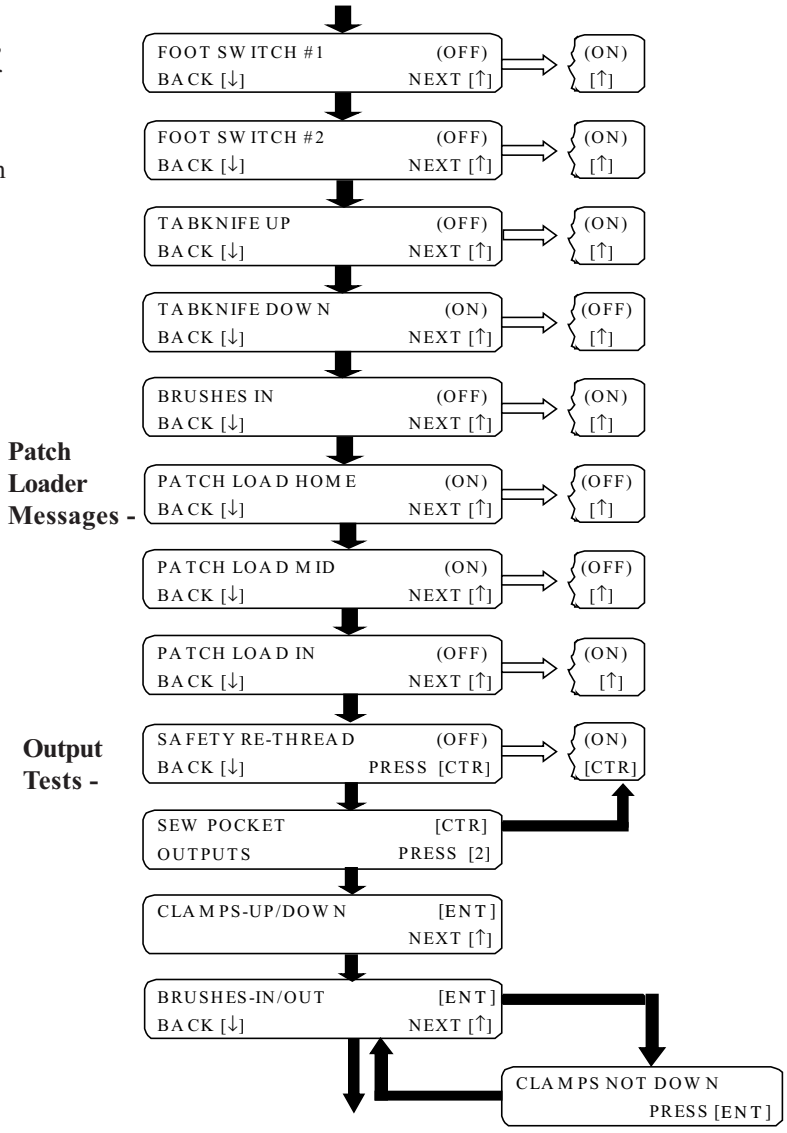
The [ENT] key will cause the various pieces of equipment to move, either up or down, in or out.

The NEXT [-] key will advance and display the next screen of the test. The BACK [‾] key will display the previous screen of the test.

If the machine is not in the proper position to perform the test, a message will appear indicating what position it must be in. At the same time, it will allow the machine to be positioned correctly by pressing the [ENT] key.

Patch Loader Messages -

Output Tests -



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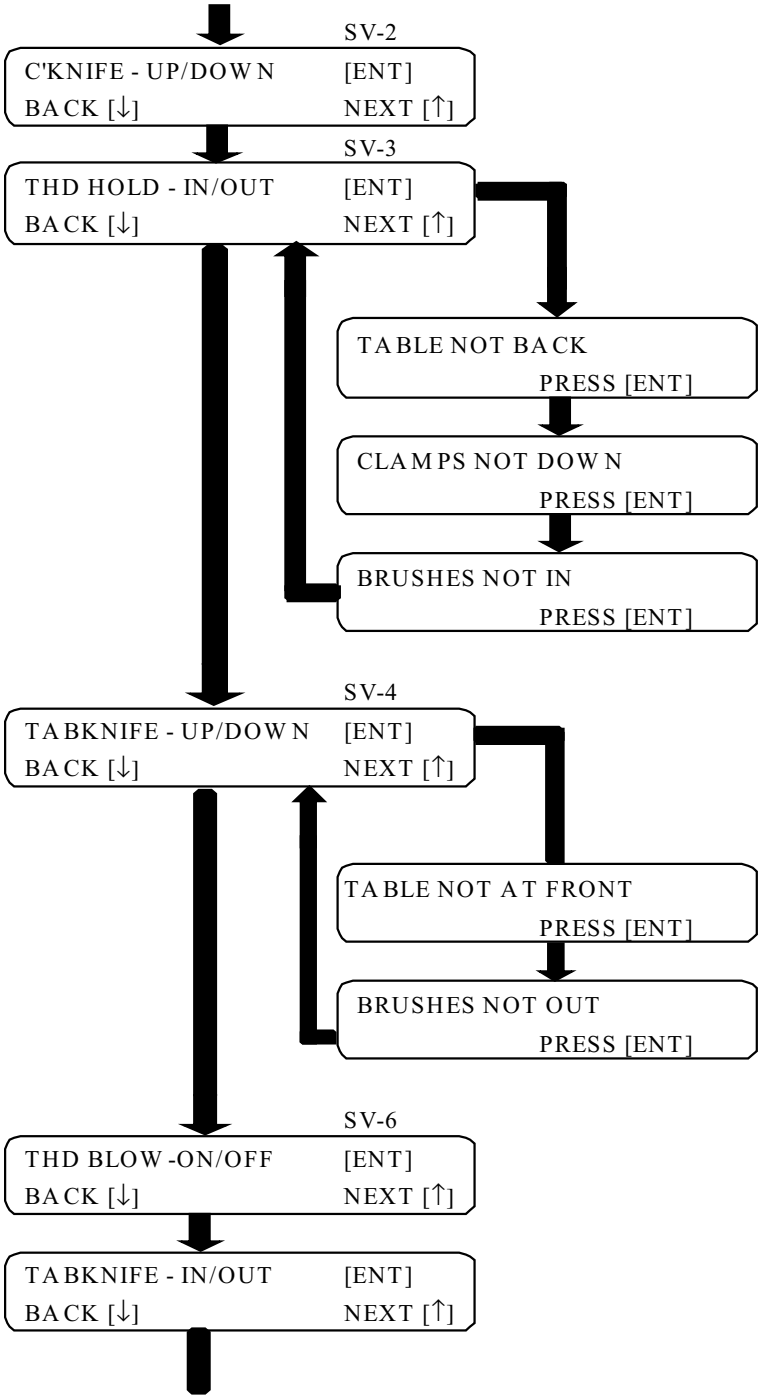
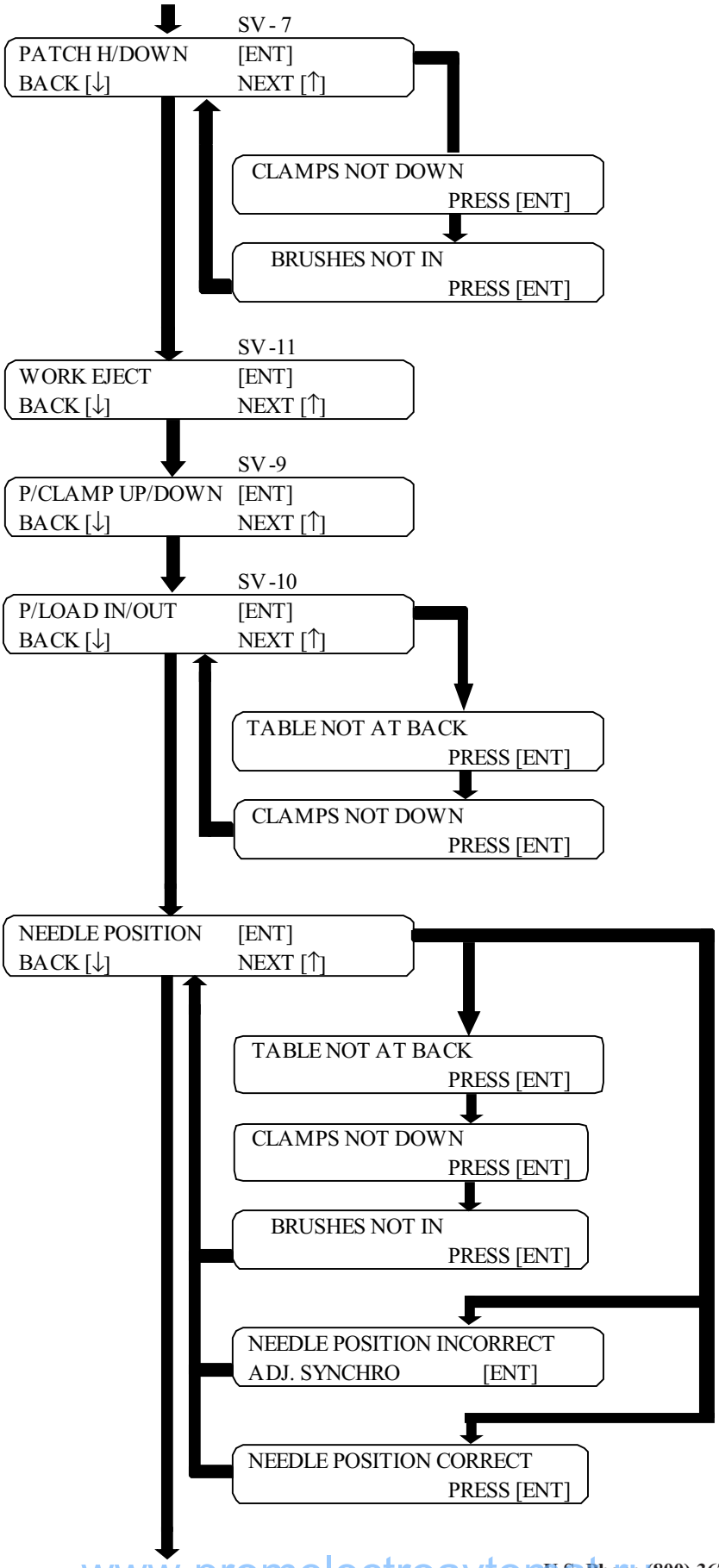
TROUBLESHOOTING

The THD HOLD is the output test for the thread pick-up finger.





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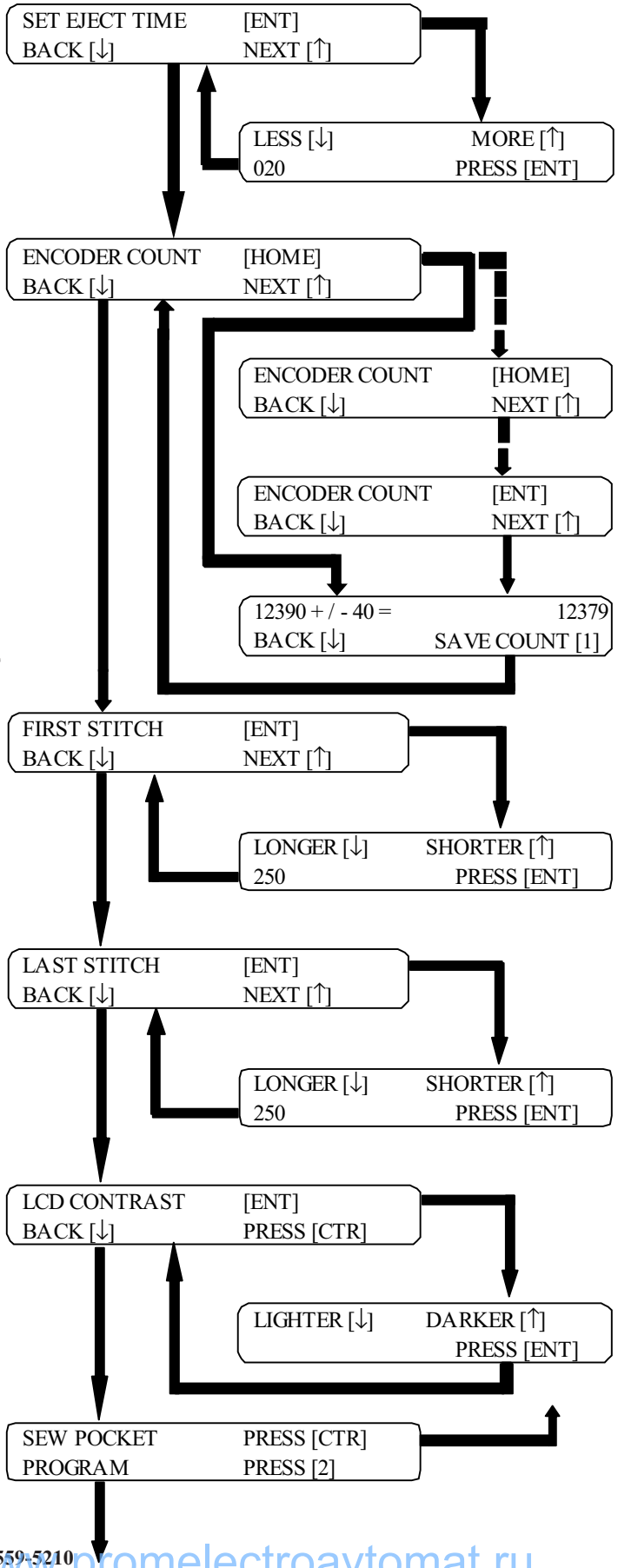

The ENCODER COUNT is the count of pulses.

The FIRST STITCH and LAST STITCH numbers control the stitch length.
Example - The ***higher*** the number entered [ENT], the ***shorter*** the stitch

The LCD CONTRAST controls the brightness of the screen.

To exit, and return to the sewing mode, press [CTR]. To enter the programming feature, press[2].

Changing the Needle Bite Size on the SpeedWelt 1000

Remove the:

a) needle holder
b) brush arms (do not lose leveling wedge)
c) patch guide
d) clamp foot
e) throat plate
f) trim knife bracket
g) tab knife holders

Install, in sequence, the new needle holder (page 1-14) and new throat plate (page 1-14).

Now, *center* the throat plate to the needle and *check* the center knife to the knife slot (page 1-26). *Adjust* the clamp mats to the throat plate (page 1-29). *Install* the new patch guide (page 1-15). *Install* the new clamp foot with the right pivot blocks, then *center* the clamp foot over the mats.

Install brush blades to the brush arms, then *install* the arms and *adjust* the patch guide (pages 1-16 to 1-24). *Adjust* the loopers to the needles (pages 1-32 to 4-35). *Install* the new trim knife to the bracket and *re-install* the machine (page 1-36). *Install* the new tab knives and holders (page 1-19 to 1-31).

Sew pockets on scrap material and *check* for correct stitch density, center knife cut, tab knife cut and for any skipped stitches. *Adjust* the thread pick-up arms (page 1-39).

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