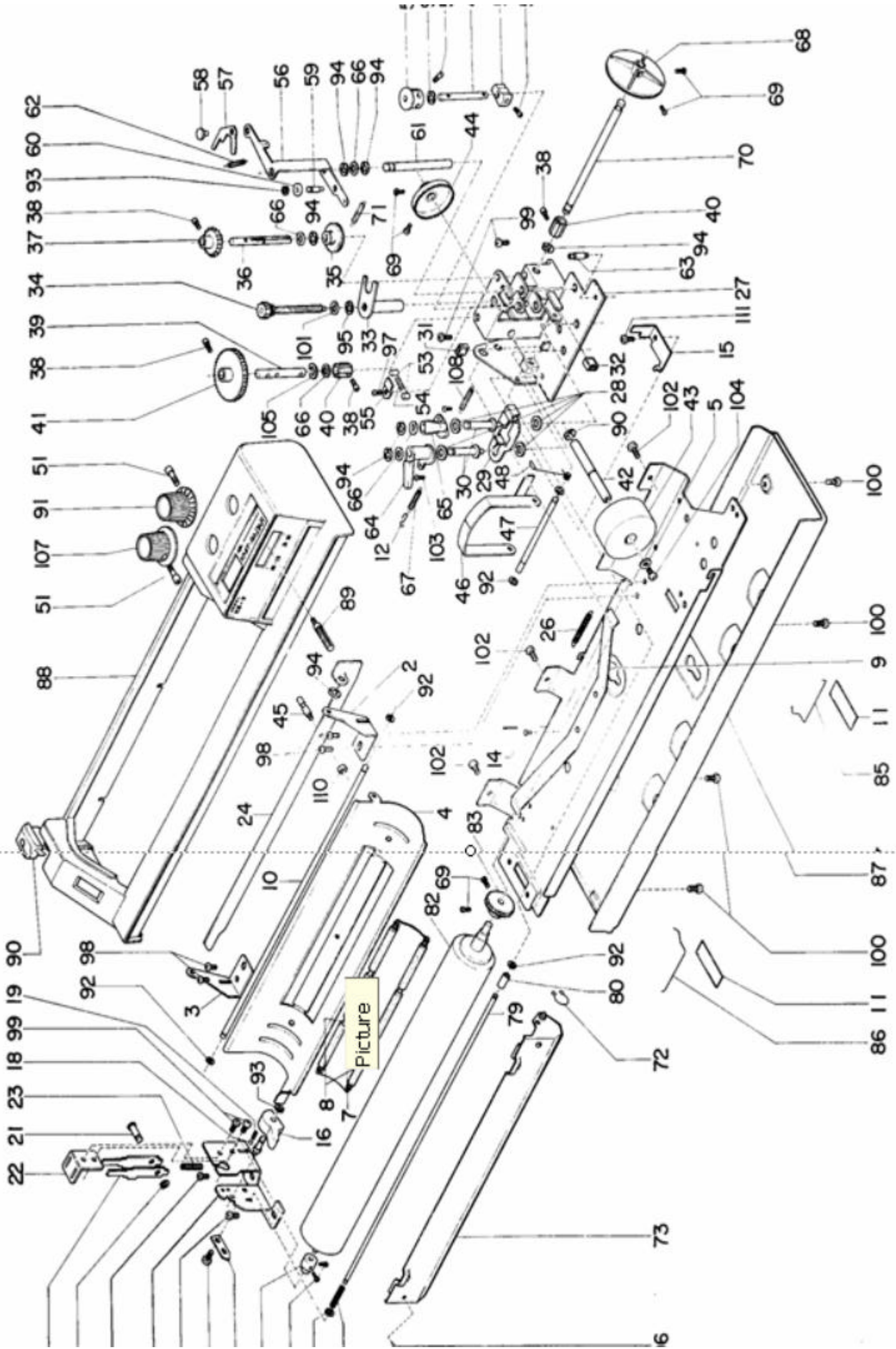


Service **M**anual

For

Knit - **R**adar



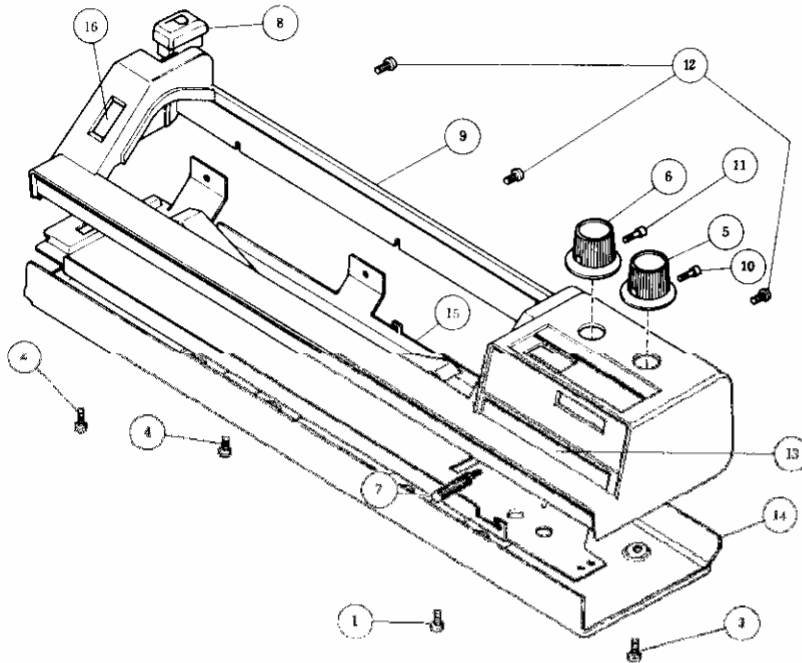
1. Nomenclature

- | | |
|--|---|
| 1. Base | 43. Row Scale |
| 2. Pan Arm (R) | 44. Crown Wheel |
| 3. Pan Arm (L) | 45. Slide Bar Spring Hanger |
| 4. Roller Pan | 46. Shutter |
| 5. Plain Washer 3 ϕ | 47. Shutter Shaft |
| 7. Roller Holder | 48. Shutter Spring (R) |
| 8. Feed Roller | 49. Shutter Cam Shaft |
| 9. Pan Spring U | 50. Shutter Cam |
| 10. Paper Pan Shaft | 51. Dial Screw |
| 12. Hook for Feed Cam Spring | 52. Change Cam A |
| 13. Frame (L) | 53. Notch Roller 4 x 4 |
| * Frame (R) Unit | 54. Ratchet Stopper Spring |
| 14. Round Head Rivet 2.6 x 3 | 55. Spring Holder |
| 15. Shutter Stopper | 56. Feed Lever |
| 16. Paper Lever | 57. Feed Pawl |
| 18. Steel Ball 3 ϕ | 58. Feed Pawl Rivet |
| 19. Paper Lever Spring | 59. Collar Shaft |
| 20. Push Bar | 60. Adjusting Collar |
| 21. Push Pin | 61. Feed Lever Shaft |
| 22. Push Cover | 62. Feed Pawl Spring |
| 23. Push Bar Spring | 63. Feed Cam Spring Hanger |
| 24. P Slide Bar | 64. Feeding Lever (L) |
| 26. Slide Bar Spring | 65. Feeding Lever (R) |
| 27. Frame (R) | 66. Spacer 5.3 ϕ x 9 ϕ x 0.2t |
| 28. Spacer 2.6 ϕ x 14 ϕ x 0.5t | 67. Feed Cam Spring (L) |
| 29. Feed Plate | 68. Friction Disc |
| 30. Feed Cam Arbor | 69. Friction Disc Screw |
| 31. Feed Cam Stopper (L) | 70. Friction Disc Shaft |
| 33. Friction Wheel Guide | 71. Feed Lever Spring |
| 34. Guide Screw | 72. Paper Cover Spring |
| 35. Friction Wheel | 73. Paper Holder |
| 36. Dial Shaft (R) | 79. Paper Cover Shaft |
| 37. Ratchet Wheel | 80. Paper Cover Collar |
| 38. Pinion Screw | 81. Paper Cover Shaft Spring |
| 39. Dial Shaft (L) | 82. Platen |
| 40. Pinion B | 83. Platen Wheel |
| 41. Set Wheel | 84. Platen Collar |
| 42. Row Scale Shaft | 85. Case Spring (R) |

- 86. Case Spring (L)
- 87. Case
- 88. Cover
- 89. Change Lever
- 90. Push Button
- 91. Feeding Dial
- 92. E Snap Ring 2 ϕ
- 93. E Snap Ring 3 ϕ
- 94. E Snap Ring 4 ϕ
- 95. E Snap Ring 6 ϕ
- 96. Round Head Rivet 2.6 x 4
- 97. ⊕ Pan Head Screw 2.6 x 4
- 98. ⊕ Pan Head Screw 3 x 3
- 99. ⊕ Pan Head Screw 3 x 4
- 100. ⊕ Truss Head Screw 3 x 4
- 101. Spacer 7.2 ϕ x 9.2 ϕ x 0.05t
- 102. ⊕ Round Head Screw 3 x 5
- 103. ⊕ Round Head Screw 2.2 x 5
- 104. ⊕ Binding Head Screw 3 x 7
- 105. Spring Washer Shaft Ring
6 x 10 x 0.3
- 106. Paper Holder Adjusting Plate
- 107. Row Number Dial
- 108. Feed Cam Spring (R)
- 110. Hexagon Nut 3 ϕ
- 111. ⊕ Binding Head Screw 3 x 5

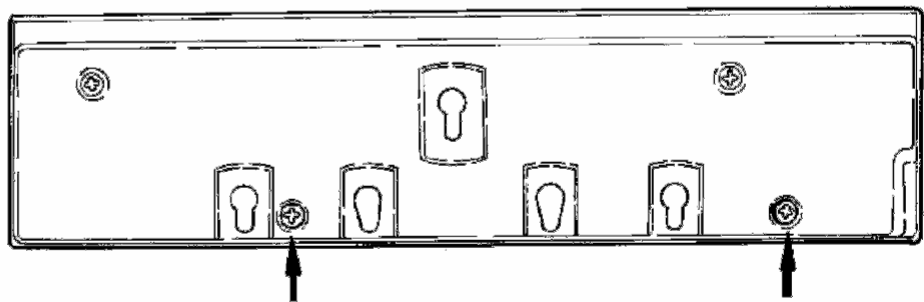
2. Disassembling

2 - 1 Disassembling of Case (Fig. 2)



- 1.—4. ⊕ Truss Head Screw 3 x 4
- 5. Feeding Dial
- 6. Row Number Dial
- 7. Change Lever
- 8. Push Button
- 9. Cover
- 10,11. Dial Screw
- 12. ⊕ Round Head Screw
- 13. Window for Feeding Lever
- 14. Case
- 15. Base
- 16. Window for Paper Lever

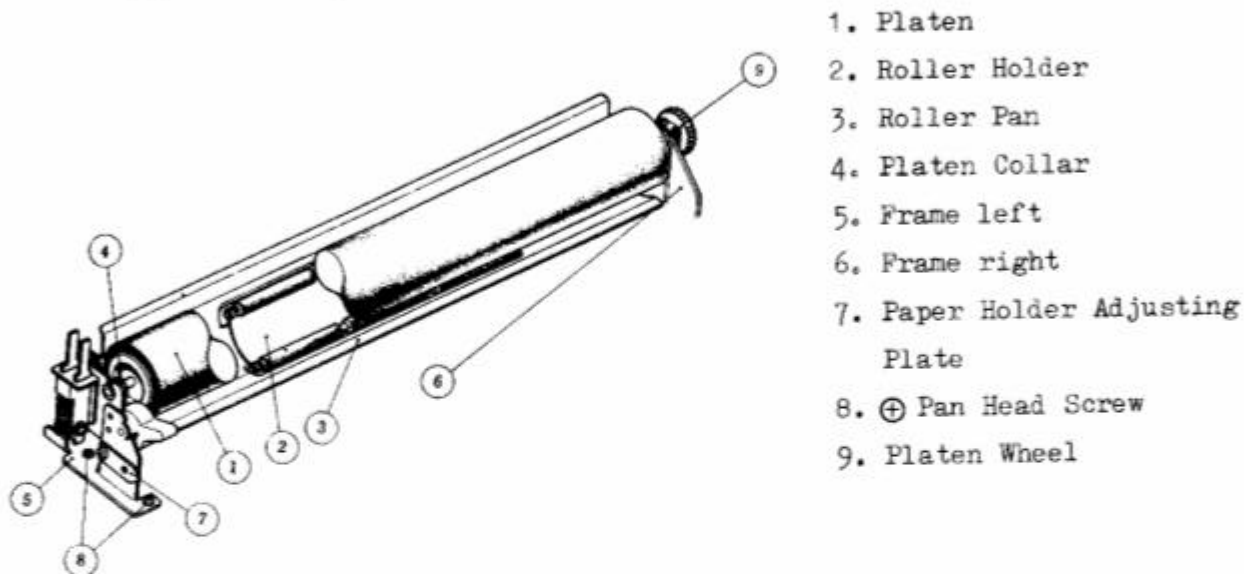
(I). Turn Knit Radar up side down, and remove two Screws pointed by the arrow, from Case. (Fig. 3)



- (I I). Loosen three Screws (12) which hold Cover on its back side.
- (III). Set Lever (7) to the left and remove it, turning to the counter clockwise direction with Duck Bill Plier or Needle Nose Plier.

- (I V). Insert Common Driver into the space under Push Button (8) and remove it by levering the driver.
- (V). Loosen two Screws (10,11) and pull up Feeding Dial (5) and Row Number Dial (6).
- (V I). Set Paper Lever (16) to ● mark and raise Paper Holder.
- (VII). Push left Feeding Lever into Cover and pull up Cover.

2 - 2 Disassembling of Platen (Fig. 4)



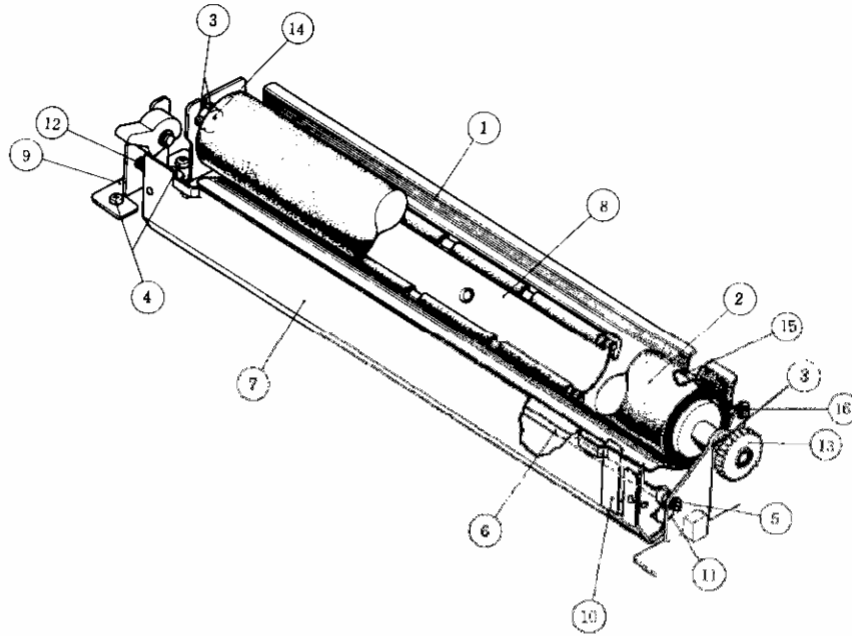
1. Platen
2. Roller Holder
3. Roller Pan
4. Platen Collar
5. Frame left
6. Frame right
7. Paper Holder Adjusting Plate
8. ⊕ Pan Head Screw
9. Platen Wheel

- (I). Loosen four Screws (4,9) on Platen Collar and Platen Wheel.
- (I I). Move Platen Collar (4) toward right.
- (III). Remove Platen Wheel (9).
- (I V). Pull up Platen.

2 - 3 Disassembling of Roller Pan (Fig.5)

- | | |
|---------------------------|----------------------|
| 1. Roller Pan | 6. Paper Cover Shaft |
| 2. Platen | 7. Paper Cover |
| 3. Friction Disc Screw | 8. Roller Holder |
| 4. ⊕ Pan Head Screw 3 x 4 | 9. Frame left |
| 5. E Snap Ring 2 φ | 10. Scale Holder |

- | | |
|------------------------------|--------------------------|
| 11. Paper Cover Spring | 14. Platen Collar |
| 12. Paper Cover Shaft Spring | 15. Roller Pan Shaft |
| 13. Platen Wheel | 16. E Snap Ring 2 ϕ |

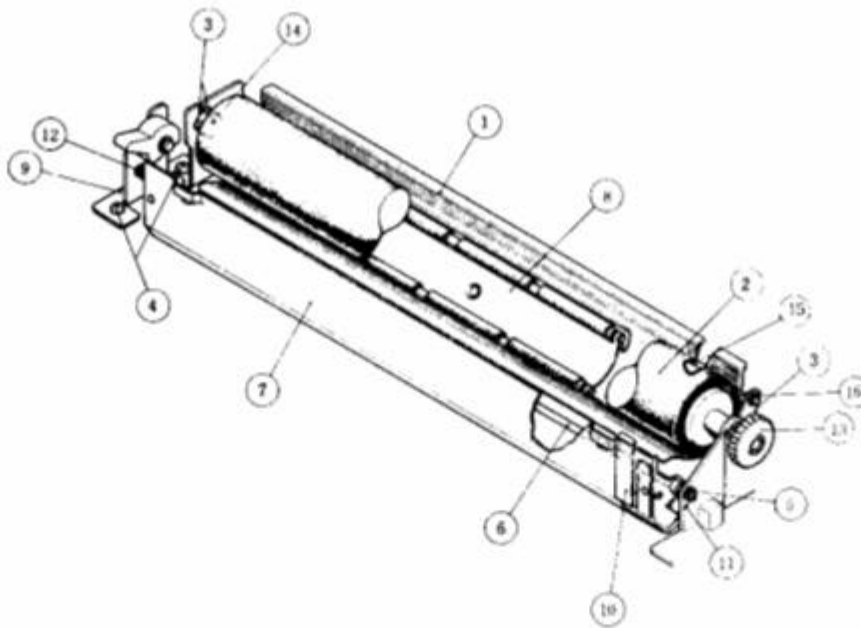


- (I). Pull up Roller Holder (8).
- (I I). Remove E Snap Ring (16) at the both right and left ends of Roller Pan Shaft (15).
- (III). Draw out Roller Pan Shaft (15) from Roller Pan (1).
- (I V). Roller Pan (1) will come off.

3. Assembling

3 - 1 Assembling of Roller Pan (Fig. 6)

- | | |
|------------------|--------------------------|
| 1. Roller Pan | 15. Roller Pan Shaft |
| 2. Platen | 16. E Snap Ring 2 ϕ |
| 8. Roller Holder | |

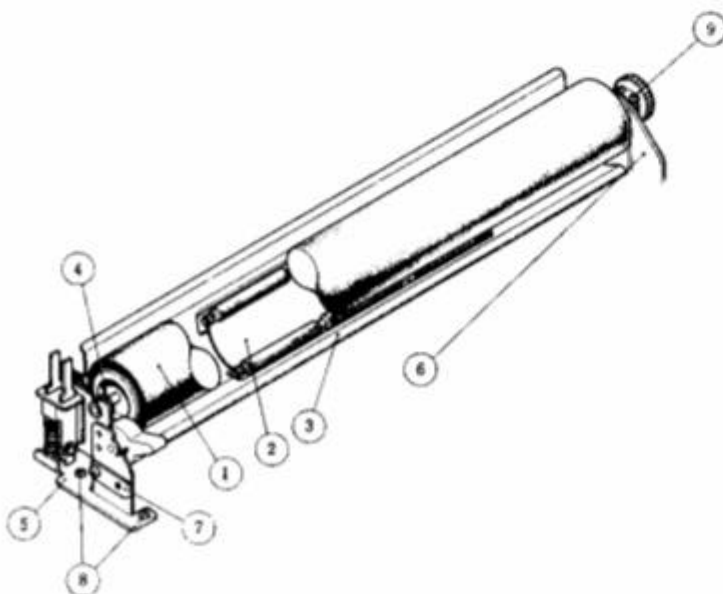


(I). Place Roller Pan (1) between Pan Arm left and Pan Arm right,
and insert Roller Pan Shaft (15) into Roller Pan (1) through
Pan Arm left and Pan Arm right.

(I I). Install E Snap Ring (16) to Roller Pan Shaft.

(III). Place Roller Holder onto Roller Pan (1).

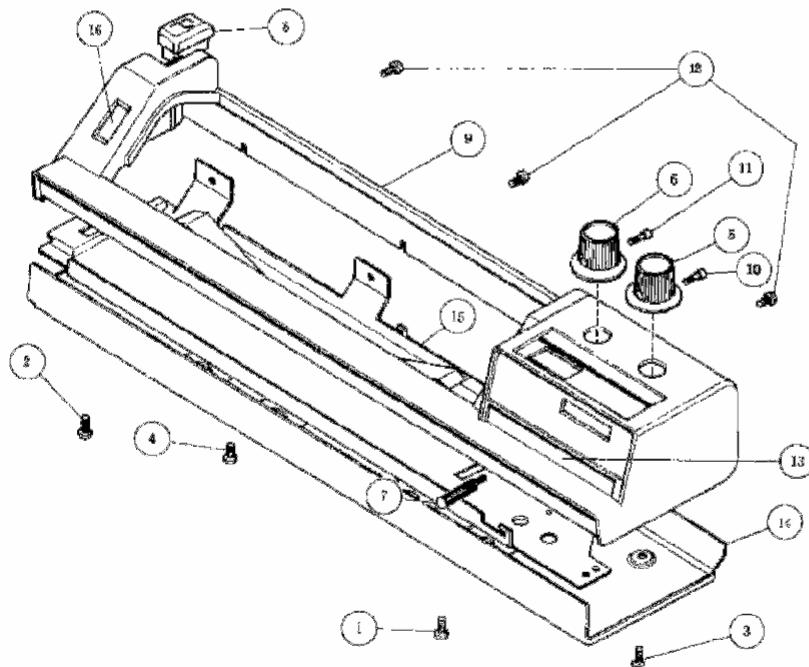
3 - 2 Assembling of Platen (Fig. 7)



1. Platen
2. Roller Holder
3. Roller Pan
4. Platen Collar
5. Frame left
6. Frame right
7. Paper Holder
Adjusting Plate
8. ⊕ Pan Head Screw
9. Platen Wheel

- (I). Set Paper Lever to the upper position (● mark).
- (I I). Insert Platen between Frames right (6) and left (5).
- (III). Insert Platen Wheel onto Platen Shaft pushing it toward Platen not to have too much play between Frame right and Platen, and fasten two Screws (9).
- (I V). Insert Platen Collar (4) into Frame left (5).
- (V). Pushing Platen toward Frame right (6) and Platen Collar in Frame left (5) to take horizontal play of Platen away from Frame left (5) and fasten two Screws (4) on Platen Collar (4).

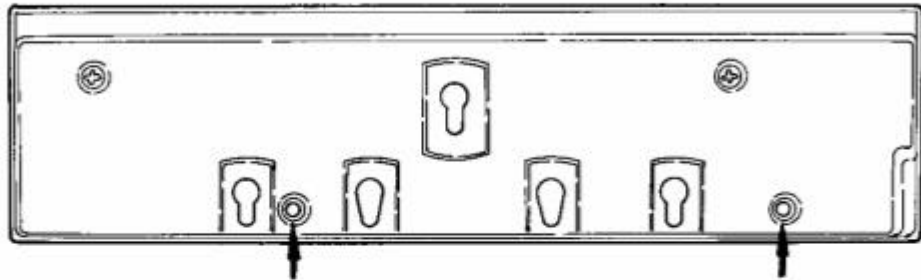
3 - 5 Assembling of Cover (Fig. 8)



- 1.—4. ⊕ Truss Head
Screw 3 x 4
5. Feeding Dial
6. Row Number Dial
7. Change Lever
8. Push Button
9. Cover
- 10,11. Dial Screw
12. ⊕ Round Head Screw
3 x 5
13. Window for Change
Lever
14. Case
15. Base
16. Window for Paper
Lever

- (I). Set Paper Lever (16) to ● mark and raise Paper Holder.

- (I I). Pushing Feeding Lever inside with finger, put Cover (9) onto Case (14).
- (III). Fasten two Screws (1,2) to Case (14). (Fig. 9)



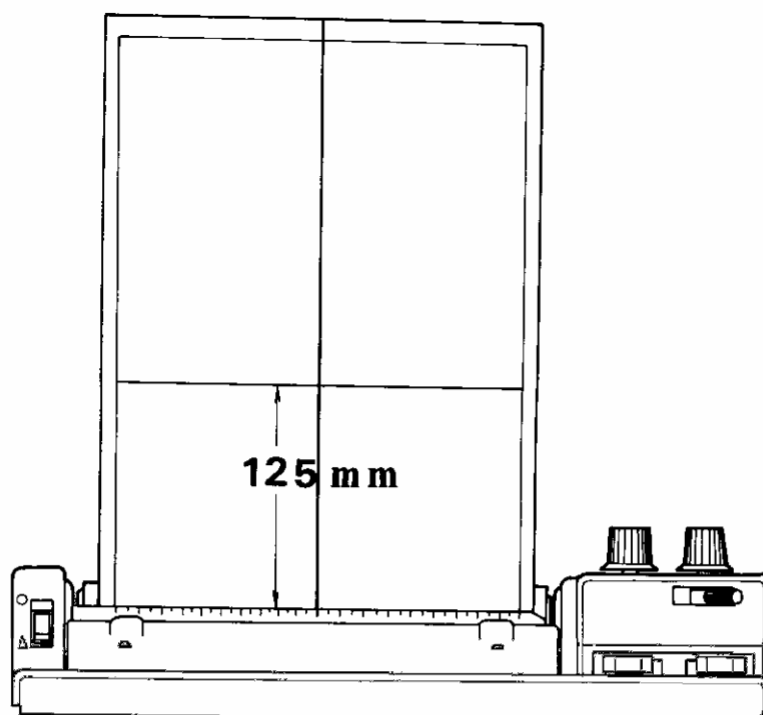
- (I V). Tighten three loosened Screws (12) at the back side of Cover.
- (V). Insert Feeding Dial (5) and Row Number Dial onto Shafts and fasten them with two Screws (10,11).
- (V I). Install Change Lever (7) to Change Cam A with Plier.
- (VII). Insert Push Button (8) onto Push Bar.

4. Adjustment of each part

4 - 1 How to adjust when Pattern Paper is not fed constantly.

* (FEEDING STANDARD)

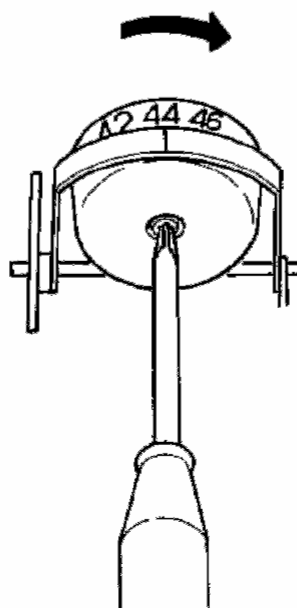
The 110 ± 1 times operation of Carriage with Row Scale set at 44, is accompanied by 125 mm long Pattern Paper feeding.
(Fig. 10)



(I). How to adjust in case 125 mm long Pattern Paper feeding accompanies less than 108 times Carriage operation.

* Correcting Method

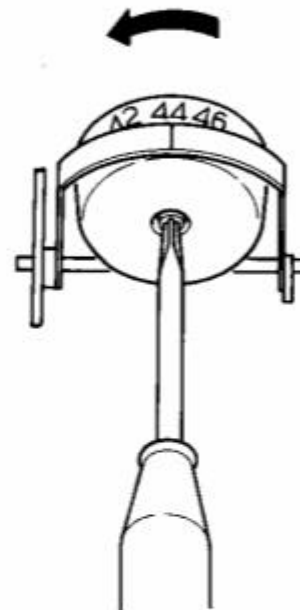
Count the number indicated on Row Counter after feeding Pattern Paper by 125 mm, loosen Screw and turn Row Scale as much graduation as $0.4 \times$ (the number of actual rows in 125 mm length) clockwise. (Fig. 11)



(I I). How to adjust in case 125 mm long Pattern Paper feeding accompanies Carriage operation more than 112 times.

* Correcting Method

Loosen Screw and turn Row Scale as much graduation as $0.4 \times$ (the number of actual rows in 125 mm length) counter clockwise. (Fig. 12)

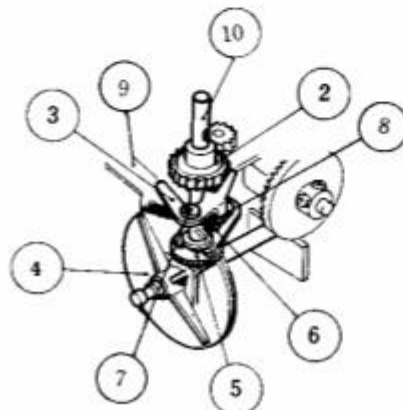


(III). Check the pressure of Friction Disc.

* (STANDARD)

The pressure of Friction Disc is 800g.

* Correcting Method (Fig. 13)

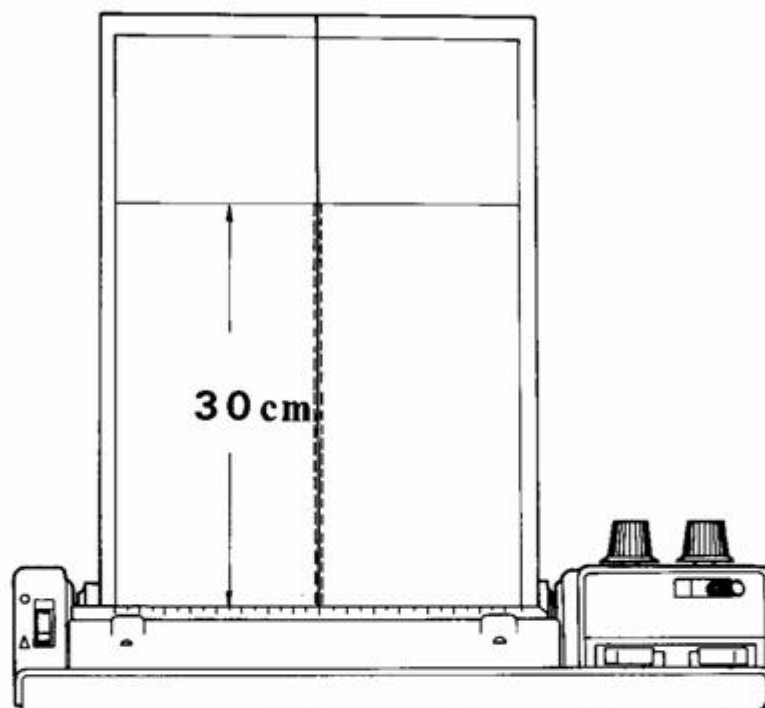


If the pressure of Friction Disc is weaker than 800g, loosen two Screws on Friction Disc (4) and adjust the pressure to 800g or replace Slide Bar Spring at P Slide Plate with a new one.

4 - 2 How to adjust when Pattern Paper is not fed horizontally.

* (STANDARD)

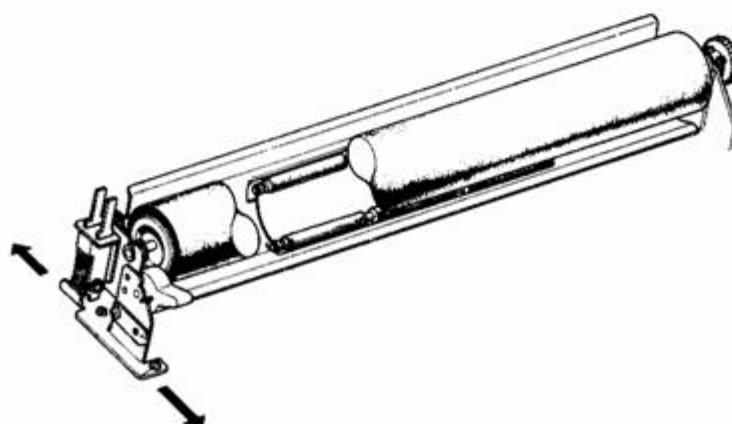
When Pattern Paper is fed by 30 cm, the gap between center line of Scale and Pattern Paper is within 1 mm. (Fig. 14)



(I). How to adjust when the center line of Pattern Paper slips to the right over 1mm.

* Correcting Method

Loosen two Screws (8) on Frame left and move Frame left forward. (Fig. 15)



(I I). How to adjust when the center line of Pattern Paper slips to the left over 1 mm.

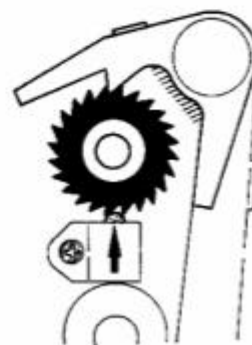
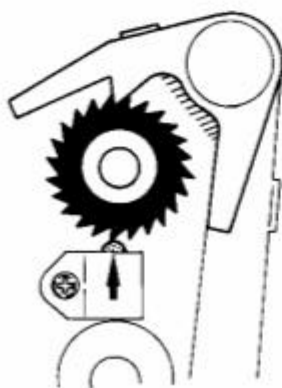
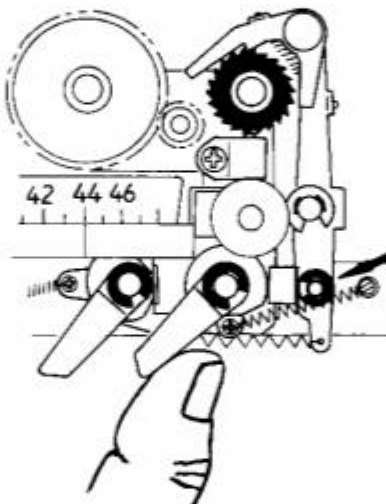
* Correcting Method

Loosen two Screws (8) on Frame left and push it backward.

4 - 3 How to determine the proper size of Adjusting Collar.

See a Collar of which size will, when you swing Feeding Lever as it goes with your finger, let Notch Roller come precisely between the teeth of the Ratchet Wheel Gear.

(Fig. 16, 17, 18)



5. Failures and Diagnoses

Failures	Points to be checked	Cause	Remedy
The length of fabric is not correct as compared with the correct pattern on Pattern Paper.	Check the surface of Friction Disc.	If Friction Disc is stained with oil, it will slip.	Clean up the surface of Friction Disc with thinner.
	Check the surface of Platen.	If Platen is stained with oil, it can not feed Pattern Paper.	Clean up the surface of Friction Disc with thinner.
	Check Friction Wheel.	If Friction Wheel is stained with oil, it will slip.	Clean up Friction Wheel with thinner.
		If Friction Wheel is stript, it will slip.	Riplace Friction Wheel with a new one.
	Check "FEEDING STANDARD" to fed Pattern Paper.	If Row Scale is not adjusted well, Pattern Paper is not fed correctly.	Adjust Row Scale.
The center line of Pattern Paper slips toward right or left.	Check how Roller Holder presses Platen.	If the pressure of roller Holder at right not equal to as at left, Pattern Paper slips.	If Roller Holder is bent, correct it or replace it with a new one.
	Check the condition of Roller Pan.	If Roller Pan is bent then its pressure on either side will not be equal or Roller will touch Platen.	If Roller Pan is bent, correct it or replace it with a new one

Failures	Points to be checked	Cause	Remedy
	Check the play of Platen.	If Platen has too much play and moves right and left, Pattern Paper will slip.	Loosen two Screws on Platen Collar, push Platen Collar toward left, and fasten two Screws.
	Check the condition of Frame left.	If Frame, left is set in too close position toward you, Paper will slip to the left.	Loosen two Screws on Frame left, and move it backward.
		If Frame left is set in too far position from you, Pattern Paper will slip to the right.	Loosen two Screws on Frame, left, and move it forward.
Pattern Paper is not fed at all.	Check Rivet of Feed Pawl.	If Feed Pawl is not fixed perfectly by Rivet, Feed Pawl Will get loose, failing to move Ratchet Wheel.	Fix Feed Pawl correctly with Rivet. If irreparable, replace Feed Pawl with a new one.
	Check Adjusting Collar.	If E Snap Ring on top of Adjusting Collar is lost, it will come off Feed Lever and Feed Plate will not be able to push Feed Lever.	Install Adjusting Collar and E Snap Ring.

Failures	Points to be checked	Cause	Remedy
	Check Feed Pawl.	If Feed Pawl is bent, it can not turn Ratchet Wheel.	Correct the bent Feed Pawl. If irreparable, replace Feed Pawl with a new one.
	Check how Roller Pan touches Platen.	If Roller Pan touches too tightly, Platen can not turn.	Correct that bent part of Roller Pan which touches it.
	Check the condition of Roller Pan.	If Roller Pan moves under Paper Cover Shaft, Roller Holder will not return to normal position, when you move Paper Lever to ▲ mark.	Push up Roller Pan so it will come over Paper Cover Shaft with a Driver.
Pattern Paper can not be inserted into Knit Radar.	Check Roller Pan Shaft.	If E Snap Ring comes off, Roller Pan Shaft will come off too, and Roller Pan will touch Platen.	Set Roller Pan Shaft in normal position and install E Snap Ring upon it.
Push Button does not return smoothly.	Check the condition of Push Bar.	If the surface of Push Bar is uneven, the movement of Push Bar will not be smooth.	Grind the surface of Push Bar with a file or sand paper.
Difficult to see the number on Row Scale.	Check the position of Shutter Stopper.	If the shape of Shutter Stopper is not correct, it will hide Row Scale.	Correct the shape of Shutter Stopper to let the numbers on Row Scale be seen

Failures	Points to be checked	Cause	Remedy
	Check the clearance between Shutter and Cover.	If Shutter touches Cover, Shutter can not move smoothly.	Correct Shutter so as not to touch Row Scale.
	Check the clearance between Shutter and Row Scale.	If Shutter touches Row Scale, Shutter can not move smoothly.	Correct Shutter so as to touch Row Scale.