SK-155

1990

SERVICE MANUAL

FOR

KNITTING MACHINE

MOD. 155

C O N T E N T S

[1] MAIN COMPONENTS AND PARTS OF THE MACHINE

1-1 Machine Body

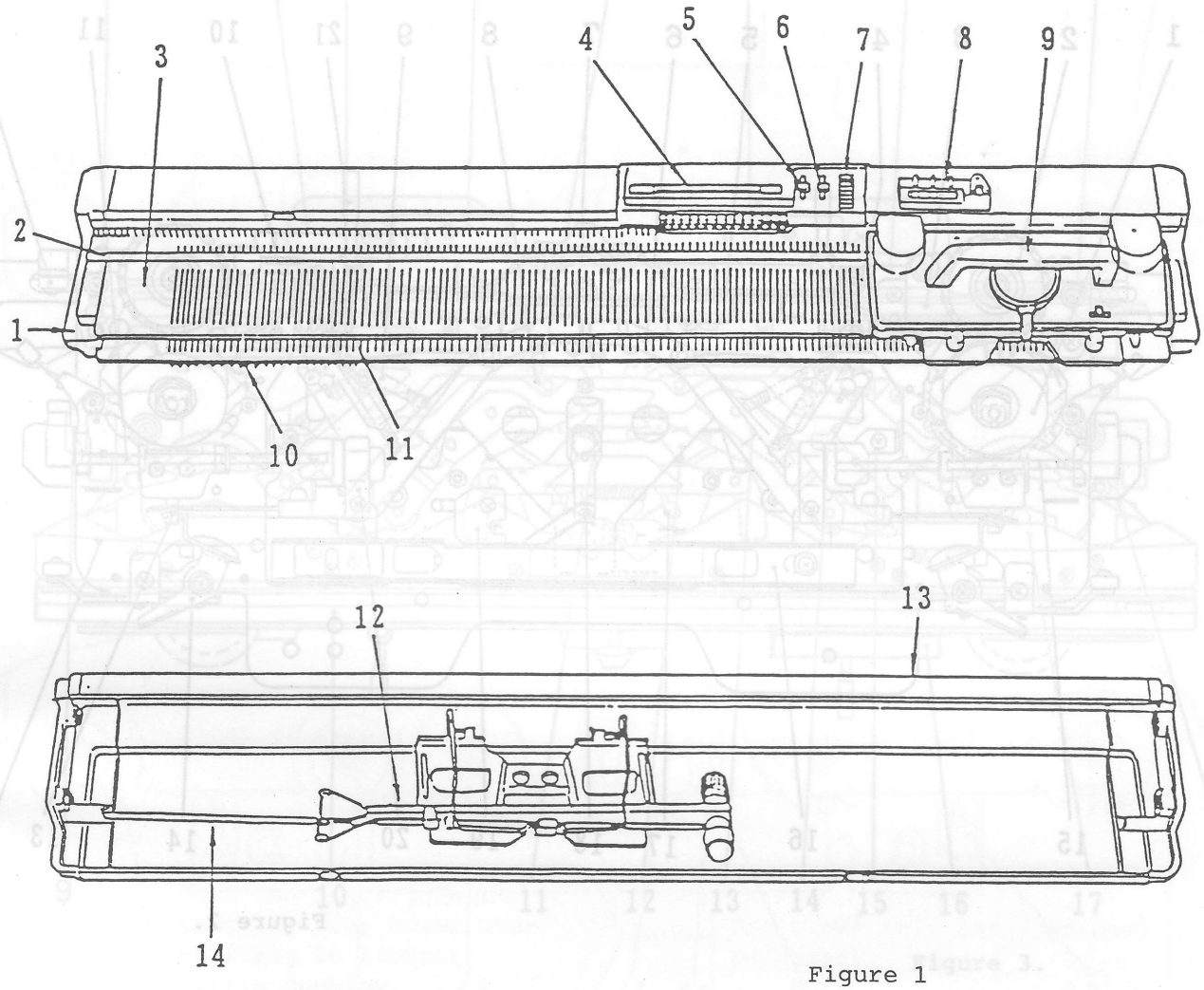


Figure 1

1. Side Cover for Case (L)
2. Carriage Rail
3. Needle Bed
4. PC Panel
5. Stop Knob
6. L Knob
7. Feeding Dial
8. Row Counter
9. Carriage
10. Sinker
11. Latch Needle
12. Tension Unit
13. Top Cover Unit
14. Yarn Rod Unit

1-2 Carriage (Inside)

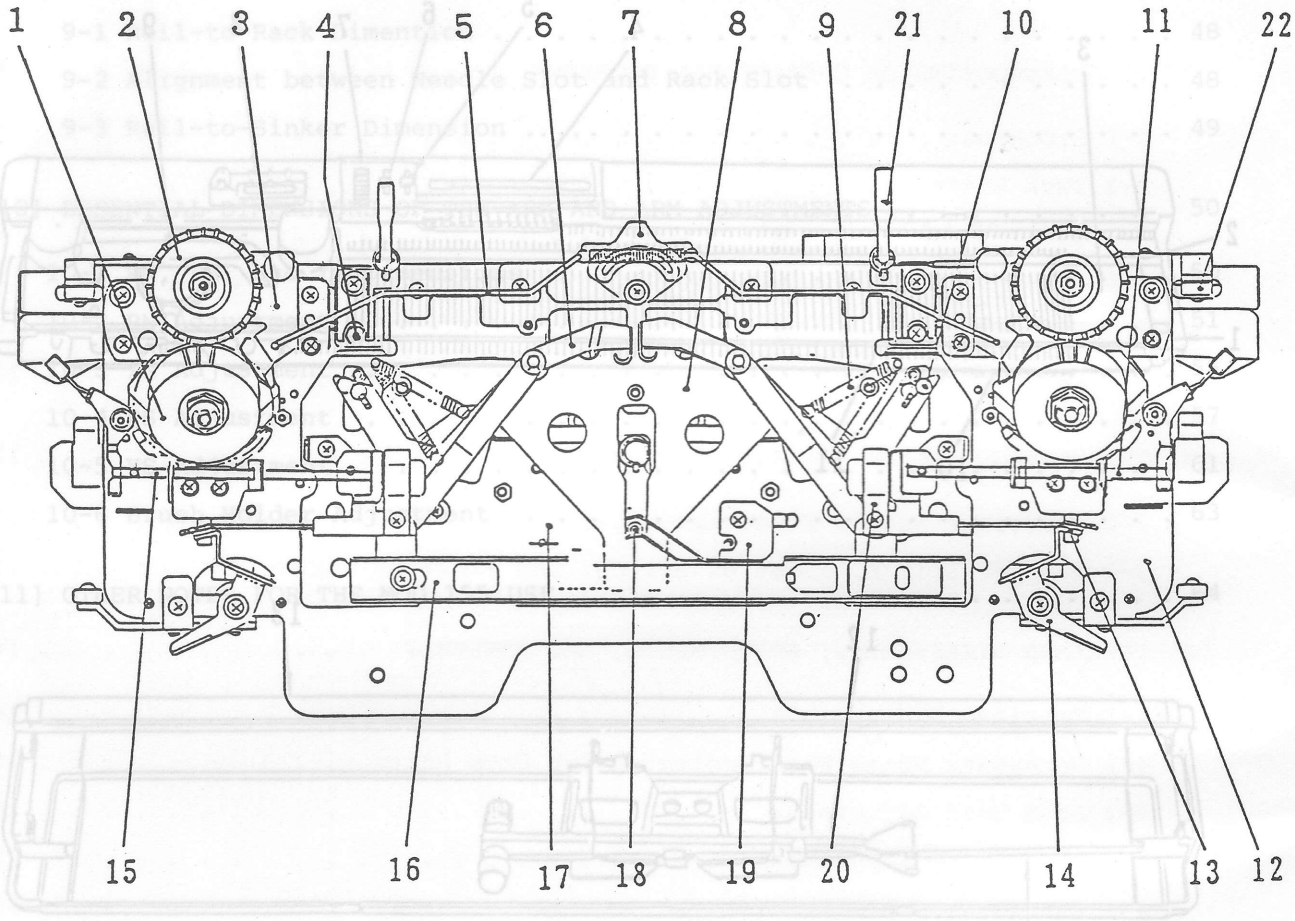


Figure 2.

1. Sub Drum
2. Main Drum
3. Sub Drum Clear Cam (L)
4. Carriage Plate A Holder (L)
5. Clear Wire (L)
6. Raising Cam Lever (L)
7. Clear Cam
8. Travelling Plate
9. Sub Lever Spring
10. Cam Spring
11. Side Lever Spring B
12. Carriage Plate B
13. Raising Spring (R)
14. Russel Lever (R)
15. Side Lever Spring B
16. Jam Release Plate
17. Carriage Plate A
18. Moving Plate Pin
19. Dial Spring
20. Handle Holder (R)
21. RC Lever (R)

1-3 Carriage (Underside)

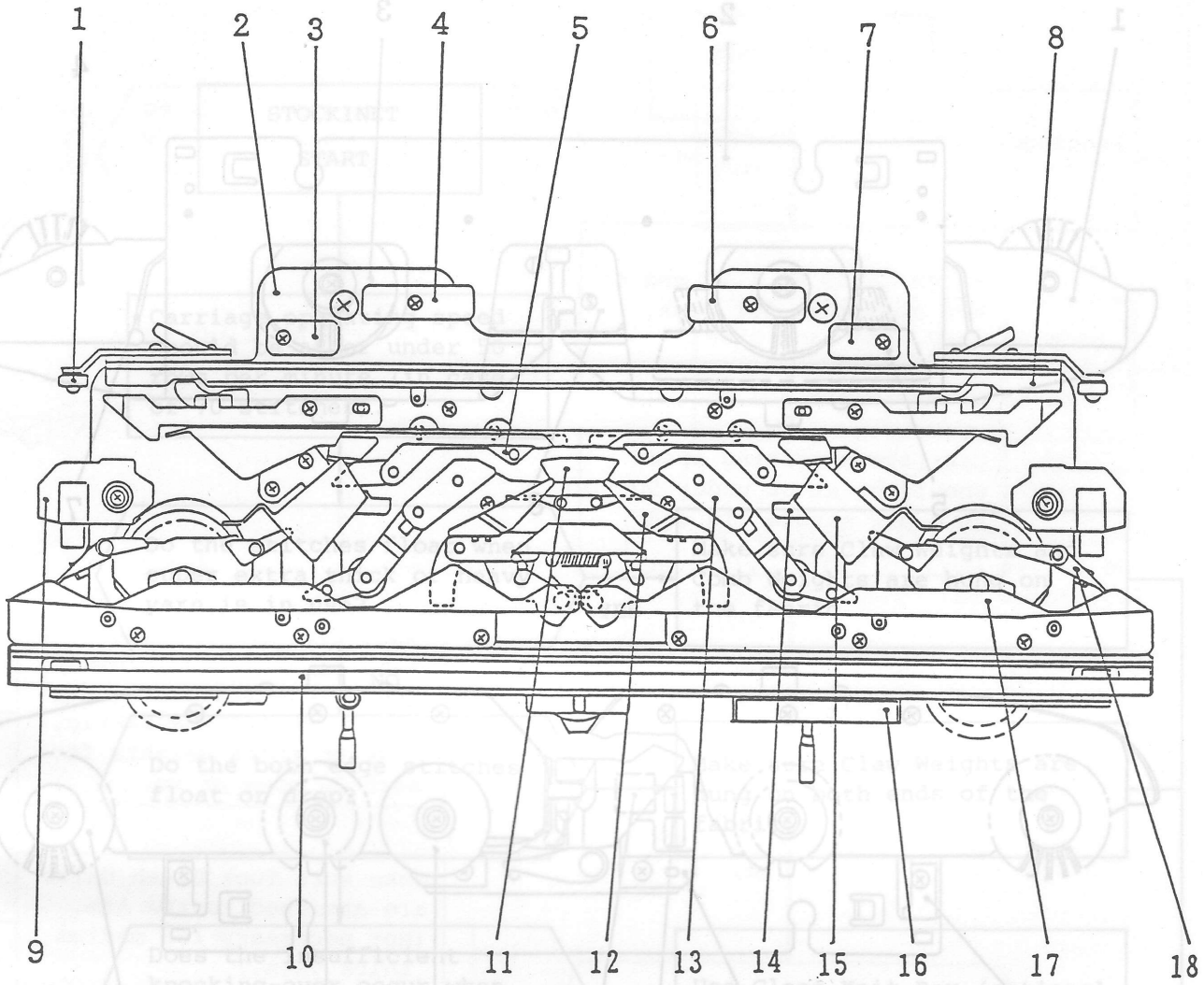


Figure 3.

1. Carriage Roller
2. Carriage Plate B
3. Carriage Magnet A
4. Carriage Magnet S
5. Middle Course Cam (L)
6. Carriage Magnet N
7. Carriage Magnet B
8. Carriage Slider
9. Guide Cam (L)
10. Carriage Pipe
11. Center Cam
12. Knit-in Cam (R)
13. Main Cam Unit (R)
14. Separation Cam B, (R)
15. Separation Cam A, (R)
16. Driving Cam
17. Guide Plate (R)
18. Side Cam (R)

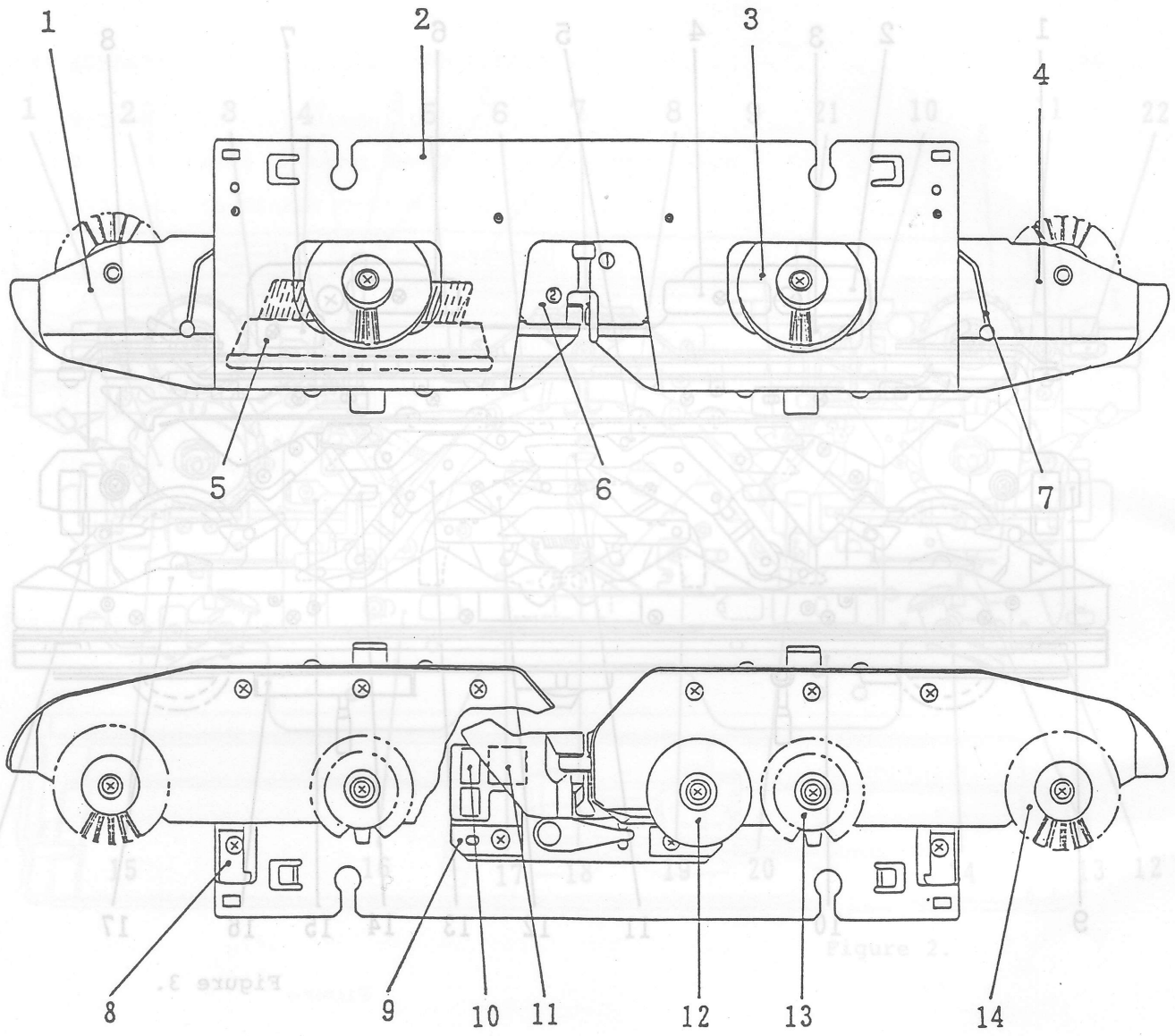
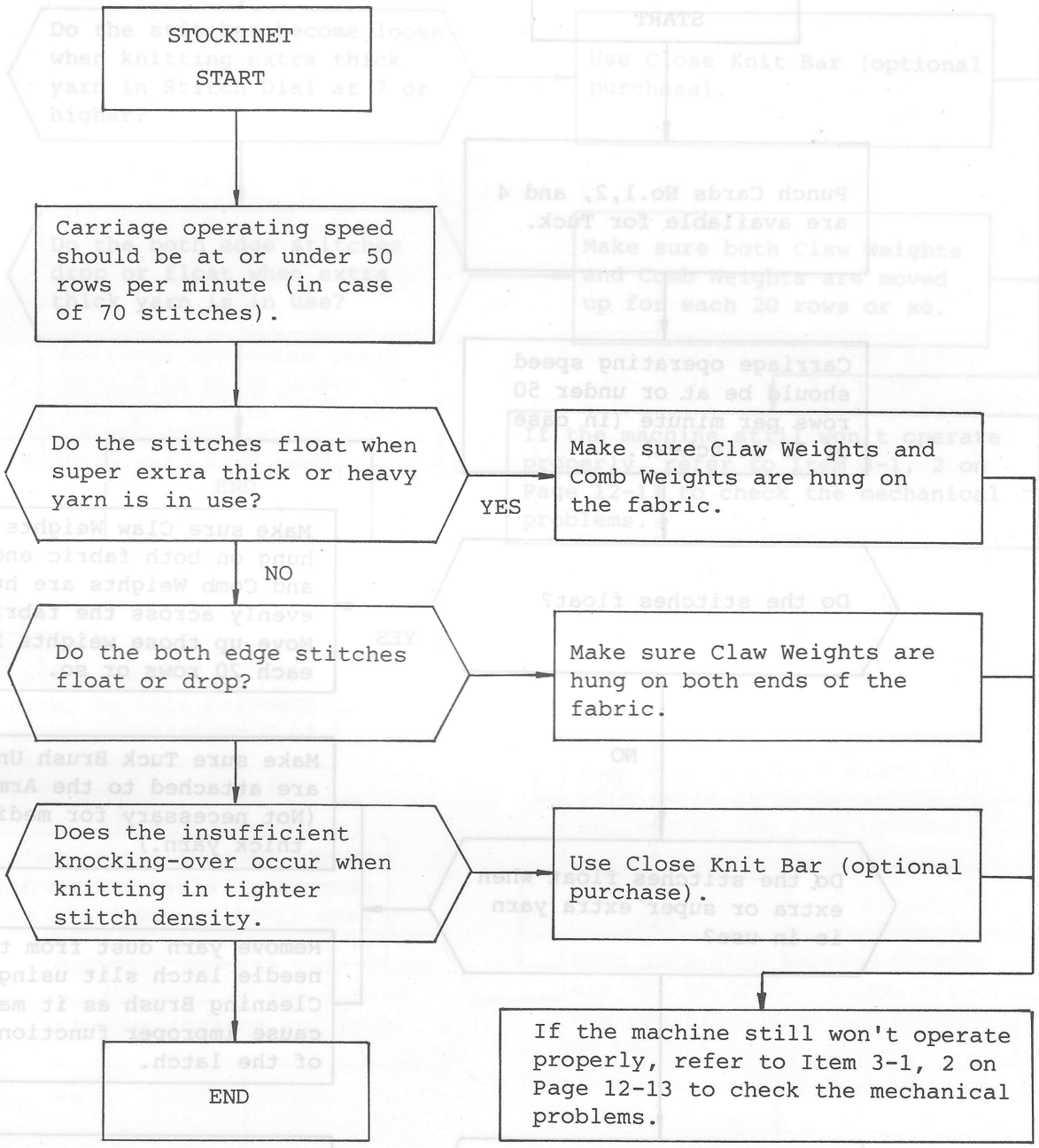


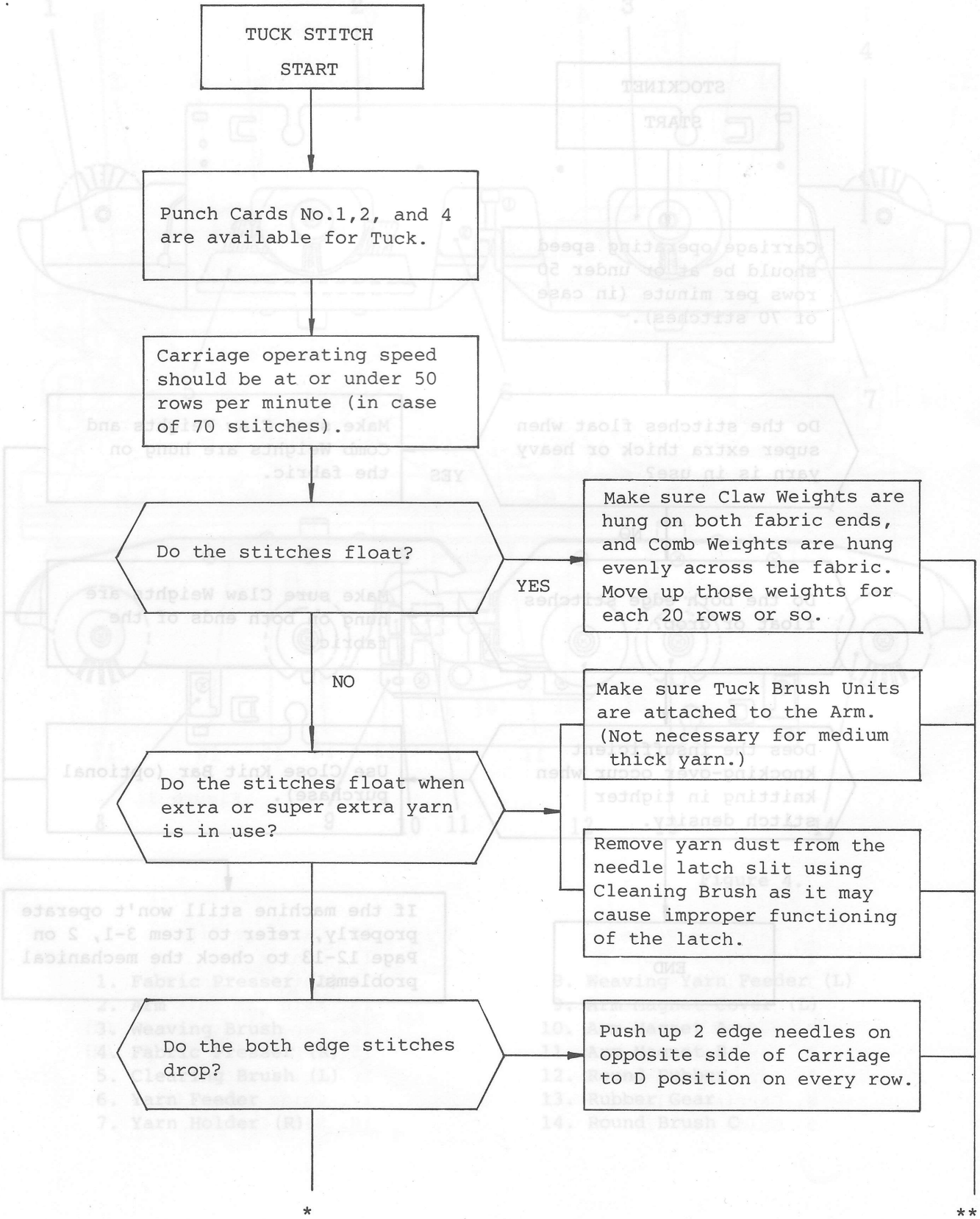
Figure 4.

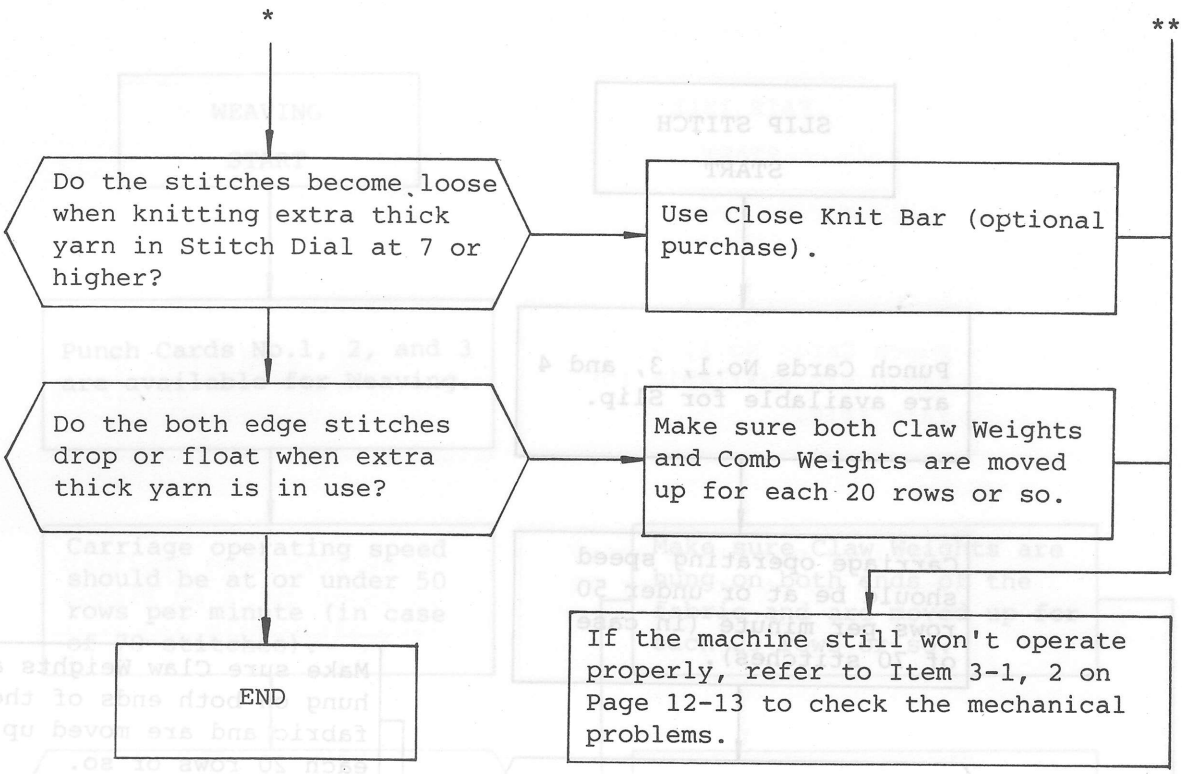
1. Fabric Presser (L)
2. Arm
3. Weaving Brush
4. Fabric Presser (R)
5. Clearing Brush (L)
6. Yarn Feeder
7. Yarn Holder (R)
8. Weaving Yarn Feeder (L)
9. Arm Magnet Cover (L)
10. Arm Magnet A
11. Arm Magnet B
12. Round Rubber
13. Rubber Gear
14. Round Brush C

2-1 Stockinet

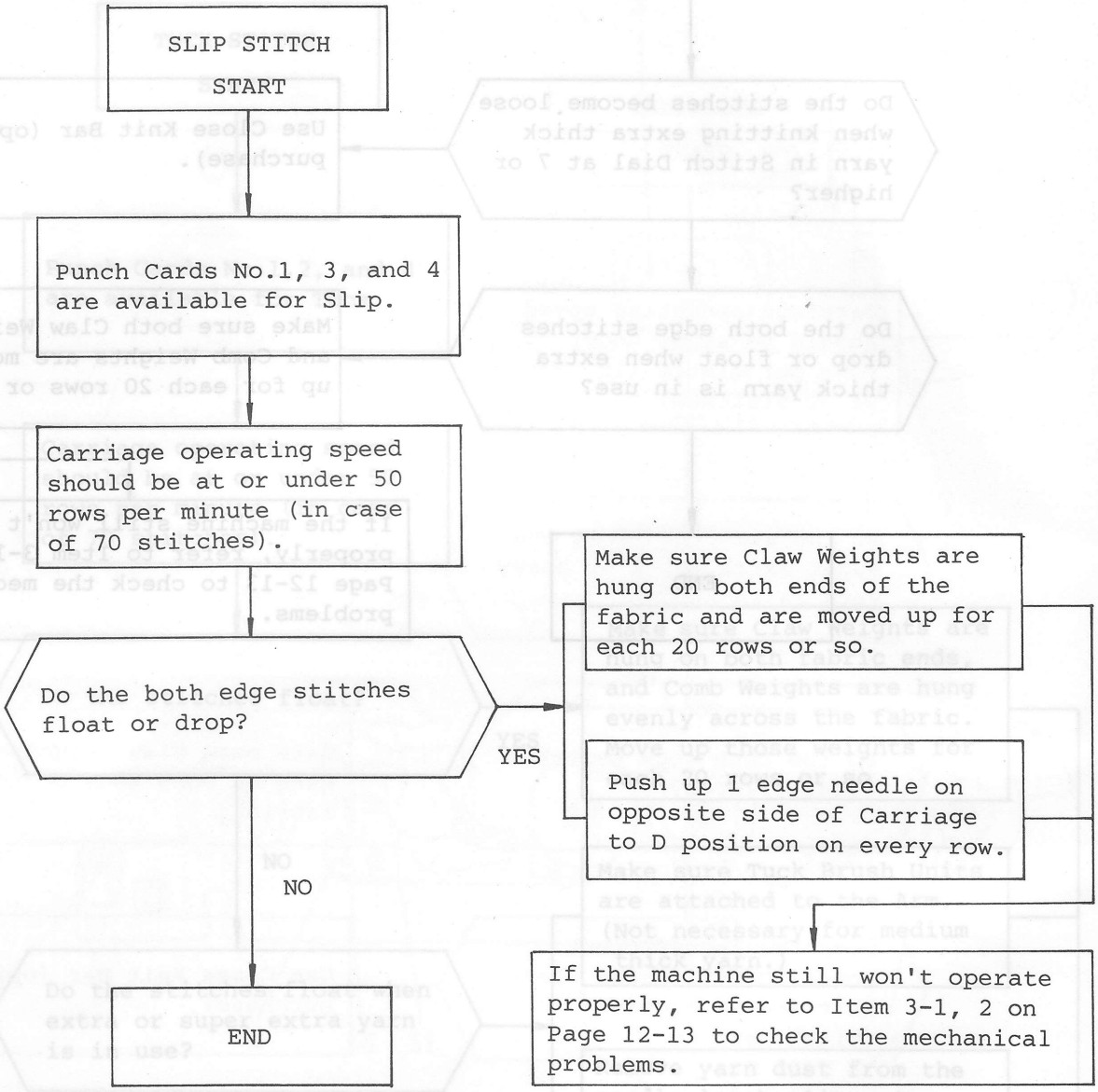


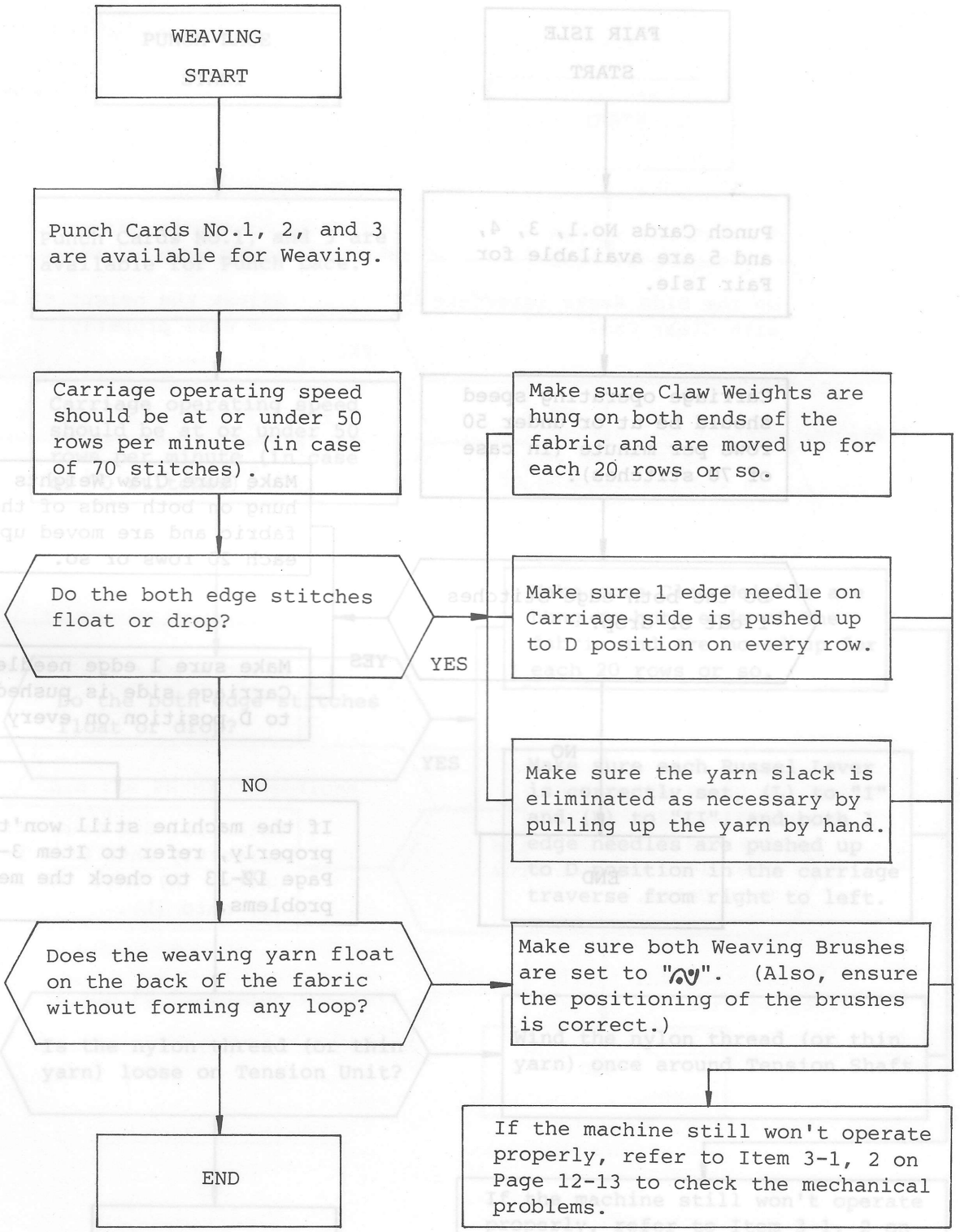
2-2 Tuck Stitch



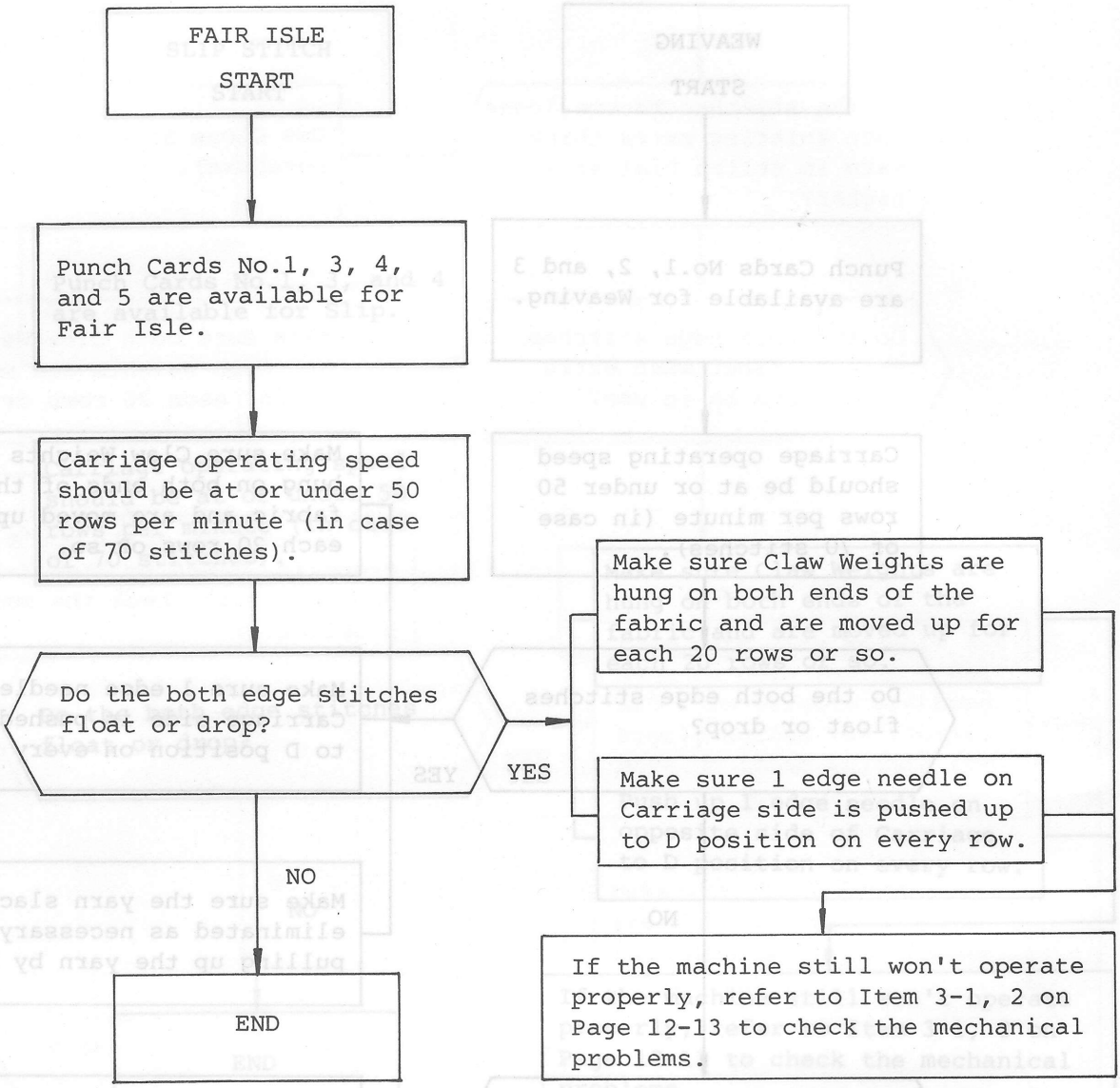

*
**
Do the stitches become loose when knitting extra thick yarn in Stitch Dial at 7 or higher?
Use Close Knit Bar (optional purchase).
Do the both edge stitches drop or float when extra thick yarn is in use?
Make sure both Claw Weights and Comb Weights are moved up for each 20 rows or so.
END
If the machine still won't operate properly, refer to Item 3-1, 2 on Page 12-13 to check the mechanical problems.

2-3 Slip Stitch

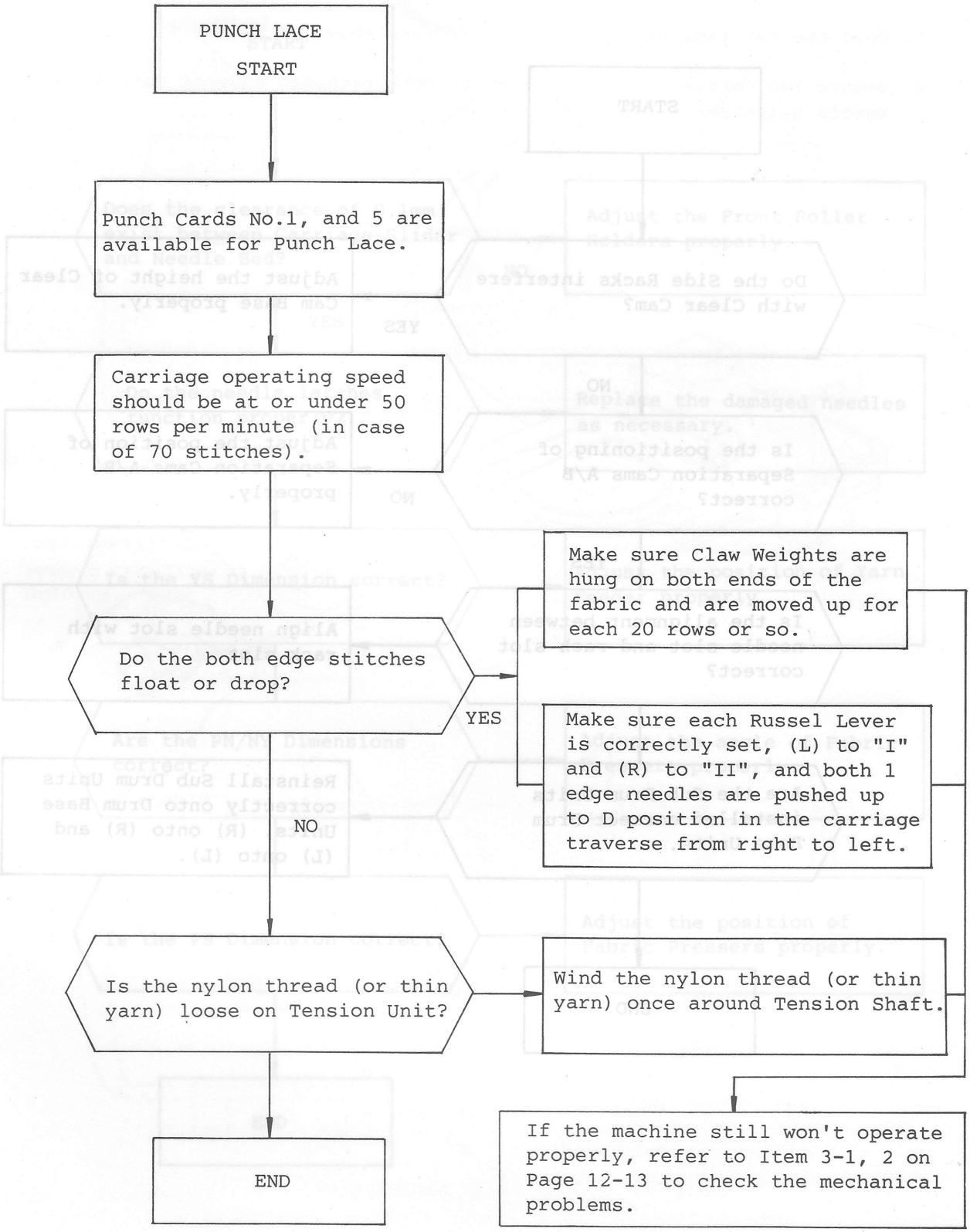



WEAVING START
Punch Cards No.1, 2, and 3 are available for Weaving.
Carriage operating speed should be at or under 50 rows per minute (in case of 70 stitches).
Do the both edge stitches float or drop?
YES
NO
Make sure Claw Weights are hung on both ends of the fabric and are moved up for each 20 rows or so.
Make sure 1 edge needle on Carriage side is pushed up to D position on every row.
Make sure the yarn slack is eliminated as necessary by pulling up the yarn by hand.
Does the weaving yarn float on the back of the fabric without forming any loop?
Make sure both Weaving Brushes are set to "∿". (Also, ensure the positioning of the brushes is correct.)
If the machine still won't operate properly, refer to Item 3-1, 2 on Page 12-13 to check the mechanical problems.
END

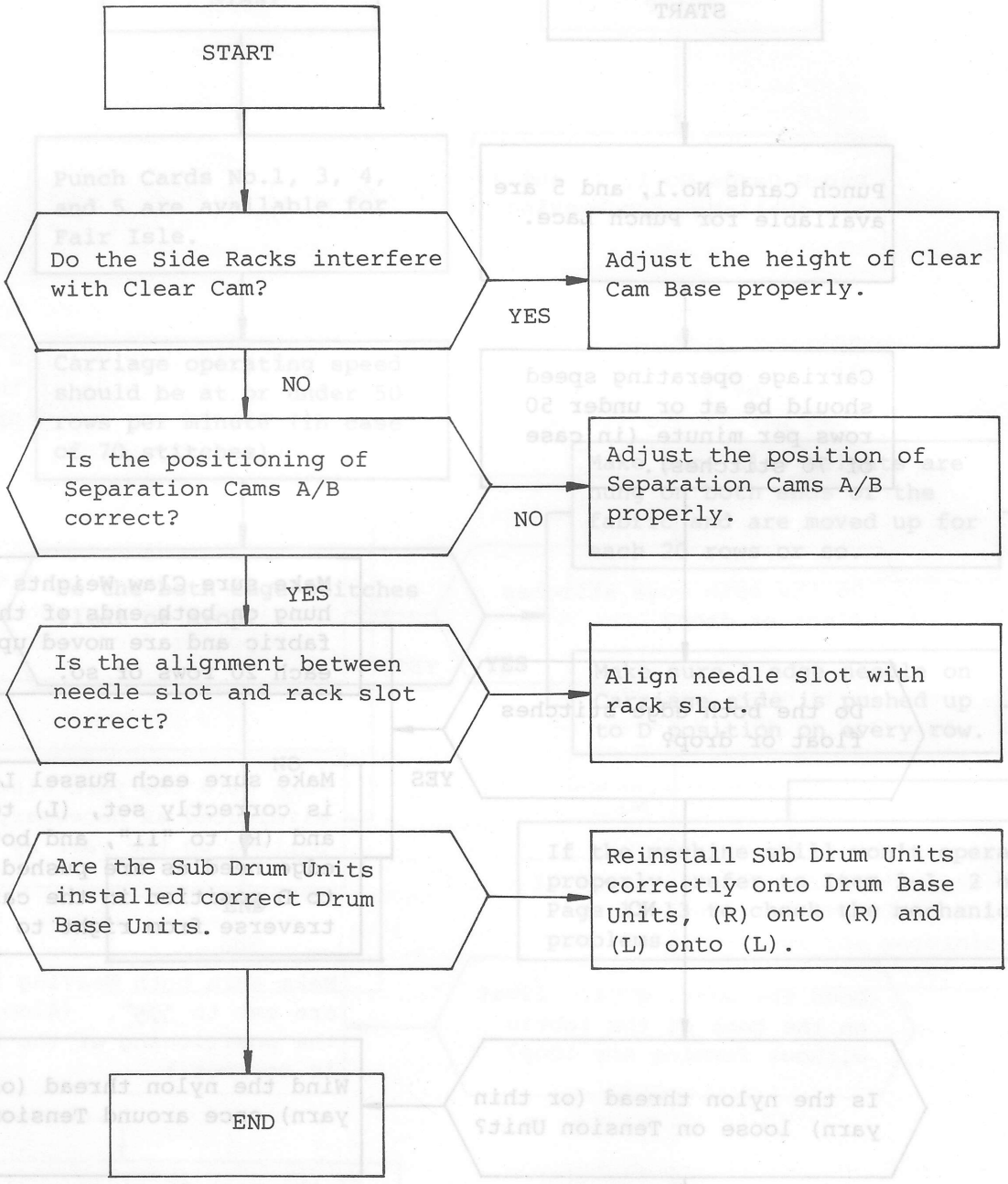
2-5 Fair Isle


FAIR ISLE
START
Punch Cards No.1, 3, 4, and 5 are available for Fair Isle.
Carriage operating speed should be at or under 50 rows per minute (in case of 70 stitches).
Do the both edge stitches float or drop?
YES
NO
Make sure Claw Weights are hung on both ends of the fabric and are moved up for each 20 rows or so.
Make sure 1 edge needle on Carriage side is pushed up to D position on every row.
If the machine still won't operate properly, refer to Item 3-1, 2 on Page 12-13 to check the mechanical problems.
END

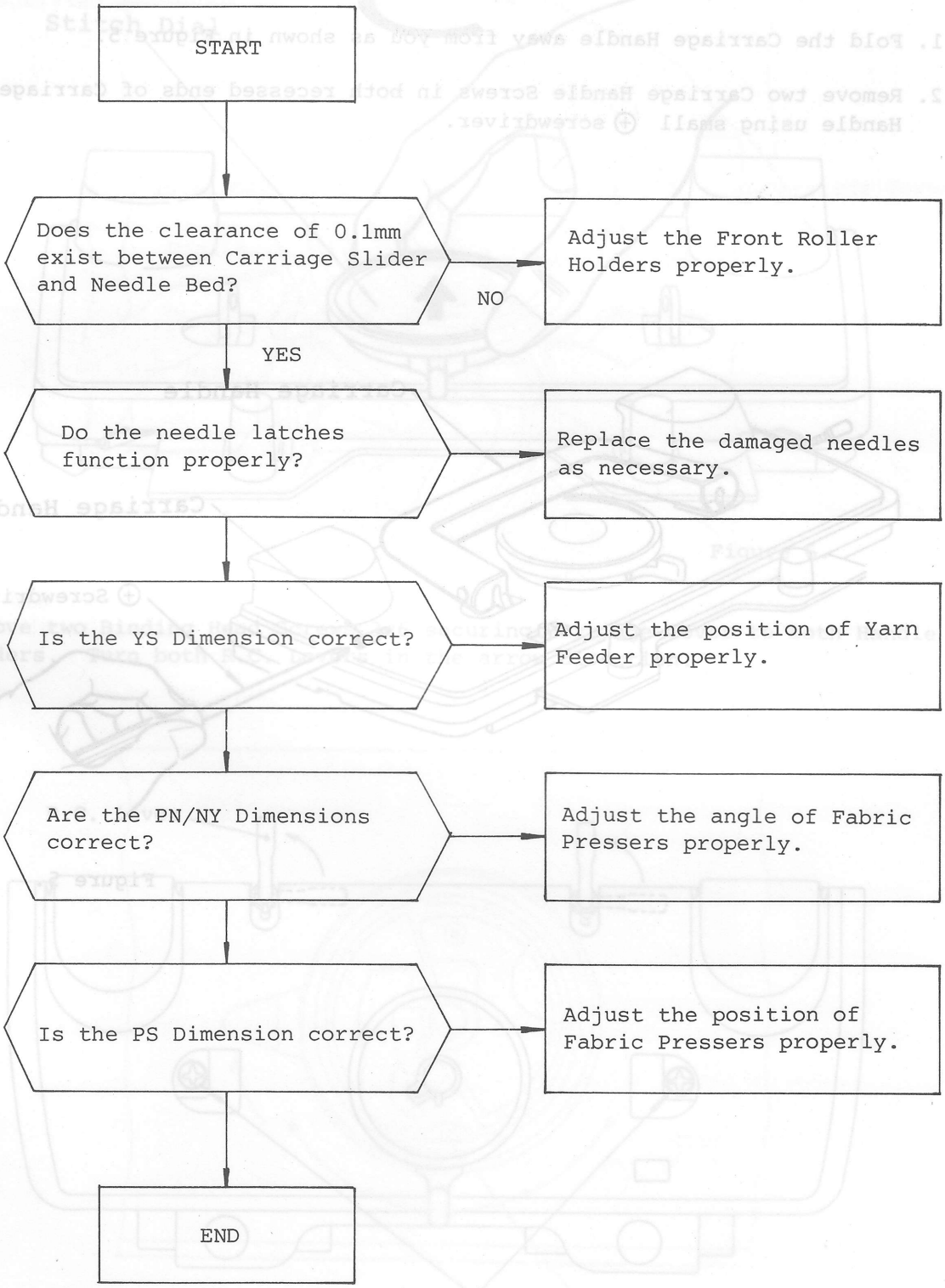
2-6 Punch Lace



3-1 Incorrect Needle Selection



3-2 Dropped Stitch, Float of Stitch, and Float of Yarn



4-1 Carriage Disassembly (Down to Carriage Cover)

1. Fold the Carriage Handle away from you as shown in Figure 5.
2. Remove two Carriage Handle Screws in both recessed ends of Carriage Handle using small ⊕ screwdriver.

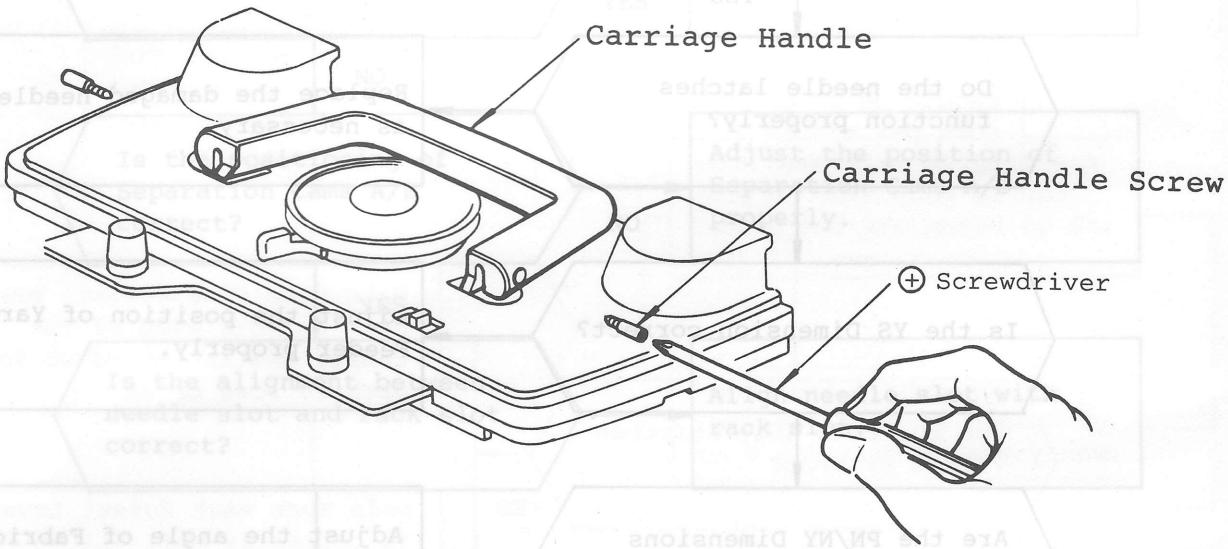


Figure 5.

3. Turn the Stitch Dial fully clockwise and lift it out.

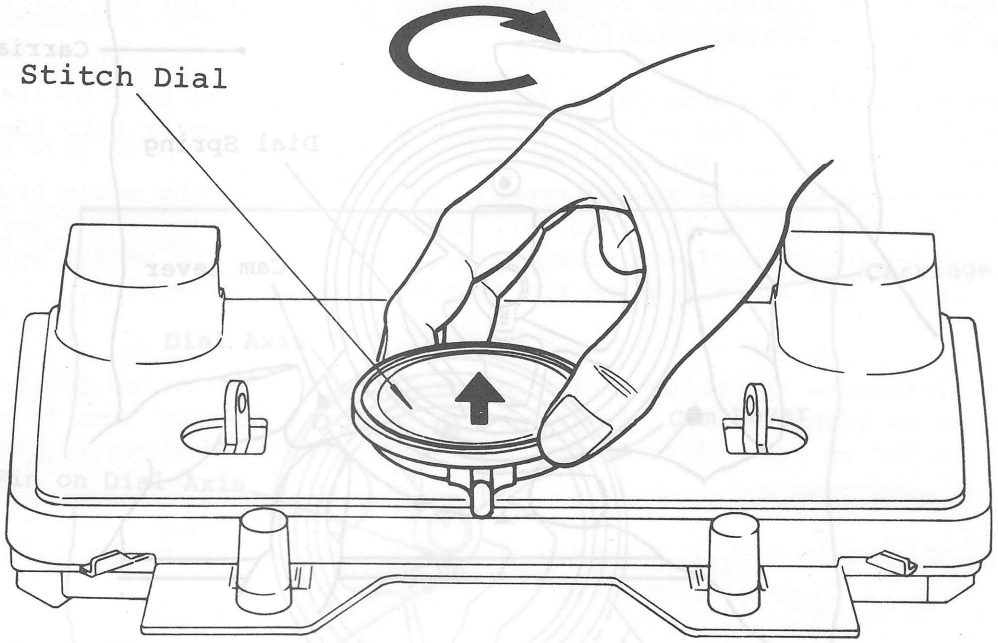


Figure 6.

4. Remove two Binding Head Screws 3x6 securing Carriage Cover to both Handle Holders. Turn both R.C. Levers in the arrow direction.

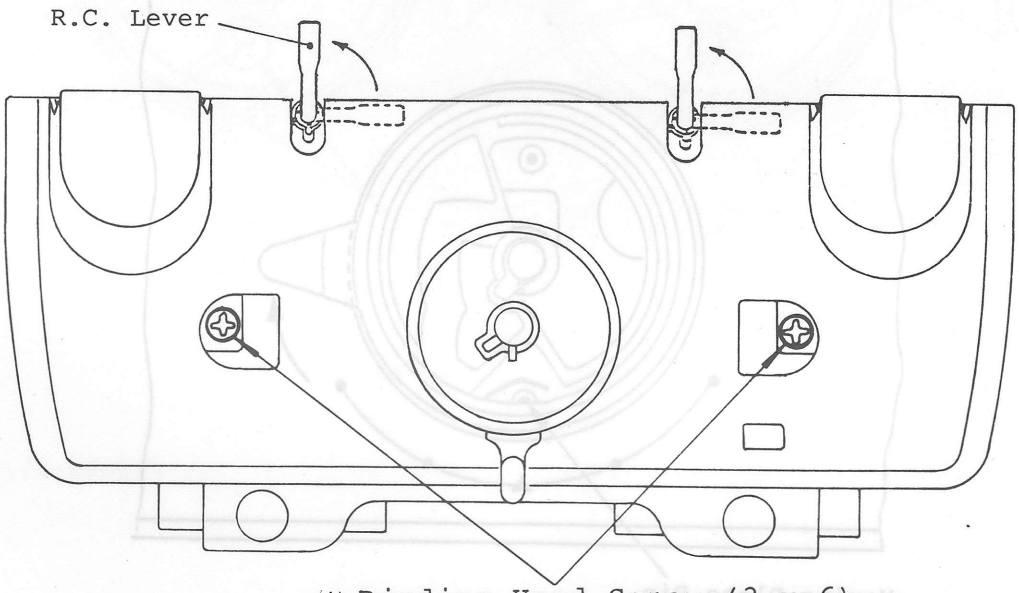


Figure 7.

5. Set the Cam Lever to "Fair Isle". Dial Spring will be seen as shown in Figure 8.

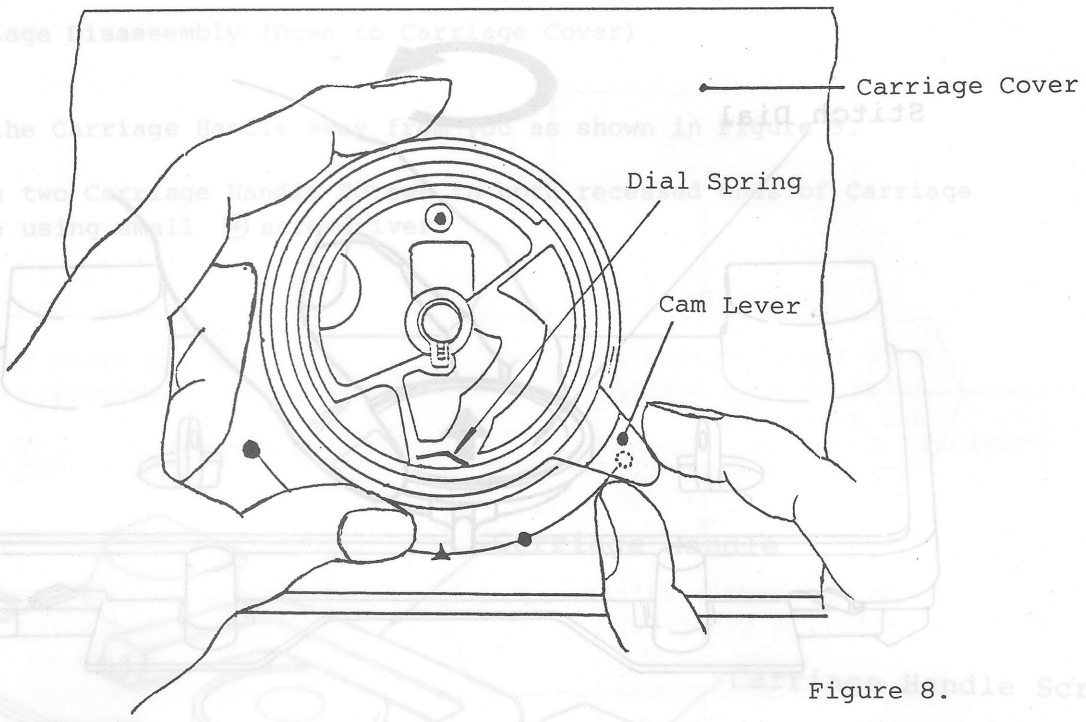


Figure 8.

6. Hold the Cam Lever as shown above. Slightly lift up Cam Lever and turn it further counterclockwise until Moving Plate Pin can be seen as shown in Figure 9.

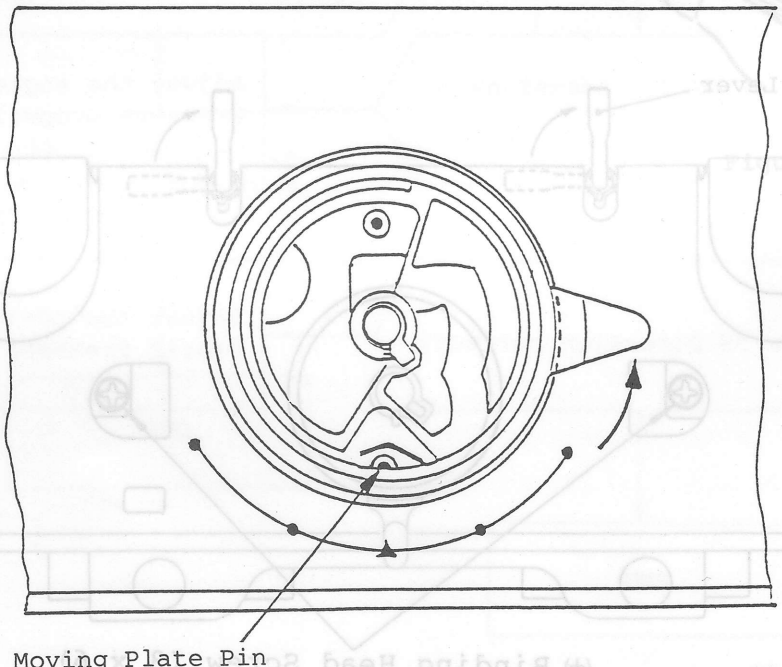


Figure 9.

7. Lift the Cam Lever together with Carriage Cover until Cam Lever is stopped by the pin on Dial Axis. Return the Cam Lever to "Fair Isle" to fit its keyhole-slot with the pin on Dial Axis. Remove both Cam Lever and Carriage Cover simultaneously by lifting them further straight up.

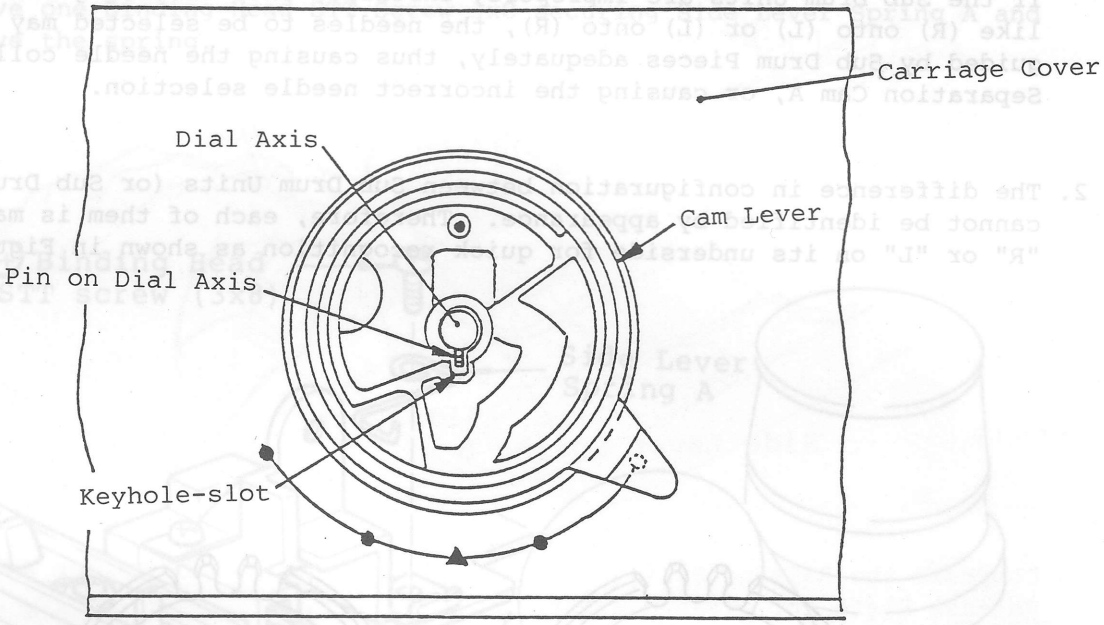


Figure 10.

4-2 Necessary Notes When Replacing Sub Drum Units (or Sub Drum Gears)

1. Sub Drum Units (R) and (L) for MOD.155 containing Sub Drum Gears of different shapes are exclusive for respective Drum Base Units (R) and (L) to improve the needle selecting capability.

   When replacing Sub Drum Units (or Sub Drum Gears), be sure to identify the difference of the two to install Sub Drum Units properly onto the correct Drum Base Units ... (R) onto (R) and (L) onto (L).
   If the Sub Drum Units are improperly installed onto the wrong Drum Base Units, like (R) onto (L) or (L) onto (R), the needles to be selected may not be guided by Sub Drum Pieces adequately, thus causing the needle collision with Separation Cam A, or causing the incorrect needle selection.

2. The difference in configuration between Sub Drum Units (or Sub Drum Gears) cannot be identified by appearance. Therefore, each of them is marked with "R" or "L" on its underside for quick recognition as shown in Figure 11.

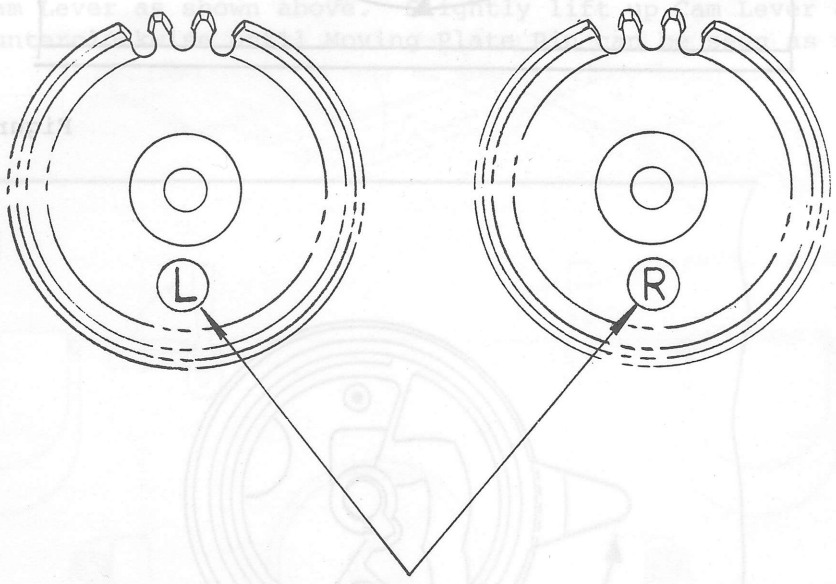


Figure 11.

4-3 Drum Unit Adjustment (Aligning Drum Unit with Needle Slot and Rack Slot)

*The following procedure is applicable to both Drum Units unles otherwise noted.

*Before attempting the Drum Unit Adjustment, remove S.P. Holder in the following manner:

[For Drum Unit (R) as an example:]

1. Remove one Binding Head STT Screw 3x8 securing Side Lever Spring A and remove the spring.

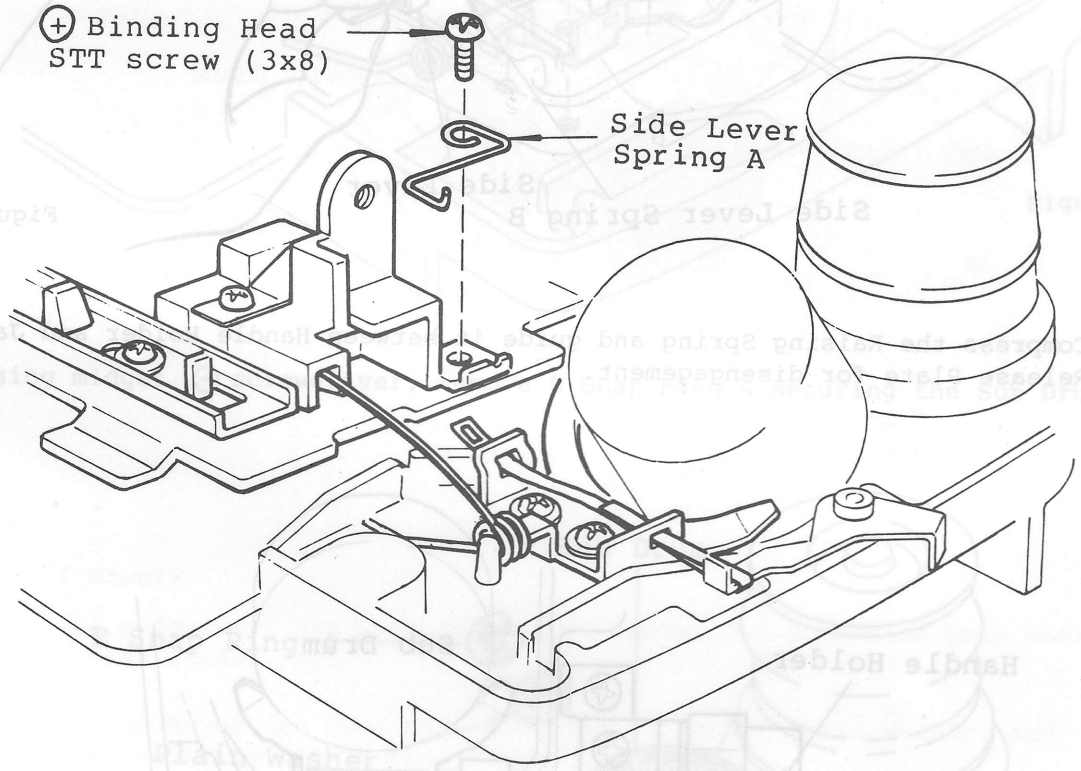


Figure 12.

2. Push the inboard end of Side Lever Spring B until its opposite end can be held with fingertips, and pull it out.

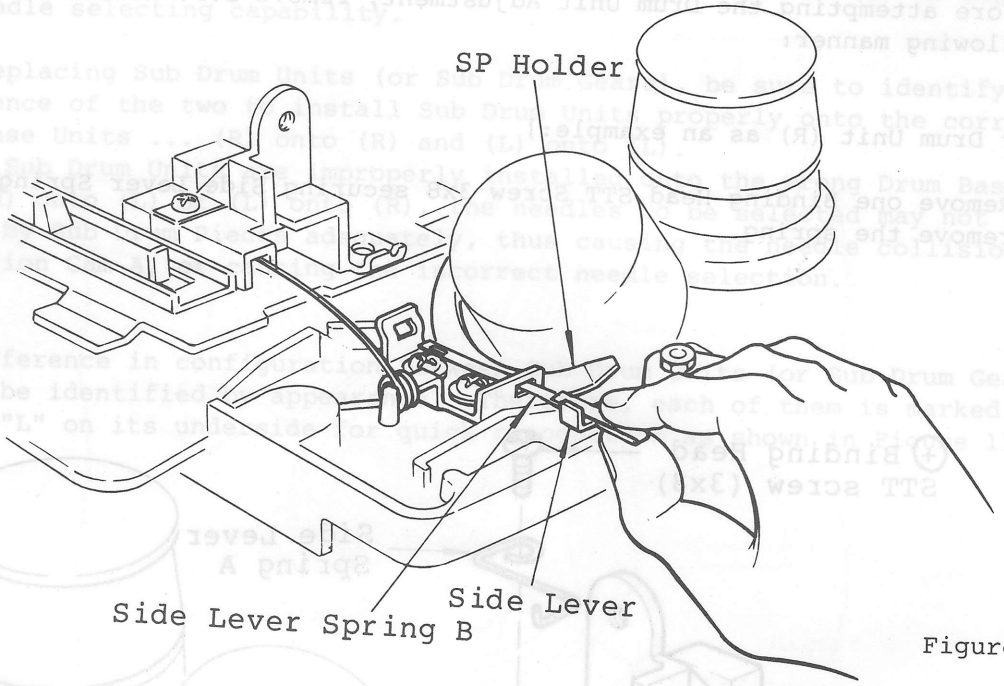


Figure 13.

3. Compress the Raising Spring and guide it between Handle Holder and Jam Release Plate for disengagement.

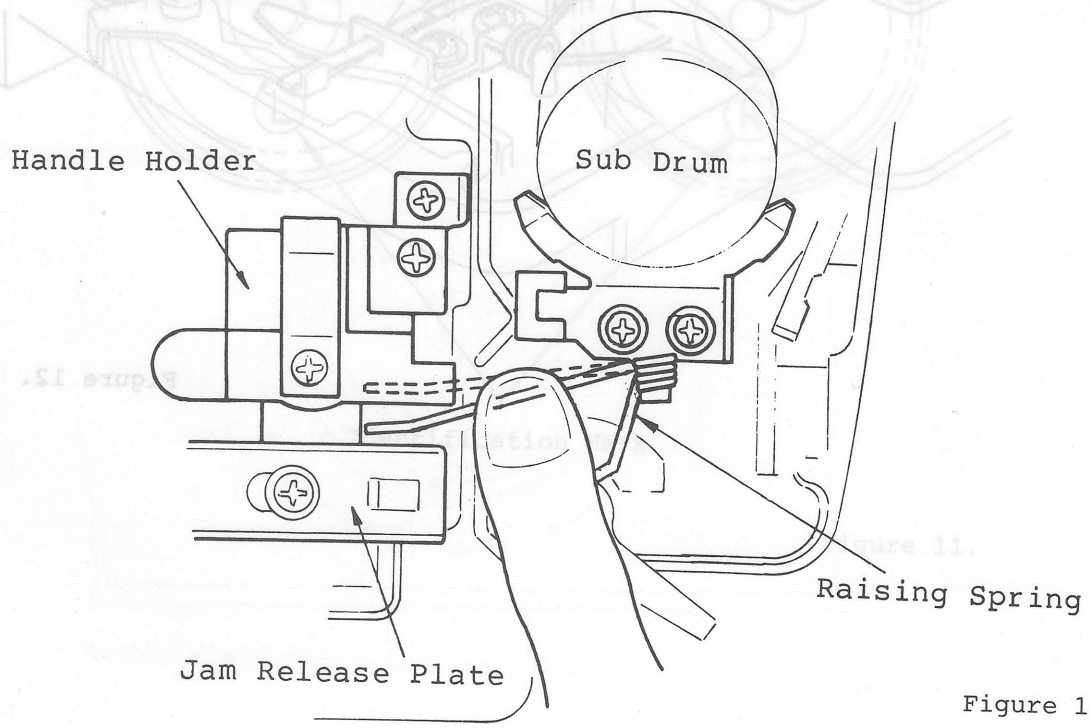


Figure 14.

4. Remove two Collar Head Screws 3x5 securing S.P. Holder, and remove the holder together with Raising Spring.

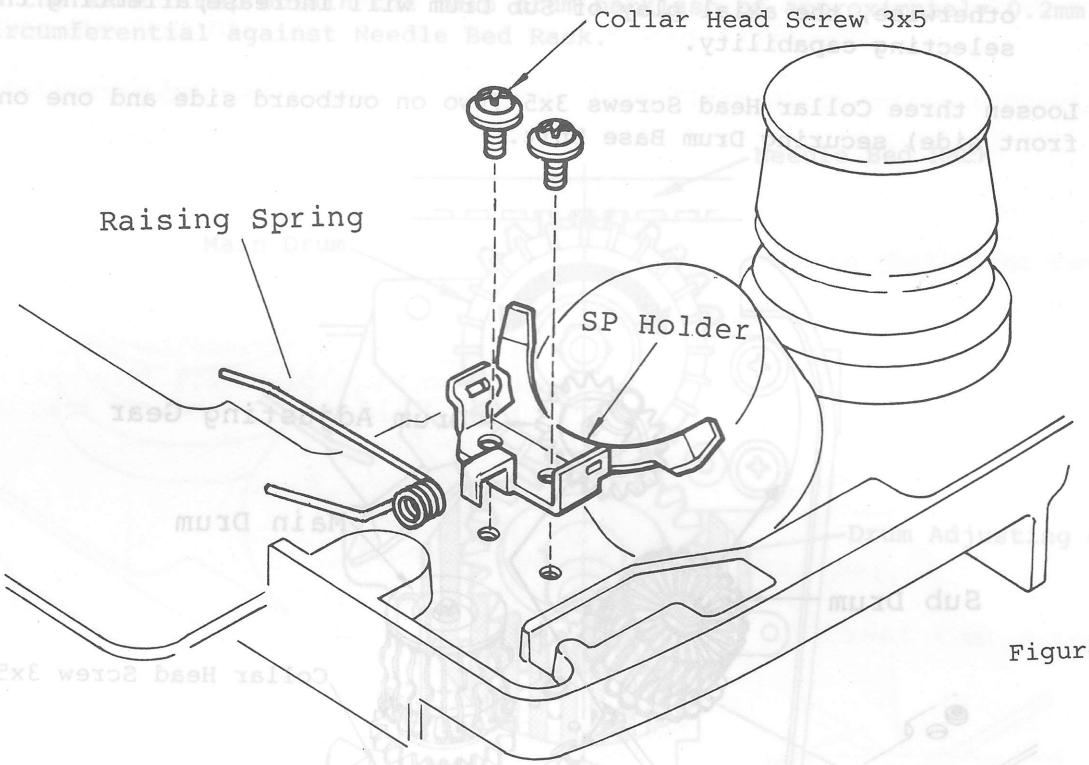


Figure 15.

5. Using midget ⊖ screwdriver, remove E Snap Ring 4 securing the Sub Drum.

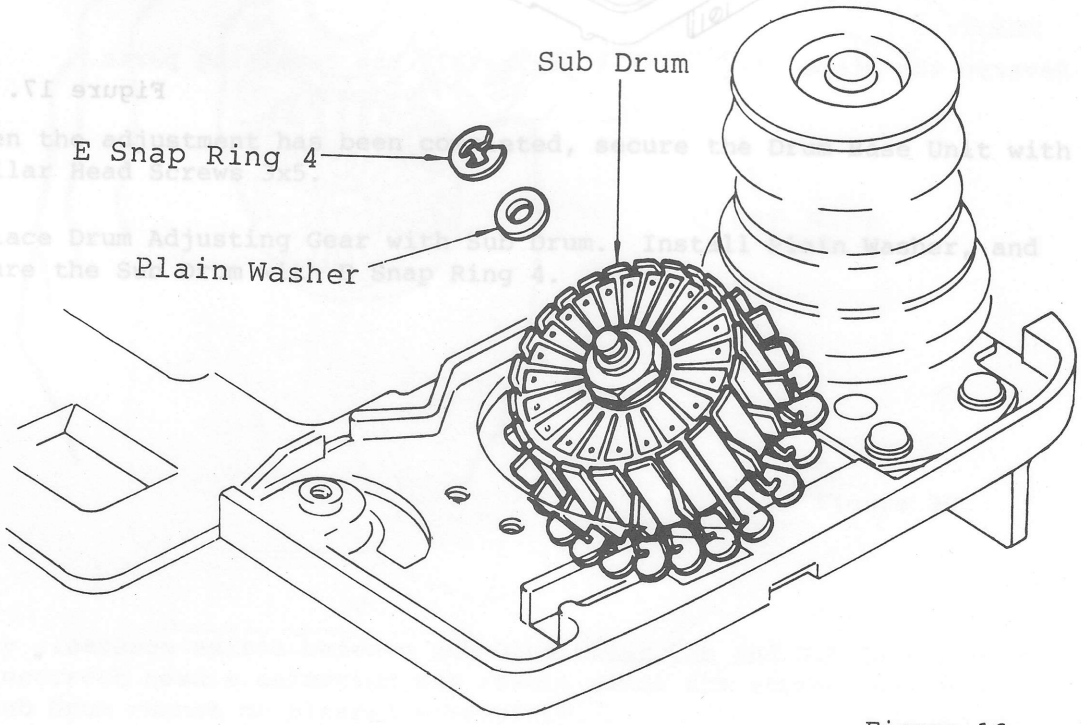


Figure 16.

6. Remove the Sub Drum, and place the Drum Adjusting Gear (Sub Drum Gear for MOD.155) onto Drum Base Unit instead.

(Note) Restore the removed washer without fail when reinstalling the Sub Drum; otherwise, the axial play of Sub Drum will increase, affecting the needle selecting capability.

7. Loosen three Collar Head Screws 3x5 (two on outboard side and one on inboard front side) securing Drum Base Unit.

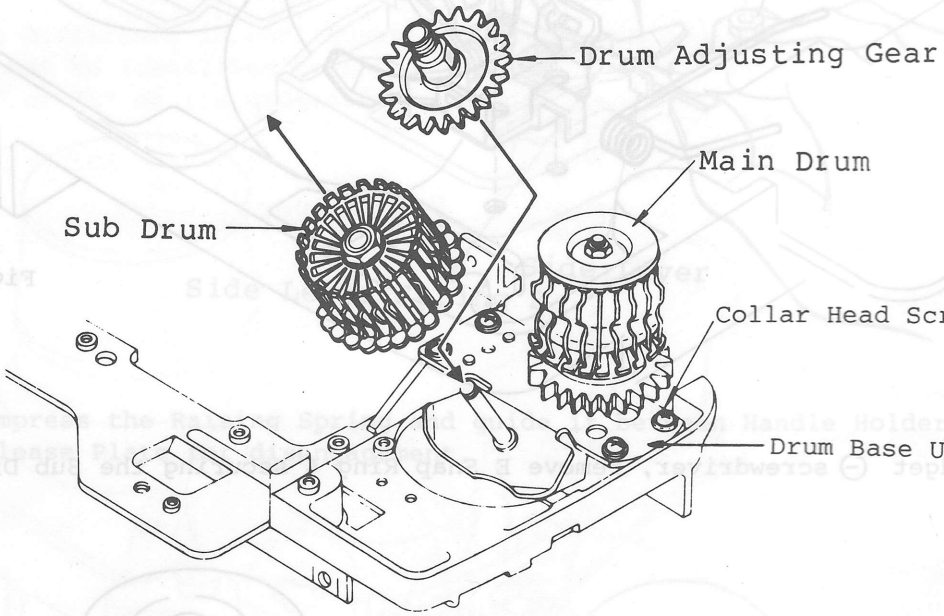


Figure 17.

8. With the notch (the space between gear teeth) of Drum Adjusting Gear fitted to the needle slot, adjust the position of Drum Base Unit to align the center line between both Main and Sub Drum Axes with the center of both needle slot and rack slot as shown in Figure 18.
   At the same time, obtain the main drum backlash of approximately 0.2mm circumferential against Needle Bed Rack.

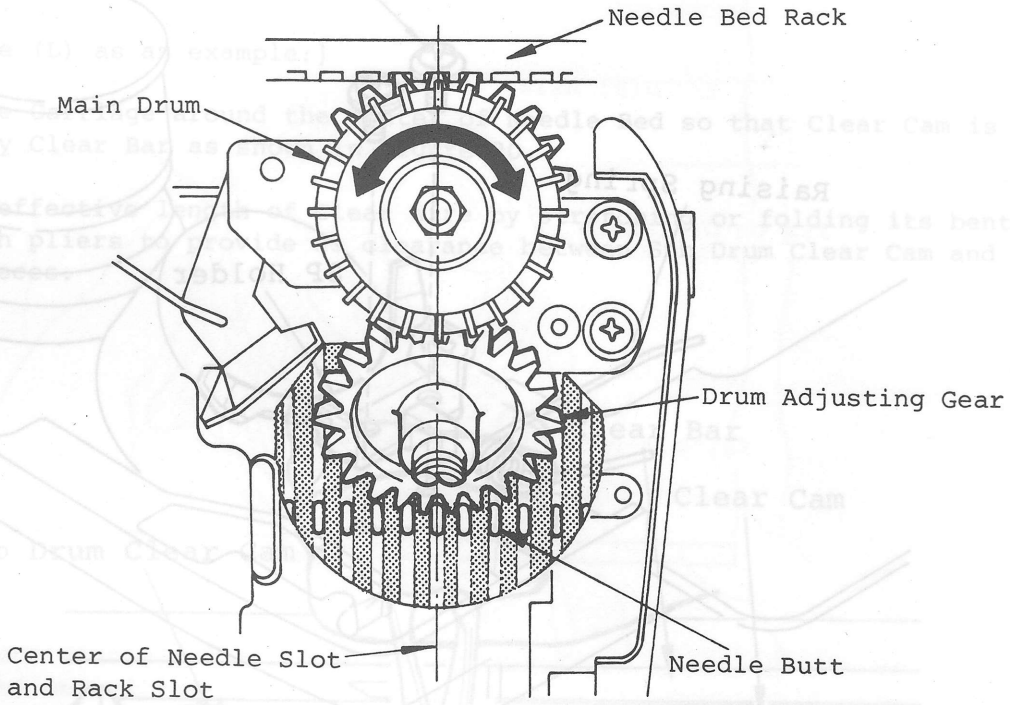


Figure 18.

9. When the adjustment has been completed, secure the Drum Base Unit with Collar Head Screws 3x5.

10 Replace Drum Adjusting Gear with Sub Drum. Install Plain Washer, and secure the Sub Drum with E Snap Ring 4.

11. Put the coil of Raising Spring onto the projection of S.P. Holder. Allow a clearance of approximately 0.5mm between S.P. Holder and Sub Drum Pieces in upper position, then secure the holder with Collar Head Screws 3x5.

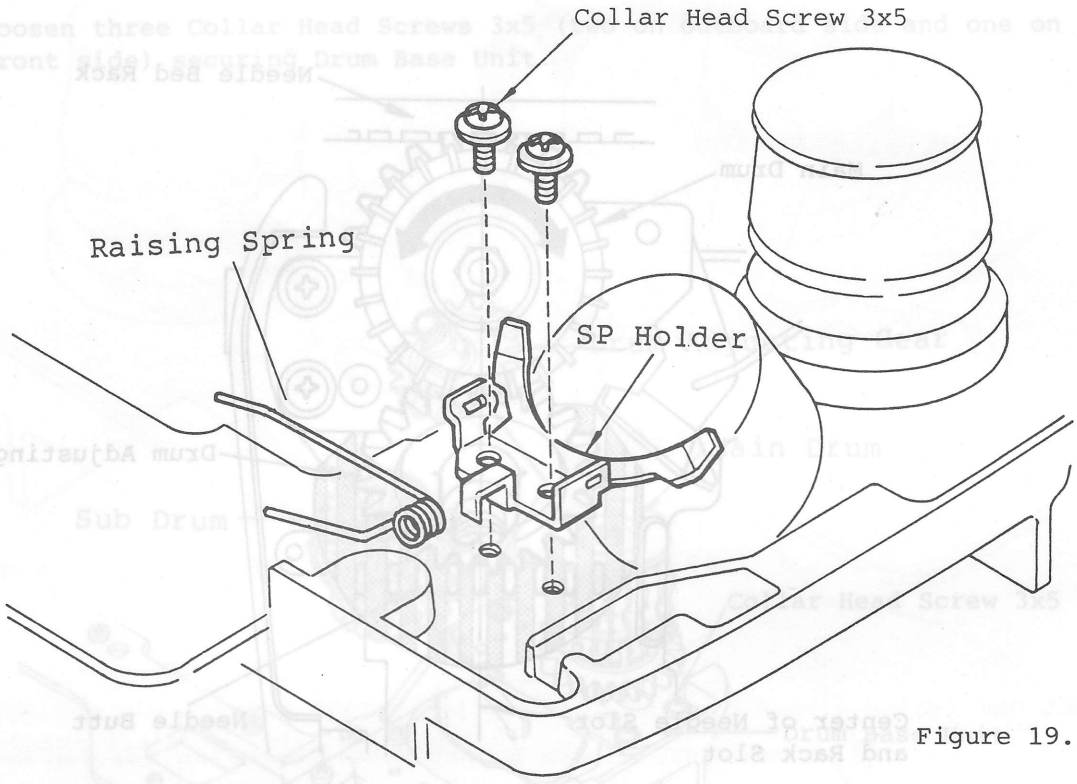


Figure 19.

12. Reverse the steps (1) to (3) to reinstall the remaining parts.

4-4 Clear Wire Adjustment (Adjusting the Effective Length of Clear Wire)

The effective length of Clear Wire must be adjusted to obtain proper amount of contact between Sub Drum Clear Cam in active position and Sub Drum Pieces s whenever the Drum Unit Adjustment has been accomplished.

*The following procedure is applicable to both Clear Wires unless otherwise noted.

[For Clear Wire (L) as an example:]

1. position the Carriage around the center of Needle Bed so that Clear Cam is activated by Clear Bar as shown in Figure 20.

2. Adjust the effective length of Clear Wire by stretching or folding its bent portion with pliers to provide no clearance between Sub Drum Clear Cam and Sub Drum Pieces.

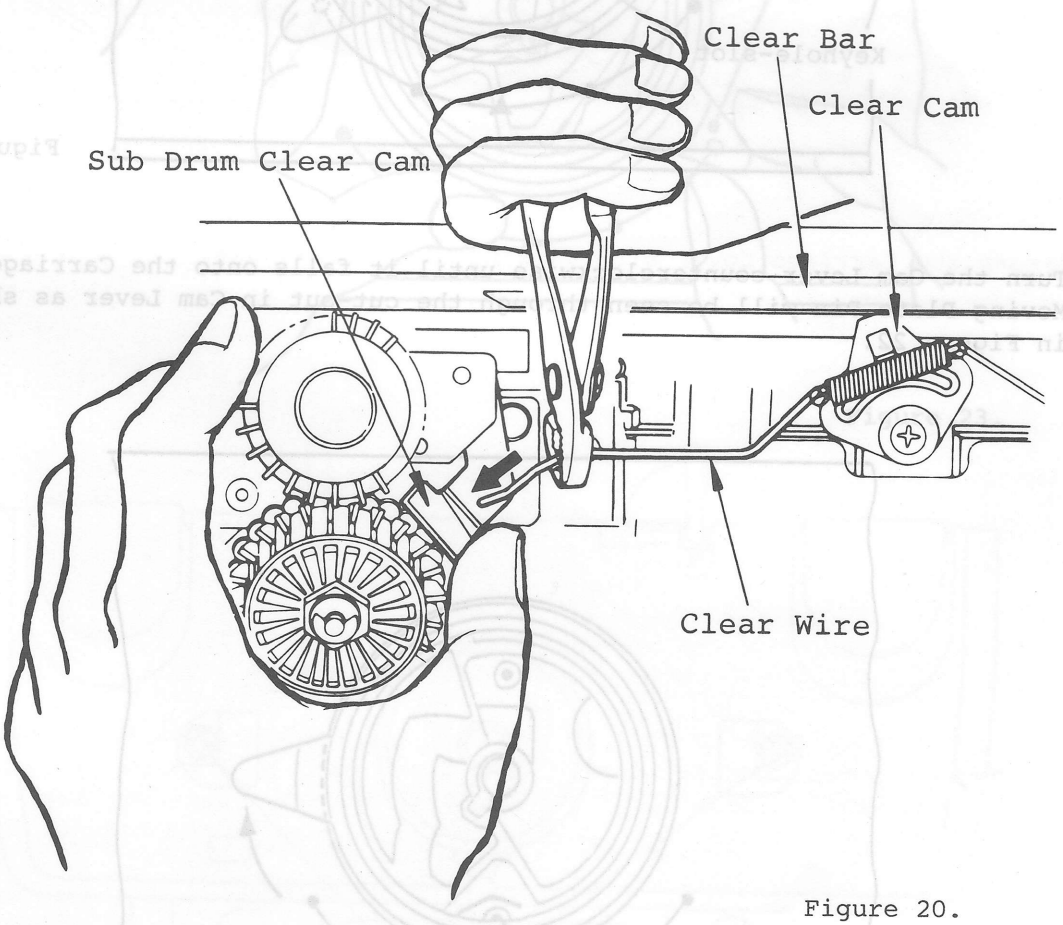


Figure 20.

*If any clearance exists between Sub Drum Clear Cam and Sub Drum Pieces, the incorrect needle selection may result since the stored memory on the Sub Drum cannot be cleared completely.

4-5 Carriage Assembly

1. Place the Cam Lever through the opening in Carriage Cover and set it to "Fair Isle". Fit the Cam Lever onto Dial Axis.

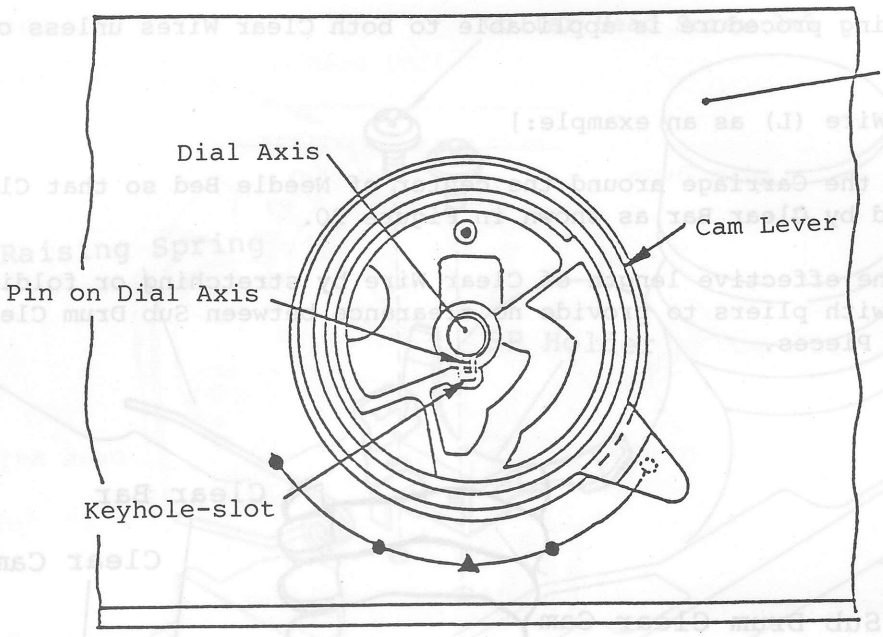


Figure 21.

2. Turn the Cam Lever counterclockwise until it falls onto the Carriage. Moving Plate Pin will be seen through the cut-out in Cam Lever as shown in Figure 22.

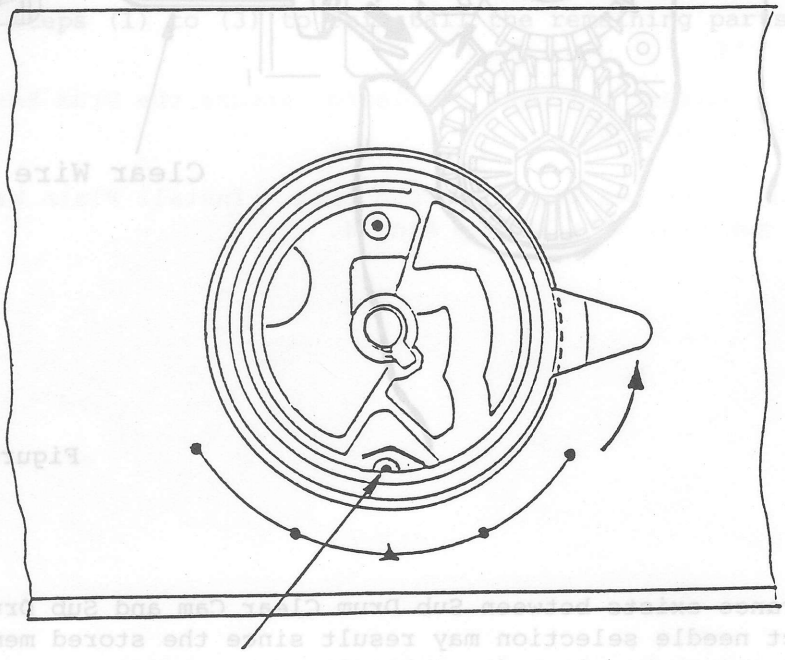


Figure 22.

3. Hold the Cam Lever as shown in Figure 23. Slightly lift up Cam Lever, and return it to "Fair Isle" so that Moving Plate Pin enters the slot on the underside of Cam Lever.

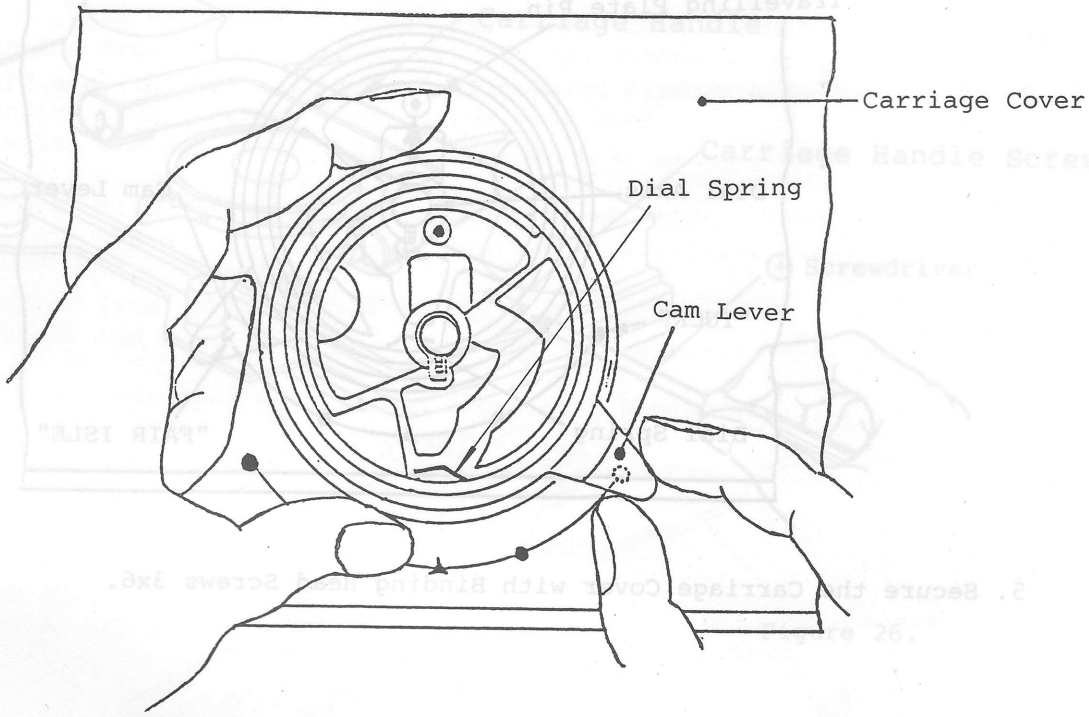


Figure 23.

4. Push the Travelling Plate Pin away from the Dial Axis. Fit the Stitch Dial onto Dial Axis and turn it counterclockwise. Check to see if the Cam Lever can be rotated smoothly and can be correctly set to any position from "Fair Isle" to "Tuck". If not, remove the Stitch Dial and reset the Cam Lever in the same manner.

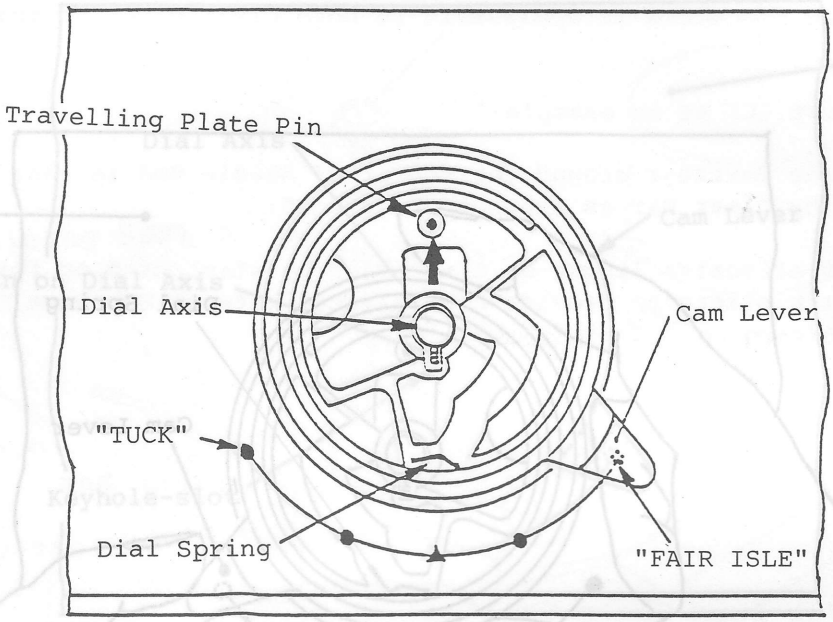


Figure 24.

5. Secure the Carriage Cover with Binding Head Screws 3x6.

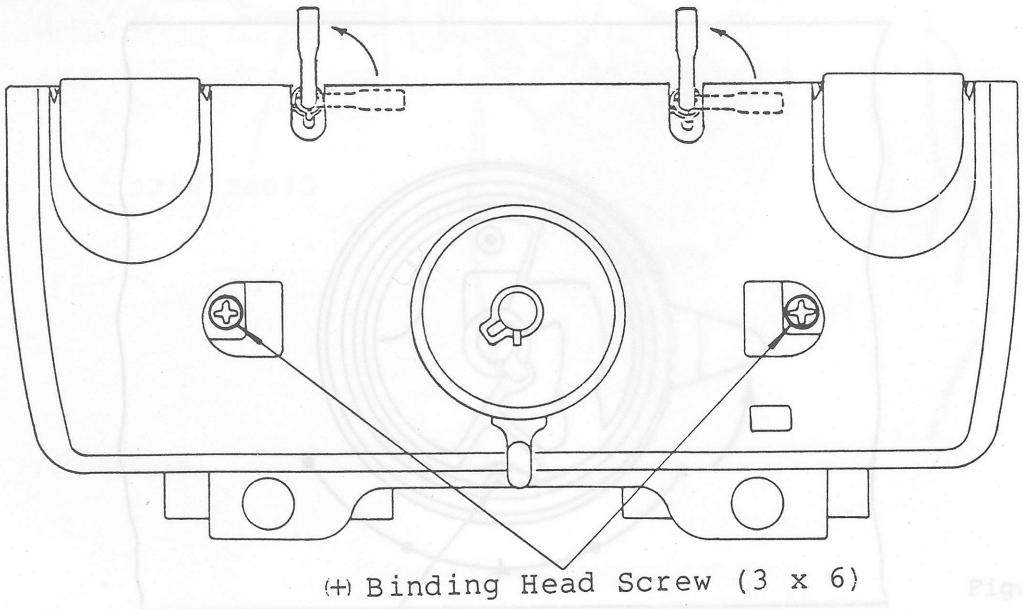


Figure 25.

6. Place the Carriage Handle as shown in Figure 26. Install Carriage Handle Screws to engage recesses in Carriage Handle using small ⊕ screwdriver.

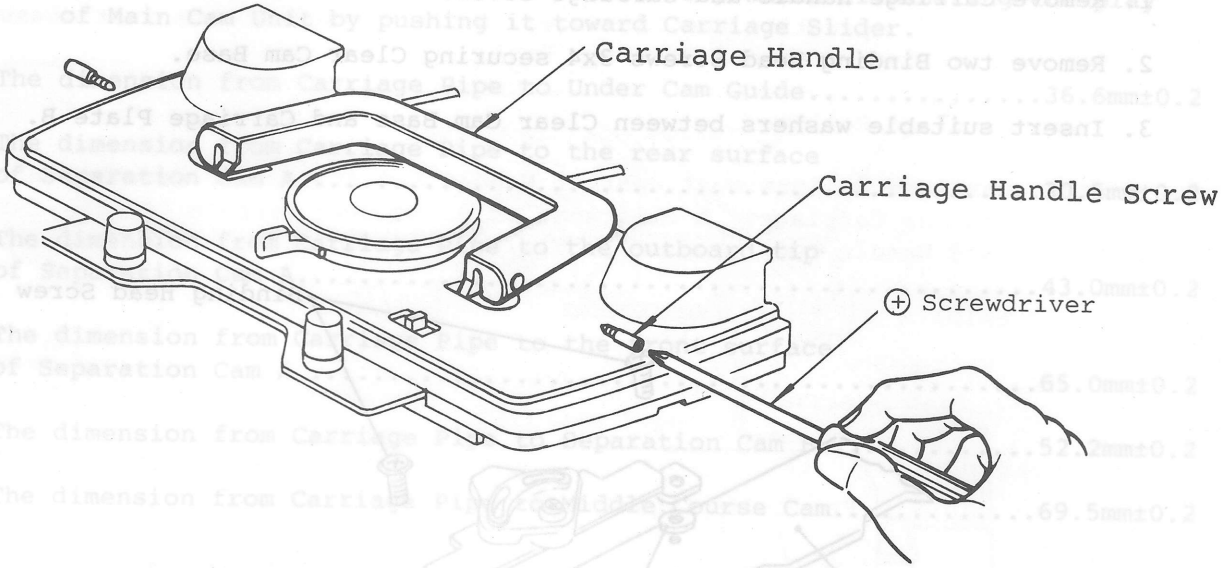


Figure 26.

4-6 Possible Interference between Clear Cam and Side Rack

If the Side Rack on each end of Needle Bed Rack interferes with Clear Cam, Side Rack will actuate Clear Cam to clear the stored memory on the Sub Drum partially, causing the incorrect needle selection.

In that case, adjust the height of Clear Cam Base in the following manner:

1. Remove Carriage Handle and Carriage Cover.

2. Remove two Binding Head Screws 3x4 securing Clear Cam Base.

3. Insert suitable washers between Clear Cam Base and Carriage Plate B.

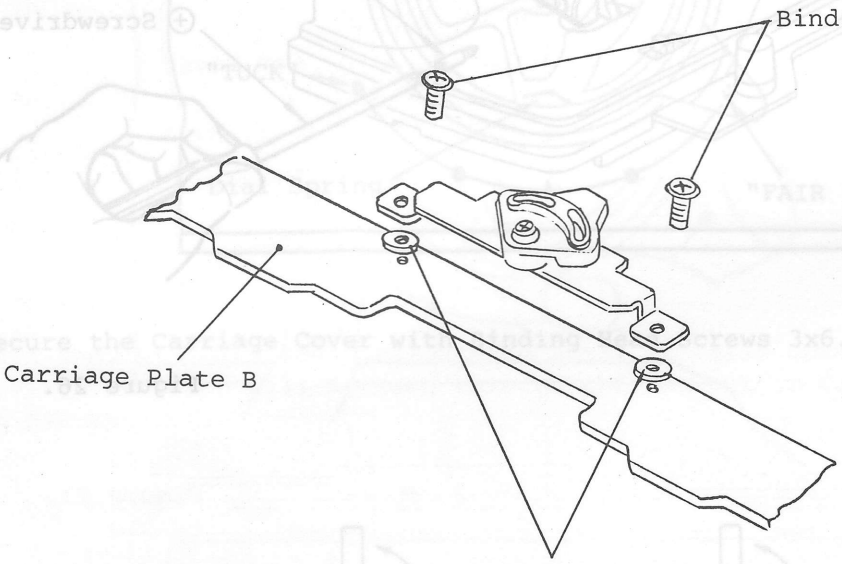


Figure 27.

*When the adjustment has been completed, check to see if the Clear Cam properly contacts Clear Bar while reciprocating the Carriage.

(Note) If the adjustment is made by removing the washers located under Clear Cam Base to obtain proper contact with Clear Bar, be sure to reinstall the removed washers onto Clear Cam Base; otherwise, Clear Cam Base cannot be secured with Binding Head Screws 3x4 since the screws come in contact with Carriage Pipe.

[5] ESSENTIAL DIMENSIONS OF THE CARRIAGE

1. The dimension from Carriage Pipe (front surface) to Main Cam Unit.....23.1mm±0.2 (Stitch Dial at "6")

(Note) The existing Course Standard Gauge is not applicable to the Carriage for MOD.155. Use vernier caliper to measure the above specified dimension with the Stitch Dial set at "6", while eliminating the play of Main Cam Unit by pushing it toward Carriage Slider.

2. The dimension from Carriage Pipe to Under Cam Guide.....36.6mm±0.2

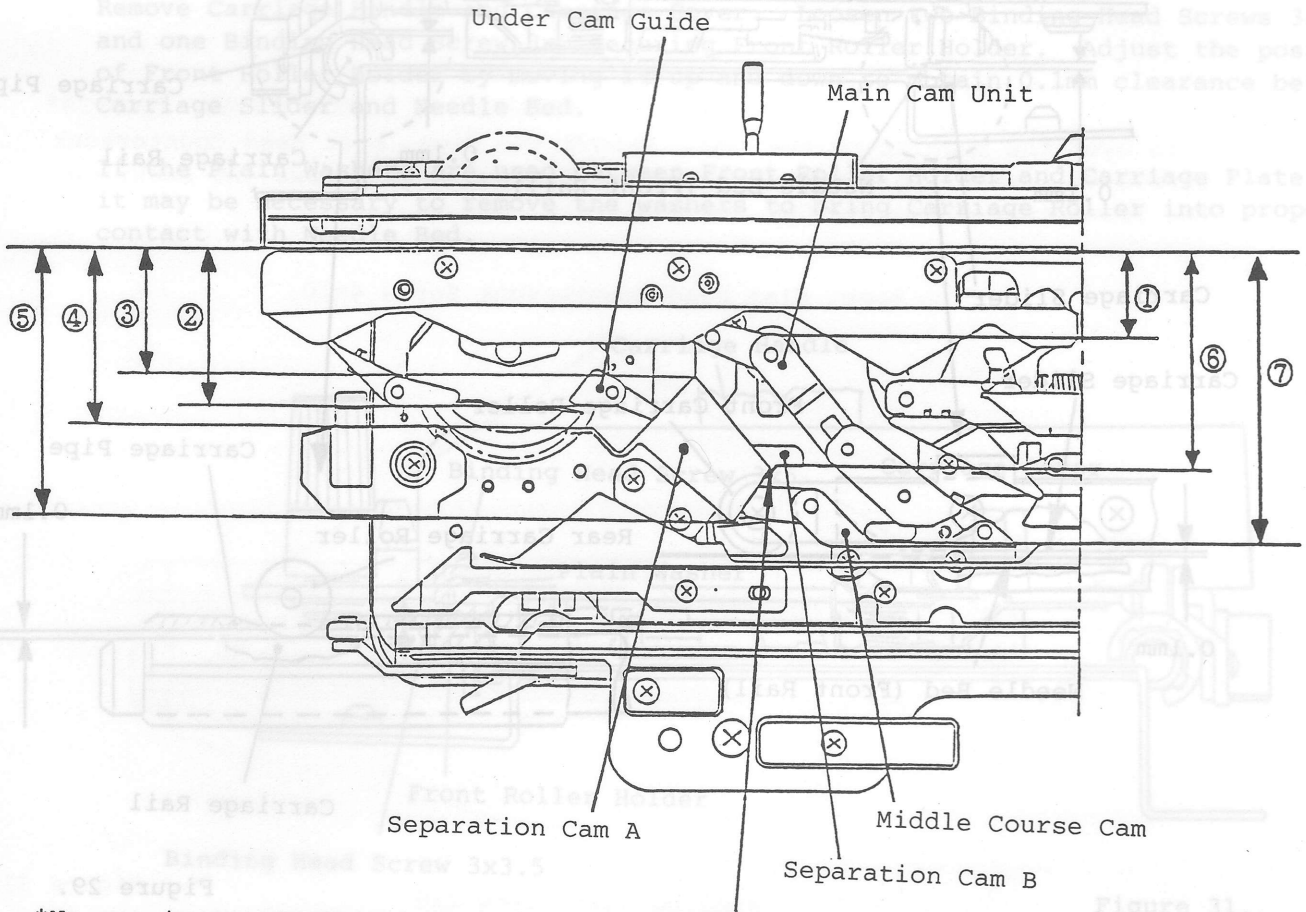
3. The dimension from Carriage Pipe to the rear surface of Separation Cam A.....30.5mm±0.2

4. The dimension from Carriage Pipe to the outboard tip of Separation Cam A.....43.0mm±0.2

5. The dimension from Carriage Pipe to the front surface of Separation Cam A.....65.0mm±0.2

6. The dimension from Carriage Pipe to Separation Cam B.....52.2mm±0.2

7. The dimension from Carriage Pipe to Middle Course Cam.....69.5mm±0.2



*No gap is permissible between both Separation Cams A and B.

Figure 28.

[6] CARRIAGE ROLLER ADJUSTMENT

6-1 Checking the Positioning of Carriage Rollers

1. Rear Carriage Rollers

   Rear Carriage Rollers must contact Carriage Rail and rotate smoothly over the rail when operating the Carriage. A clearance of 0.1mm must measure between Carriage Pipe and Carriage Rail.

2. Front Carriage Rollers

   Front Carriage Rollers must contact Needle Bed and rotate smoothly when operating the Carriage. A clearance of 0.1mm must measure between Carriage Slider and Needle Bed.

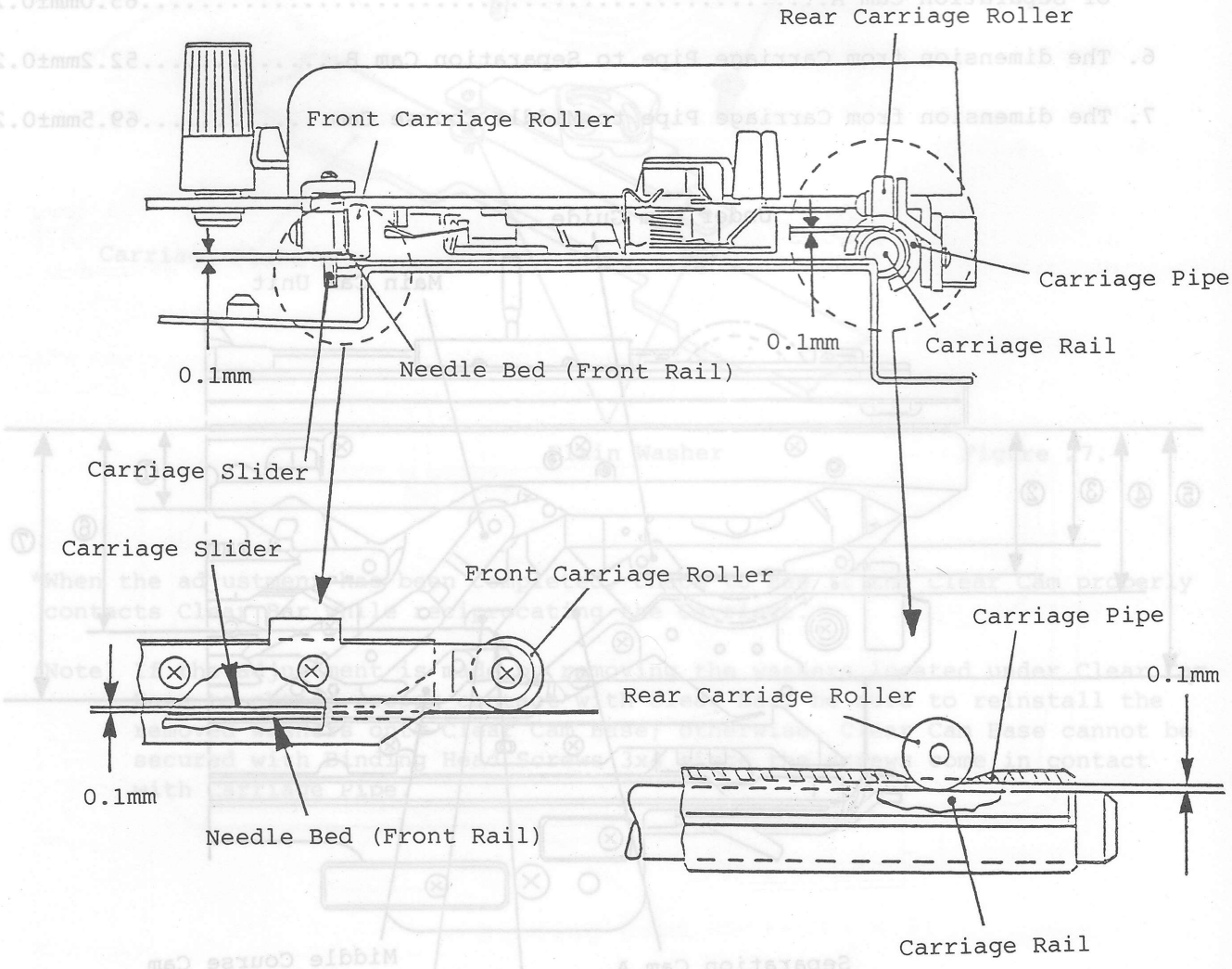


Figure 29.

6-2 Carriage Roller Adjustment

1. Rear Carriage Rollers

Loosen two Binding Head Screws 3x4 securing Rear Roller Holder. Adjust the position of Rear Roller Holder by moving it up and down to obtain 0.1mm clearance between Carriage Pipe and Carriage Rail.

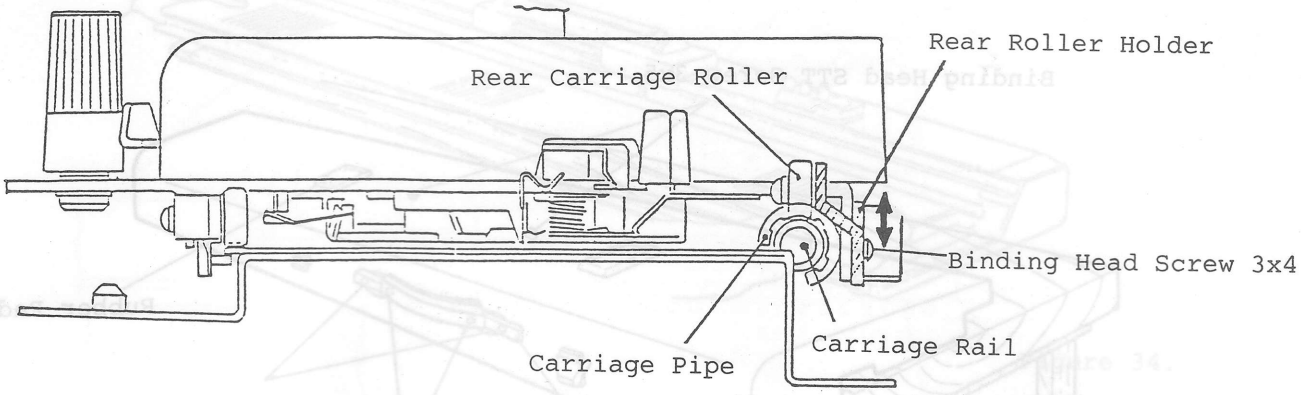


Figure 30.

2. Front Carriage Rollers

Remove Carriage Handle and Carriage Cover. Loosen two Binding Head Screws 3x3.5 and one Binding Head Screw 3x5 securing Front Roller Holder. Adjust the position of Front Roller Holder by moving it up and down to obtain 0.1mm clearance between Carriage Slider and Needle Bed.

If the Plain Washers are used between Front Roller Holder and Carriage Plate B, it may be necessary to remove the washers to bring Carriage Roller into proper contact with Needle Bed.

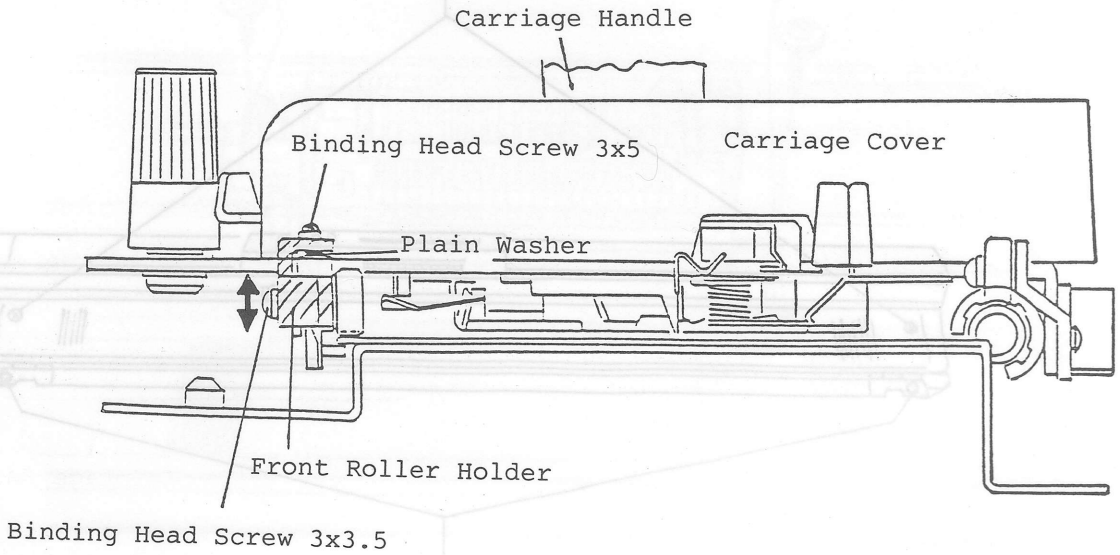


Figure 31.

1. Place the machine upside down as shown in Figure 32, and remove two Binding Head STT Screws 3x5 located between Rubber Pads.
2. Remove two Binding Head STT Screws 3x12 on Carrying Handle Securing Plates and two Collar Head STT Screws 3x8 behind Carrying Handle.

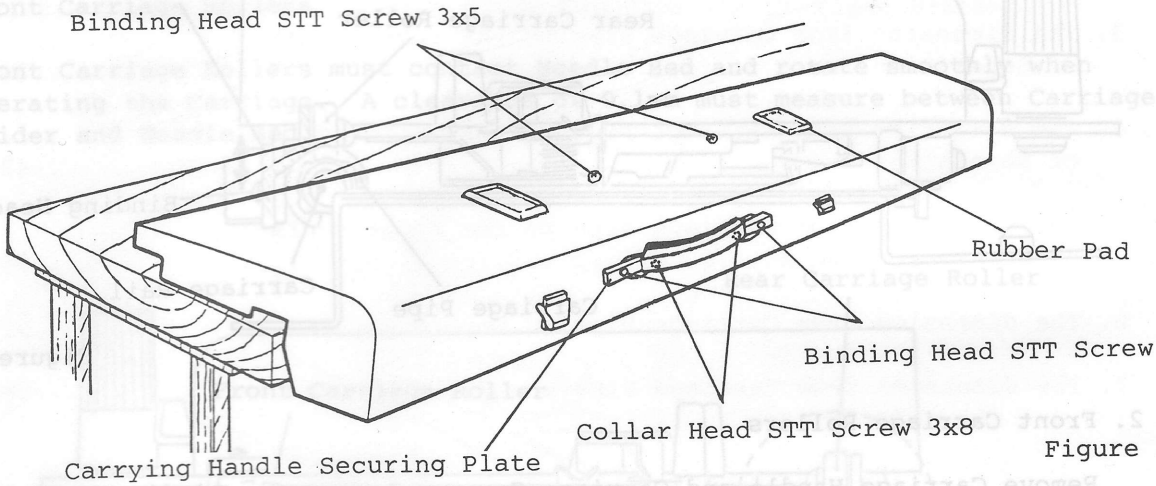


Figure 32.

3. Turn over the machine to the top. Remove two Spec. Flat Head Countersunk Screws 4x10 securing Needle Bed and two Binding Head Screws 4x8 securing the front edge of Needle Bed, respectively.

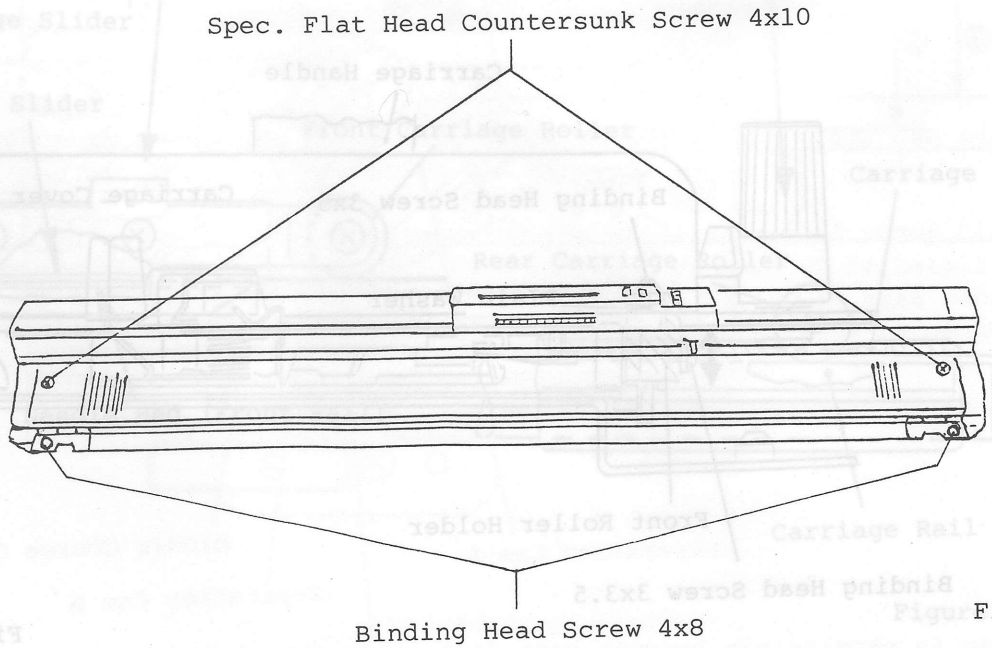


Figure 33.

4. Slightly lift up the front edge of Needle Bed and draw the Needle Bed toward you out of the Case. Do not raise the front edge of Needle Bed more than necessary since Pattern Unit is caught by the Case.

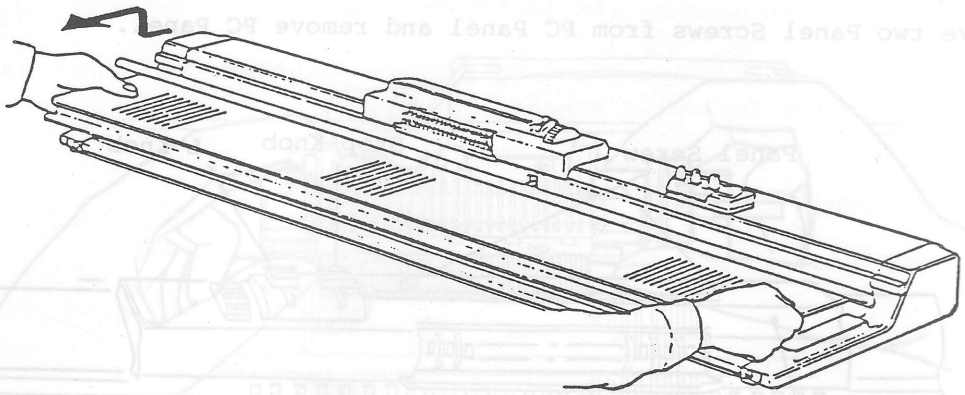


Figure 34.

*REVERSE THE PROCEDURE TO ASSEMBLE THE MACHINE BODY.

8-1 Pattern Unit Removal

1. Pull off the Stop Knob and L Knob.
2. Remove two Panel Screws from PC Panel and remove PC Panel.

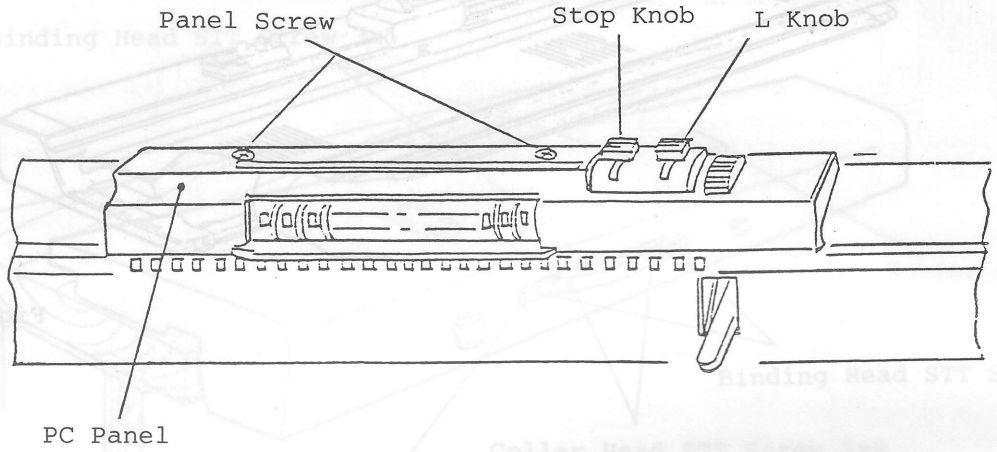


Figure 35.

3. Push up the needles located in front of Pattern Unit to D position. Pull out Feeding Dial, and remove four Collar Head STT Screws 3x5 securing Pattern Unit to Needle Bed Bracer A.

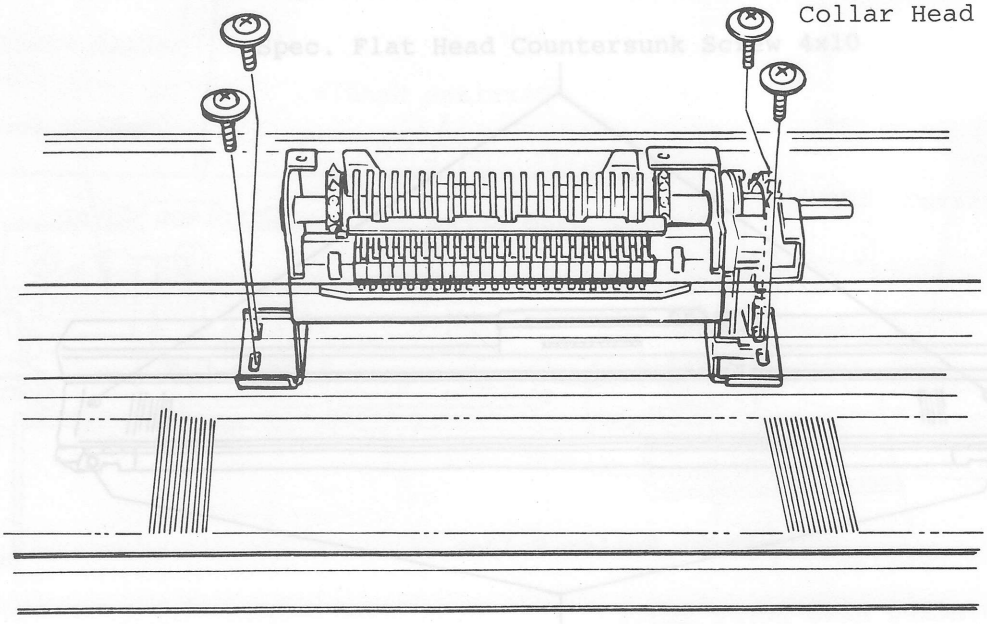


Figure 36.

4. Hold the Pattern Unit at both sides as shown in Figure 37. Slightly lift up the Pattern Unit (Fig. A), then guide it toward you (Fig. B) out of the machine body.

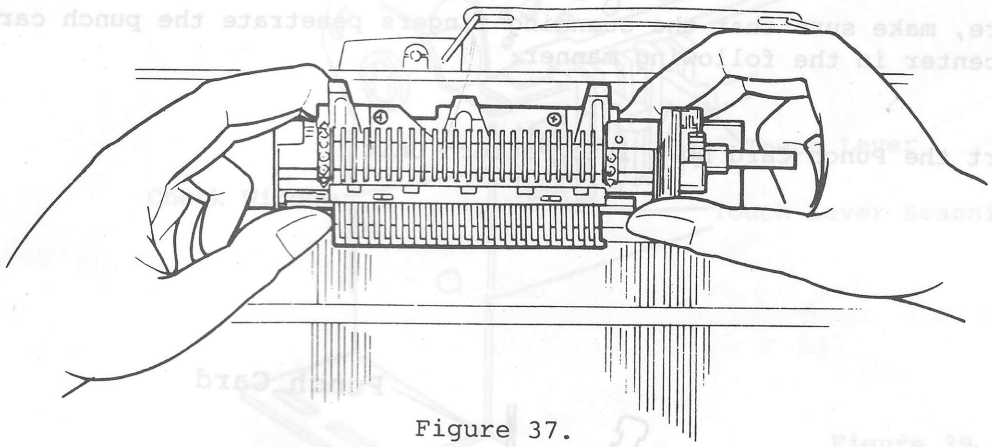
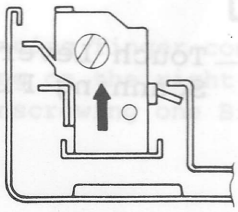
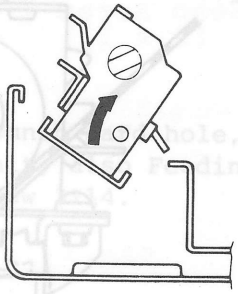


Figure 37.



(Fig. A)



(Fig. B)

8-2 Card Drum Adjustment

Touch Lever Scanning Fingers protrude through the punch card holes to read out the pattern on the card, and to transmit the pattern to the Main Drum. However, if the punch card holes are dislocated, the scanning fingers cannot enter the punch card holes properly to read out the pattern, and consequently relative pattern cannot be transmitted to the Main Drum correctly. Thus, the pattern will be reproduced on the fabric incorrectly.

Therefore, make sure that the scanning fingers penetrate the punch card holes at its center in the following manner:

1. Insert the Punch Card No.1 into Pattern Unit.

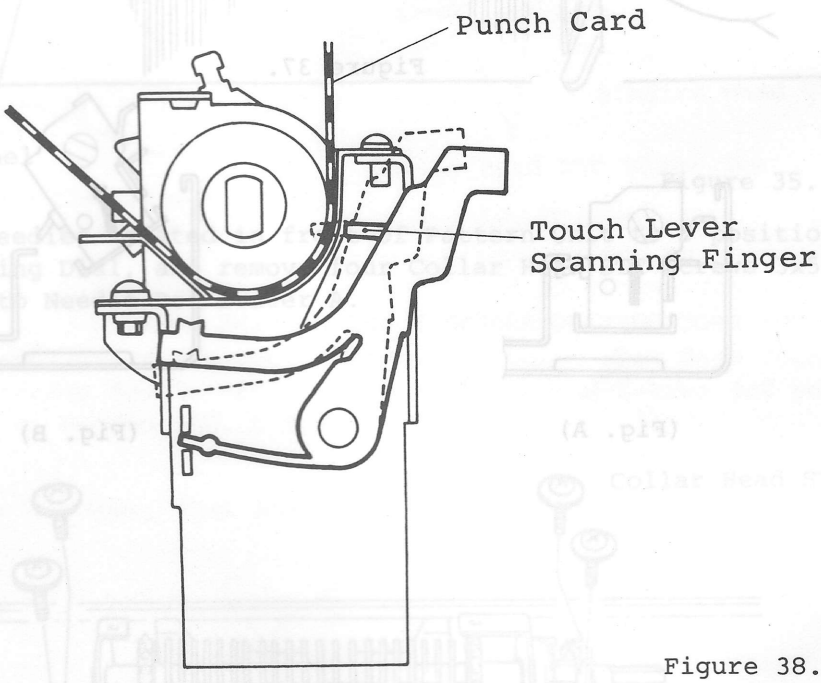


Figure 38.

2. Set the Punch Card so that one of the punch card holes at the left end can be seen through the left-hand Check Window. Looking through the Check Window, press the left end touch lever into Pattern Unit to ensure the scanning finger penetrates the center of the punch card hole.

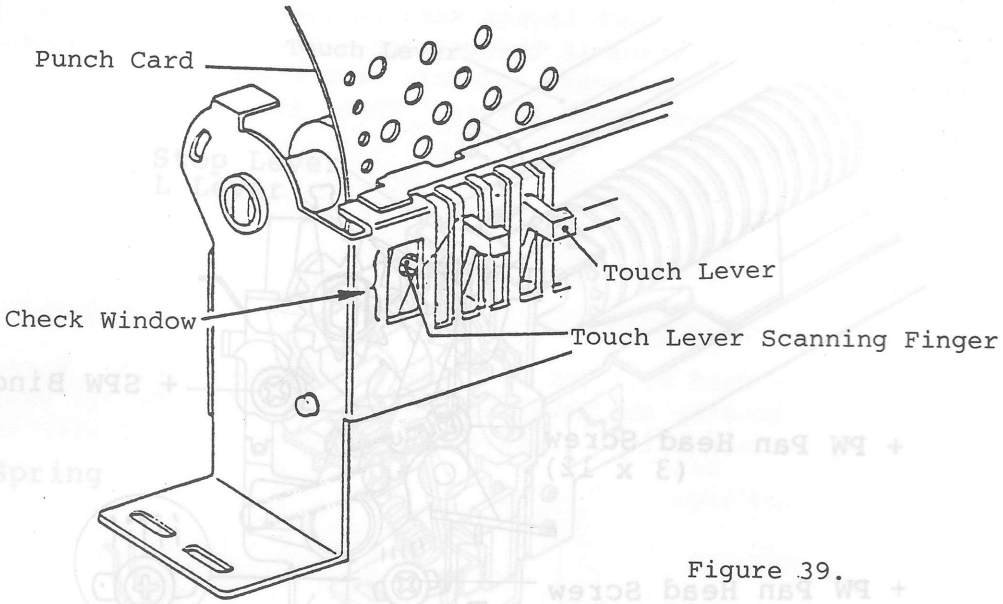


Figure 39.

3. If the scanning finger contacts the rim of punch card hole, remove Feeding Lever Spring on the right side of Pattern Unit, also Feeding Ratchet Stopper Plate by unscrewing one Binding Head STT Screw 3x14.

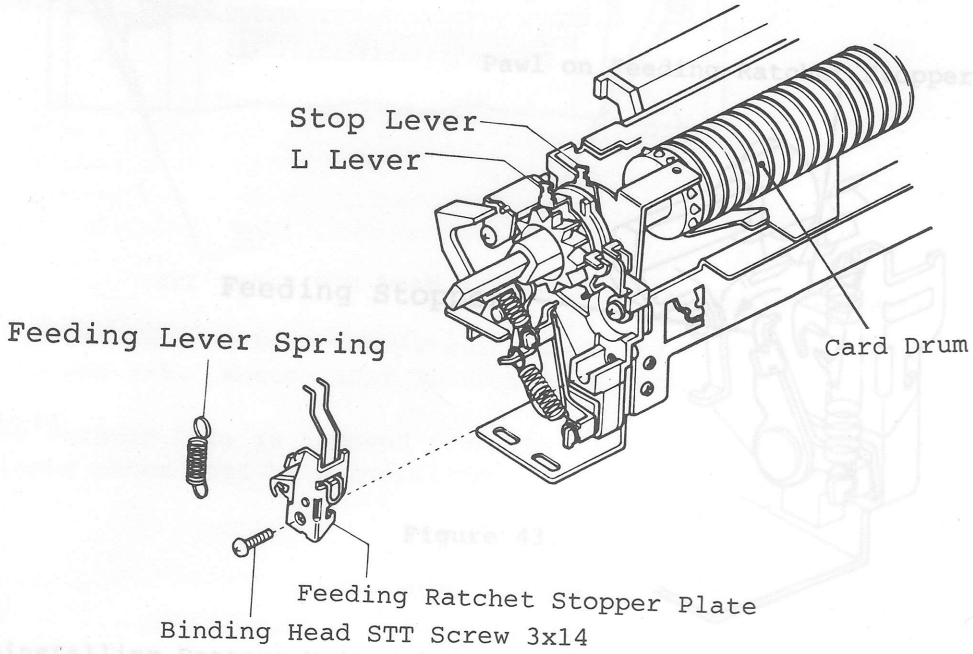


Figure 40.

4. Loosen three screws securing Stop Lever Holder. While closely watching the position of the scanning finger against the punch card hole through the Check Window, adjust the Card Drum by shifting Stop Lever Holder in either direction of the arrow so that the scanning finger enters the punch card hole at its center. (For proper positioning, the graduation is usually set between 2 and 4.)

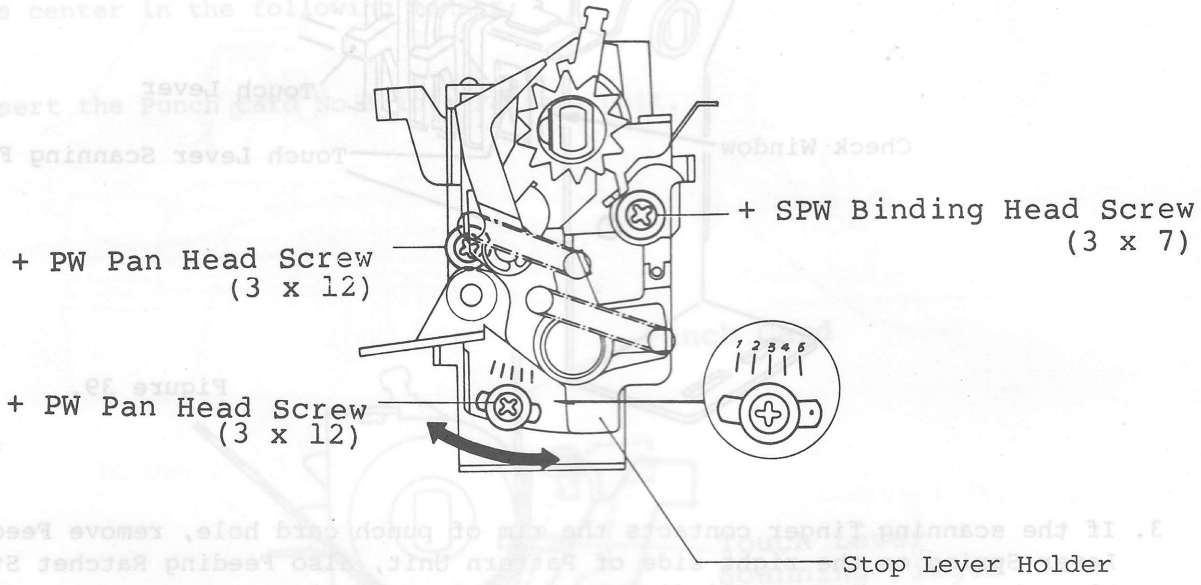


Figure 41.

5. When the adjustment has been completed, move both Stop Lever and L Lever toward you to facilitate the installation of Stop Lever Spring, move the Feeding Stopper toward you to avoid damaging the pawl on Feeding Ratchet Stopper Plate, install Feeding Ratchet Stopper Plate together with Stop Lever Spring, install Feeding Lever Spring.

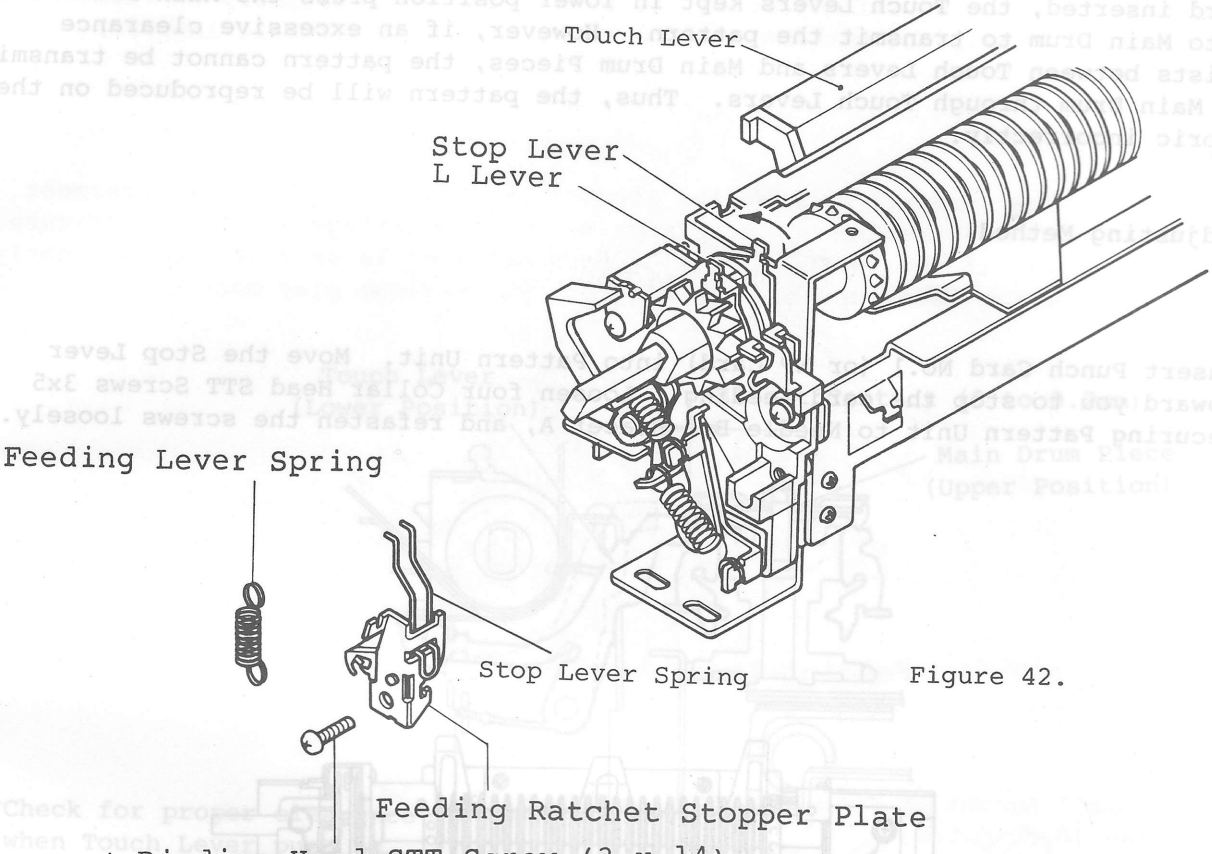


Figure 42.

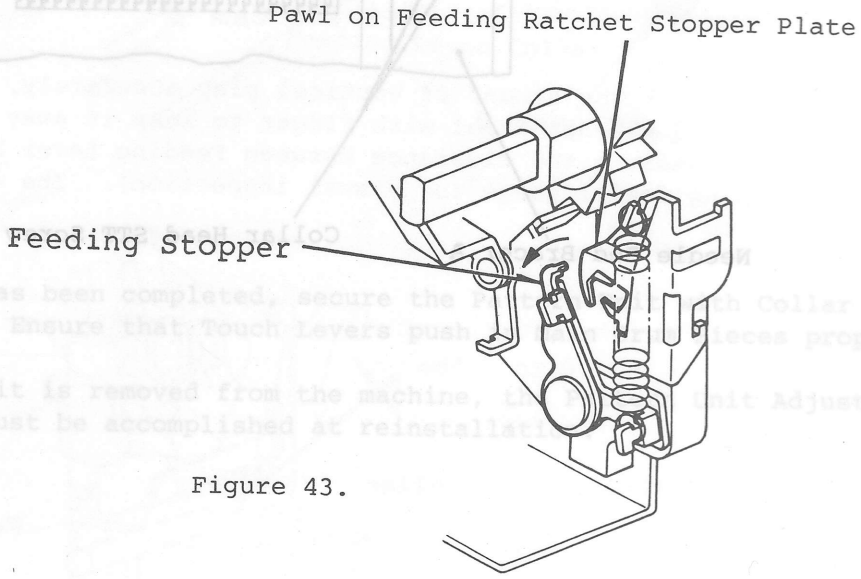


Figure 43.

*Whenever reinstalling Pattern Unit, always perform the Pattern Unit Adjustment described in Item 8-3.

8-3 Pattern Unit Adjustment (Adjusting the Clearance between Touch Lever and Main Drum Piece)

Touch Levers are designed to read out the pattern on the card and transmit it to the Main Drum. When the Stop Lever on Pattern Unit is set to "O" with the card inserted, the Touch Levers kept in lower position press the Main Drum Pieces into Main Drum to transmit the pattern. However, if an excessive clearance exists between Touch Levers and Main Drum Pieces, the pattern cannot be transmitted to Main Drum through Touch Levers. Thus, the pattern will be reproduced on the fabric incorrectly.

[Adjusting Method]

1. Insert Punch Card No.1 (or NP Card) into Pattern Unit. Move the Stop Lever toward you to stop the card feeding. Loosen four Collar Head STT Screws 3x5 securing Pattern Unit to Needle Bed Bracer A, and refasten the screws loosely.

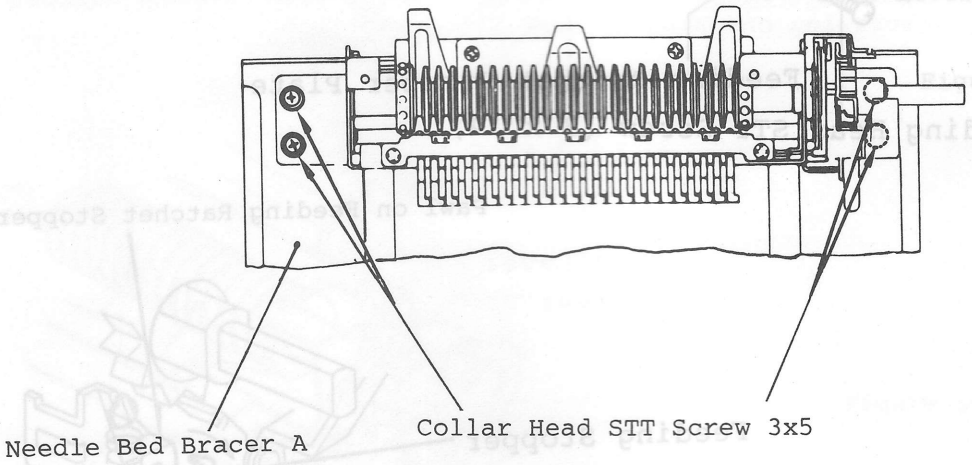
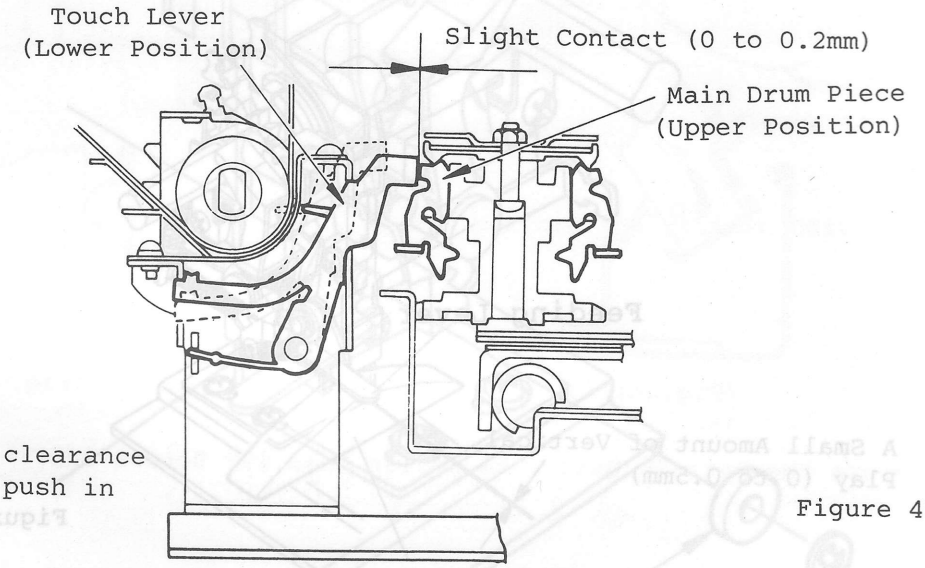


Figure 44.

2. Position the Carriage so that the Main Drum and Touch Levers face each other. With the Main Drum Piece aligned with Touch Lever as shown in Figure 45, slide Pattern Unit toward or away from Main Drum using the blade of ⊖ screwdriver to obtain 0 to 0.2mm clearance between Touch Lever (lower position) and Main Drum Piece (upper position).



*Check for proper clearance when Touch Lever push in Main Drum Piece.

Figure 45.

3. When the adjustment has been completed, secure the Pattern Unit with Collar Head STT Screws 3x5. Ensure that Touch Levers push in Main Drum Pieces properly.

(Note) If the Pattern Unit is removed from the machine, the Pattern Unit Adjustment mentioned above must be accomplished at reinstallation.

8-4 Feeding Lever Adjustment

The vertical movement of Feeding Lever feeds the Punch Card on every carriage stroke. However, if the amount of feed is not correct, the punch card holes will be out of position against Touch Lever Scanning Fingers, and consequently the scanning fingers will not enter the punch card holes properly to read out the pattern. Thus, the pattern will be reproduced on the fabric incorrectly.

[Adjusting Method]

1. Position the Carriage so that the Feeding Lever is raised to its uppermost position by Driving Cam on the rear side of the Carriage as shown in Figure 46. Check to see if the vertical play of Feeding Lever is provided only slightly by pulling the lever upward with finger. The maximum play must not exceed 0.5mm.

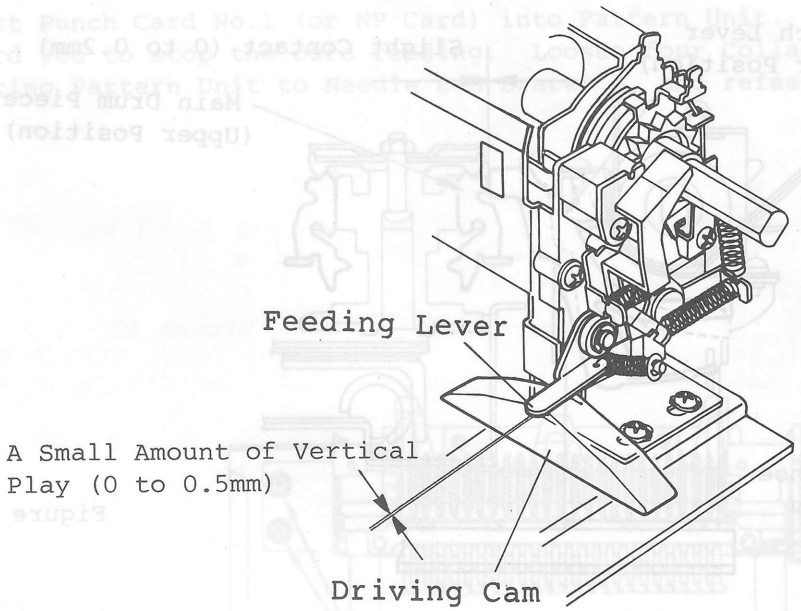


Figure 46.

2. To check the amount of vertical play accurately, press the Feeding Lever B toward Ratchet Wheel with finger to keep it away from Feeding Lever Collar, and measure the clearance between Feeding Lever B and Feeding Lever Collar using feeler gauge (or visual inspection). The clearance must measure 0 to 0.5mm.

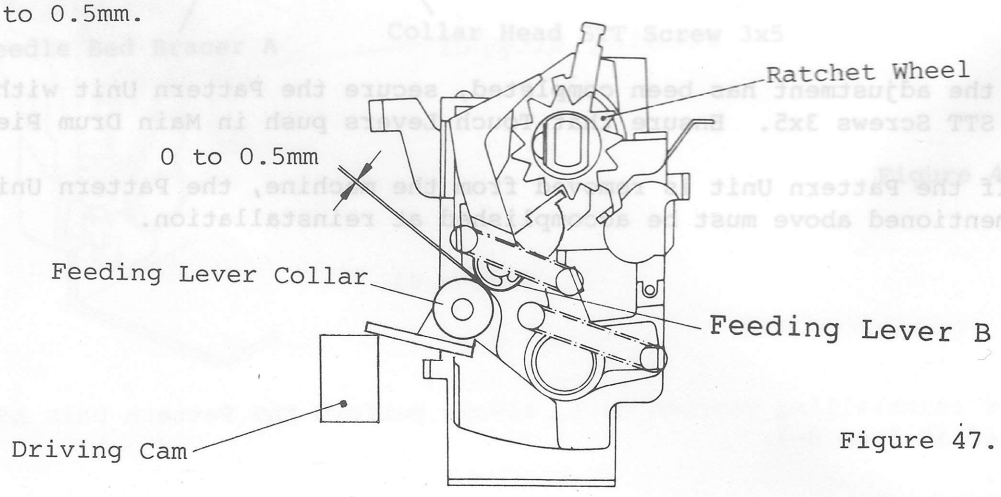


Figure 47.

3. If the clearance more than 0.5mm is recognized, replace the Feeding Lever Collar with a next larger size one (provided in 0.5mm increments 7ø to 14ø).

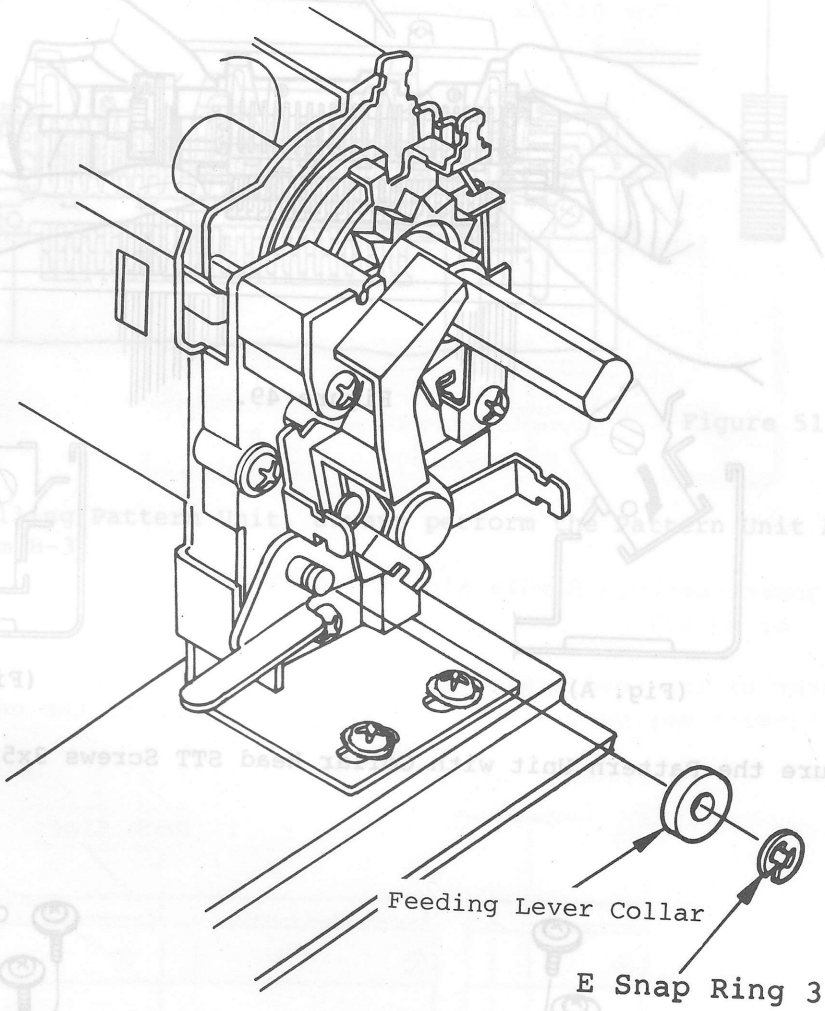


Figure 48.

8-5 Pattern Unit Installation

1. Hold the Pattern Unit at both sides. Tilt the Pattern Unit toward you, and guide it between Needle Bed and Case (Fig. A) into position (Fig. B).

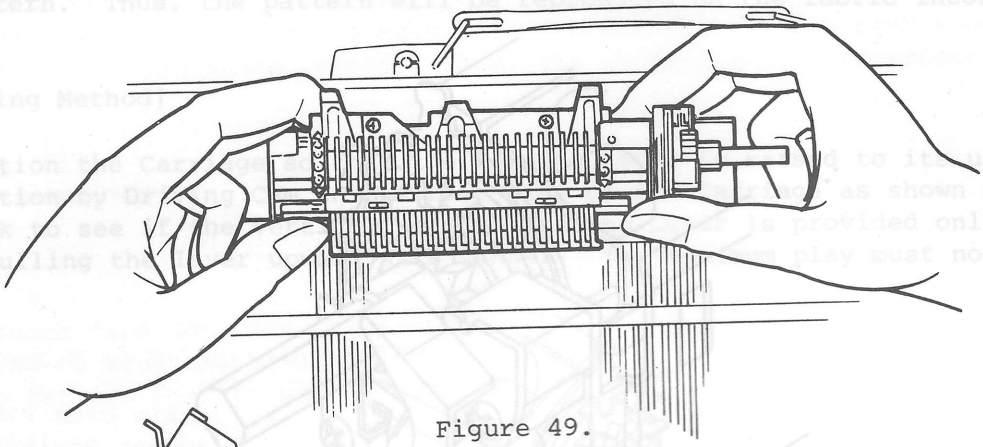
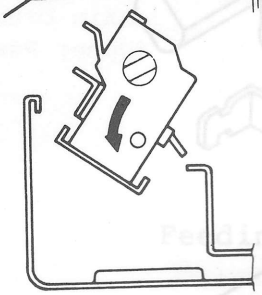
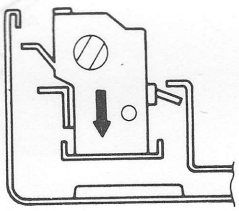


Figure 49.



(Fig. A)



(Fig. B)

2. Secure the Pattern Unit with Collar Head STT Screws 3x5.

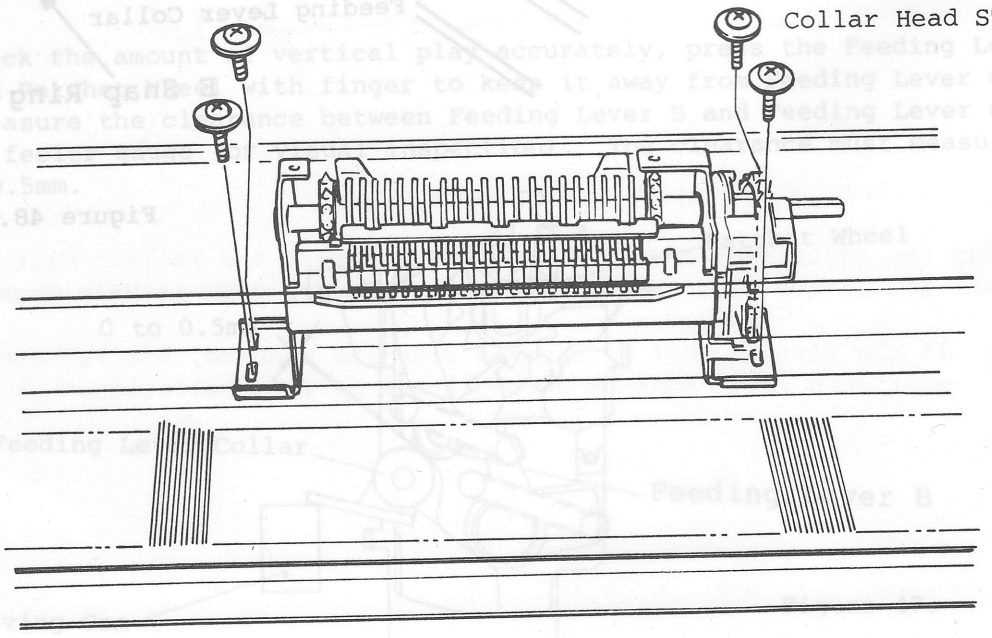


Figure 50.

3. Fit the Feeding Dial onto Pattern Shaft with its neck outboard.

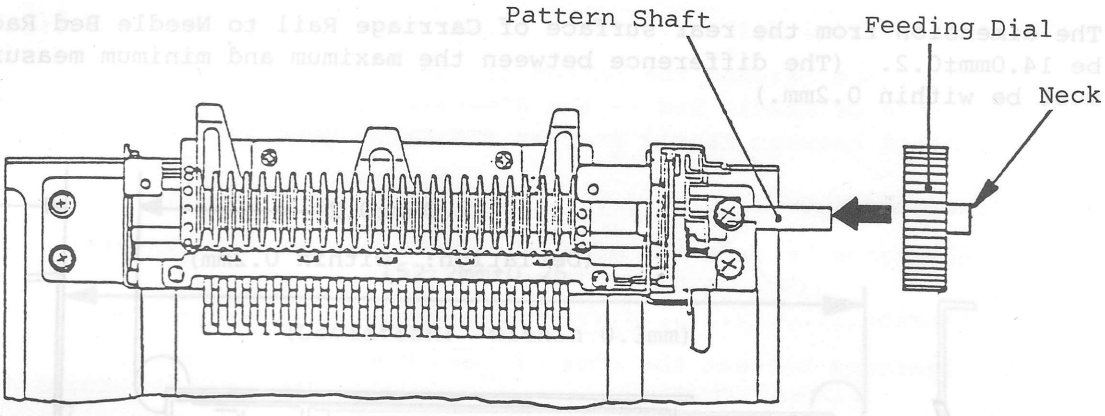


Figure 51.

*Whenever reinstalling Pattern Unit, always perform the Pattern Unit Adjustment described in Item 8-3.

[9] ESSENTIAL DIMENSIONS OF THE NEEDLE BED

9-1 Rail-to-Rack Dimention

The dimension from the rear surface of Carriage Rail to Needle Bed Rack must be 14.0mm±0.2. (The difference between the maximum and minimum measurements must be within 0.2mm.)

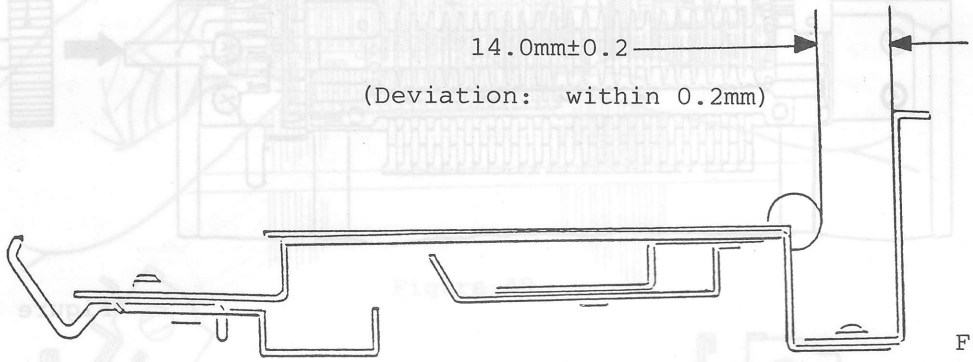


Figure 52.

9-2 Alignment between Needle Slot and Rack Slot

The center of the needle slot must be aligned with that of the rack slot. (The alignment may vary within the range of 0.3mm at the center of Needle Bed.)

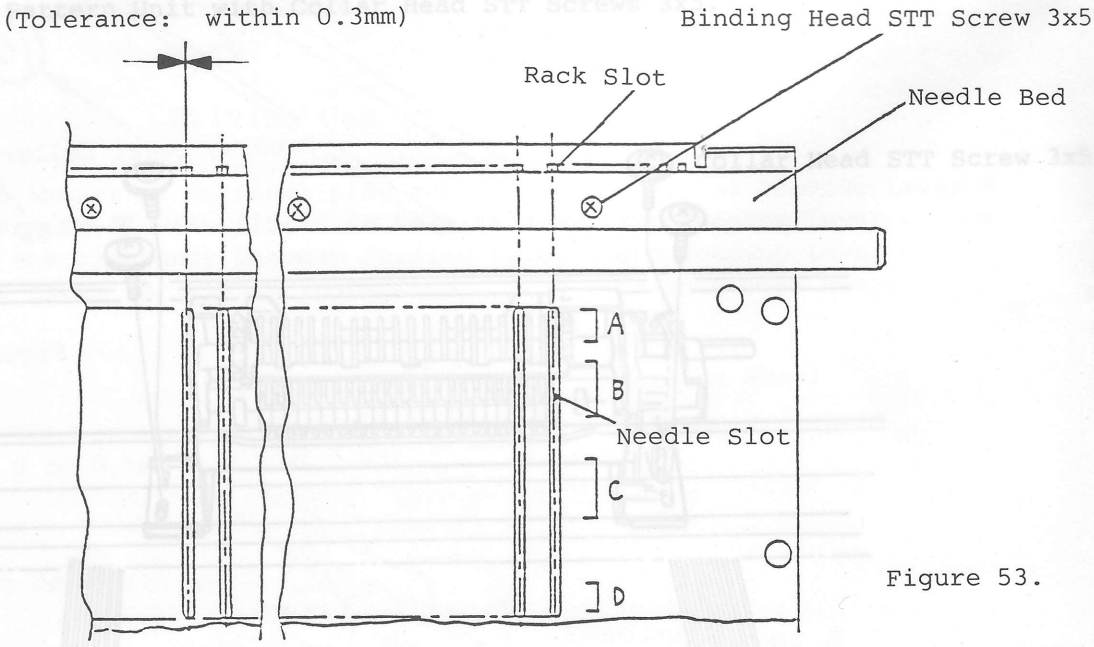


Figure 53.

[Adjusting Method]

Place the Rack Adjusting Tool onto Needle Bed at its center. Loosen six Binding Head STT Screws 3x5, then align the center of the needle slot with that of the rack slot by moving Needle Bed Rack. Also adjust for 14.0mm±0.2 Rail-to-Rack Dimension, simultaneously.

9-3 Rail-to-Sinker Dimension

The dimension from the rear surface of Carriage Rail to Sinkers must be 152.2mm±0.25. (The difference between the maximum and minimum measurements must be within 0.3mm.)

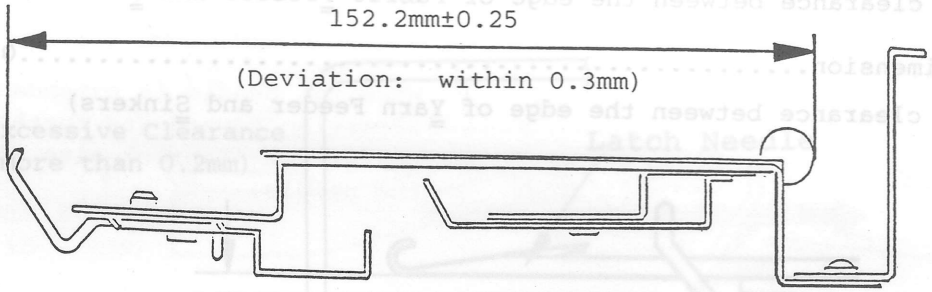


Figure 54.

[10] ESSENTIAL DIMENSIONS OF THE ARM AND ARM ADJUSTMENTS

10-1 PN, PS, and YS Dimensions

1. PN Dimension.....-0.2 to 0.2mm

   (The clearance between the bottom of Latch Needles and the front edge of Needle Bed -- the dimension to check the amount of contact between Fabric Presser and Latch Needles)

2. PS Dimension.....1.5 to 2.0mm

   (The clearance between the edge of Fabric Presser and Sinkers)

3. YS Dimension.....0.3 to 0.7mm

   (The clearance between the edge of Yarn Feeder and Sinkers)

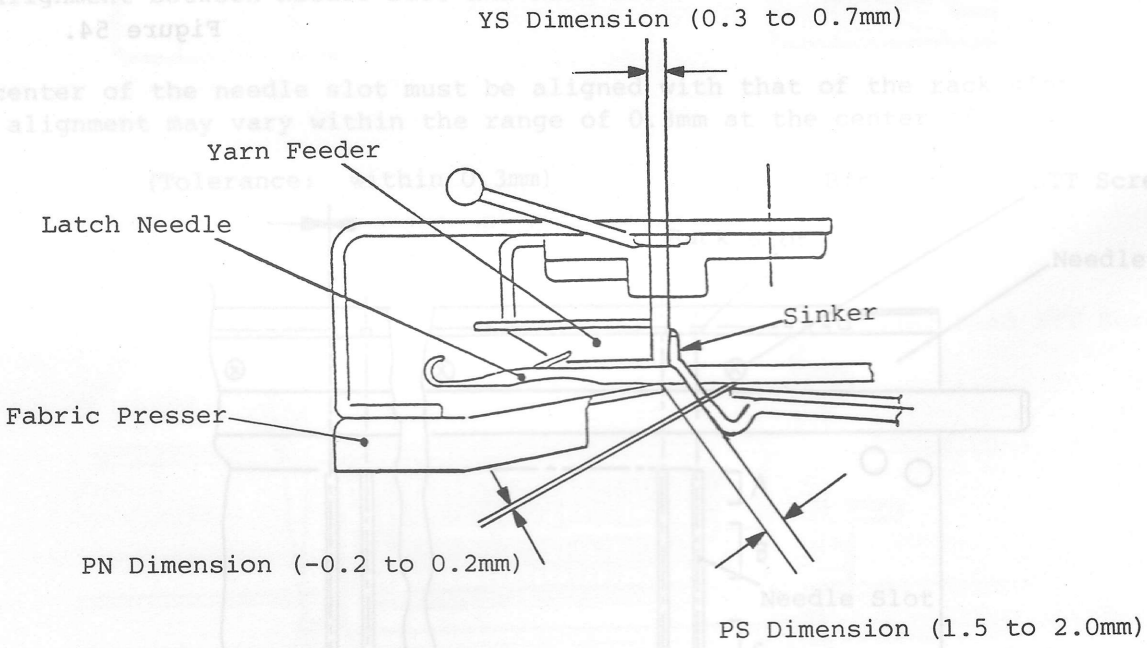


Figure 55.

10-2 PN Adjustment (Adjusting the Angle of Fabric Presser)

[Defective Case]

(A) When an excessive clearance exists between Fabric Presser and Latch Needles:

1. The stitches are apt to float without forming the fabric.

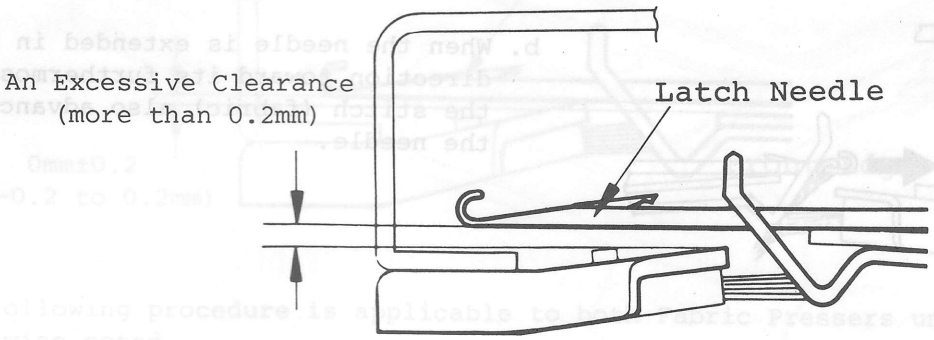
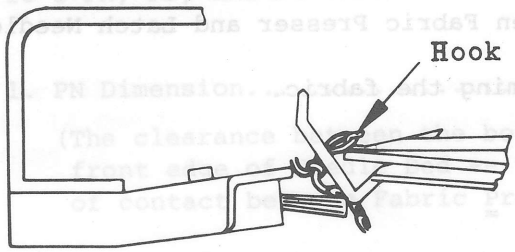


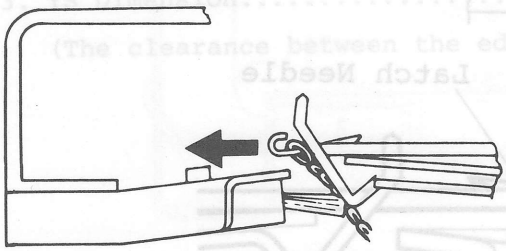
Figure 56.

(Note) Maximum clearance acceptable is 0.2mm.
Condition shown is in excess of 0.2mm
and is unacceptable.

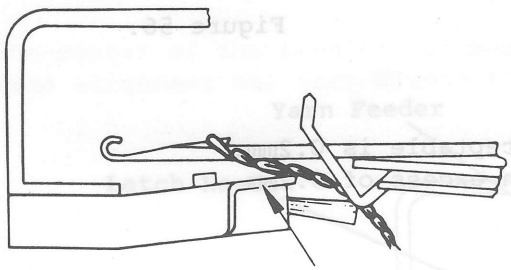
The knitting action in this defective case is illustrated below:



a. An old stitch is held in the needle hook.



b. When the needle is extended in the arrow direction toward its furthermost position, the stitch (fabric) also advances with the needle.



c. Fabric Presser (Round Brush and Fabric Gear, as well) serves to stop the fabric, allowing the needle to advance without taking the stitch with it. However, if an excessive clearance exists between the presser edge and the needles, the presser cannot hold the fabric back effectively, allowing the stitch to go forward with the needle. Then, the needle retracts before the old stitch slides over the needle latch, not forming the new stitch. This knitting failure is called "Float of Stitch".

Figure 57.

2. The stitches are apt to drop since the position of the needles against Yarn Feeder becomes lower than required. The yarn fed through Yarn Feeder cannot be caught by the needles, causing the dropped stitches.

(B) When the Fabric Presser lifts up Latch Needles excessively:

1. The operation of the Carriage becomes heavy.

2. The needles are apt to be damaged by the collision with Yarn Feeder.

[Adjusting Method]

The angle of Fabric Presser should be adjusted so that the edge of Fabric Presser slightly contacts the bottom of Latch Needles. The amount of contact between the presser and the needles must be within the range of -0.2 to 0.2mm.
To check the amount of contact, measure the clearance between the bottom of Latch Needles and the front edge of Needle Bed using feeler gauge.

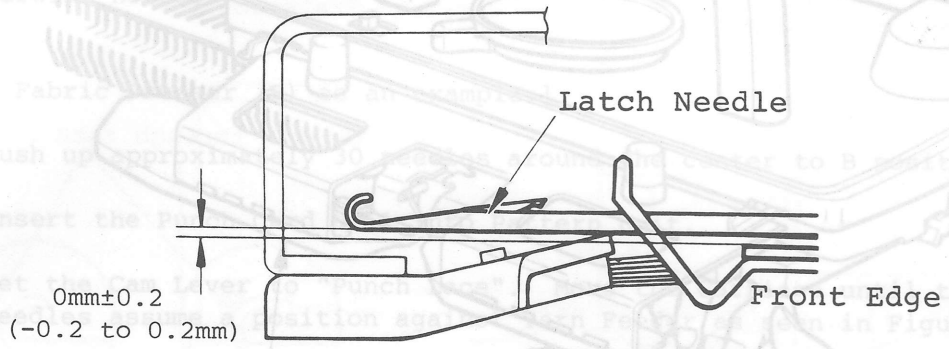


Figure 58.

*The following procedure is applicable to both Fabric Pressers unless otherwise noted.

1. Push up approximately 30 needles around the center to D position and set both Russel Levers to "I".

2. Position the Carriage so that approximately 3 needles are placed on the straight edge of Fabric Presser, and check the clearance between the bottom of Latch Needles and the front edge of Needle Bed is -0.2 to 0.2mm.

3. If the Fabric Presser is out of contact with the needles, remove the Arm from Carriage, place Arm upside down, depress Fabric Presser gradually by hand to adjust its angle adequately.

(Note) Do not apply too much force to Fabric Presser when depressing it. Otherwise, the Arm may be bent more than necessary and consequently provide excessive contact amount of the presser against the needles. Always adjust the angle of Fabric Presser gradually with care.

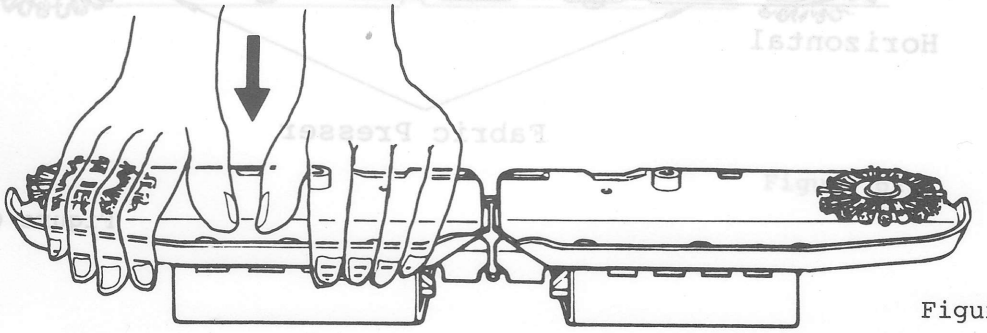


Figure 59.

4. If the Fabric Presser is in excessive contact with the needles, position the Carriage to either end where the presser to be adjusted is located, and pull down the presser by hand to adjust its angle adequately as shown in Figure 60.

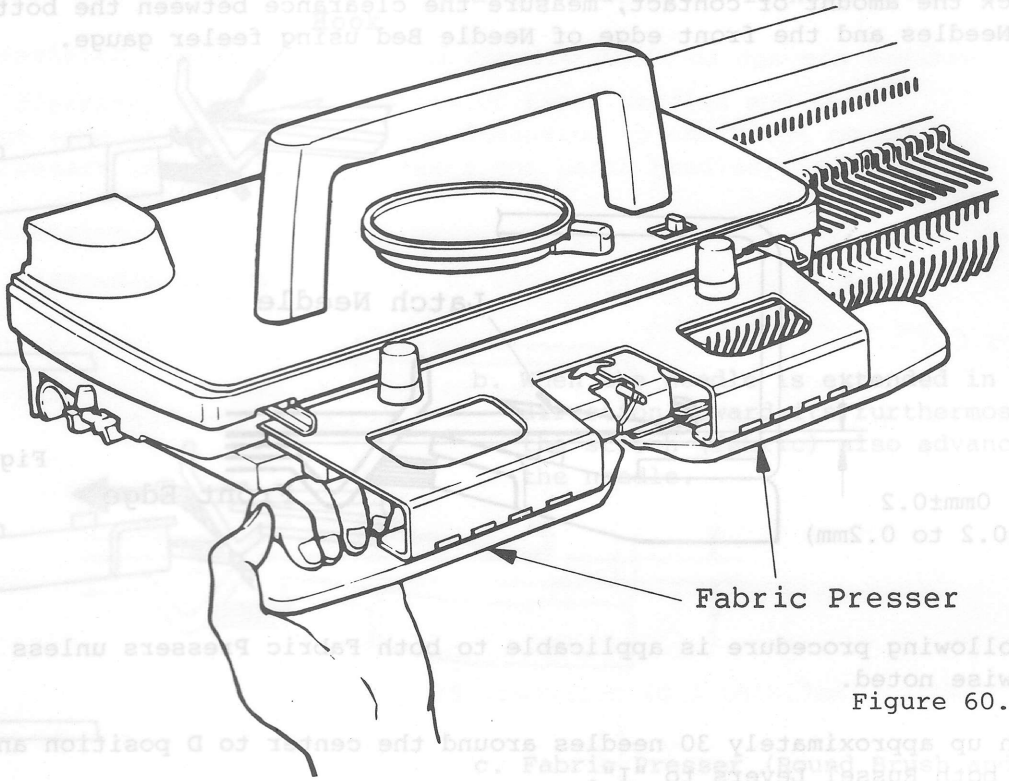


Figure 60.

5. Align both right and left Fabric Pressers horizontally.

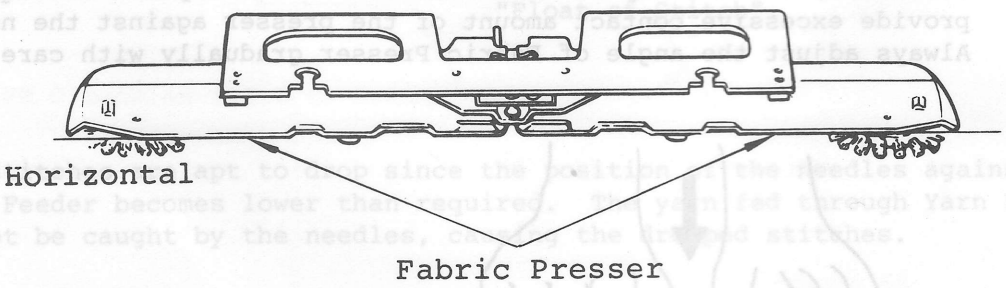


Figure 61.

10-3 YN Adjustment (Adjusting the Clearance between Yarn Feeder and Latch Needle)

1. YN Dimension.....2.2mm $^{+0.3}_{-0.1}$

(The clearance between Yarn Feeder and the hook of Latch Needle)

The angle of the inboard side of Fabric Presser cannot be checked by the preceeding method in Item 10-2. To obtain its proper angle against the needles, check and adjust the YN Dimension in the following manner:

*The following procedure is applicable to both Fabric Pressers unless otherwise noted.

[For Fabric Presser (R) as an example:]

1. Push up approximately 30 needles around the center to B position.

2. Insert the Punch Card No.1 into Pattern Unit.

3. Set the Cam Lever to "Punch Lace". Move the Carriage until the working needles assume a position against Yarn Feeder as seen in Figure 62.

4. Measure the clearance between Yarn Feeder and the hook of Latch Needle (retracting needle) in its uppermost position. If the measurement is not within the tolerance, adjust the inboard presser angle with hand force in the same manner as described in Item 10-2.

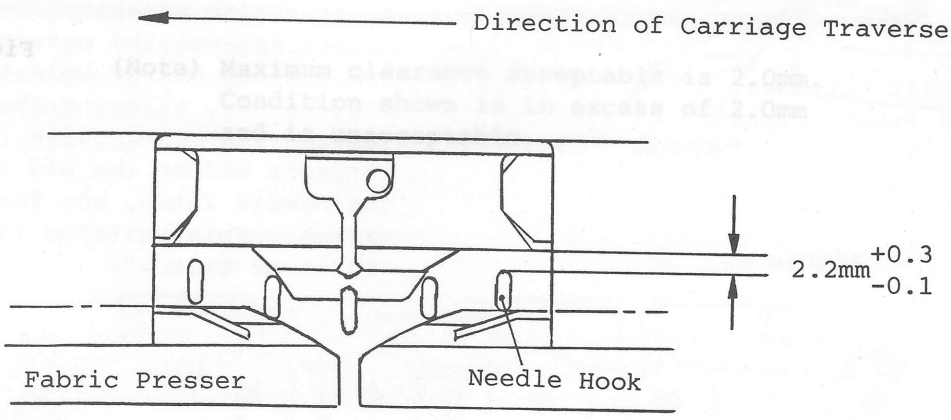
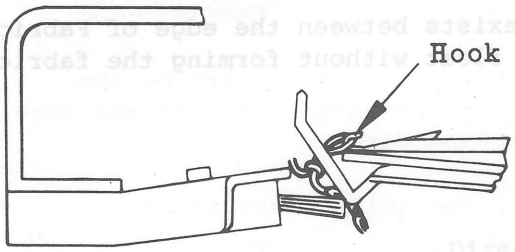
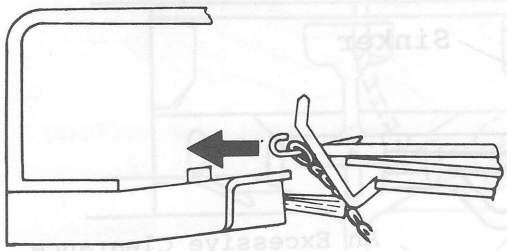


Figure 62.

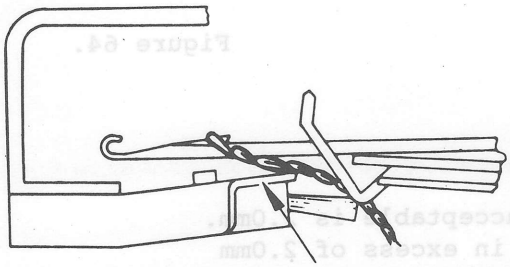
The knitting action in this defective case is illustrated below:



a. An old stitch is held in the needle hook.



b. When the needle is extended in the arrow direction toward its furthermost position, the stitch (fabric) also advances with the needle.



c. Fabric Presser (Round Brush and Fabric Gear, as well) serves to stop the fabric, allowing the needle to advance without taking the stitch with it. However, if an excessive clearance more than 2.0mm exists between the presser edge and Sinkers, the presser cannot hold the fabric back effectively, allowing the stitch to go forward with the needle. Then, the needle retracts before the old stitch slides over the needle latch, not forming the new stitch. This knitting failure is called "Float of Stitch".

Figure 65.

[Adjusting Method]

The position of Fabric Presser must be adjusted so that the clearance between the edge of Fabric Presser and the inclined surface of Sinkers is within the range of 1.5 to 2.0mm. Use feeler gauge to measure the clearance.

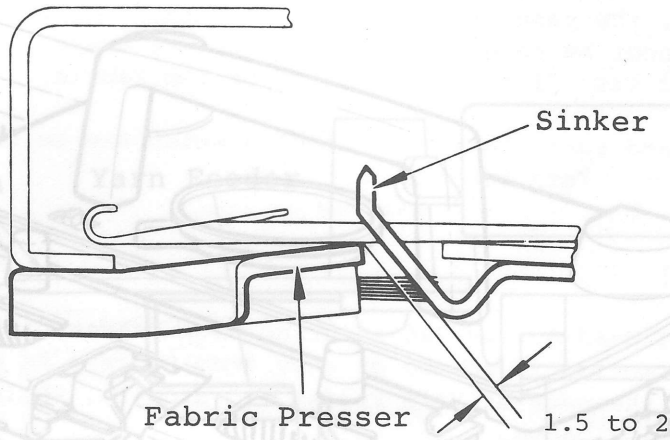


Figure 66.

*The following procedure is applicable to both Fabric Pressers unless otherwise noted.

[For Fabric Presser (L) as an example:]

1. Before attempting the adjustment, remove Round Brush C, Rubber Gear, and Round Rubber to facilitate the adjustment.
   Loosen three Binding Head Screws 3x3.5 securing Fabric Presser. Slide the Fabric Presser toward you to provide the maximum PS Dimension (more than 2.0mm), and loosely secure the presser with the screws.

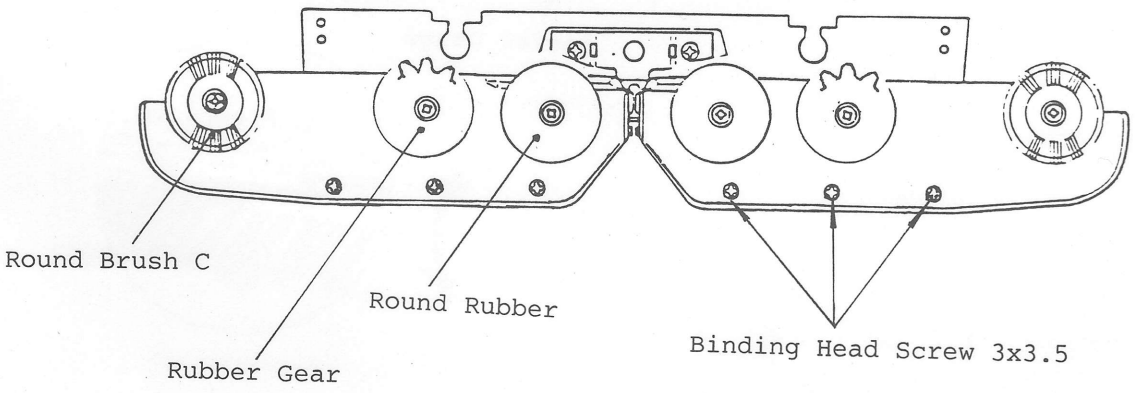


Figure 67.

2. Adjust the position of Fabric Presser by tapping it with the handle of screwdriver to obtain 1.5 to 2.0mm clearance between the presser edge and Sinkers, while measuring the clearance with feeler gauge.
When the positioning has been completed, tighten Binding Head Screws 3x3.5 to secure the adjustment.

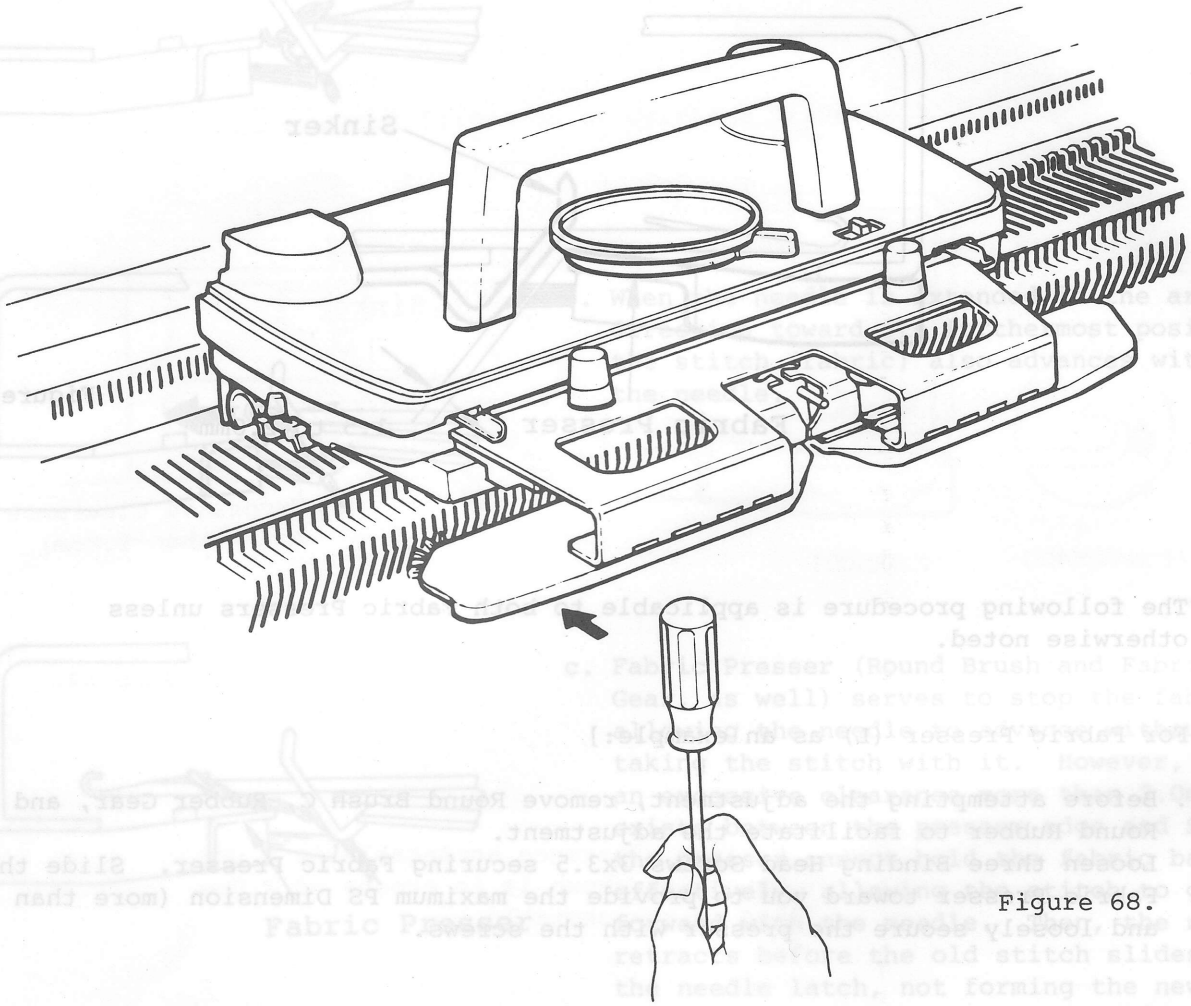


Figure 68.

10-5 YS Adjustment (Adjusting the clearance between Yarn Feeder and Sinkers)

1. YS Dimension.....0.3 to 0.7mm
   (The clearance between the edge of Yarn Feeder and Sinkers)

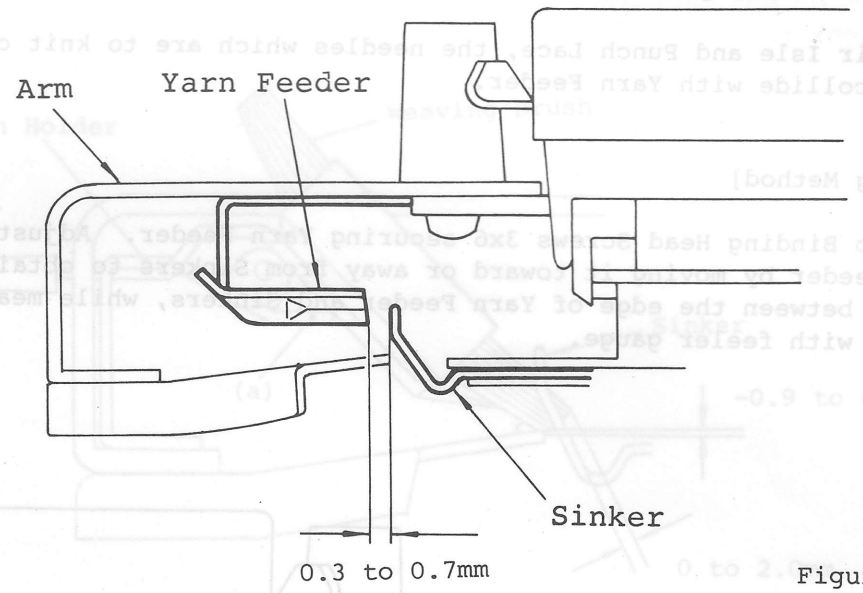


Figure 69.

[Defective Case]

(A) When the clearance is narrower than required:

The operation of the Carriage becomes heavy since Yarn Feeder rubbs Sinkers.

(B) When the clearance is wider than required:

1. In Punch Lace, the yarn (Nylon Thread or Thin Yarn) fed through the Yarn Feeder 2 cannot be caught by the needles which are to knit ground yarn, and the missed yarn floats on the back of the fabric.

2. In Fair Isle and Punch Lace, the needles which are to knit contrast yarn will collide with Yarn Feeder.

[Adjusting Method]

Loosen two Binding Head Screws 3x6 securing Yarn Feeder. Adjust the position of Yarn Feeder by moving it toward or away from Sinkers to obtain 0.3 to 0.7mm clearance between the edge of Yarn Feeder and Sinkers, while measuring the clearance with feeler gauge.

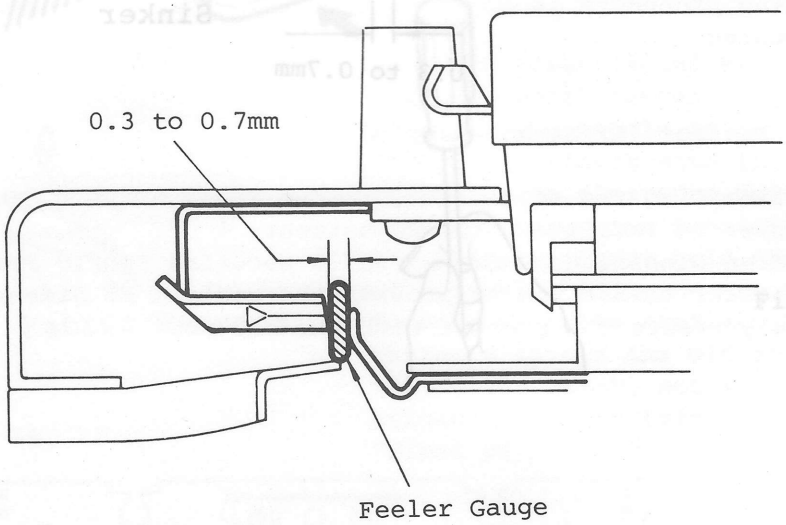


Figure 70.

10-6 Brush Holder Adjustment

1. The amount of vertical contact between Weaving Brush and Fabric Presser (cut-out portion).....-0.9 to 0.3mm

2. The amount of horizontal contact between Weaving Brush and Sinkers.....0 to 2.0mm

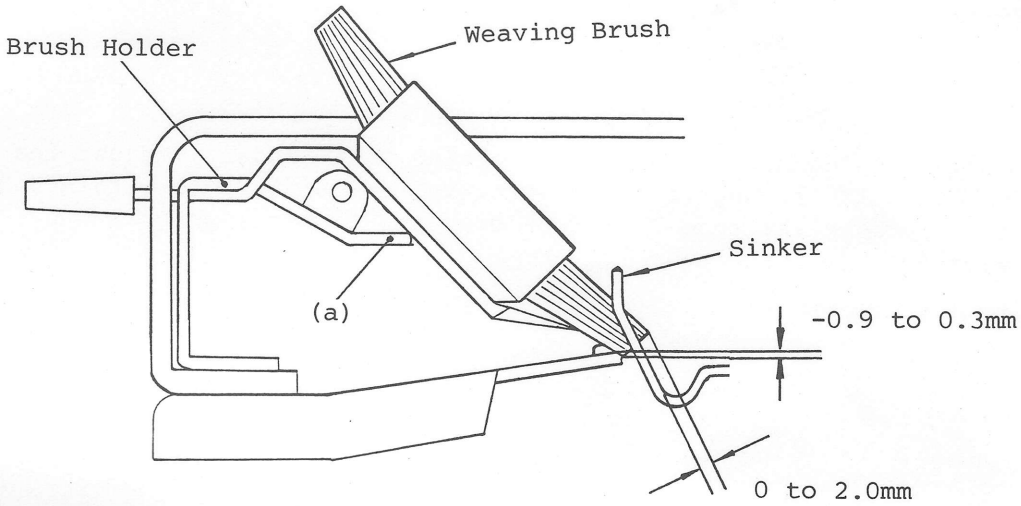


Figure 71.

[Adjusting Method]

Adjust the angle of Weaving Brush by bending the tip (a) of Brush Holder up and down using slotted point adjusting tool or pliers as shown in Figure 71.

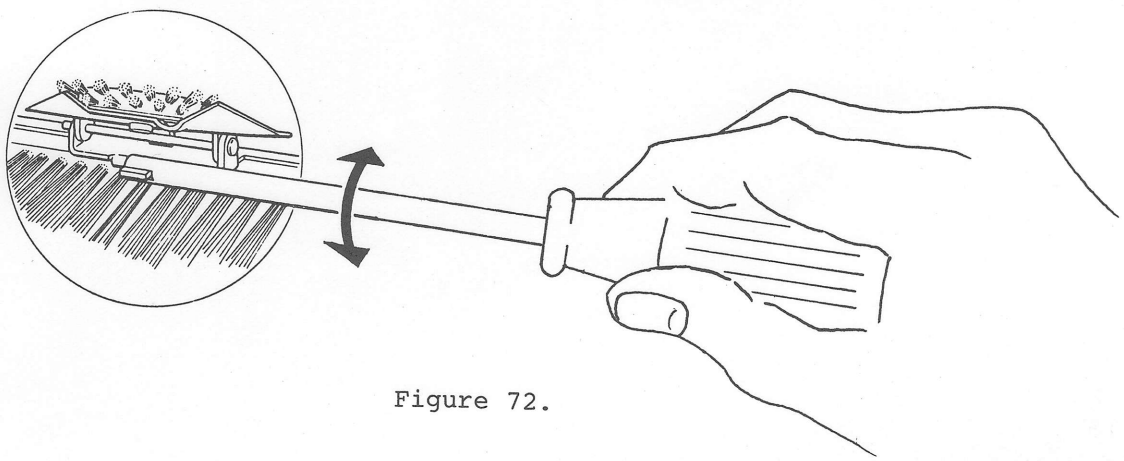
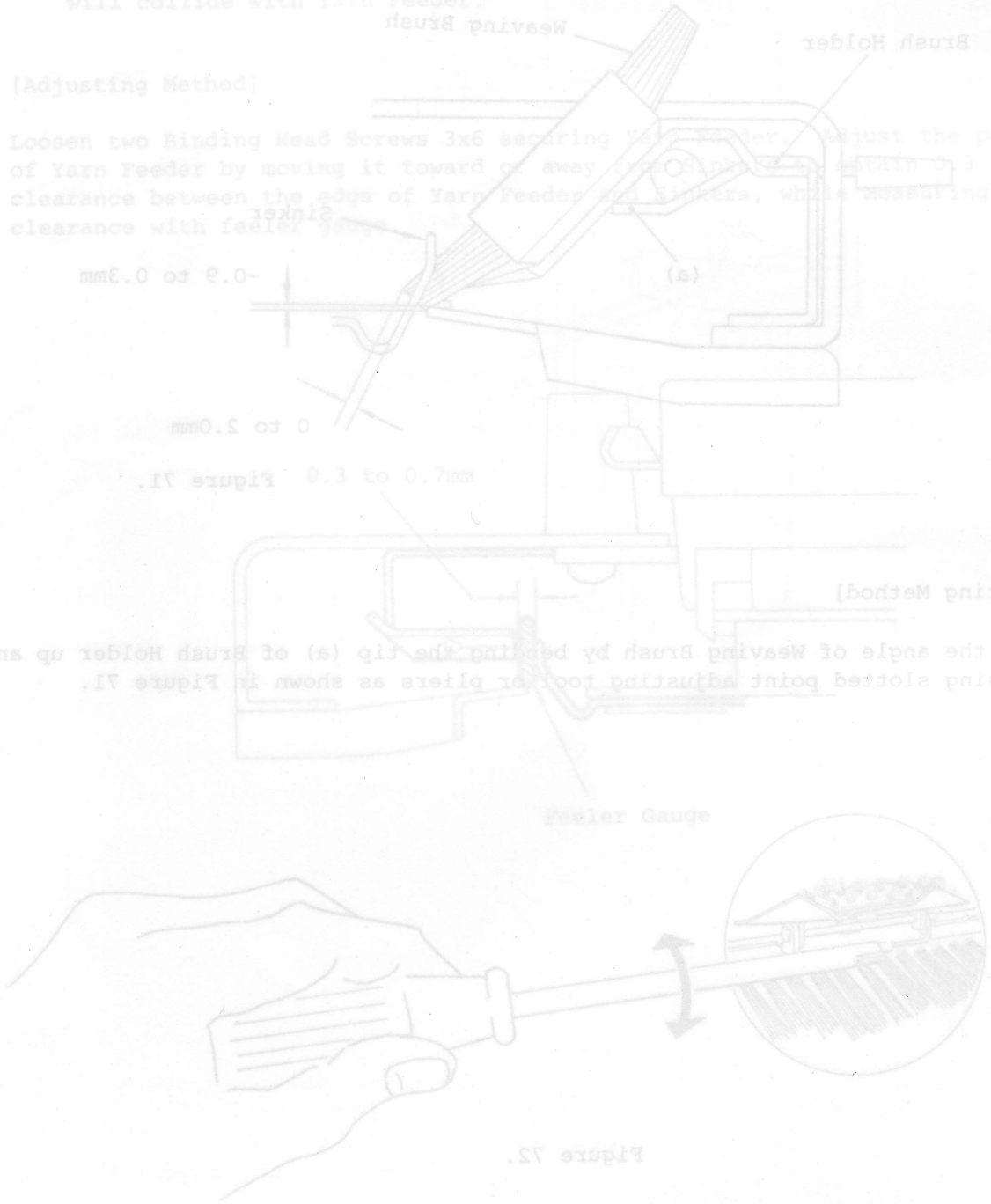


Figure 72.

[11] OTHER NOTES FOR THE MOD.155 USE

1. Take note the Latch Needle (01116813) is exclusive for MOD.155 knitter. When replacing the needles, use the above-mentioned needles only.

2. When operating MOD.155 knitter with Motor Drive Unit MOD.SA205, take note the working width available is limited to 90 needles wide only (between each 45th needle on both sides of center 0) for normal operation.
If the knitting width over 90 needles is set up, the excess needles cannot come out of the Carriage through Side Lever and the incorrect needle selection selection results.



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