

AMF

**DECORATIVE
STITCHING
MACHINE**

70-52

**E. D. S.
PARTS CATALOG**

For Serial Numbers 3151 and up.

AUGUST 1984

AMF

APPAREL EQUIPMENT DIVISION
2115 West Laburnum Avenue, P.O. Box 9168, Richmond, VA 23227 - 804/355-7961
AMF INCORPORATED

20/887



ELECTRONIC DECORATIVE STITCHER LOGIC BOARD - P. C. BOARD

Product Technical Bulletin

Class 59 Lit. 83 I.T.E. No. 85-9-100

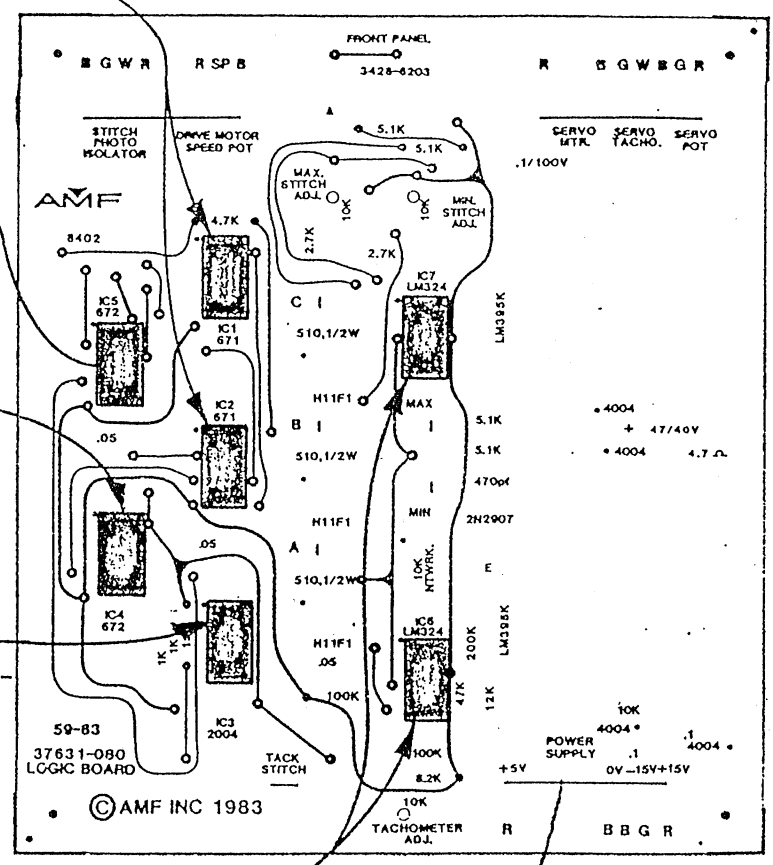
THE FOLLOWING STITCHING FAULTS MAY BE CAUSED BY THESE FAILED COMPONENTS: (*SEE BELOW)

- I.C. #1 & #2 (671)
- (1) STITCH ON ONE SIDE NO GOOD** - OTHER SIDE GOOD.
 - (2) STITCHES ON BOTH SIDES NO GOOD**.

- I.C. #5 (672)
- (1) STITCHES ON BOTH SIDES MIN.
 - (2) STITCHES ON BOTH SIDES IDENTICAL (EITHER LONG OR SHORT).

- I.C. #4 (672)
- (1) STITCHES WILL NOT REVERSE.
 - (2) STITCHES ON BOTH SIDES IDENTICAL (EITHER LONG OR SHORT).

- I.C. #3 (2004)
- (1) STITCH ON ONE SIDE NO GOOD** - OTHER SIDE GOOD.
 - (2) STITCHES ON BOTH SIDES NO GOOD**.
 - (3) STITCHES WILL NOT REVERSE.
 - (4) ONE (1) STITCH ODD WHEN REVERSE ACTIVATED.



- I.C. #6 & #7 (LM324)
- (1) STITCHES ON BOTH SIDES EITHER MAX. OR MIN. (MECHANICALLY STOPPED).

*CHECK VOLTAGE AS SHOWN BEFORE CHANGING ANY I.C.

**STITCHES ARE "NO GOOD" IF THEY DO NOT MATCH STITCH LENGTH INDICATOR LIGHTS.

MOST PROBLEMS CAN BE CORRECTED BY REPLACING THE APPROPRIATE I.C.
A KIT CONSISTING OF VARIOUS I.C.'s CAN BE ORDERED FROM AMF BY PART NO. 59-83-49925-348.

Revised 7/29/87

STITCH PHOTO ISOLATORS AND
PANEL MODULE P. C. BOARDS

59

83

85-9-101

THE FOLLOWING STITCHING FAULTS MAY BE CAUSED BY THESE FAILED COMPONENTS:

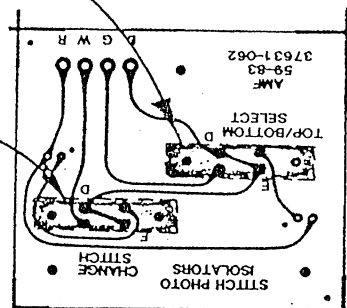
STITCH PHOTO ISOLATORS - P. C. BOARD

TOP/BOTTOM SELECT (G.E. #H21-B3)

- (1) STITCHES, BOTH SIDES, CAN ONLY BE CHANGED BY TURNING ONE OF THE STITCH LENGTH POTS.

CHANGE STITCH (G.E. #H21-B3)

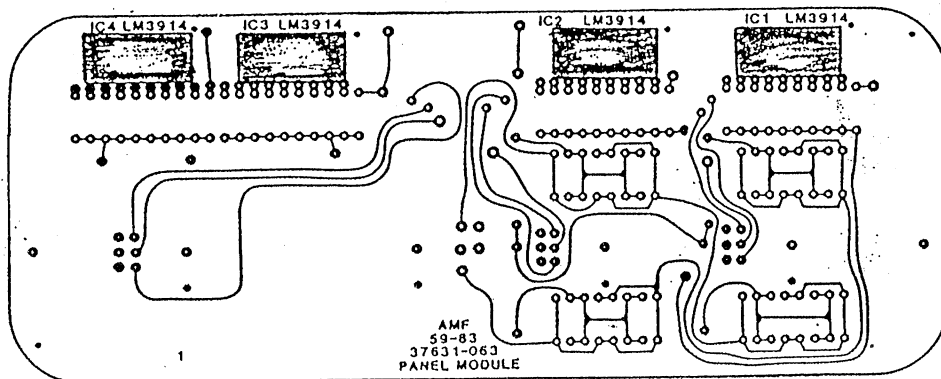
- (1) RANDOM LENGTH SINGLE STITCH PROBABLE WHEN REVERSE SWITCH ACTUATED.
- (2) STITCHES DO NOT REVERSE WHEN REVERSE SWITCH IS ACTUATED.



(SHOWN AS MOUNTED)

PANEL MODULE - P. C. BOARD

THE LIGHTS ON THIS BOARD ARE INDICATORS ONLY AND MAY NOT REPRESENT THE ACTUAL STITCH OR SPEED OF MACHINE. IF THE LIGHTS DO NOT CHANGE WHEN A POT. IS TURNED, REPLACE I. C. (BEFORE CHANGING ANY I.C. - CHECK VOLTAGE FROM POWER SUPPLY)



MOST PROBLEMS CAN BE CORRECTED BY REPLACING THE APPROPRIATE I.C.

A KIT CONSISTING OF VARIOUS I.C.'s CAN BE ORDERED FROM AMF BY PART NO. 59-83-49925-348.

Revised 7/29/87

Insert into Service Manual

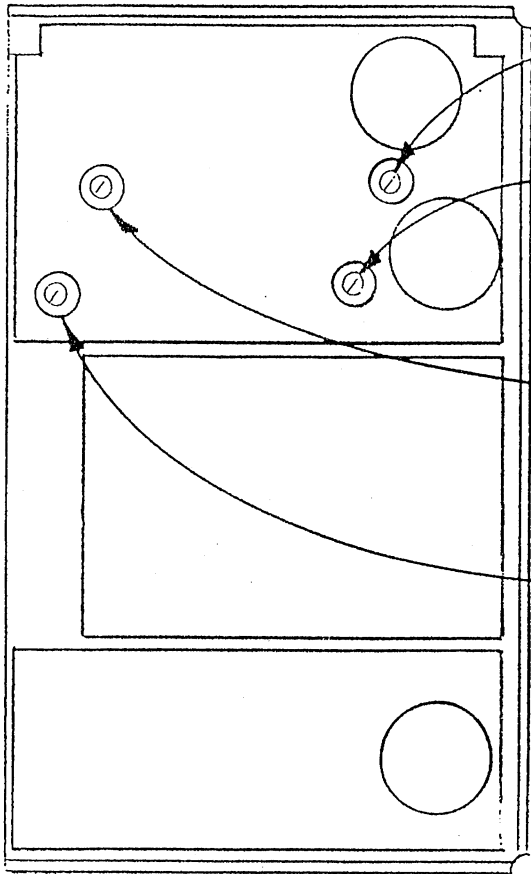
STITCH MALFUNCTION -
ALL LONG.

AMF

Technical Bulletin

59 83 87-06-100

The two (2) current limiting potentiometers should be set to maximum current (turn pot C.W. max.) in order to eliminate the following potential problems:



CURRENT LIMIT POT.
(R12 -15V I. LIM.)

CURRENT LIMIT POT.
(R 5 +15V I. LIM.)

CHECK OUTPUT TERM. FOR -15V AND
ADJ. IF NECESSARY (R26 -15V ADJ.)

CHECK OUTPUT TERM. FOR +15V AND
ADJ. IF NECESSARY (R20 +15V ADJ.)

Stitches larger than set (over 1/4") after machine has been run for one-half hour or more. The fault usually causes the stitches, both top and bottom, to be longer than the 1/4" that can be set with the controls of the machine. However, it has been noted in some instances that this long stitch may alternate with one of the programmed stitches.

STITCH MALFUNCTION -
ALL LONG.

AME

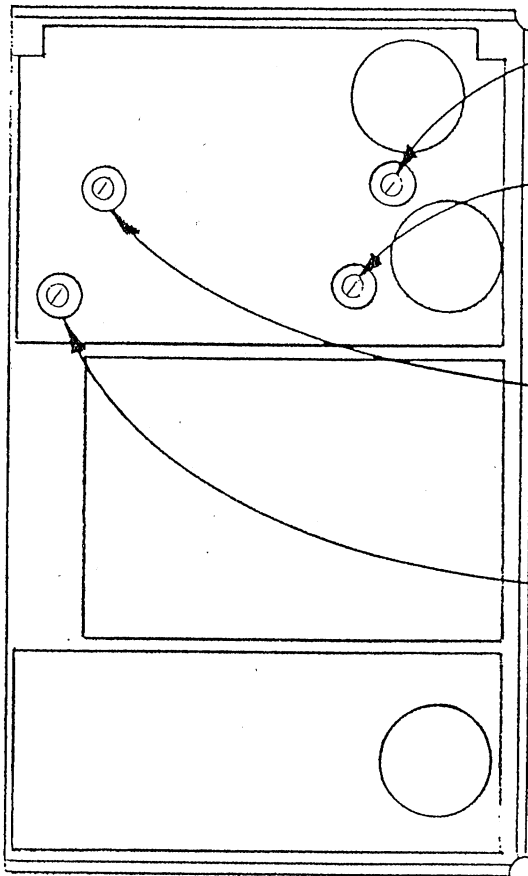
Product Technical Manual

59

83

87-06-100

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Insert into Service Manual



DECORATIVE STITCHING MACHINE

70-52

E. D. S.

INSTRUCTIONS

For Serial Numbers 3151 and up.

AUGUST 1984



APPAREL EQUIPMENT DIVISION
2115 West Laburnum Avenue, P.O. Box 9168, Richmond, VA 23227 · 804/355-7961
AMF INCORPORATED

Printed in U.S.A.



AMF Decorative Stitching Machine

APPAREL EQUIPMENT

CLASS 59 DIVISION 83

AMF

WARRANTY POLICY ON NEW AND RECONDITIONED EQUIPMENT

What is covered:

90 day warranty on service. The warranty period shall begin on the completed installation date.

One year warranty on parts. Any part customer feels is defective, customer must return, freight prepaid, to AMF Richmond. Upon receiving the part, AMF will inspect and if the part is found to be defective, it will be replaced at no charge to customer.

What is not covered:

Normal adjustments and routine maintenance will not be covered. This is the sole responsibility of the customer.

Cleaning and lubrication of equipment.

Parts found to be altered, broken or damaged due to neglect or improper installation or application.

Shipping or delivery charges.

WHAT TO DO IF THERE IS A QUESTION REGARDING WARRANTY

The satisfaction and goodwill of owners and lessee's of AMF Equipment are of primary concern to AMF Manufacturer's Representatives and the AMF Apparel Equipment Division. In the event that a warranty matter is not handled to your satisfaction, the following steps are suggested:

1. Discuss the problem with the nearest AMF Manufacturer's Representative.
2. Contact the Director of Installation And Service at the address below:

AMF INCORPORATED
Apparel Equipment Division
2115 W. Laburnum Avenue
P.O. Box 9168
Richmond, Virginia 23227

Telephone 804/355-7961



AMF Decorative Stitching Machine

APPAREL EQUIPMENT

CLASS 59 DIVISION 83

INSTALLATION POLICIES

I. AMF Installations (by AED Field Service Representative)

- A. Installation, without charge, includes four hours training (with operator and mechanic).
- B. The customer is responsible for having all pertinent personnel available for training upon request from AMF field service representative.
- C. If additional training is requested, AMF will bill at the prevailing service rates.

II. Customer Installation

Should the customer choose to install the machine himself, AMF will not be held responsible for any damage incurred through improper handling of the machine or any of its component parts. Our advice is to take advantage of the installation offer in each case.

III. Distributer Installation

It shall be the responsibility of each distributor or agent to handle installations and training in his territory. Should the distributor/agent be unable to complete installation due to the condition of the machinery, then AMF shall send its own representative at no charge to assist with the installation.

Should it be decided or become necessary for AMF technicians to install machinery because the distributor or agent's mechanics are not able to perform said installation, then AMF at its discretion may charge the commission account or bill back the distributor for the following costs:

Air Fare

Expenses of living and lodging

Service time at the prevailing service rate

This is a general policy and may be subject to a case by case evaluation. Any variation to this policy should be cleared by the General Manager, Director Of Marketing, or Director of Installation And Service.



AMF Decorative Stitching Machine

APPAREL EQUIPMENT

CLASS 59 DIVISION 83

AMF APPAREL EQUIPMENT DIVISION GENERAL OPERATING PRECAUTIONS

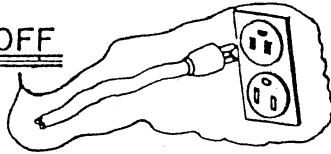
Equipment described in this manual has been carefully designed and manufactured to our high quality standards. Special attention has been devoted to convenience of operation while simultaneously providing effective hazard protection for operating personnel.

Any piece of equipment can become dangerous to personnel when improperly operated or poorly maintained. It is incumbent upon you that all personnel who will be expected to operate or maintain this equipment be familiar with the instructions contained in this manual. It is recommended that AMF service personnel be utilized to supervise the installation and initial training of your personnel.

The most effective hazard protection for your employees is a rigidly enforced safety program which includes effective training in safe operating methods. Supplementary methods of hazard protection such as guards, covers, and electrical interlocks are useful to the extent that they remain attached in a protective manner and are rigidly maintained.

STITCH LENGTH ADJUSTMENTS

POWER OFF

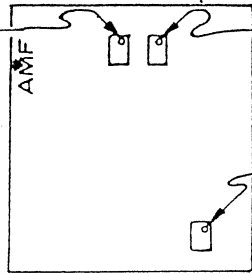


1 SERVO MOTOR ADJUSTMENT

"MAX. STITCH ADJ."

① TURN ↻ 25X

② TURN ↻ 5X



"MIN. STITCH ADJ."

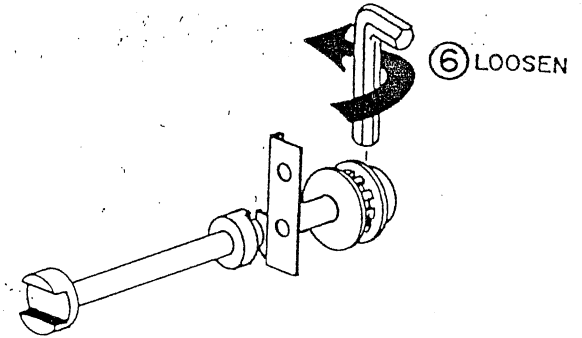
③ TURN ↻ 25X

"TACK ADJ."

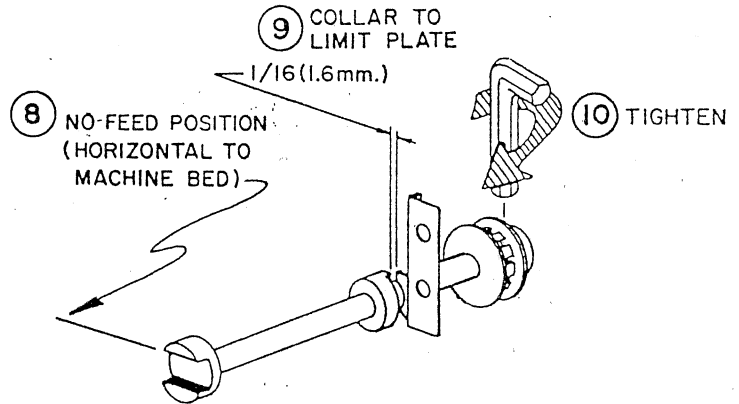
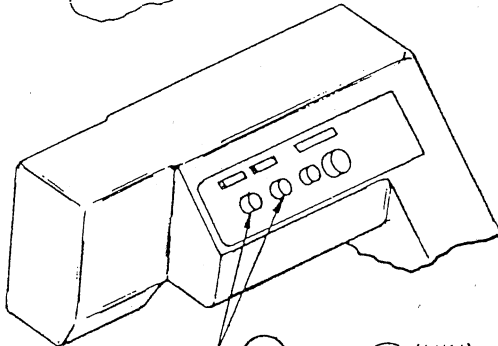
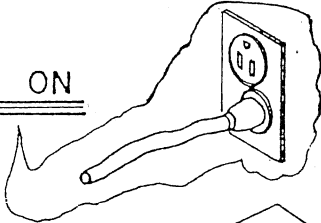
④ TURN ↻ 25X

⑤ TURN ↻ 10X

P.C. BOARD NO. 59-83-37631-061
'STITCH LENGTH CONTROLLER'

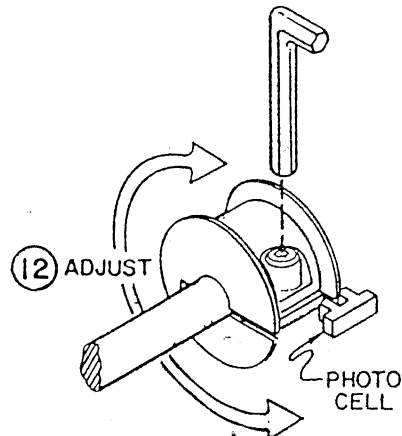
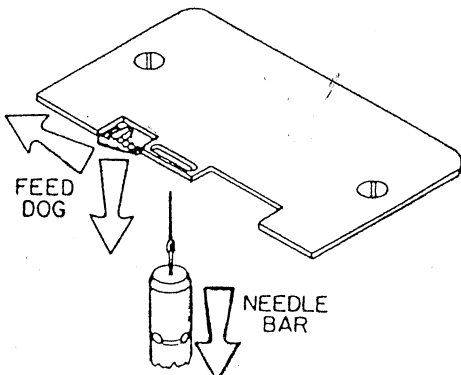


POWER ON



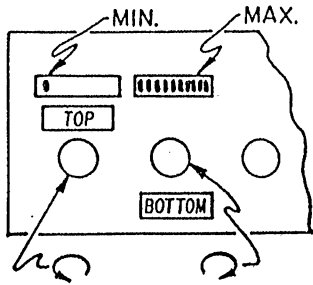
2 TIMING ADJUSTMENT

⑪ TURN HANDWHEEL

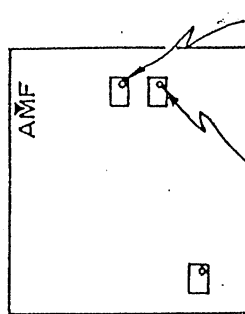
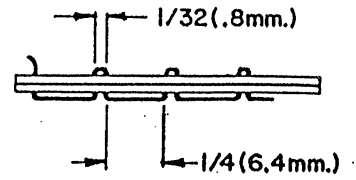


3 STITCH ADJUSTMENT

(13)



(14) SEW SAMPLE

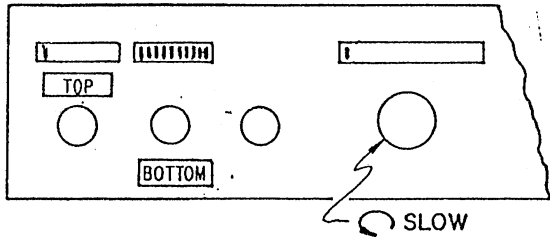


(15) TURN = +(LONGER STITCH)
TURN = -(SHORTER STITCH)

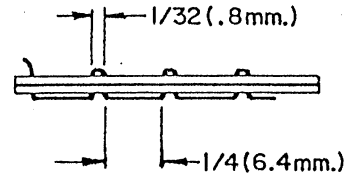
(16) TURN = +(LONGER STITCH)
TURN = -(SHORTER STITCH)

4 SERVO MOTOR TACHOMETER ADJUSTMENT

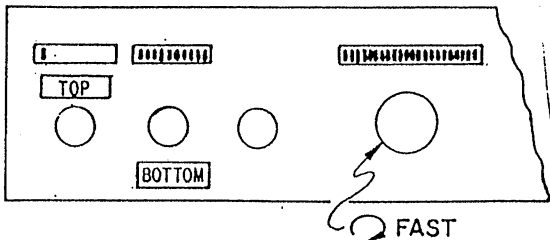
(17) SET TOP(MIN), BOTTOM(MAX.),
SPEED(SLOW)



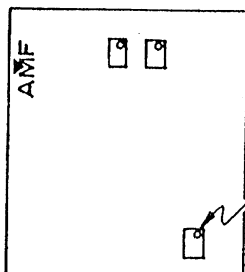
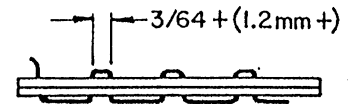
(18) SEW 6" (152mm.)



(19) SET SPEED(FAST)

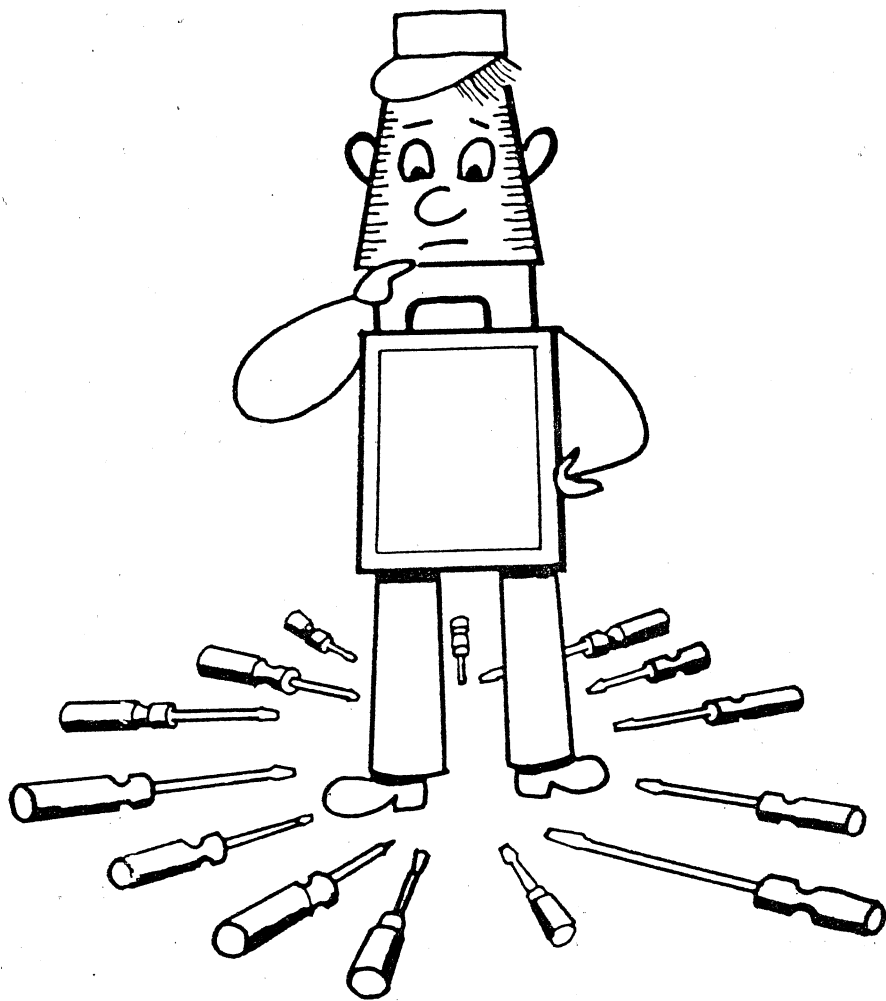


(20) SEW 6" (152mm.)



(21) TURN 2X

(22) REPEAT (20) + (21)
UNTIL (20) = (18)

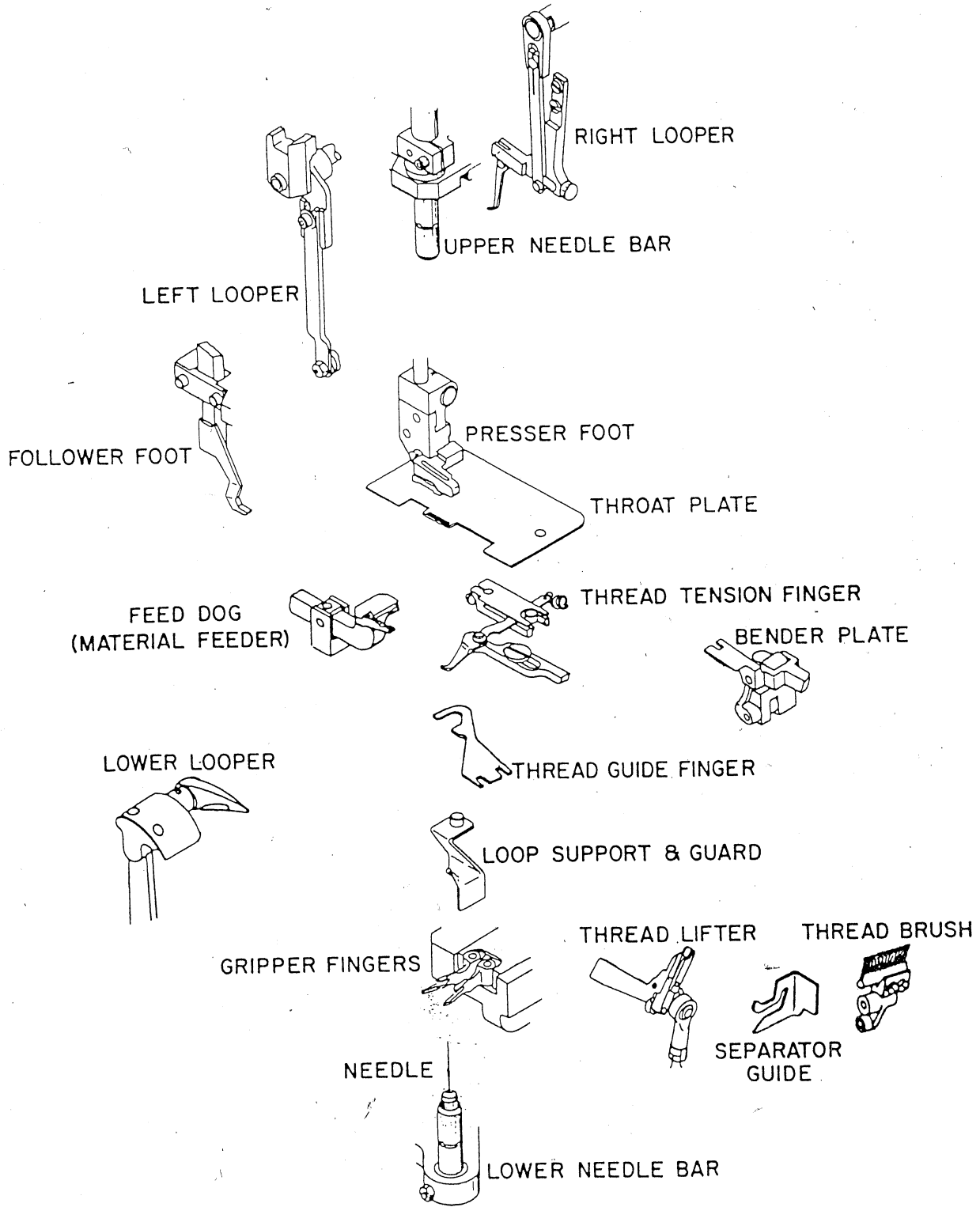


ADJUSTMENTS

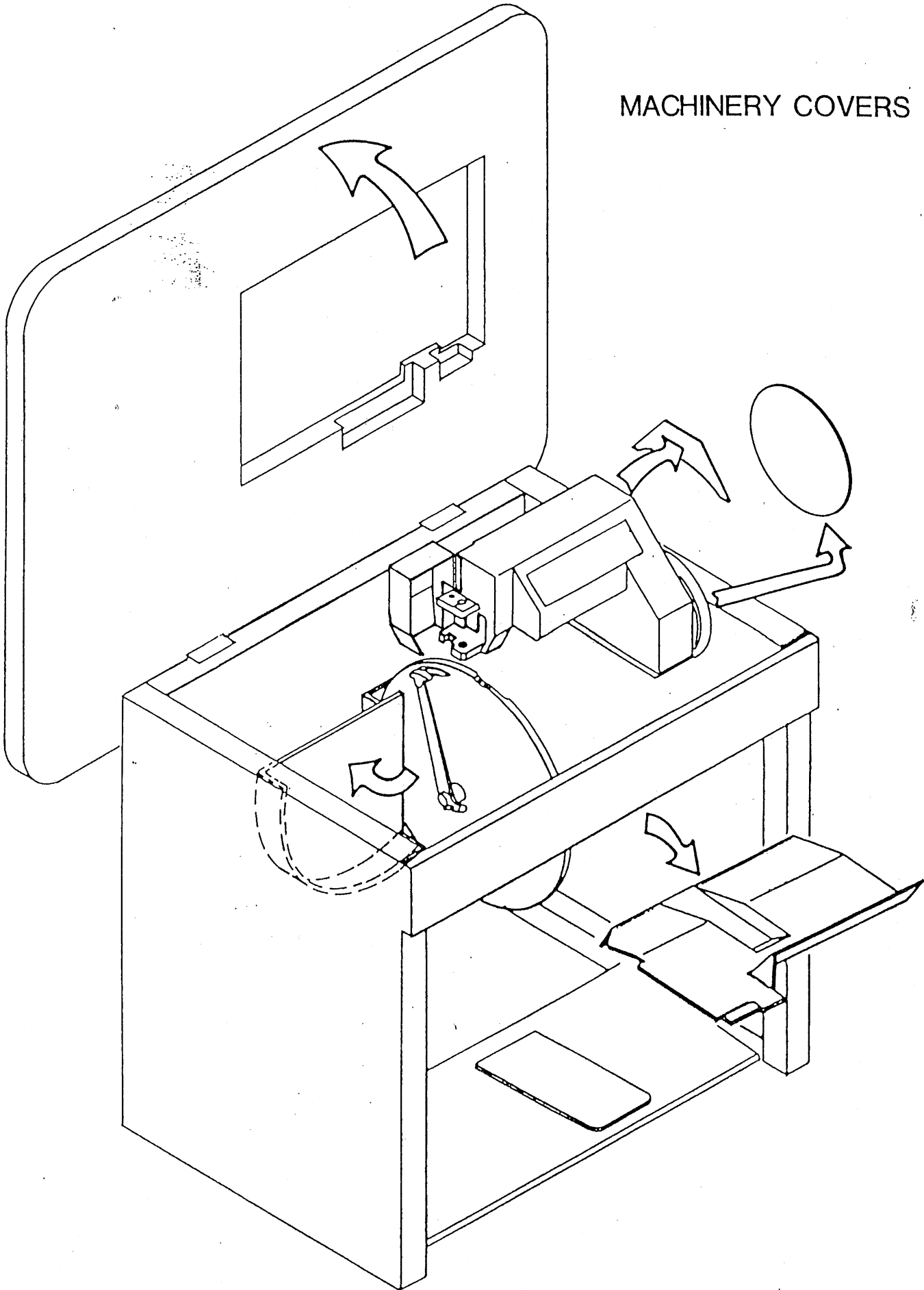
ADJUSTMENTS

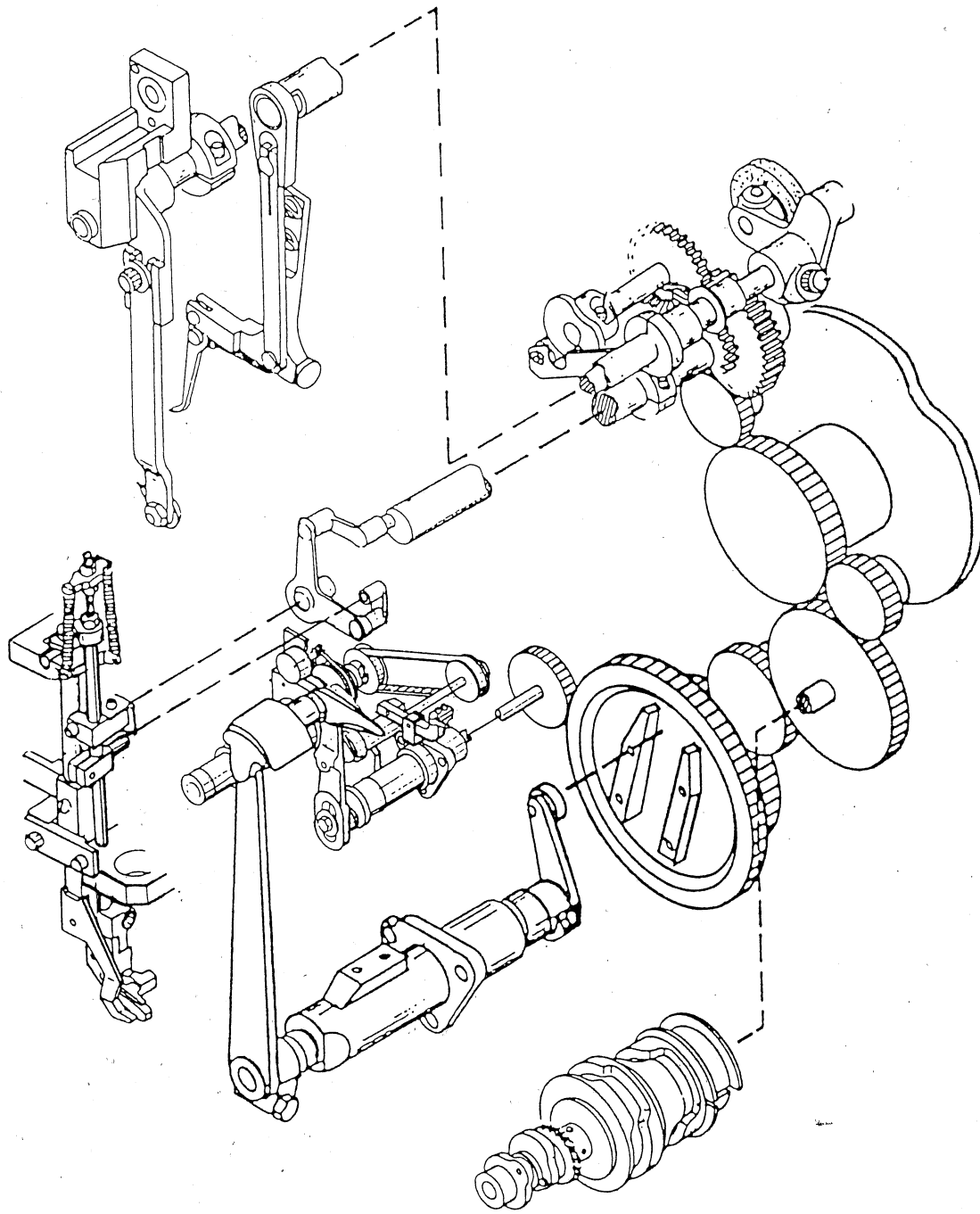
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PARTS GLOSSARY



MACHINERY COVERS

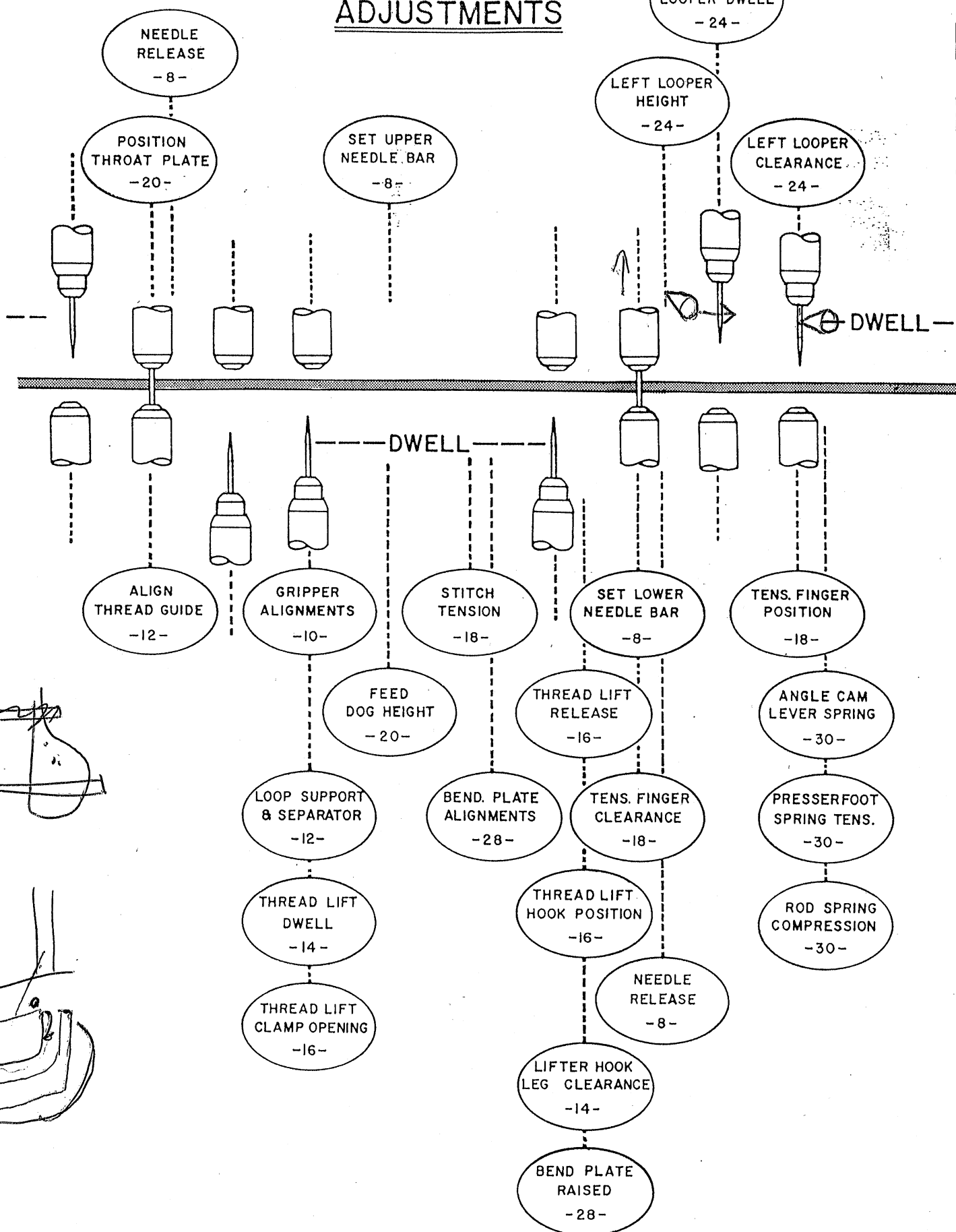




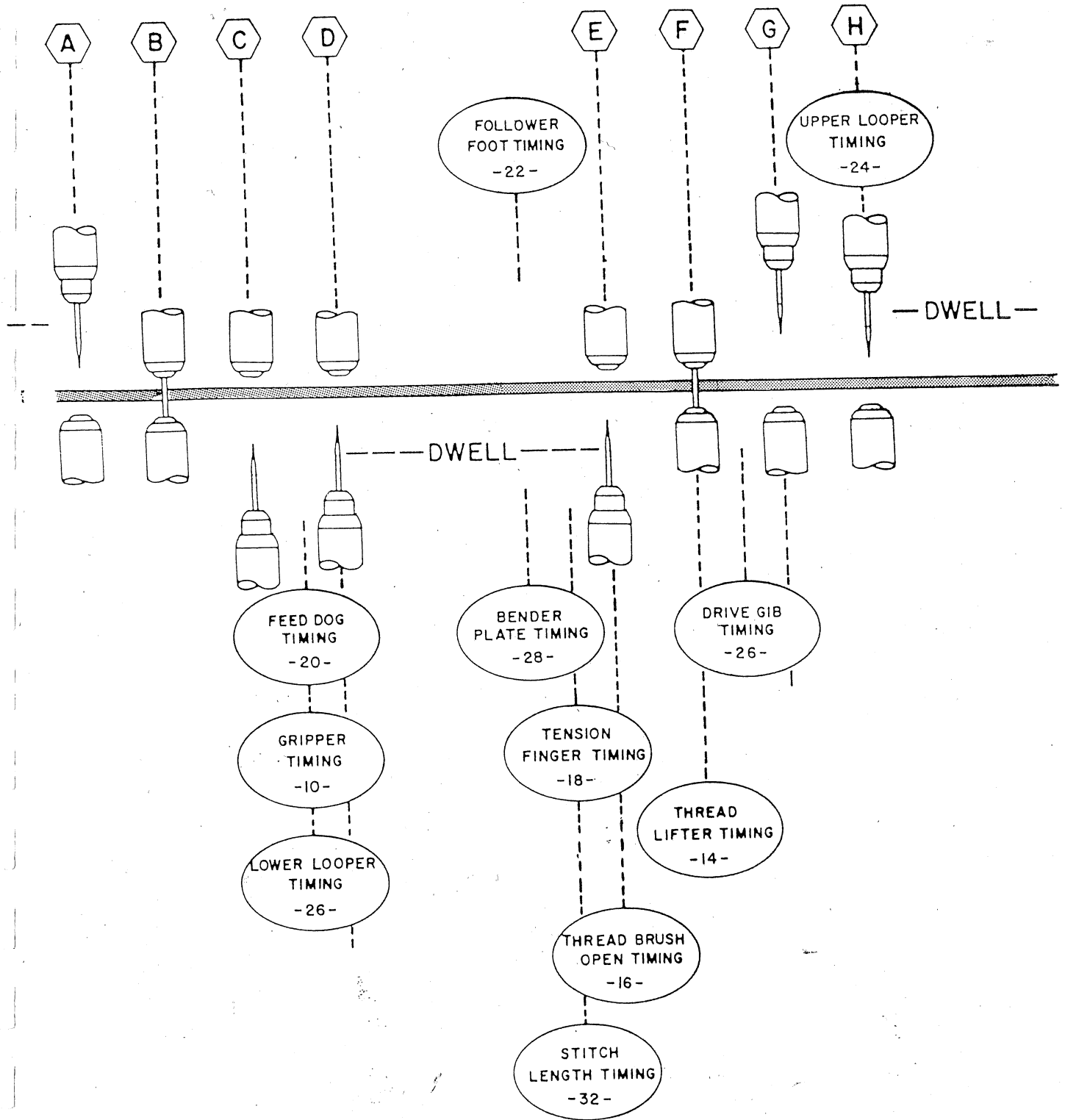
MACHINE GEAR TRAIN

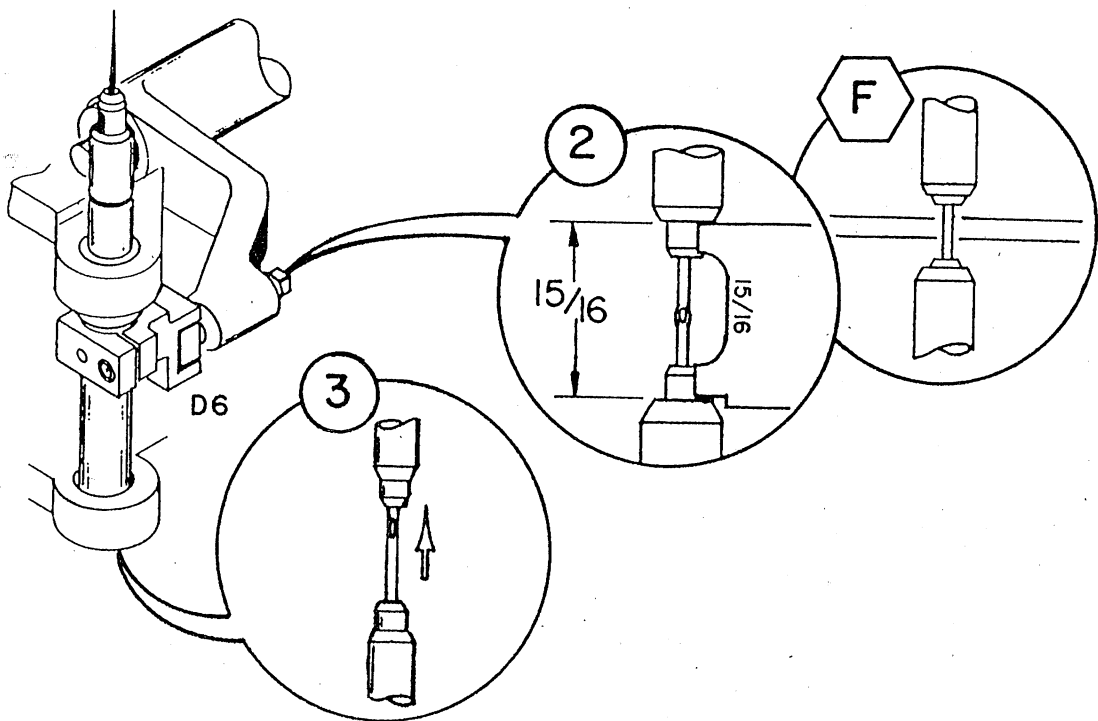
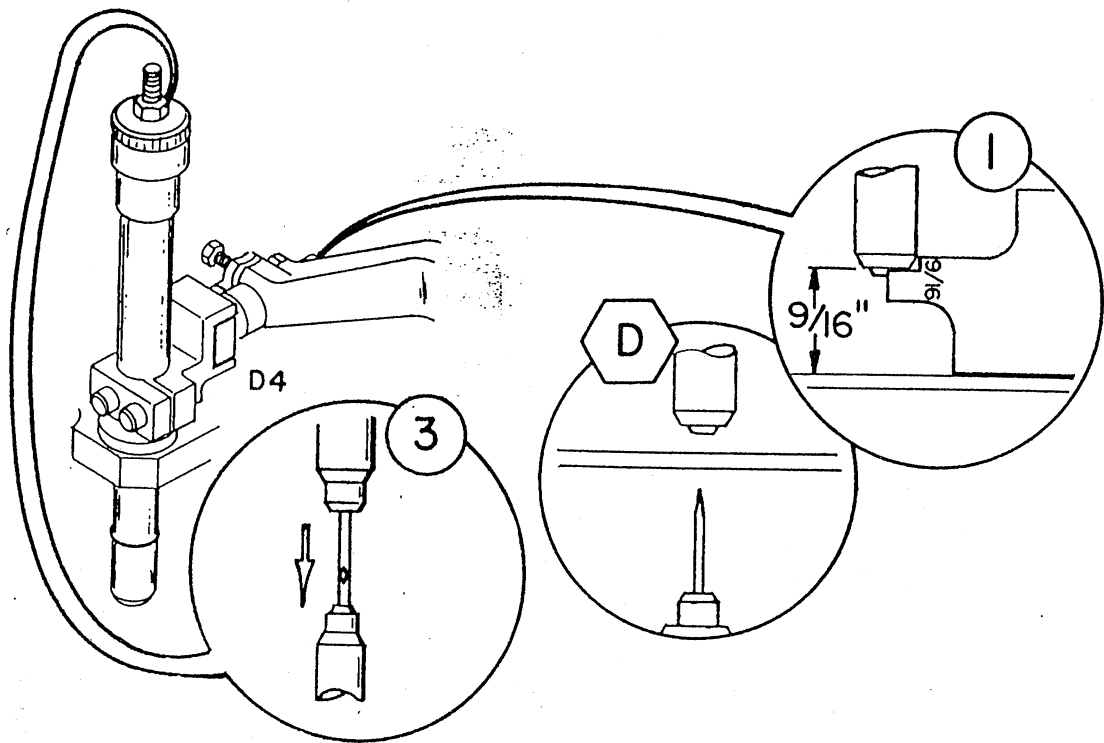
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ADJUSTMENTS



TIMING





APPAREL EQUIPMENT

CLASS 59 DIVISION 83

ADJUSTMENT OF NEEDLE BARS

① ADJUST THE UPPER NEEDLE BAR

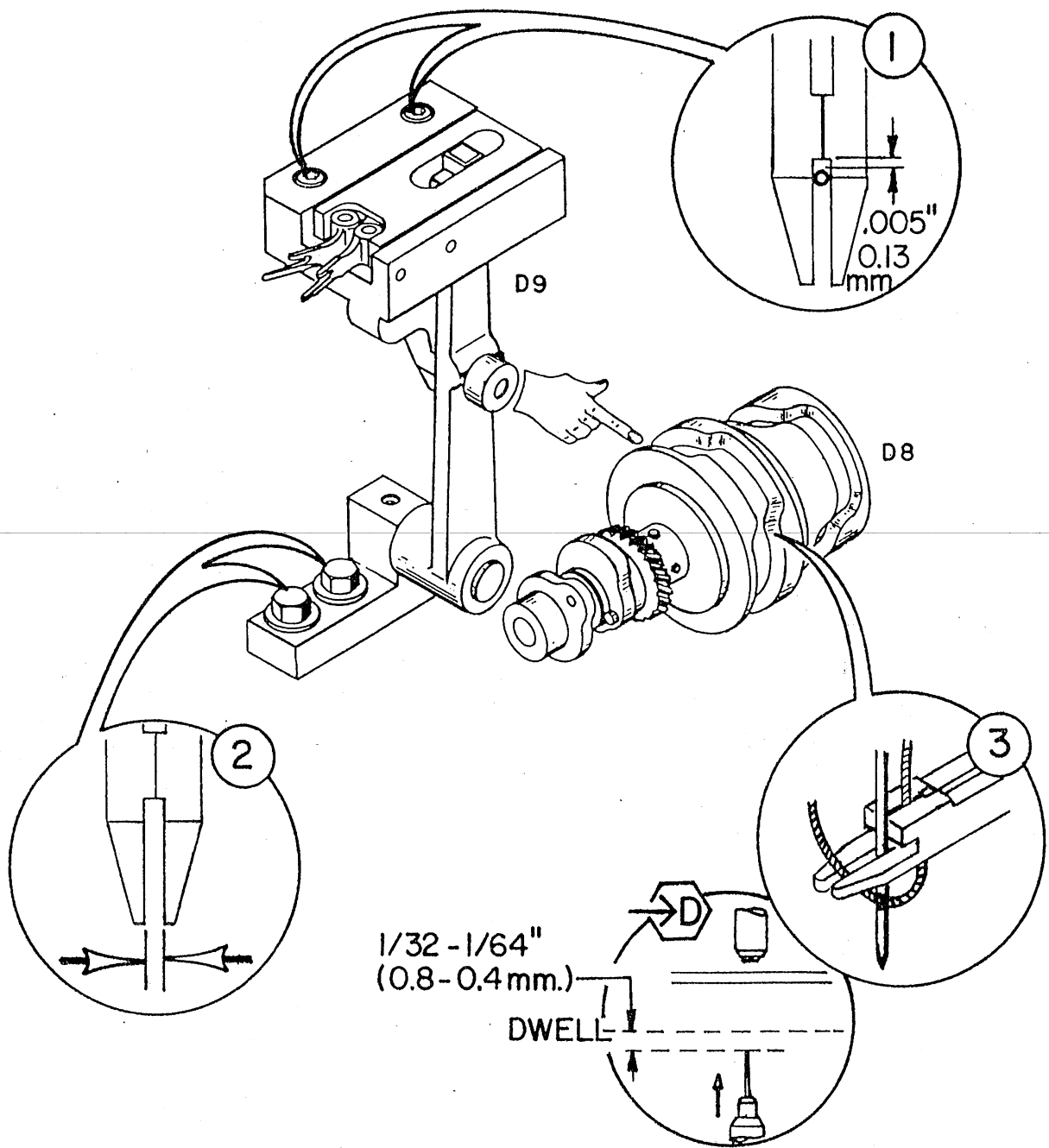
1. Move the Upper Needle Bar to its DWELL position.
2. Use the square head adjustment on the rear of the rocker arm to move the Needle Bar up and down. First loosen the clamping screw (5/16 wrench).
3. Use the gauge (37771-023) to measure 9/16 inch between the lip on the Needle Bar -not the needle sleeve- to the Throat Plate.
4. Adjust the Upper Needle Bar to the gauge. Tighten the clamping screw.

② ADJUST THE LOWER NEEDLE BAR

1. Bring the needle bars to the closest point while transferring the needle.
2. Use the square head adjustment on the rear of the lower rocker arm to move the Needle Bar up and down. First loosen the clamping screw (5/32 allen key).
3. Use the gauge (37771-023) to measure 15/16 inch between the lip on the Lower Needle Bar and the lip on the Upper Needle Bar. Do not measure to the needle sleeves.
4. Adjust the Lower Needle Bar to the gauge. Tighten the clamping screw.
5. Move the needle up and down. The needle should be free to move 1/64 to 3/64 inch (0.4 to 1.2 mm).

③ ADJUST THE NEEDLE RELEASE

1. With a needle in the Upper Needle Bar, rotate the Handwheel to bring the needle just to the transfer point to the Lower Needle Bar.
2. Move the handwheel back and forth slightly to test the needle release from the Upper Needle Bar.
3. Loosen the jam nut (3/8 wrench) on the top of the Needle Bar. Rotate the Sleeve Adjust Nut counterclockwise (viewed from above) 1/8 turn at a time until the needle does not release. Reverse the nut clockwise until the needle just releases at the transfer point. Turn clockwise an additional 3/4 turn. Tighten the jam nut.
4. Make the same adjustment on the Lower Needle Bar to get needle release from the Lower Needle Bar to the Upper Needle Bar. Oscillate the handwheel to assure that the needle transfers properly.



APPAREL EQUIPMENT

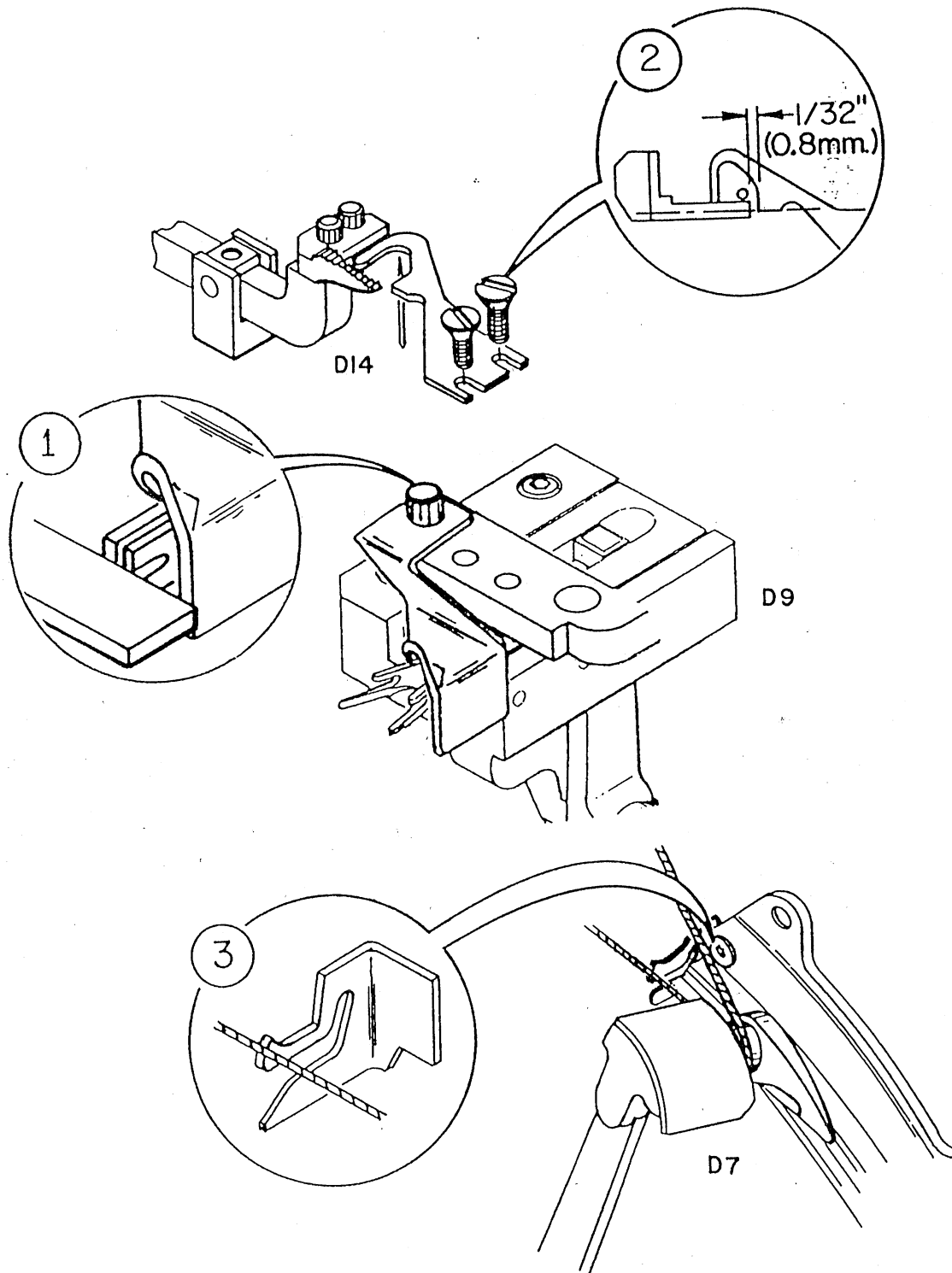
CLASS 59 DIVISION 83

ADJUSTMENT AND TIMING OF GRIPPER FINGERS

- ① **ALIGN TO THE NEEDLE**
 1. Bring the Gripper Fingers into the closed position.
 2. Loosen the mounting screws holding the Finger Bracket (2 screws, 1/4 allen key).
 3. Move the Finger Bracket to get .005 inch (0.13 mm) clearance between the needle and the end of the pads on the Gripper Fingers. Tighten the screws.

- ② **ADJUST FINGER CLOSING**
 1. Bring the Gripper Fingers into the closed position with the Lower Needle Bar in the DWELL position.
 2. Loosen the Pivot Bracket (2 screws, 7/16 wrench).
 3. Move the Pivot Bracket to close the Fingers. Be sure to remove all play in the mechanism. Tighten the screws.

- ③ **TIMING THE GRIPPER FINGERS**
 1. Bring the Lower Needle Bar at 1/32 to 1/64 inch (0.8 to 0.4 mm) before the needle reaches the DWELL position.
 2. Loosen the screws (3 screws, 5/16 wrench) clamping the Thread Clamp Cam on the Main Cam Shaft.
 3. Rotate the Cam to just close the Gripper Fingers. Tighten the clamping screws on the Cam.



APPAREL EQUIPMENT

CLASS 59 DIVISION 83

ADJUSTING LOOP SUPPORT, THREAD GUIDE, AND SEPARATOR GUIDE**① ADJUST THE LOOP SUPPORT**

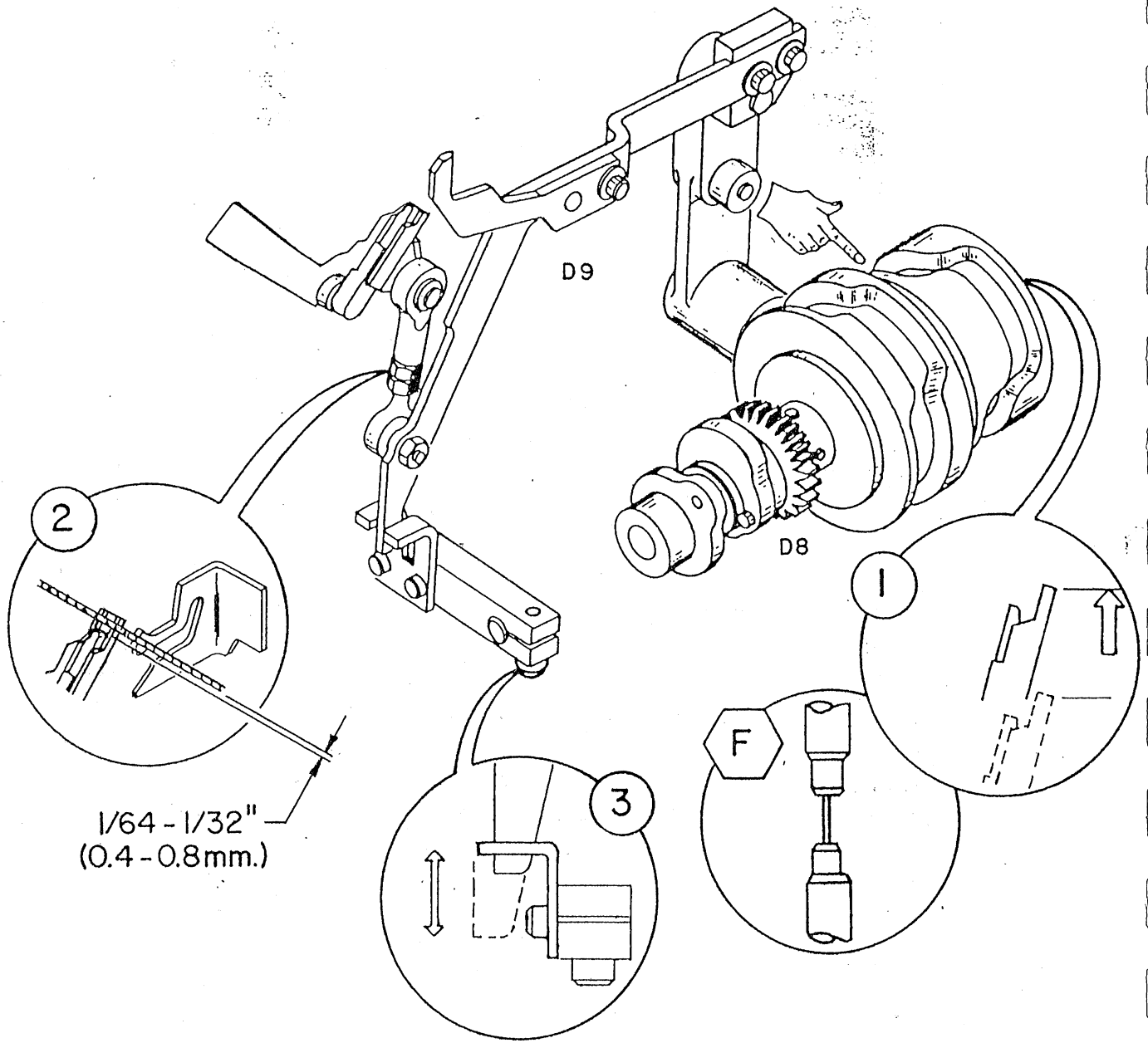
1. Bring the Gripper Fingers into the closed position.
2. Loosen clamping screw (1 screw, 9/64 allen key) holding the Loop Support (pyramid).
3. Move the Loop Support to align its edge with the top fingers on the Gripper Fingers. Tighten the clamping screw.
4. Bring the Lower Needle Bar all the way up. Make sure that it clears the Loop Support.

② ADJUST THE THREAD GUIDE

1. Bring the Lower Needle Bar to hold the needle in the DWELL position.
2. Loosen the screws (2 #5 flathead screws) holding the Thread Guide.
3. Set the Thread Guide at 1/32 inch (0.8 mm) from the side of the needle.
4. Align the edge of the Thread Guide with the center of the Feed Dog. Tighten the screws.

③ ADJUST THE SEPARATOR GUIDE

1. Loosen the screw (5/64 allen key) holding the Separator Guide to the Drum.
2. Set the Separator Guide so that the thread being carried by the Lower Looper contacts midway on the upper angle. The thread will then drop properly into the groove. Tighten the screw.



APPAREL EQUIPMENT

CLASS 59 DIVISION 83

ADJUSTMENT AND TIMING OF THE THREAD LIFTER

① THREAD LIFTER TIMING

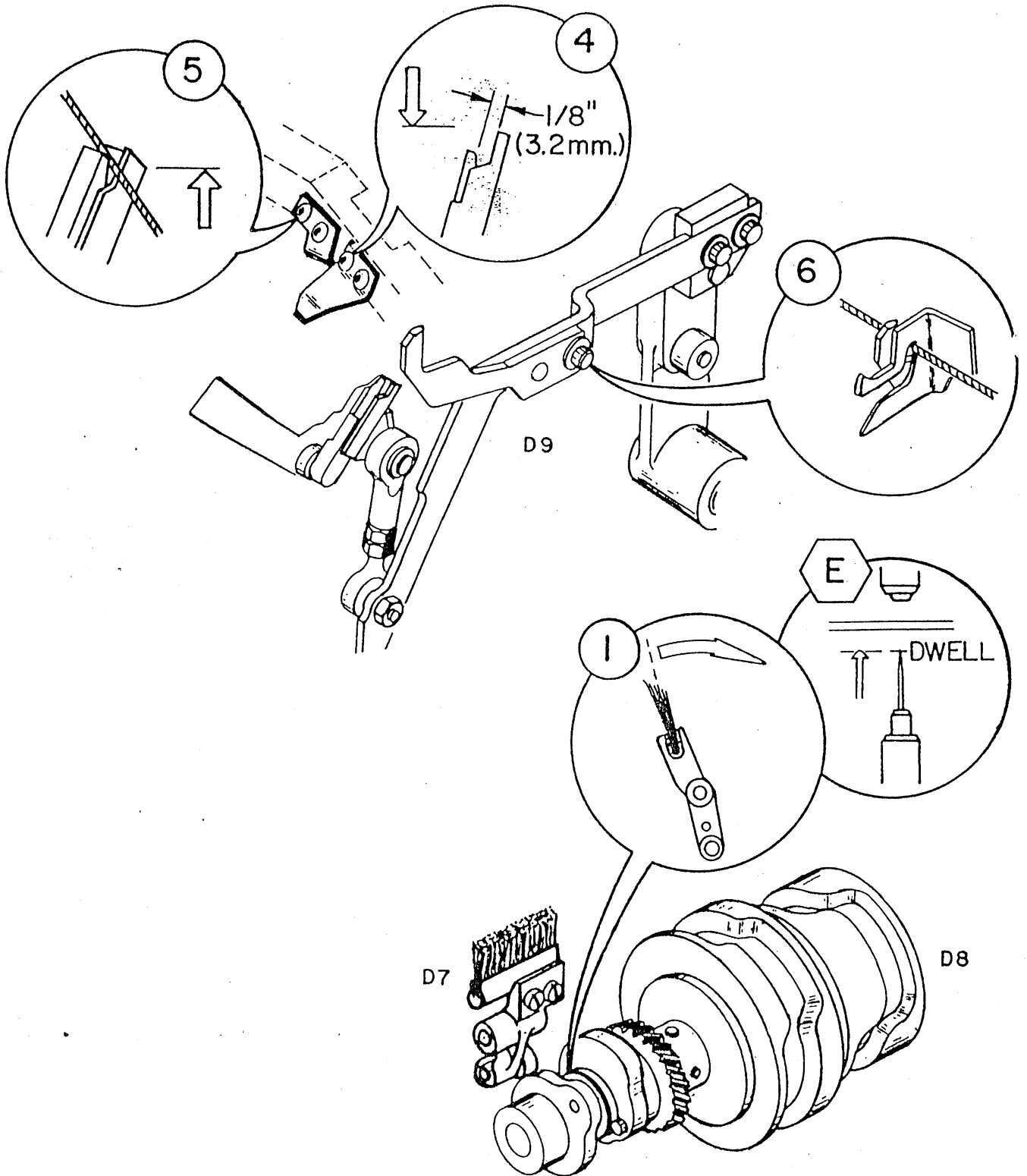
1. Rotate the Handwheel until the needle just transfers from the Lower Needle Bar to the Upper Needle Bar.
2. Loosen the Thread Lifter Cam (3 screws, 5/16 wrench) on the Main Cam Shaft.
3. Rotate the Cam to where the Thread Lifter just completes its upward motion. Tighten the Cam.

② ADJUST DWELL POSITION

1. Look at the screws (2 screws, 9/64 allen key) holding the arm of the Lifter Hook to the Cam Lever; they should be approximately centered in the slot. Measure the center-to-center distance between the ball joints on the Rod End; it should be approximately 2 inches (50.8 mm).
2. Use the handwheel to run a stitch through a piece of material and bring the Lower Needle Bar to its DWELL position.
3. Continue slowly to pick up the thread with the Lower Loper. Stop when the rear of the Lower Loper is one inch (25 mm) beyond the starting edge of the drum.
4. Adjust the Thread Lifter for 1/64 to 1/32 inch (0.4 to 0.8 mm) clearance between the thread and the clamp finger of the Thread Lifter.
5. Make the Rod End longer or shorter to set the clearance.
6. Remove the jam nut (3/8 wrench) and the screw (5/32 allen key) at the bottom of the Rod End. Loosen the jam nut (3/8 wrench) and adjust the length of the Rod End. Reassemble to test the clearance between the thread and the clamp. Tighten the assembly.

③ LIFTER HOOK LEG CLEARANCE

1. Move the Thread Lifter from DWELL to all the way up. Check the motion of the tip of the lower arm of the Lifter Hook.
2. Loosen the clamping screw (5/32 allen key) to move the Support Bracket Arm so that the tip of the lower arm always moves in the slot in the Support Bracket without striking the Bracket. Tighten the screw.



APPAREL EQUIPMENT

CLASS 59 DIVISION 83

ADJUSTMENT AND TIMING OF THE THREAD LIFTER (CONTINUED)**4** ADJUST CLAMP OPENING

1. Move the Thread Lifter to its DWELL position (down).
2. Adjust the Lower Opener Cam (2 screws) to get 1/8 inch (3.2 mm) opening at the tip of the Clamp finger. Tighten the screws.

5 ADJUST THREAD RELEASE

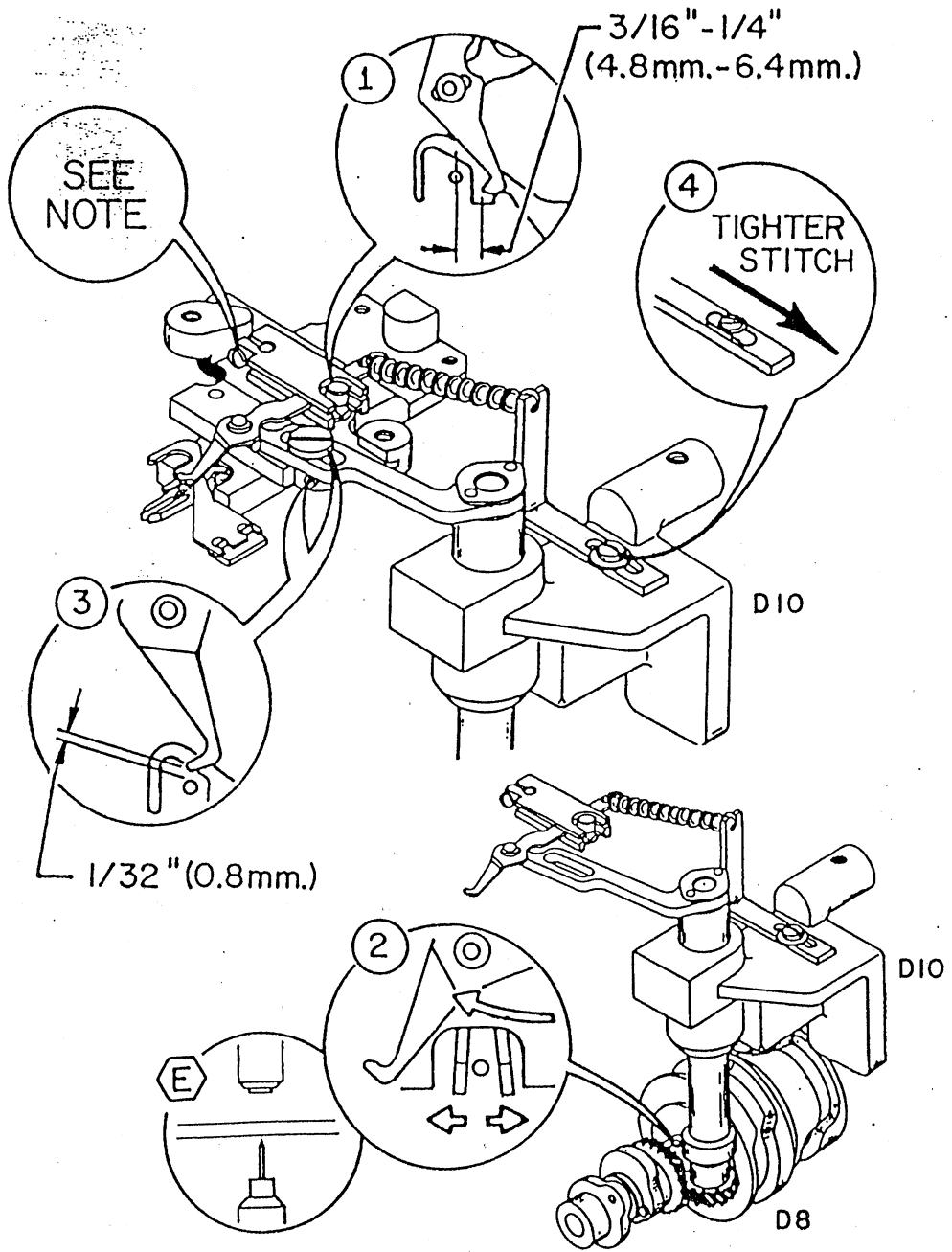
1. Move the Thread Lifter to just before completing its upward travel.
2. Adjust the Upper Opener Cam (2 screws) to release the thread. Tighten the screws.

6 ADJUST LIFTER HOOK

1. Move the Thread Lifter to complete its upward travel.
2. Adjust the Lifter Hook (9/64 allen key) to lift the thread fully into the slot of the Separator Guide. Do not pinch the thread. Tighten the screw.

TIMING THE THREAD BRUSH**1** THREAD BRUSH OPENING

1. Bring the Lower Needle Bar to the point where the needle just starts to move from the DWELL position.
2. Loosen the Brush Operating Cam (2 screws, 3/32 allen key) on the Main Cam Shaft.
3. Rotate the Cam to where the Thread Brush just starts to open. Tighten the Cam.



APPAREL EQUIPMENT

CLASS 59 DIVISION 83

ADJUSTMENT AND TIMING OF THREAD TENSION FINGER

① SET FORWARD POSITION

1. Remove the Throat Plate (2 pieces)
2. Bring the Tension Finger to its most forward position (toward operator).
3. Loosen the Support Block pivot screw (9/64 allen key). Move the pivot to position the nose of the Finger at 3/16 to 1/4 inch (4.8 to 6.4 mm) from the center of the needle. Tighten the screw.

② TIMING THE TENSION FINGER

1. Bring the Lower Needle Bar to the point when the Gripper Fingers just open.
2. Loosen the Bevel Gear on the Main Cam Shaft (2 screws, 3/32 allen key).
3. Rotate the other bevel gear to move the Tension Finger to its rearmost position. Tighten the screws on the bevel gear.

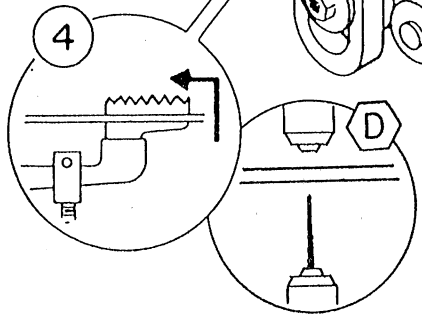
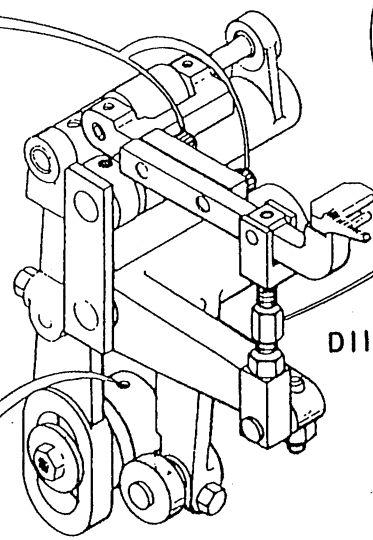
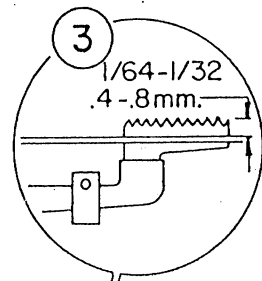
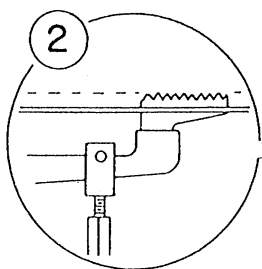
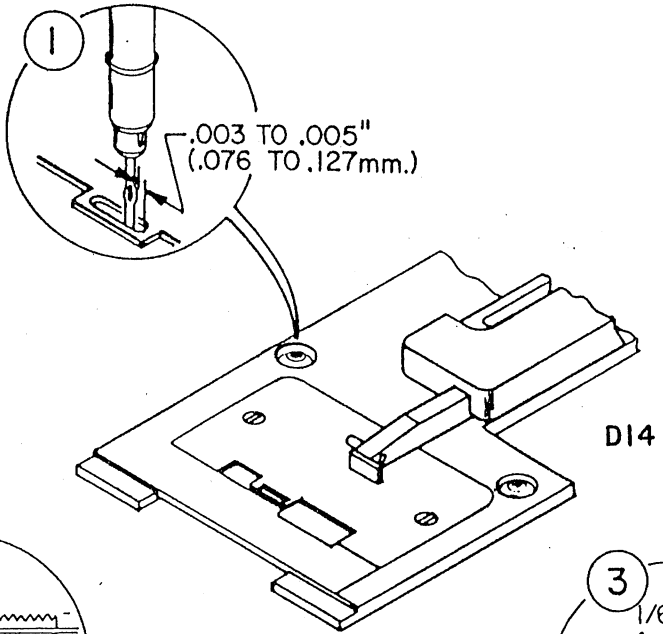
③ CLEARANCE FROM THE NEEDLE

1. Remove the Throat Plate (2 pieces).
2. Rotate the Handwheel to move the Tension Finger through a complete cycle.
3. Loosen the set screw (1/16 allen key) clamping the Eccentric Stud. Rotate the Eccentric Stud to adjust for 1/32 inch (0.8 mm) clearance on the return stroke between the Finger and the needle. Tighten the set screw.

④ ADJUST THE STITCH TENSION

1. First set the Tension Spring (1 screw) for no tension with the Tension Finger at the rearmost position (away from the operator).
2. For tighter stitches, adjust for more tension on the Tension Spring.

NOTE: Adjust the Support Block up or down so that the Tension Finger moves through the complete cycle without any binding.

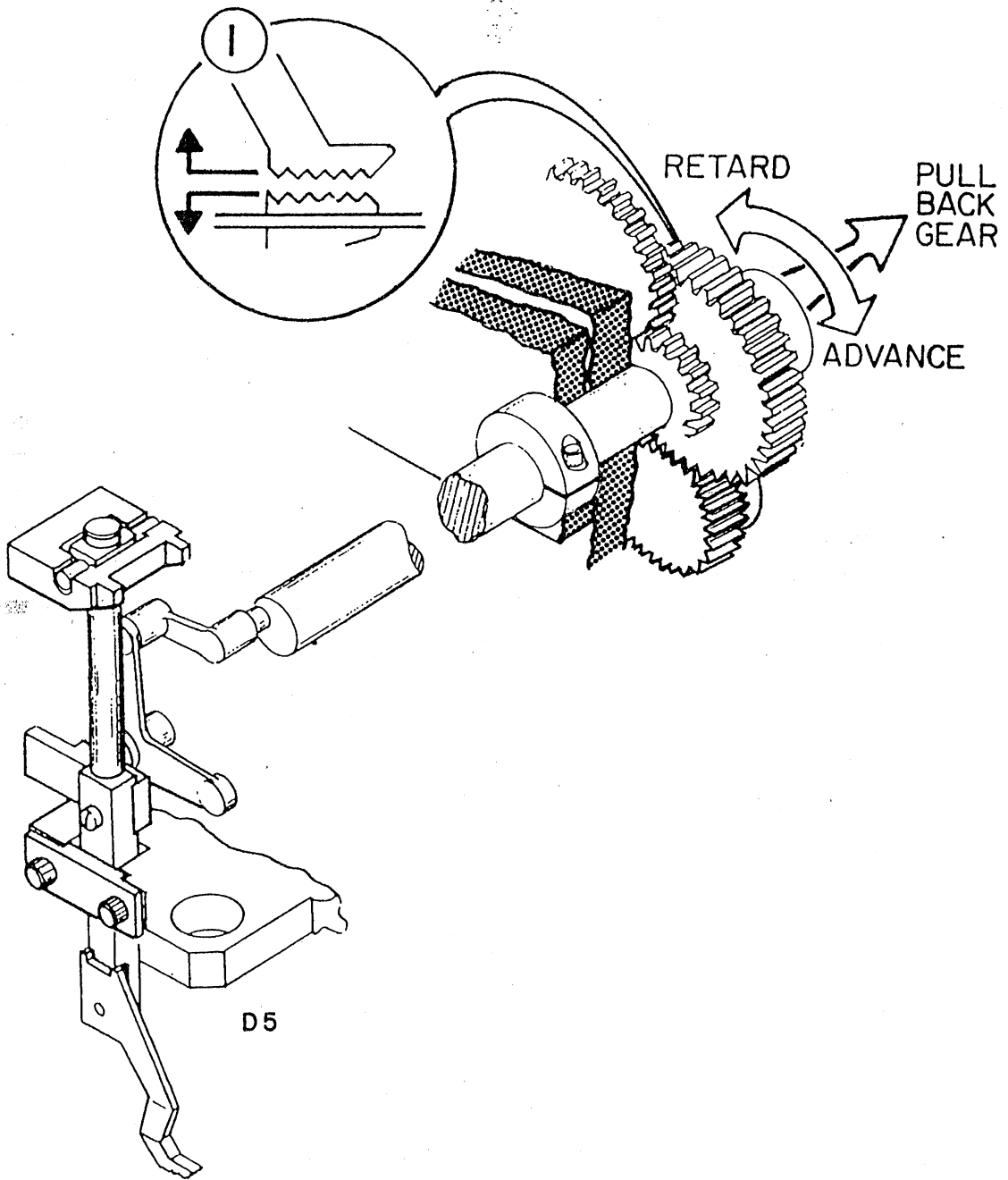


APPAREL EQUIPMENT

CLASS 59 DIVISION 83

ADJUSTMENT AND TIMING OF MATERIAL FEED

- ① POSITION THE THROAT PLATE
 1. Bring the eye of the needle flush with the Throat Plate.
 2. Loosen the Throat Plate Holder (2 screws, 5/32 allen key) holding the Throat Plates.
 3. Position the Throat Plate for .003 to .005 inch (0.08 to 0.13 mm) clearance of the forward end of the slot from the needle eye. Make sure that the Feed Dog and the Bender Plate are free to operate. Tighten the Throat Plate Holder making sure that it is square with the back casting.
- ② ADJUST FEED DOG ANGLE
 1. Perform this adjustment and the adjustment FEED DOG HEIGHT at the same time.
 2. Bring the Feed Dog above the Throat Plate.
 3. Loosen the Material Feed arm (2 screws, 5/32 allen key) to adjust the Feed Dog.
 4. Adjust the upper surface of the Feed Dog parallel with the Throat Plate. Tighten the screws.
- ③ ADJUST FEED DOG HEIGHT
 1. Bring the Feed Dog above the Throat Plate.
 2. Use the Lifter Rod to raise or lower the Feed Dog. Loosen the upper jam nut (7/16 wrench). Loosen the lower jam nut (left hand thread).
 3. Adjust the Feed Dog for 1/64 to 1/32 inch (0.4 to 0.8 mm) above the Throat Plate. Tighten the jam nuts.
- ④ ADJUST FEED DOG TIMING
 1. Bring the Lower Needle Bar at 1/32 to 1/64 inch (0.8 to 0.4 mm) before the needle reaches the DWELL position.
 2. Loosen the Material Feed Cam (2 screw, 1/8 allen key) and rotate to just bring the Feed Dog all the way up. Tighten the Feed Cam.



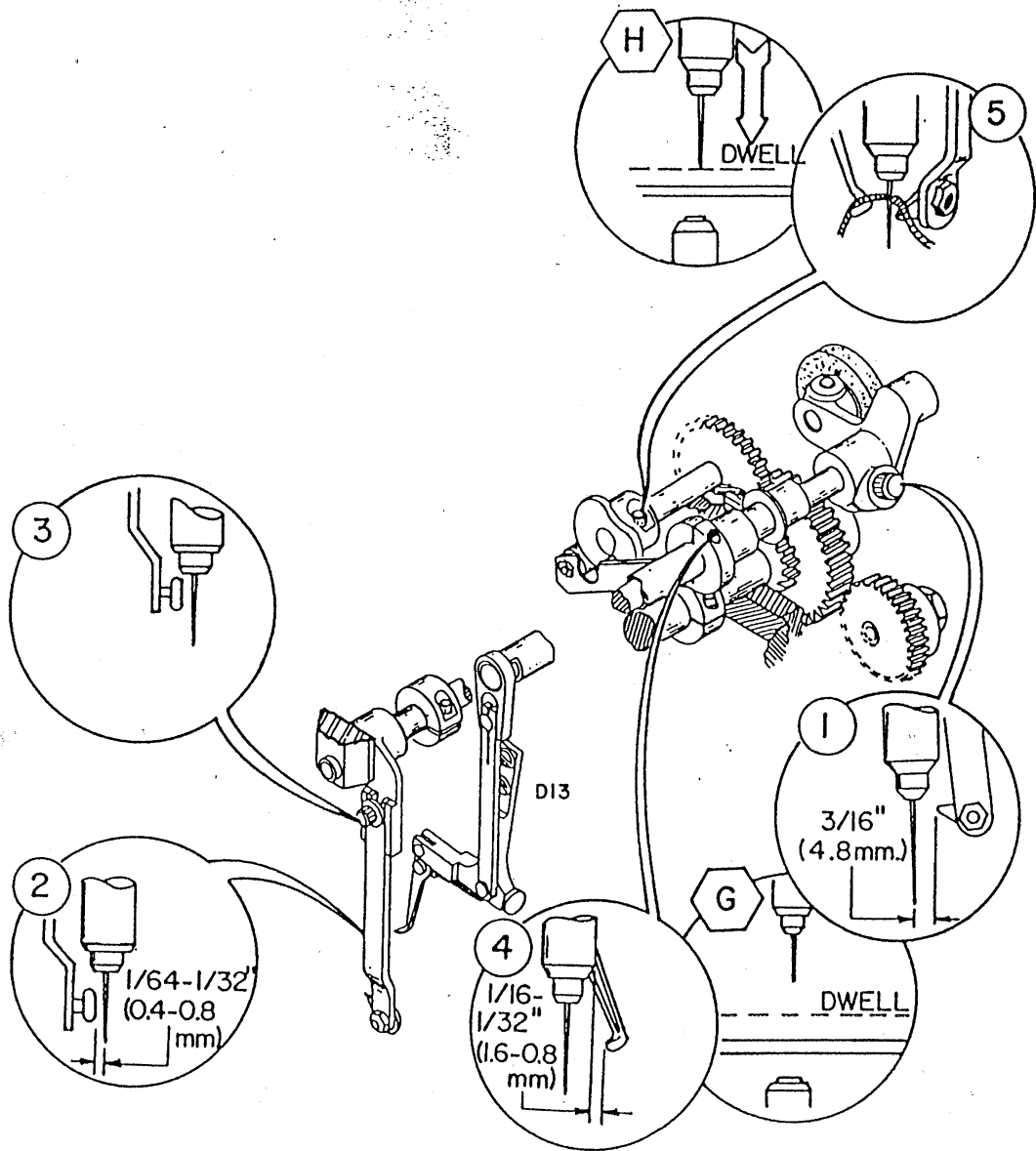
APPAREL EQUIPMENT

CLASS 59 DIVISION 83

TIMING THE FOLLOWER FOOT

① ADJUST THE FOLLOWER FOOT SEPARATION

1. This adjustment requires a Long Arm 3/32 Allen Key or an extension to a standard Key. Bend the key as required for access to the gear screw.
2. Remove the Belt Guard. Unhook the Cam Lever Spring for the Upper Looper.
3. Rotate the Handwheel to bring the set screw on the Presser Foot Gear into view. Loosen the set screw (3/32 allen key).
4. Rotate the Handwheel to bring the Feed Dog to the end of stroke where it starts to descend. The Follower Foot should move upward at this time. Determine whether to Advance the Follower Foot to move upward sooner or Retard the Follower Foot to move later.
5. Rotate the Handwheel to where the low section of the Left Upper Looper Cam uncovers the Presser Foot Gear.
6. Hold the Right Cam Looper Gear in place. Pull the Presser Foot Gear to disengage from the gearing. Rotate the Presser Foot Gear clockwise to Retard the Follower Foot or counterclockwise to Advance. Push the Gear in to engage the gearing. Rotate the Handwheel to check the timing of the Follower Foot to the Feed Dog.
7. Repeat Step 5 and Step 6 until the Follower Foot separates from the Feed Dog at the end of its stroke.
8. Rotate to bring the set screw on the Presser Foot Gear into view and tighten the screw. Replace the Upper Looper Cam Lever Spring. Replace the Belt Guard. Check the Right Looper timing.



APPAREL EQUIPMENT

CLASS 59 DIVISION 83

ADJUSTMENT AND TIMING, LEFT LOOPER AND RIGHT LOOPER

① LEFT LOOPER DWELL POSITION

1. Remove the Belt Guard (2 screws, 3/32 allen key) at the Handwheel end of the machine for access to the Cam Lever.
2. Bring the Upper Needle Bar to its maximum upward position.
3. Loosen the Cam Lever screw (3/16 allen key) and locate the tip of the Left Looper at 3/16 inch (4.8 mm) from the center of the needle. Tighten the screw. Replace the Belt Guard.

② LEFT LOOPER CLEARANCE

1. Rotate the Handwheel to bring the Left Looper alongside the needle.
2. Check for 1/64 to 1/32 inch (0.4 to 0.8 mm) clearance between the Left Looper and the Needle. If necessary, carefully bend the Looper Arm to get the proper clearance.

③ LEFT LOOPER HEIGHT

1. Loosen the Left Looper Arm (screw at top, 9/64 allen key) and adjust the Arm to just clear the needle bar on the return stroke. Tighten the Arm.
2. Run the Left Looper through its motion a few times to assure that the Arm does not strike the Needle Bar on the return stroke.

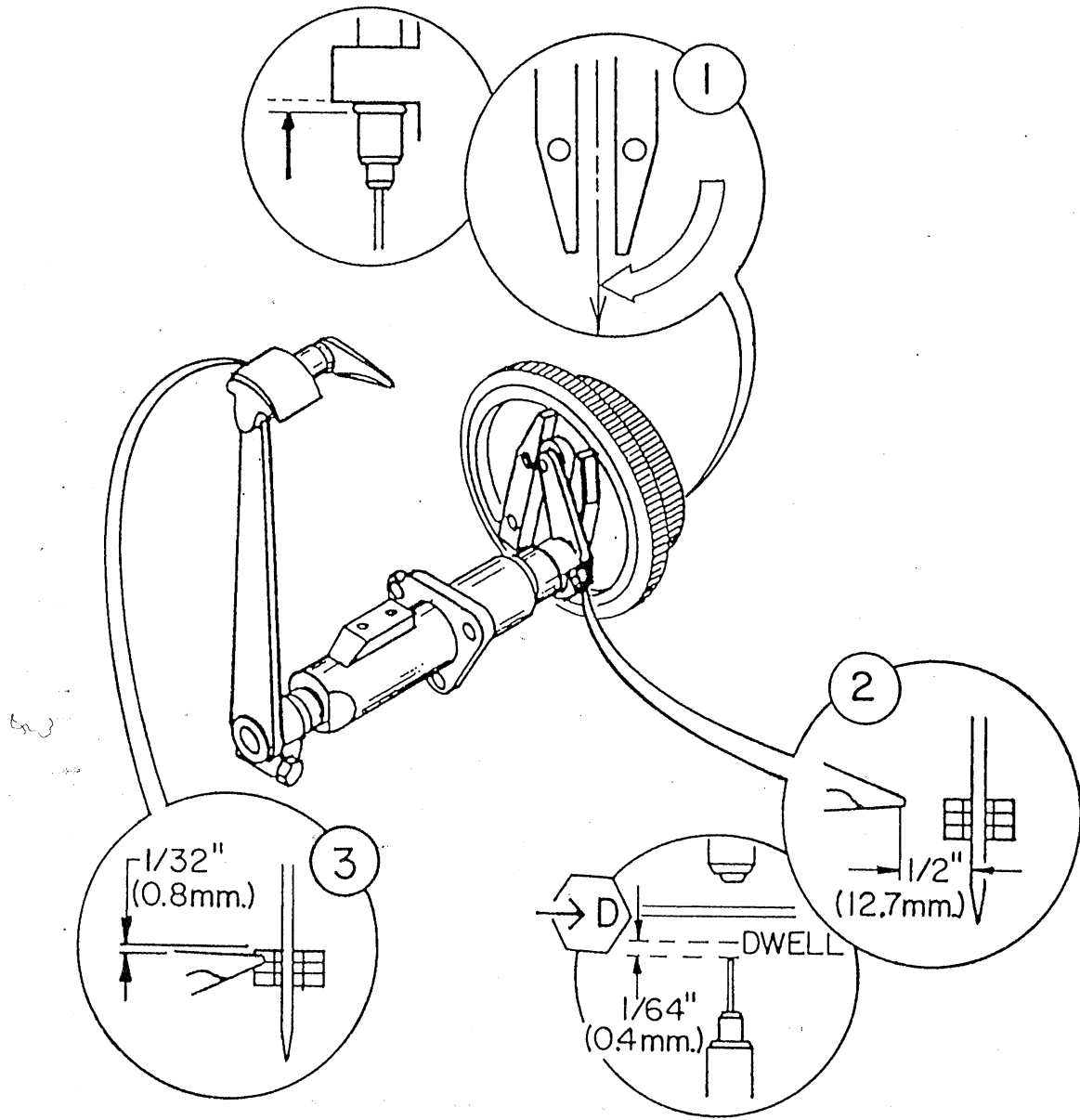
④ RIGHT LOOPER DWELL

1. Bring the Upper Needle Bar to its maximum upward position.
2. Loosen the Right Looper Cam Lever (9/64 allen key). Move the Right Looper for 1/16 to 1/32 inch (1.6 to 0.8 mm) clearance from the Upper Needle Bar. Tighten the Cam Lever.

⑤ LOOPER TIMING

1. Bring the Upper Needle Bar just to its DWELL position.
2. Loosen the Right Looper Cam (7/64 allen key). Rotate the Cam to advance the Right Looper to 1/32 inch (0.8 mm) ahead of the Left Looper. Tighten the Cam.

NOTE: The Right Looper picks up the thread ahead of the Left Looper.



APPAREL EQUIPMENT

CLASS 59 DIVISION 83

ADJUSTMENT AND TIMING OF LOWER LOOPER

① TIMING THE DRIVE GIBS

1. Rotate the Handwheel by hand to transfer the needle to the Upper Needle Bar. Stop at the point that the Retainer Ring on the Upper Needle Bar (moving upward) is just flush with the bottom of the Needle Bar Bushing.
2. Loosen the Arm Crank screw (1/2 inch wrench). Hold the Arm Crank assembly and move the Lower Looper Arm out far enough to remove the Arm Crank.
3. Below the Handwheel, remove the nut (15/16 wrench on nut, 13/16 wrench on gear stud) holding the Arm Crank Drive Gear.
4. Mark the position of the Material Feed Drive Gear.
5. Pull the Arm Crank Drive Gear to disengage from the gearing and rotate to make the Drive Gibs point vertically downward to the 6:00 o'clock position (not as shown). Reengage the Arm Crank Drive Gear to the gearing. Check that the Material Feed Drive Gear has not moved.
6. Replace the nut on the gear stud and tighten.
7. Install the Arm Crank assembly on the shaft of the Lower Looper Arm and make sure that the Looper Arm is seated. Do not tighten. Proceed to the instructions for Timing The Lower Looper.

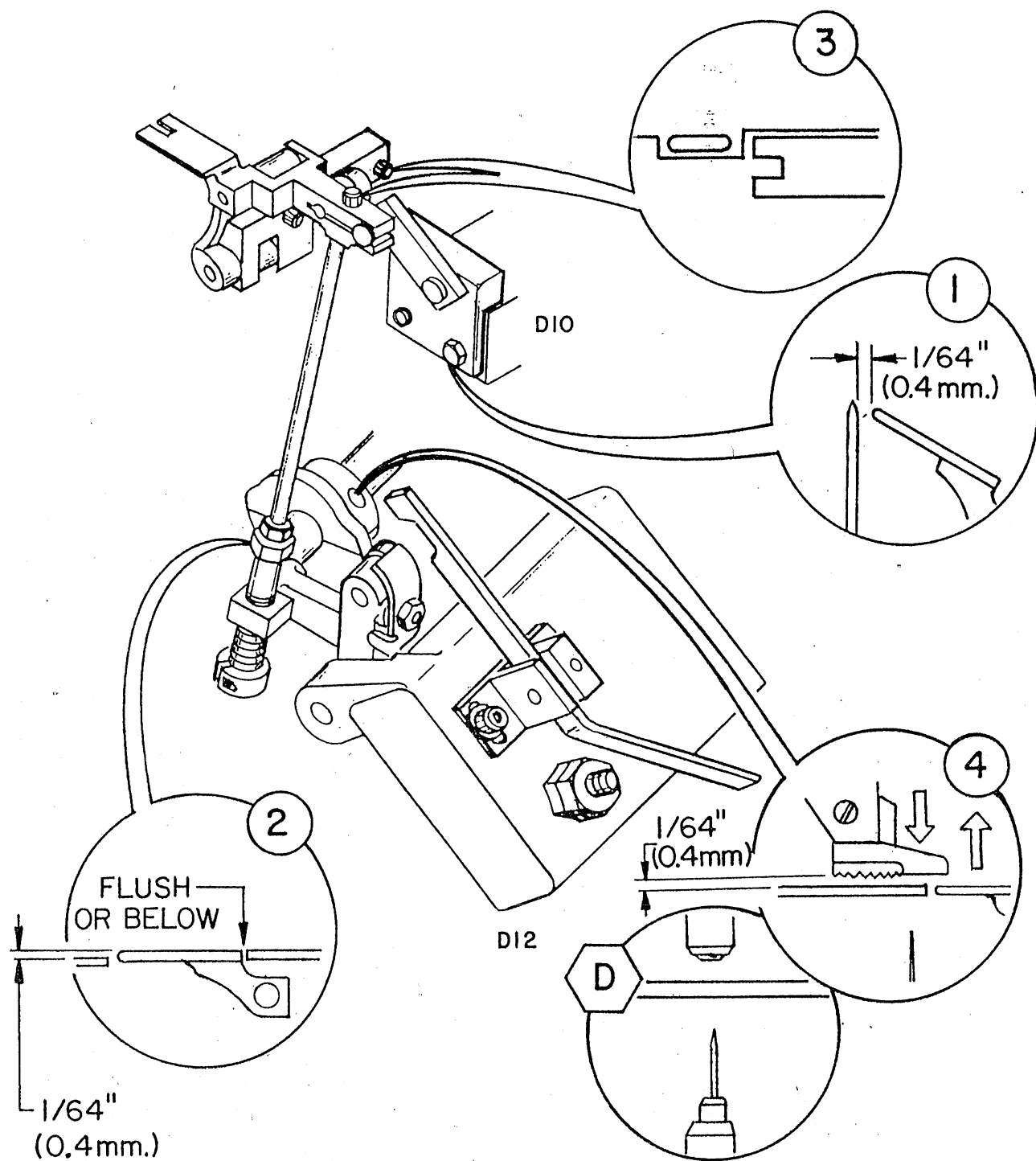
CAUTION: Whenever the Arm Crank Drive Gear is disengaged, all other timings and adjustments must be checked.

② TIMING THE LOWER LOOPER

1. Bring the Lower Needle Bar to 1/64 inch (0.4 mm) before the needle reaches its DWELL position. The Gripper Fingers should just close.
2. Loosen the Arm Crank screw (1/2 inch wrench). Hold the Drive Gibs in place and rotate the Bottom Looper to position its tip at 1/2 inch (12.7 mm) from the slot in the Gripper Fingers. Tighten the screw.

③ ALIGN THE LOWER HOOK TIP

1. Bring the tip of the Lower Hook to the Gripper Fingers.
2. Align the tip of the Hook at 1/32 inch (0.8 mm) below the top edge of the Gripper Fingers (screw at end of Looper Arm, 9/64 allen key). Tighten the screw.



APPAREL EQUIPMENT

CLASS 59 DIVISION 83

ADJUSTMENT AND TIMING OF BENDER PLATE

① RAISED POSITION OF BENDER PLATE

1. Remove the Metal Table (2 screws).
2. Release the Angle Plate Latch for Pick Stitch operation. Rotate the Handwheel to bring the Bender Plate fully up.
3. Loosen the screw (5/16 wrench) attaching the Pusher Plate.
4. Lift the Presser Foot away from the Bender Plate. Move the Bender Plate for 1/64 inch (0.4 mm) clearance from the needle. Tighten the screw.

② ADJUST BENDER PLATE HEIGHT

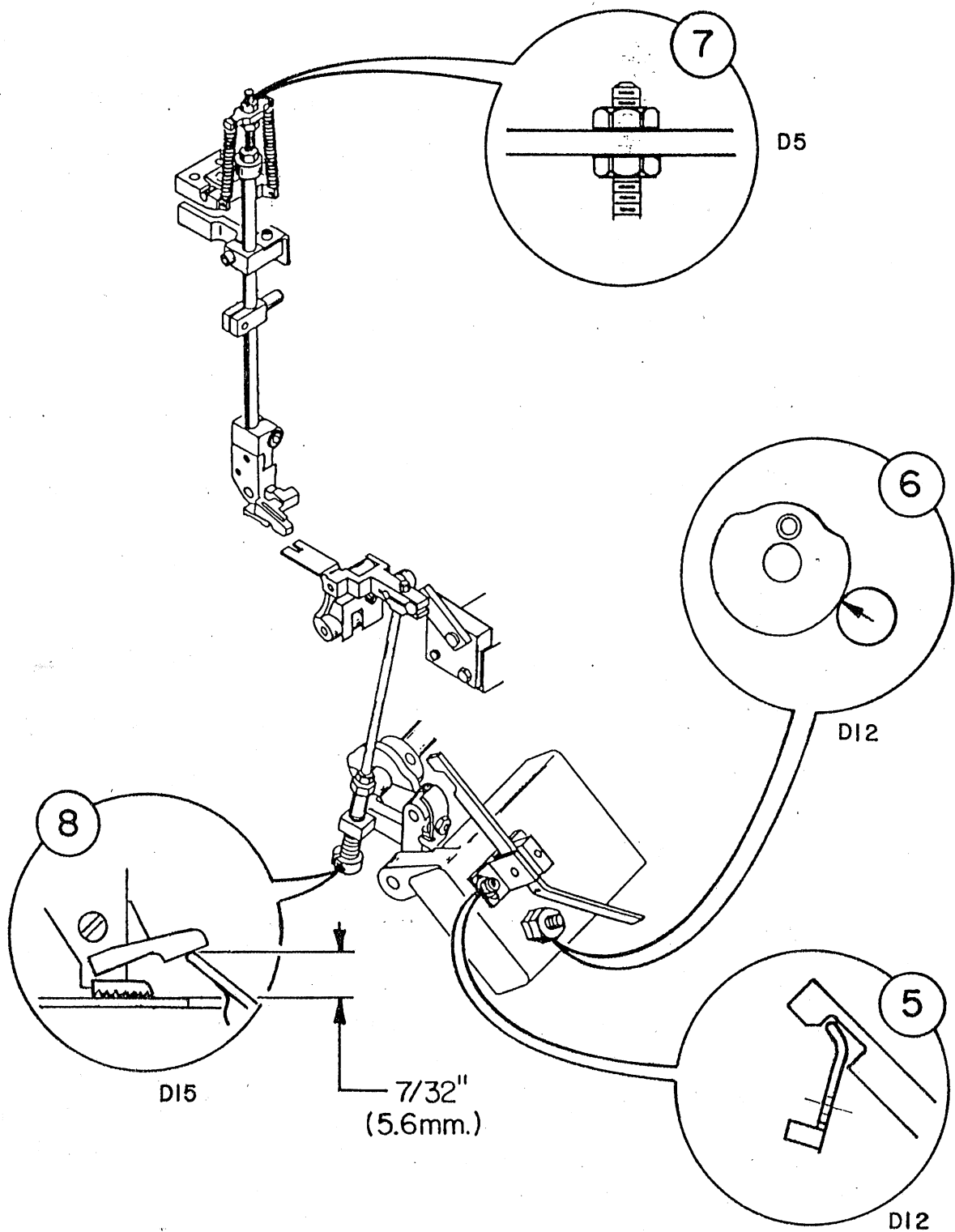
1. Bring the Bender Plate into the down position.
2. Loosen the jam nut on the Bracket Rod. Turn the Adjusting Bushing to align the end of the Bender Plate towards the operator flush with the Throat Plate. This should set the opposite end of the Bender Plate at 1/64 inch (0.4 mm) above the Throat Plate. Tighten the jam nut.

③ ALIGN TO THE THROAT PLATE

1. Loosen the clamping screw on the Bender Plate (7/64 allen key). Loosen the Pivot Support (2 screws, 9/64 allen key).
2. Align the edge of the notch for the Feed Dog on the Bender Plate with the edge of the Feed Dog slot on the Throat Plate.
3. Tighten the Pivot Support Screws. Adjust the pins to the Bender Plate and tighten the clamping screw.

④ TIMING THE BENDER PLATE

1. Release the Angle Plate Latch for Pick Stitch operation.
2. Rotate the Handwheel to move the needle into the Lower Needle Bar.
3. Rotate to bring the Presser Foot down to the Throat Plate. Stop when the Presser Foot is 1/64 inch (0.4 mm) above the Throat Plate.
4. Loosen the Angle Plate Cam (2 screws, 5/32 allen key) on the Main Cam Shaft.
5. Rotate the Cam to just start the Bender Plate upward. Tighten the Cam.



APPAREL EQUIPMENT

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ADJUSTMENT AND TIMING OF BENDER PLATE (CONTINUED)

5 ADJUST THE ANGLE PLATE LATCH

1. Rotate the Handwheel to bring the roller onto the high section of the Angle Plate Cam on the Main Cam Shaft.
2. Loosen the mounting of the Angle Plate Latch (2 screws, 5/32 allen key) on the Tie Bracket.
3. Adjust the Latch to snap onto the locking clip. Tighten the mounting.

6 ADJUST CAM LEVER SPRING

1. Loosen the jam nut (5/16 wrench) on the stud attaching the Cam Lever Spring to the Tie Bracket.
2. Use the other nut to adjust the pressure of the roller on the Cam Lever against the Angle Plate Cam.
3. Operate the machine. The roller should stay in positive contact with the Cam. Tighten the jam nut.

7 PRESSER FOOT TENSION

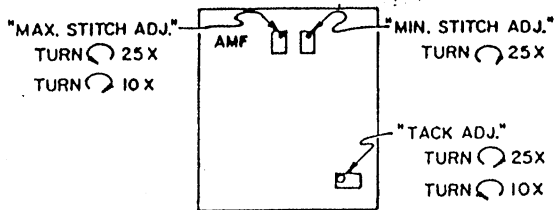
1. Run the upper nut (3/8 wrench) on the top of the Presser Foot rod to two threads from the top.
2. Turn the underneath nut to move the Spring Clip against the upper nut. Tighten the two nuts.

8 ROD SPRING COMPRESSION

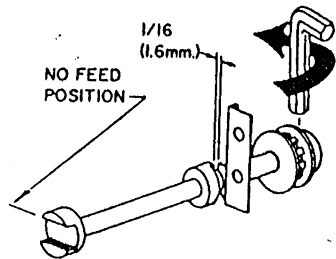
1. Bring the Bender Plate to the fully up position.
3. Lift the Presser Foot and then reseal on the Bender Plate. The Presser Foot should move down to contact the Throat Plate.
2. Loosen the collar under the Rod Spring on the Angle Stitch mechanism.
4. Rotate the collar to increase or decrease the compression of the Rod Spring. Find the point that the Bender Plate just lifts the Presser Foot away from the Throat Plate. Then back off 2 turns on the collar to decrease the compression on the Rod Spring. Tighten the collar.
5. Operate the machine to check the stitching on the material being used. If the stitch length varies, increase the compression on the Rod Spring.



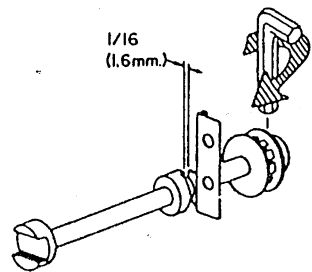
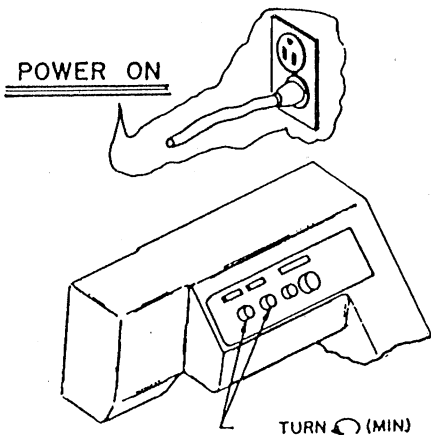
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P.C. BOARD NO. 59-83-37631-061
'STITCH LENGTH CONTROLLER'

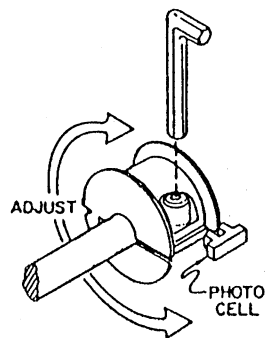
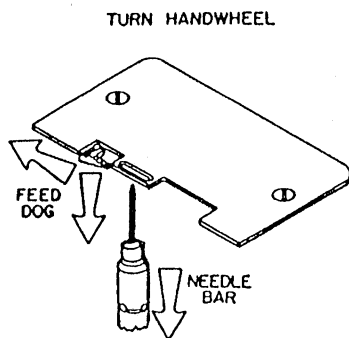


LOOSEN



TIGHTEN

2



APPAREL EQUIPMENT

CLASS 59 DIVISION 83

ADJUSTMENT AND TIMING OF STITCH LENGTH

① ZERO FEED ADJUSTMENT

1. Switch the POWER to OFF.
2. In the Electronics Cabinet, set the potentiometer adjustments on the Stitch Length Controller circuit board as follows:
 - MAX STITCH ADJ. Turn counterclockwise 25 rotations, then clockwise 10 rotations.
 - MIN STITCH ADJ. Turn clockwise 25 rotations.
 - TACK ADJ. Turn clockwise 25 rotations, then counterclockwise 10 rotations.
3. On the control panel, set both STITCH LENGTH controls counterclockwise.
4. Loosen Slide Block Limit Stop (1 screw, 7/64 allen key). Loosen the driven Pulley on the same shaft (1 screw, 9/64 allen key).
5. Switch POWER to ON. The servo motor will run to the minimum stitch condition. Check that both STITCH Length controls are set to the minimum stitch.
6. Rotate the Slide Block to the No Feed position with the slot in the Block exactly horizontal. Tighten the Pulley. NOTE: If the Pulley screw is not accessible, first switch POWER to OFF and then rotate the Block and the Pulley as a unit to a position where the screw can be tightened; switch POWER to ON and assure that the slot in the Slide Block comes to the exactly horizontal position.
7. With the slot in the Slide Block exactly horizontal, rotate the Slide Block Limit Stop to achieve 1/16 inch (1.6 mm) clearance between the Limit Stop and the upper projection on the Stop Plate. Tighten the Limit Stop.
8. Rotate the Handwheel and check that the Feed Dog does not move horizontally. There must be neither forward feed nor back feed. Should any feed occur, loosen the screw in the Pulley and readjust starting with step 5.

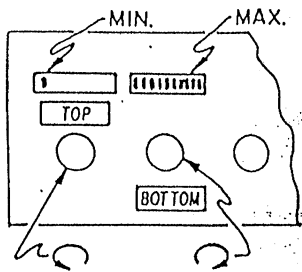
② PHOTOCCELL TIMING

1. Rotate the Handwheel to move the needle to the Lower Needle Bar. Stop at the point that the Feed Dog reaches its lowest position below the Throatplate.

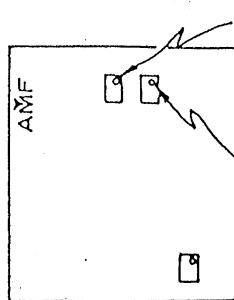
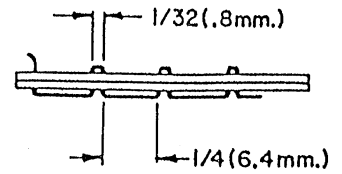
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3 STITCH ADJUSTMENT

(13)



(14) SEW SAMPLE

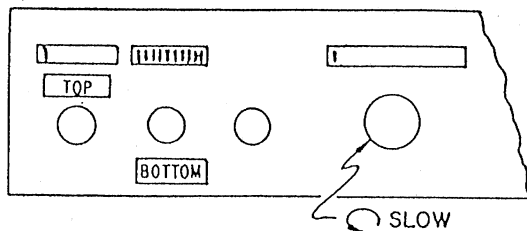


"MAX. STITCH ADJ."
 (15) TURN = +(LONGER STITCH)
 TURN = -(SHORTER STITCH)

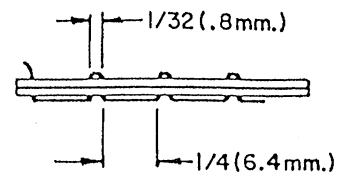
"MIN. STITCH ADJ."
 (16) TURN = +(LONGER STITCH)
 TURN = -(SHORTER STITCH)

4 SERVO MOTOR TACHOMETER ADJUSTMENT

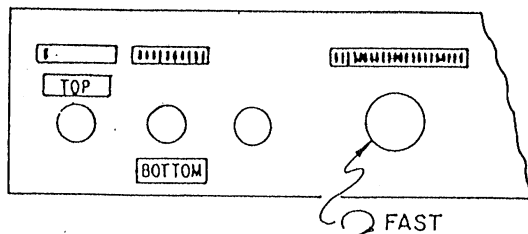
(17) SET TOP(MIN), BOTTOM(MAX.),
 SPEED(SLOW)



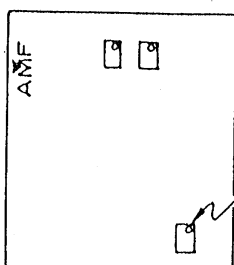
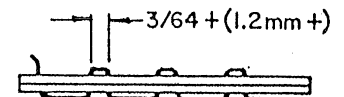
(18) SEW 6" (152mm.)



(19) SET SPEED(FAST)



(20) SEW 6" (152mm.)



TACHOMETER
 "TACK ADJ."
 (21) TURN 2X

(22) REPEAT (20) + (21)
 UNTIL (20) = (18)

APPAREL EQUIPMENT

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2. Loosen the Stitch Control Cam (1 screw, 5/32 allen key) on the Main Cam Shaft. Rotate the Cam to position the screw upwards and to bring the step in the rear flange just to the center of the photocell. Align, as necessary, to center the flange in the slot of the photocell. Tighten the screw.

3 STITCH LENGTH ADJUSTMENT

1. Thread the machine. Place 2 plies of sample material under the Presser Foot.
2. Switch POWER to ON. Set STITCH LENGTH controls; TOP to minimum stitch and BOTTOM to maximum stitch.
3. Rotate the Handwheel to form stitches. In the Electronic Cabinet, rotate the MIN STITCH ADJ. counterclockwise to get a minimum stitch length of 1/32 inch (0.8 mm). Rotate the MAX STITCH ADJ. to get a maximum stitch length of 1/4 inch (6.4 mm). Counterclockwise adjustments increase the stitch lengths.

4 TACHOMETER ADJUSTMENT

1. Thread the machine. Place 2 plies of sample material under the Presser Foot.
2. Switch POWER to ON. Set STITCH LENGTH controls; TOP to minimum stitch and BOTTOM to maximum stitch.
3. Set SEWING SPEED to minimum speed. Sew for about 6 inches (150 mm).
4. Set SEWING SPEED to maximum speed. Sew for about 6 inches (150 mm).
5. Compare the low speed stitches to the high speed stitches. If the short high speed stitches are longer, rotate the TACHOMETER ADJ. 2 turns counterclockwise and try again. Repeat until the stitches do not vary in length.

