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Service Manual Part 1:

For S.I.T./SUPERBA Knitting Machine Products sold under the Brand Names SUPERBA, SINGER, WHITE, PHILDAR.

This service manual covers the following:

- Yarn Guide/Tension Unit
- Motor Drive
- Knitting Retainer Accessory
- Plastic Bed 9mm Gauge Hobby Knitting Machines Models SB100, S7, D7, S9.
- 4 Colour Yarn Changer
- Basic Parts/Repair for most Double Bed Model Knitting Machines models including Light Scanning and Pressure Pad models.
- Note: see Service Manual Parts 2 & 3 for additional detailed repair, parts and service information.

KNITTER SERVICE MANUAL

White Sewing Machine Company

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WHITE SEWING MACHINE
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Ontario, Canada

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DISASSEMBLING AND REMOUNTING OF THE TENSION UNIT

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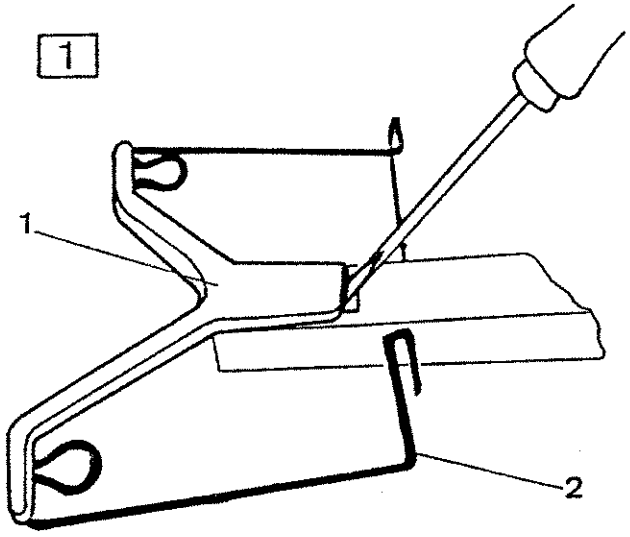

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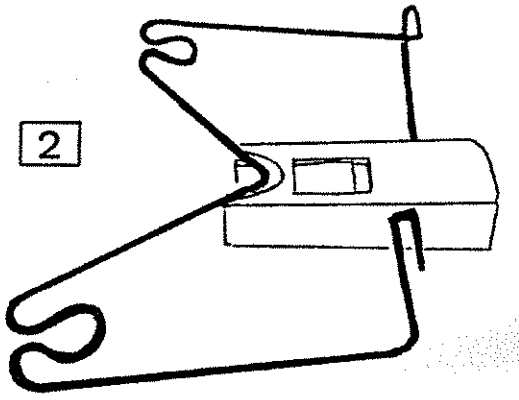

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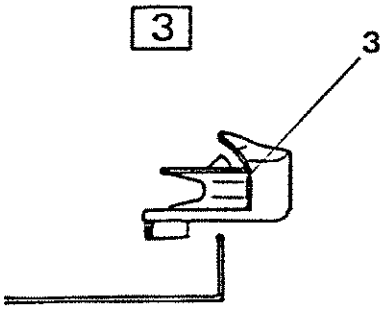

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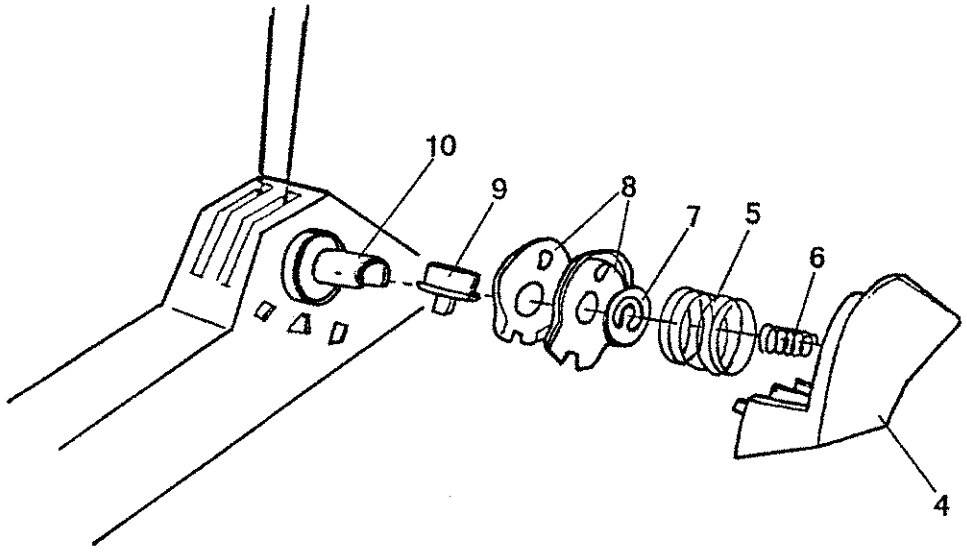


DISASSEMBLING OF THE TENSION UNIT

1. Remove the tension unit yarn retainer (1) pushing it first downwards, then forwards until it is completely disengaged, without trying to remove the same time the front yarn-guide (2).

2. This piece is released automatically once the yarn retainer removed.

3. Remove the two pulleys with their guides (3).

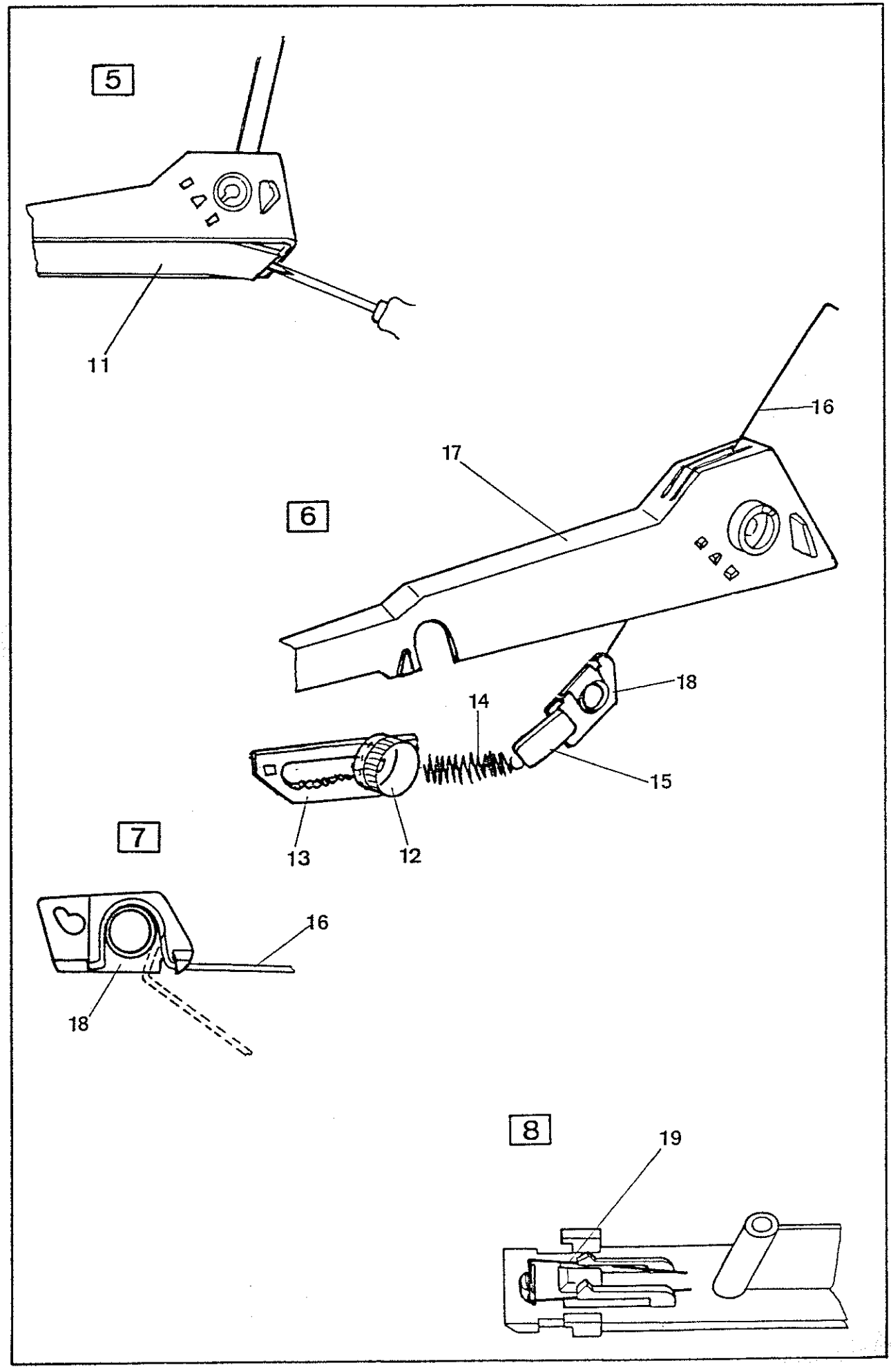
4. Remove one of the assembling heads (4) simply pinching it.
   This allows to withdraw : the pressing spring (5), the brake spring (6), the special washer (7) and the two braking discs (8).
   Let fall out the small brake pusher (9).
   Disassemble the other side the same way.
   Then remove the tension unit shaft (10)

5. By means of a screwdriver, raise the back part of the tension unit bracket (11) and pull it backwards to withdraw it.

6. The remaining parts are thus liberated and can be removed in this order : the setting knobs (12) , the two racks (13) , the tension springs (14) and the connecting parts (15) .

7. Remove the tension units (16) from the cover (17) and separate them from their hubs (18) .

8. The tension unit bracket spring (19) is removed simply by extraction.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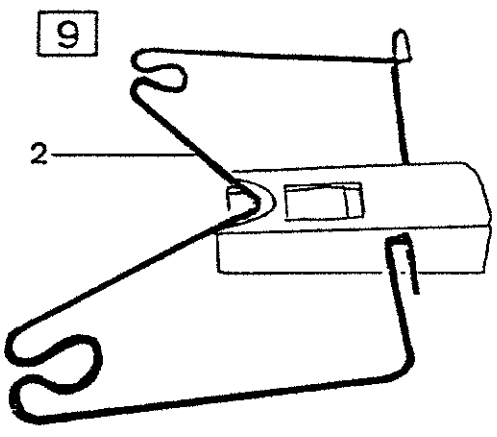

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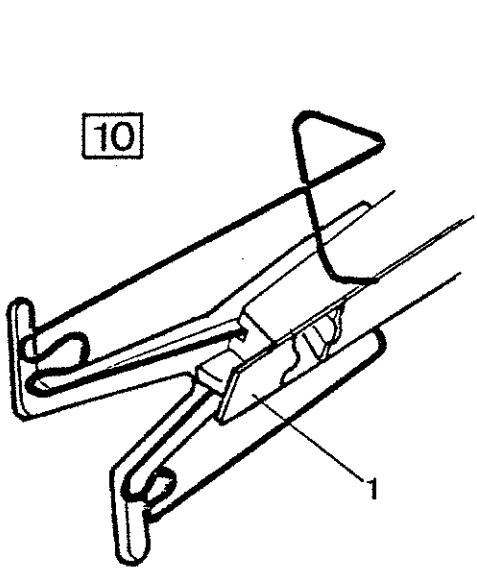

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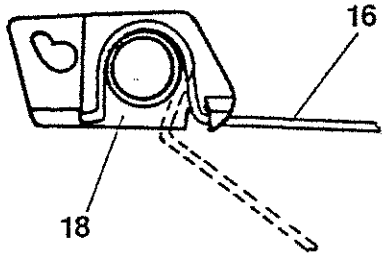

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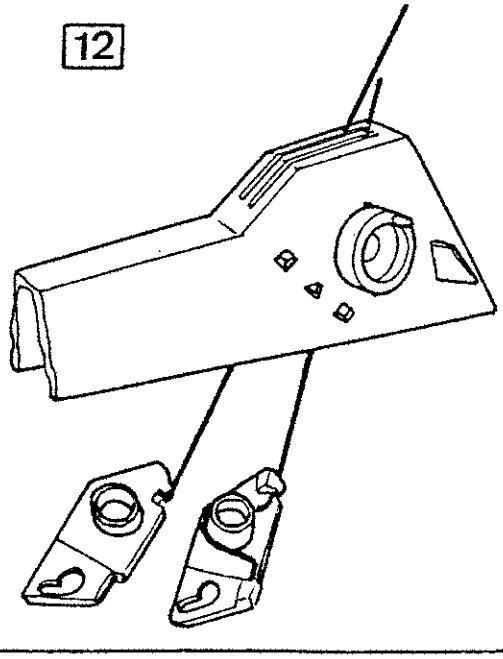

REMOUNTING OF THE TENSION UNIT

9. To start with, set the front yarn-guide (2).

10. Introduce the tension unit yarn retainer (1) in its housing.

11. Assemble the two tension units (16) to their hubs (18).
Caution : the two tension units are identical, but not the hubs : there is a left and a right hub.

12. Let fall the tension units thus assembled in the corresponding slots.
Watch carefully the position of the tension unit in the cover : this is very important, the tension unit won't work if it is remounted the wrong way.

13. Set the pulleys with their guides (3) by simple pression.

14. Take the right setting knob (12) and introduce it into the rack (13) , of which the teeth are upwards, the cranks downwards and towards the inside. The flat part of the knob (in front of number 8) has to be aligned with the flat part in the middle of the rack.
In this position the numbers of the knob (12) have to be readable.

15. Set these two parts assembled in the right slot in the middle of the cover and turn the knob towards you until the number 3 is upwards and the rack on the end of its stroke on the back.

16. Hook the tension spring (14) onto the rear crank of the rack. Take the connecting part (15) (teats upwards and towards the inside), hook it into the boucle of spring (14) and into the hub (18) .
Bewaring to move the right side thus finished, assemble the left side the same way.

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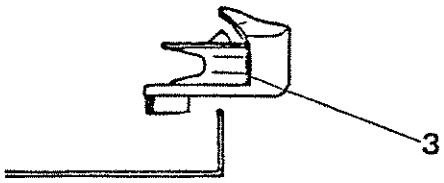

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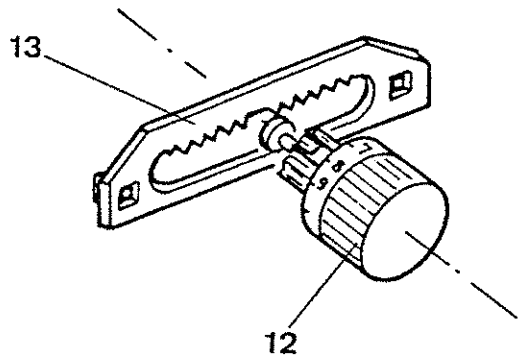

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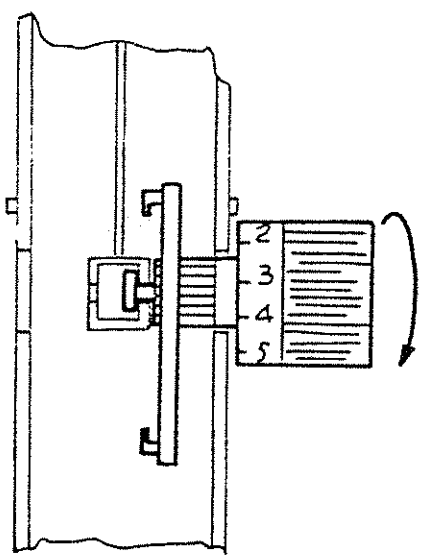

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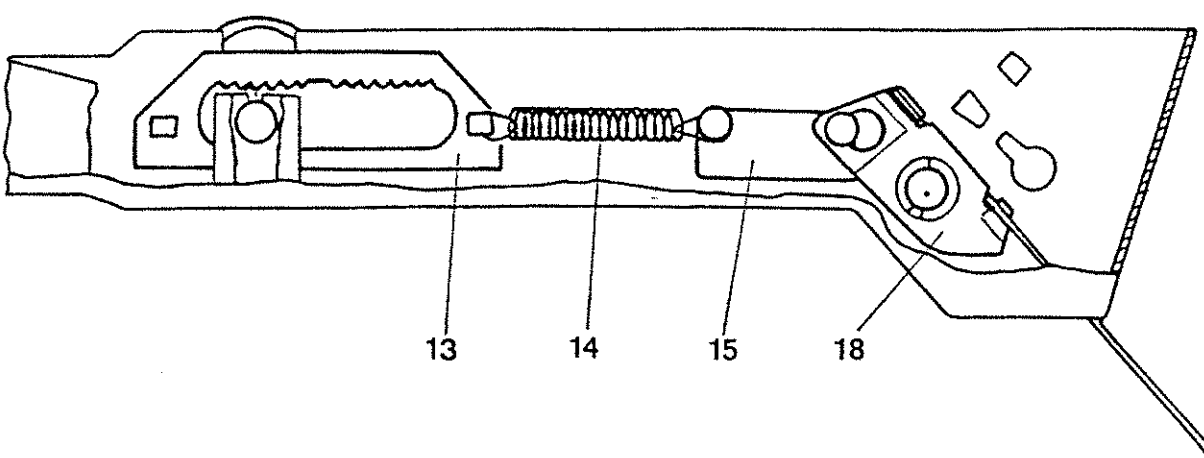

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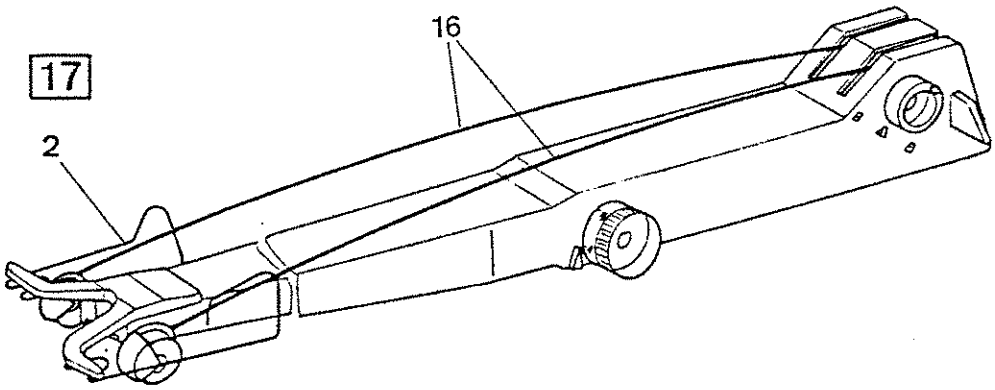

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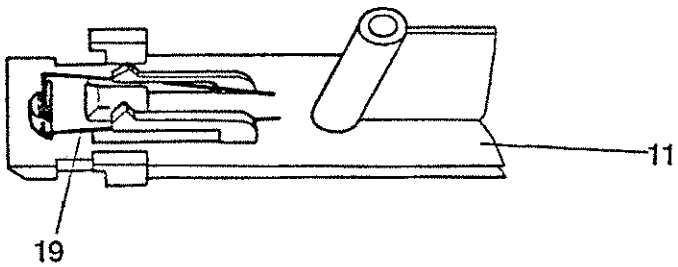

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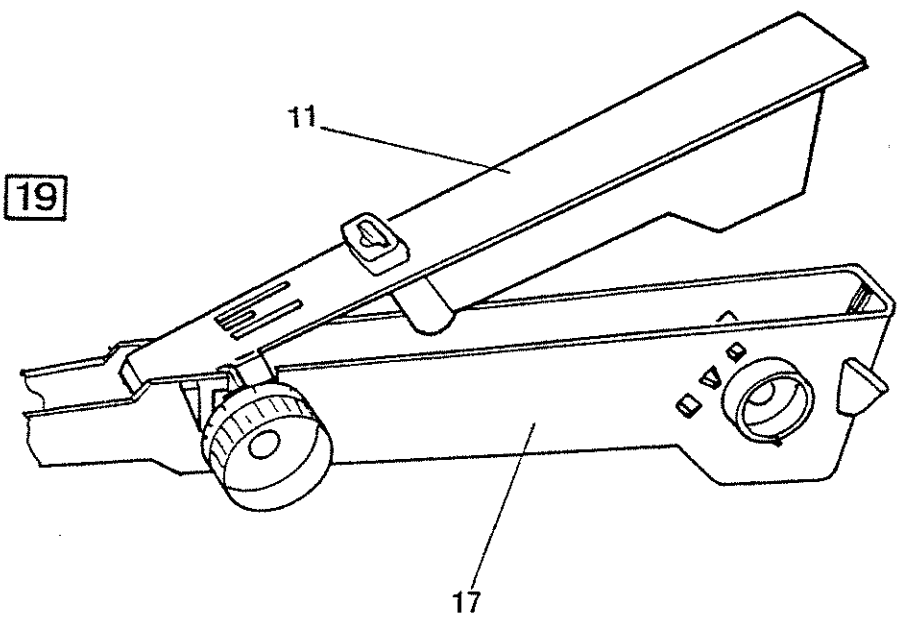
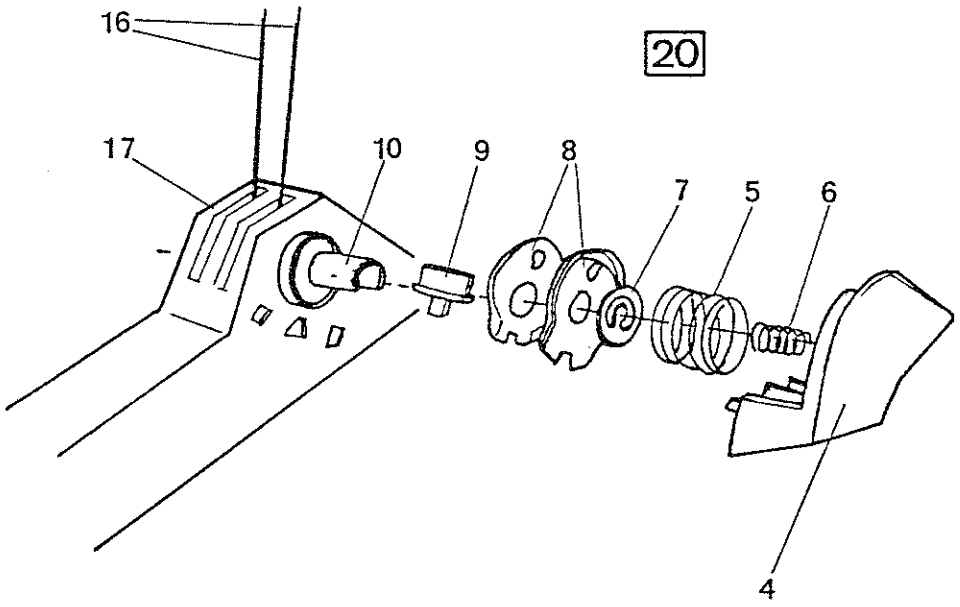


17. To facilitate the rest of the remounting, set the two tension units (16) carefully - one after the other, under the front yarn-guide (2) and place the assembly on the table.

18. Set the spring (19) onto the tension unit bracket (11).

19. Introduce the two cramps of tension unit bracket (11) into the notches of tension unit cover (17) just in front of the setting knobs and pushing forwards, lower the back part of the tension unit bracket, its vertical part being guided in the slot on the back part of the tension unit cover.

20. Take the tension unit shaft (10) and introduce it into the central hole on the side of the cover, its opening towards the slot. Press on the tension unit slightly to align the round hole of the hub with the one of the cover. Make go across the shaft completely, aligning the round hole of the other hub with the one of the cover on the opposite side.
The shaft should pass the cover the same distance both sides.
Check the good functionning of the two setting knobs (12) , which have to turn from 1 to 11 and from 11 to 1 without any difficulty.
Introduce one brake pusher (9) into the tension unit shaft (10) making sure that its body is well in the interior of the shaft and its tongue in the slot of the cover (17).
Set a braking disc (8) onto the shaft, bulged part upwards and an other one bulged part downwards, then a special washer (7) , which's shape corresponds to the shape of the shaft. Set afterwards the small brake spring (6) into the shaft on the special washer and the big pressing spring (5) in the hollow of the braking disc.
Take the corresponding assembling head (4) , its point backwards and downwards and cap the whole braking assembly by this piece, introducing its two small cramps into the slots forseen for this purpose. Assemble the other side the same way.
Check now the good functioning of the braking system the following way :
The tension units (16) being held under the front yarn-guide (2) , separate by means of a finger the two braking discs touching each other. You should feel a slight braking, which allows the yarn slip easily between the two braking discs.
Free now the tension unit from under the front yarn-guide and let it go up slowly. As soon as the pulley is about ten cm. above the front yarn-guide, you should feel a much stronger braking between the two braking discs.
If not, check the remounting of the braking system.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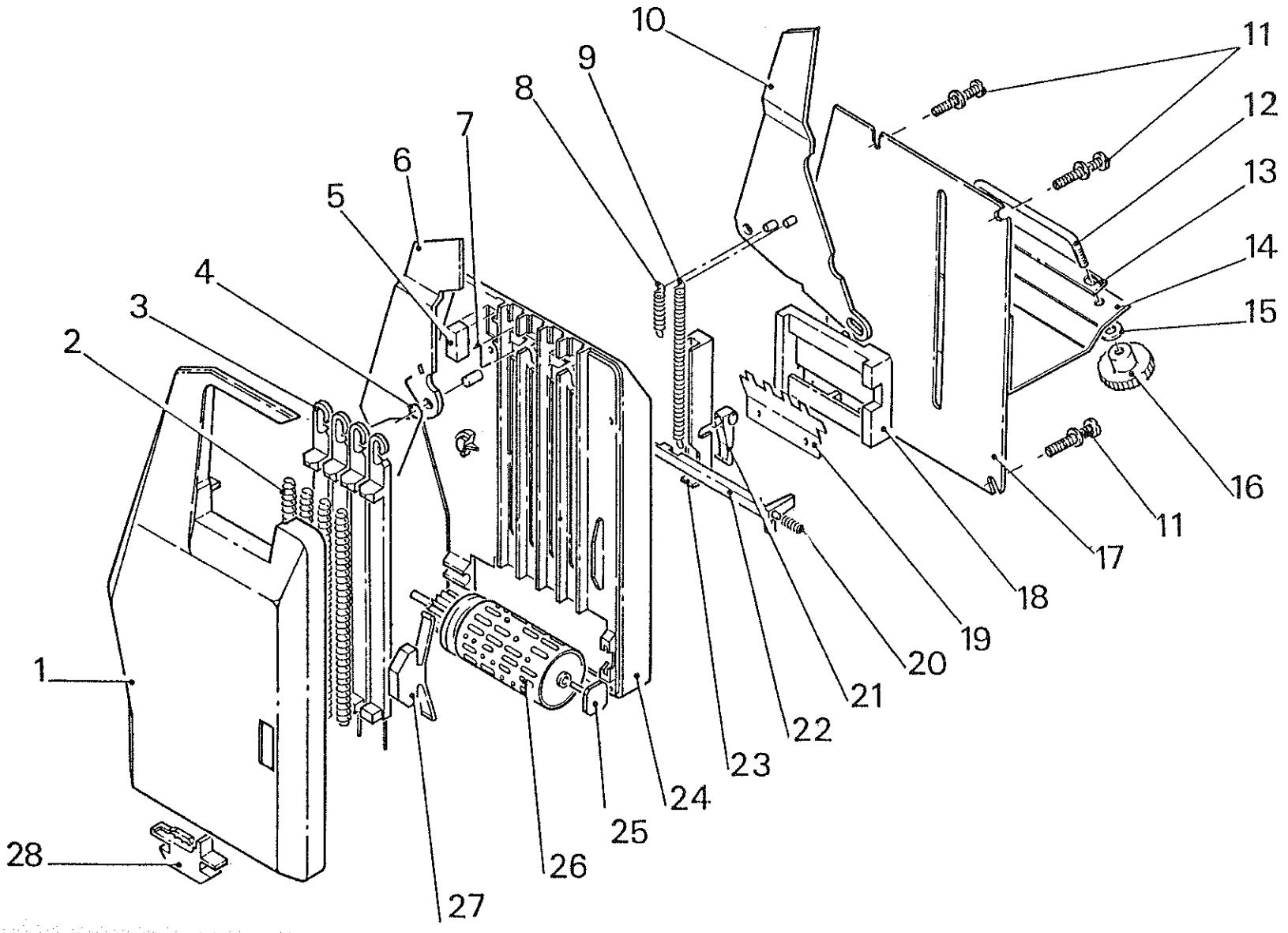
DISMOUNTING – REMOUNTING

OF THE YARN DISTRIBUTOR ASSEMBLY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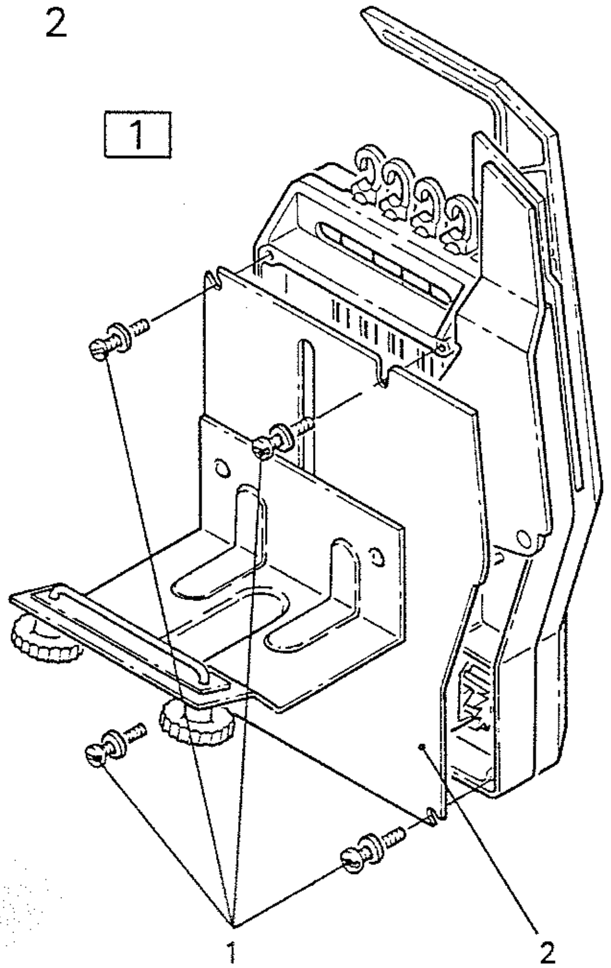

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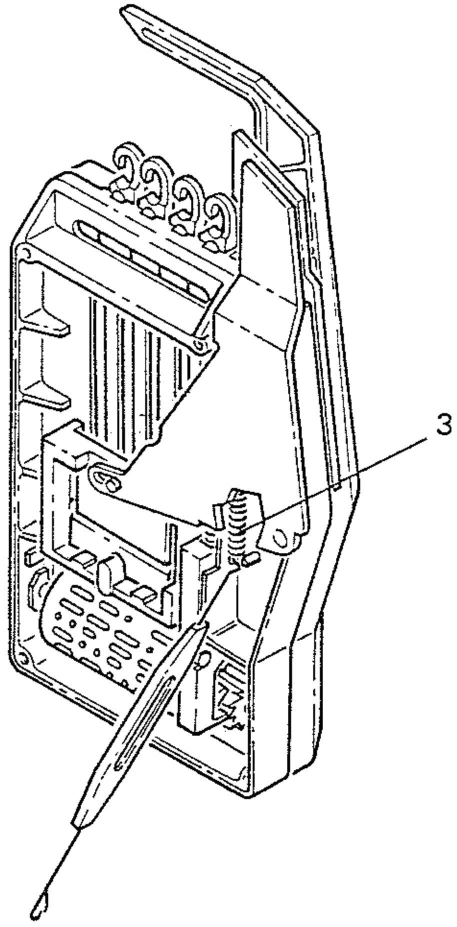

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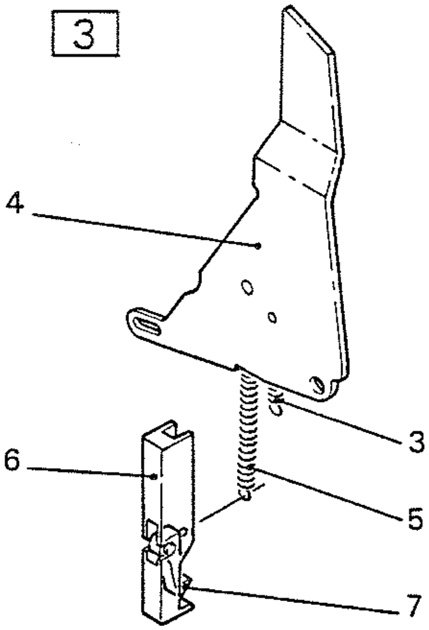

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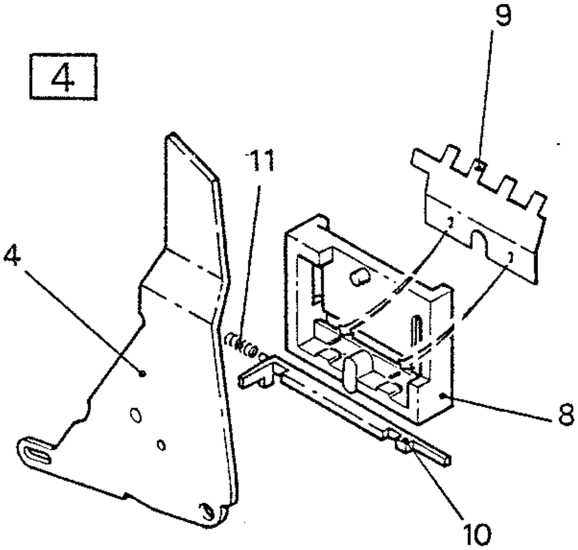


I - Unscrew and withdraw the 4 fixing screws (1) of the support (2)

Remove the support in order to have access to the mechanism inside the casing of the 4 colours changer.

2 - Unhook the drawback spring (3) from the casing (For more facilities, you can use the hook of the latch needle tool).

3 - Take off the operating lever (4) with its drawback spring (3) and click spring (5) as well as the click-holder (6) and the click (7)

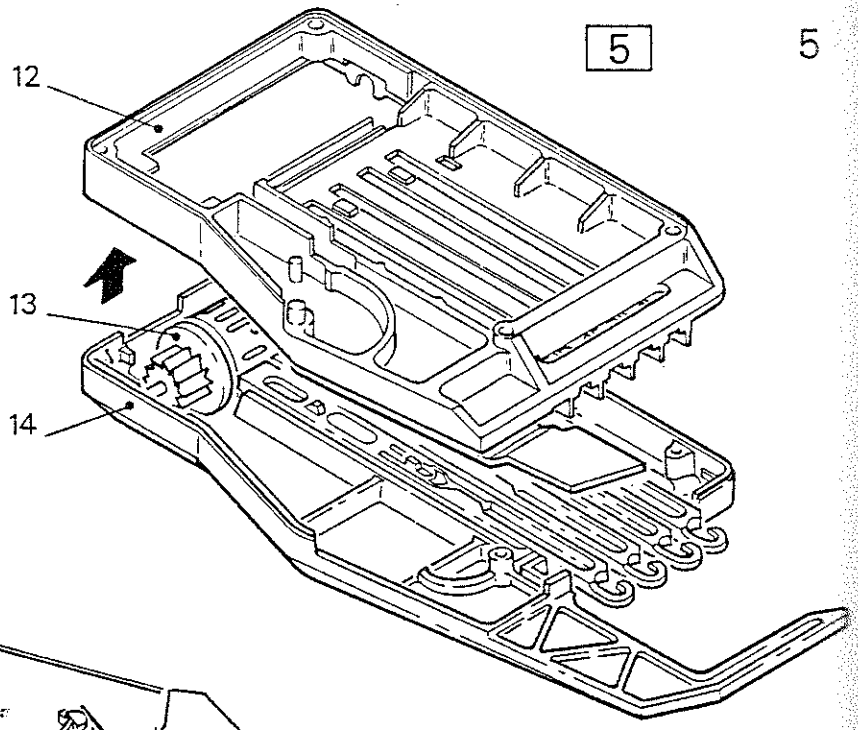
4 - And now, take off the slider (8) and the driving plate (9) , then remove the stopper (10) with its spring (11)

5 - Place the assembly on the table, the cover of the casing against the table. Remove the casing (12) keeping the drum (13) in place against the cover (14) so that the distributor hooks, the springs and the drum can stay in position into the cover.

6 - Turn the cover (12) upside down and remove the selection knob (15)

7 - Take off the spring (16) . Remove the drawback lever (17) from its shaft and the absorber (18) from its location.

8 - Release the 4 positioning shafts (19) from their tabs swiveling them.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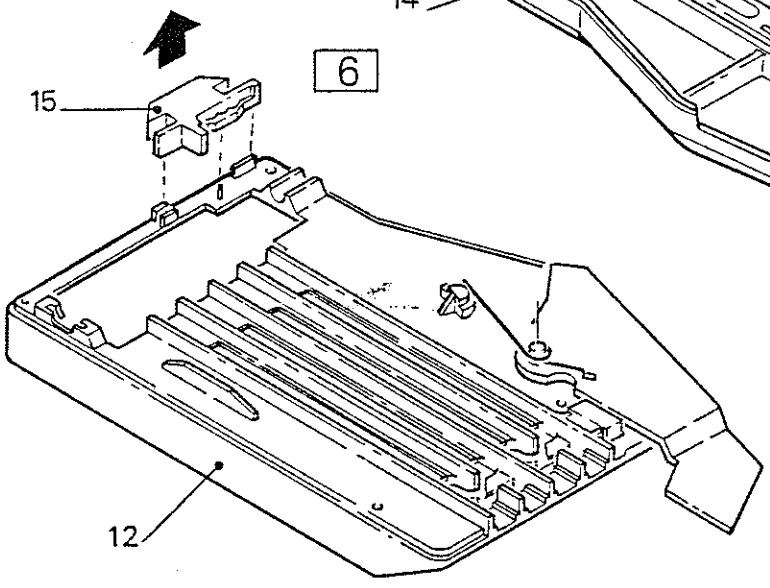
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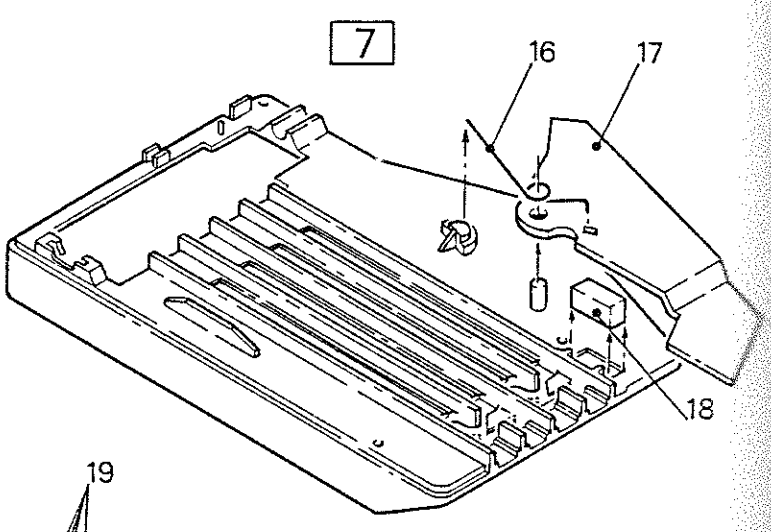
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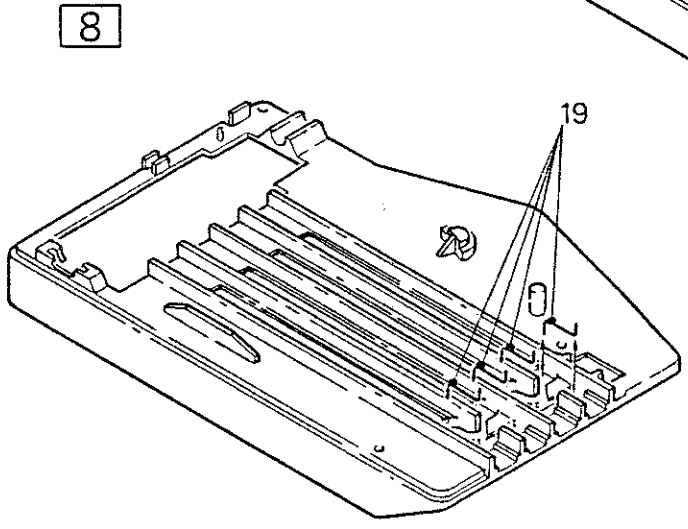
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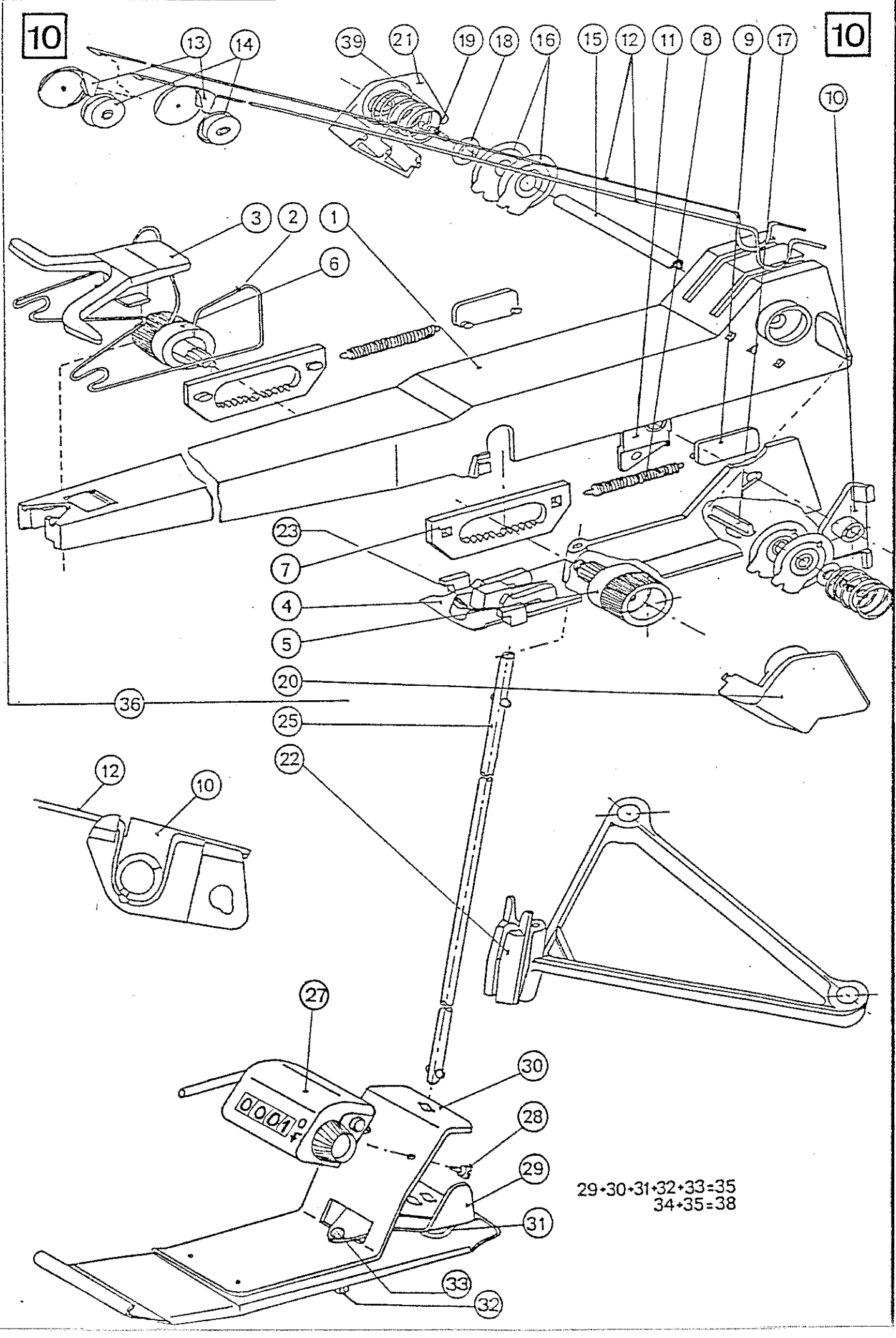
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9 - Take the cover (14) and start to dismount it removing the cancellation knob (20)

10 - Push the 4 distributor hooks upwards in order to disengage them from the holes in the drum

11 - Pull the drum (13) upwards removing the shaft (22) out of its location

12 - Remove the 4 distributor hooks and the 4 springs (23) from their guiding slots.

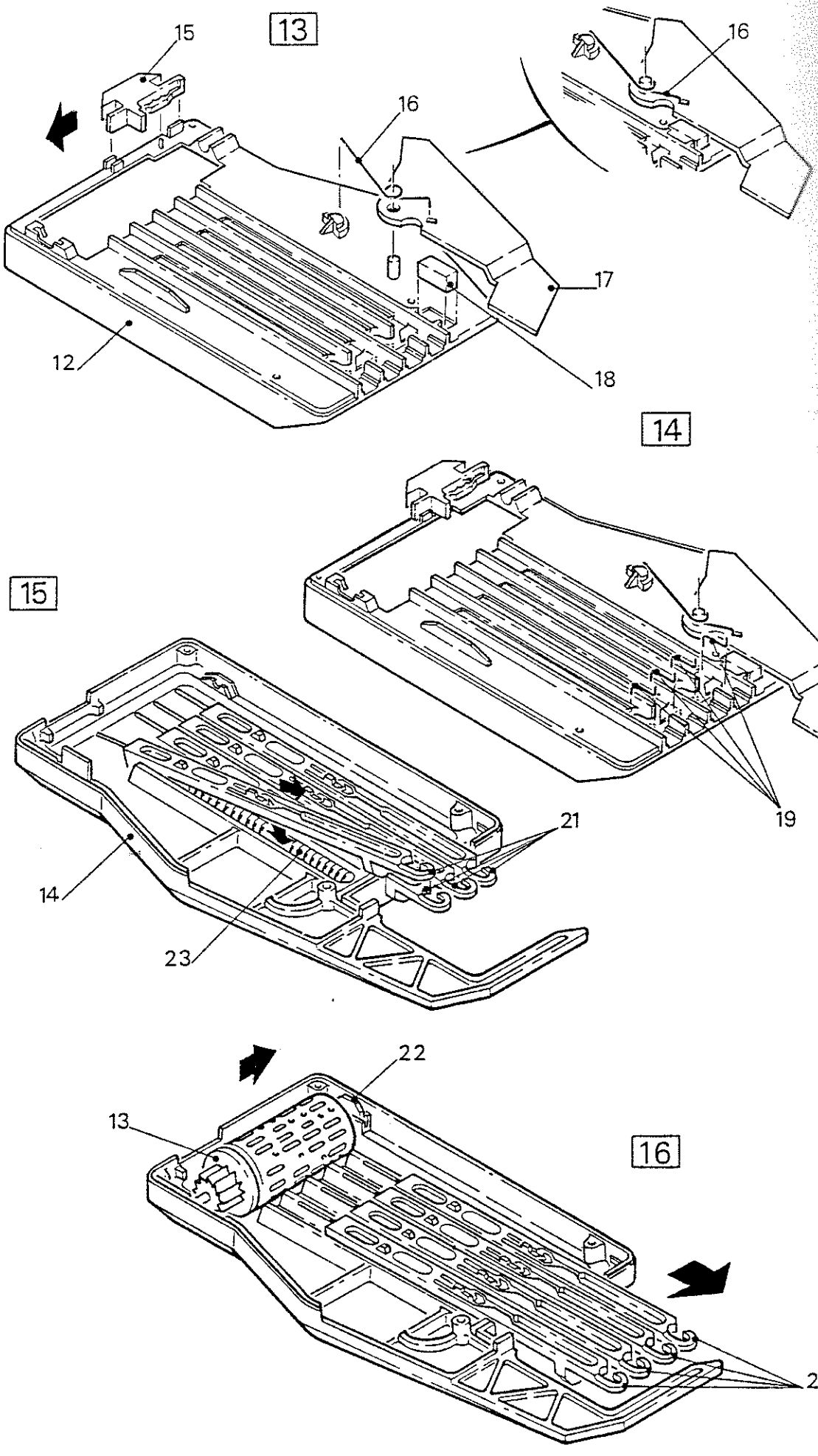
13 - Start the remounting taking the casing (12) and introducing the absorber (18) into its location.
Position the drawback lever (17) onto its shaft and then place the drawback spring (16) (see detail drawing).
Replace the selection knob (15) onto its positioning pins.
Set it on manual position, i.e. completely against the right stopper.

14 - Introduce the 4 positioning shafts into their location and under the tabs.
Make sure they will be in line with the distributor hooks.

15 - Take the cover (14) and set back the 4 springs (23) in the 4 guiding slots.
Set back as well the 4 distributor hooks compressing the springs upwards.

16 - To remount the drum (13) with its shaft (22) , pull the 4 distributor hooks (21) upwards and hold them in upper position.

Then push on the drum shaft (22) until it stops against the bottom of the cover.
The location into the cover ensure the good position in height of the drum's shaft.
Push the drum (13) completely against its shaft and release the distributor hooks (21) so that they can fit into the holes of the drum.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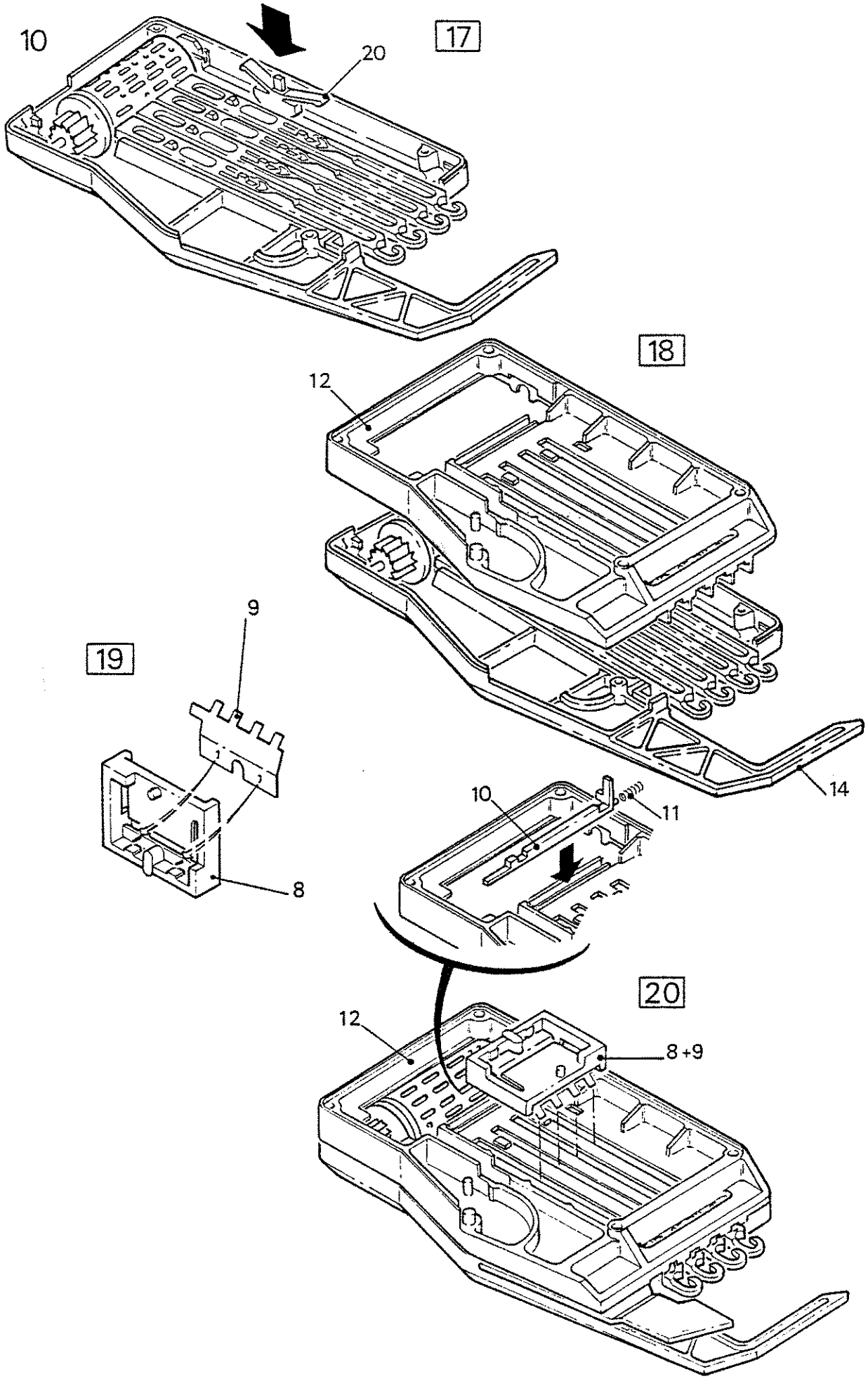
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17 - Place the cancellation knob (20) on the corresponding rectangular opening.

18 - Now set back the casing (12) on the cover (14) positioning the shaft of the drum into its location in the casing.
Remind that the 4 positioning shafts must be lined up with the 4 distributor hooks.

19 - Assemble the slider (8) with its driving plate (9)

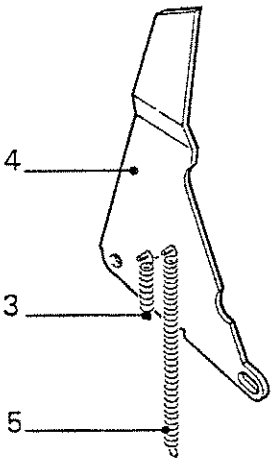
20 - Place the assembly slider (8) and its driving plate (9) in casing (12) (the four teeth of the driving plate must be in front of the 4 slots in the casing).
Place the stopper (10) with its spring (11) into its location below the slider (see detail drawing).

21 - Place the drawback spring (3) and the click spring (5) onto their shafts on the drawback lever (4)
Replace the click (7) on the click-holder (6)

22 - Hook the spring (5) on the click (7)
For more facilities, you can use the hook of the latch needle tool

23 - Place the operating lever (4) on the shaft of the casing (12) and on the shaft of the slider (8)

24 - Replace the assembly click-holder (6) + (7) into its location
Hook the drawback spring (3) onto the pin of the casing
Use the latch needle tool.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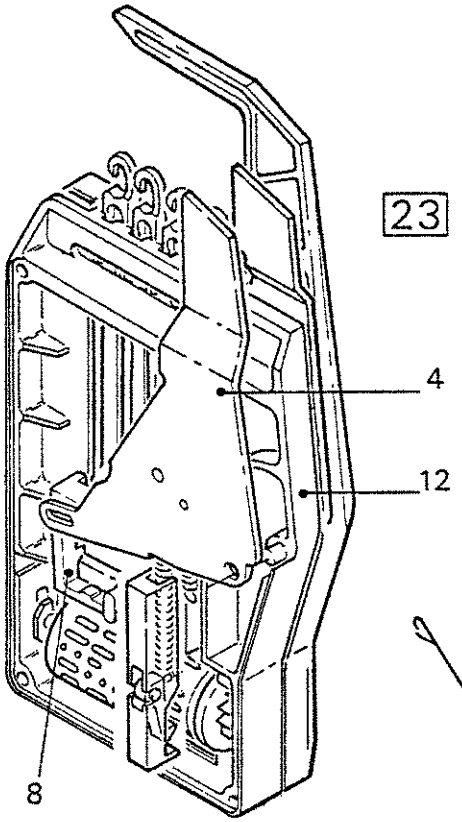
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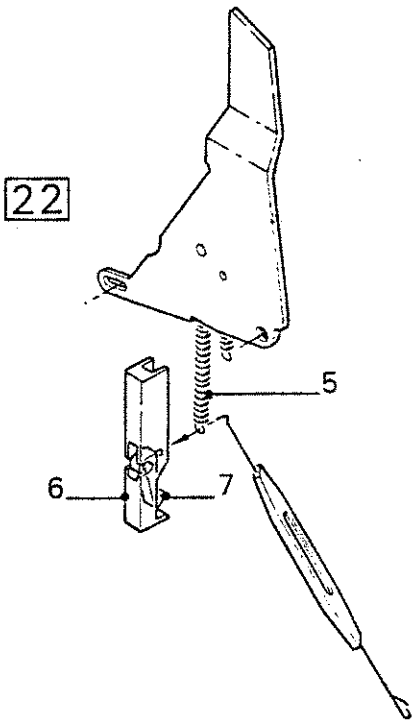
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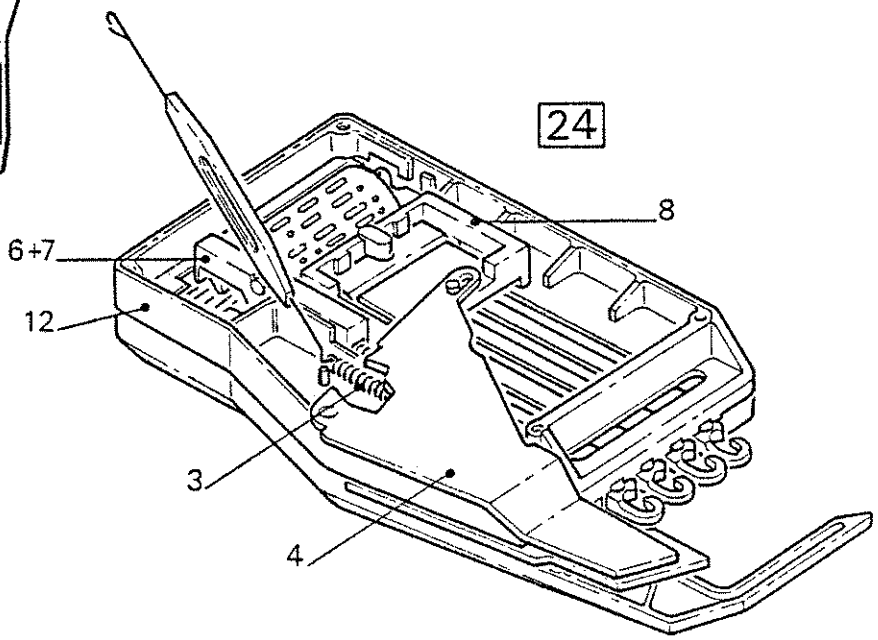
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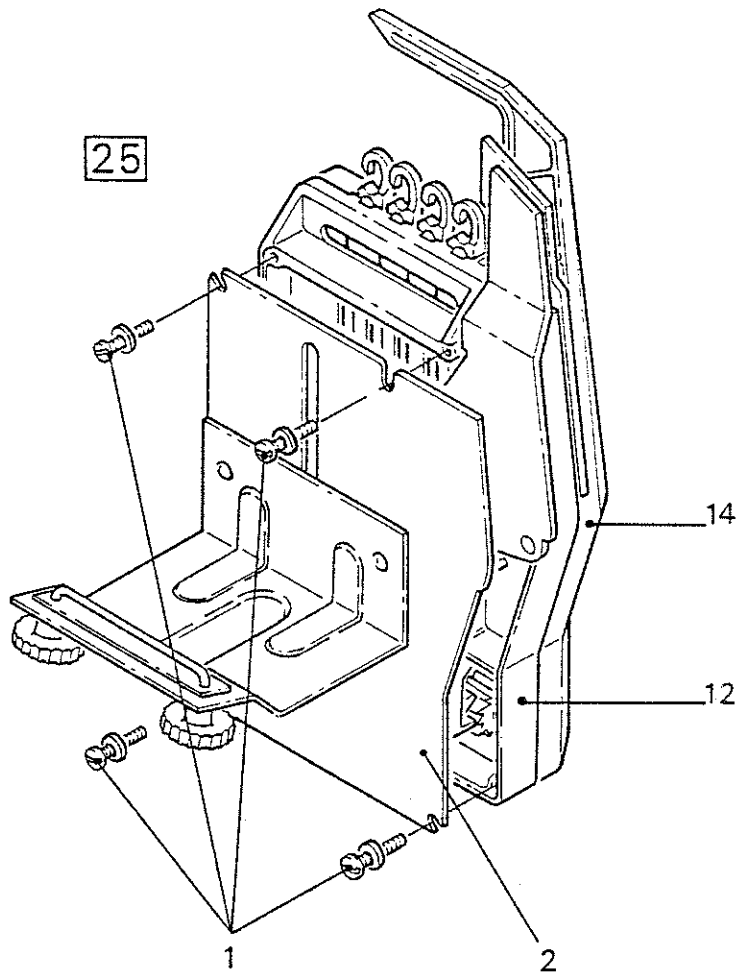
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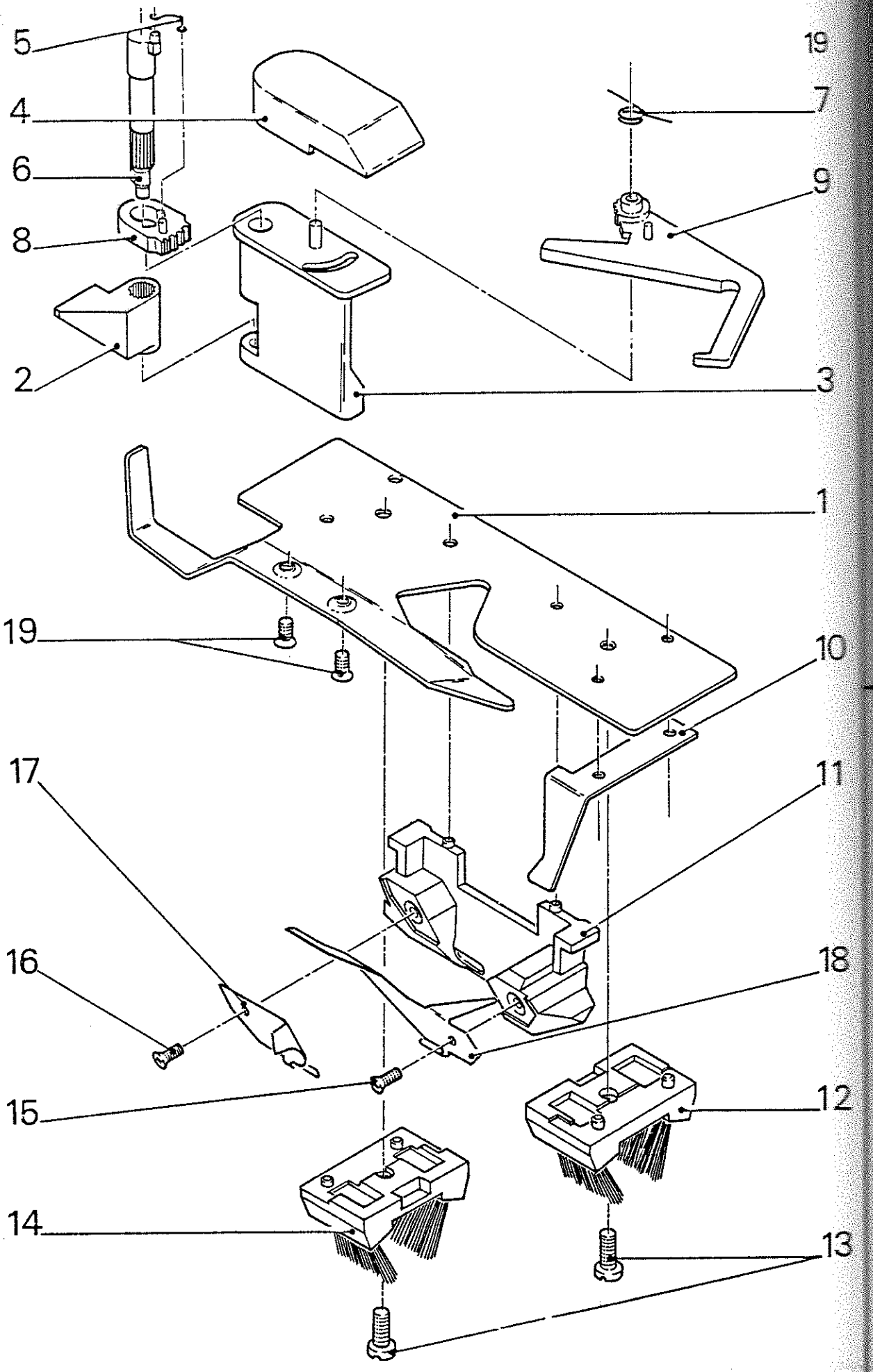
25 - Take the support (2) and fix it on the assembly casing (12) and cover (14) by means of the 4 fixing screws and washers (1)

DISMOUNTING — REMOUNTING OF THE YARN GUIDE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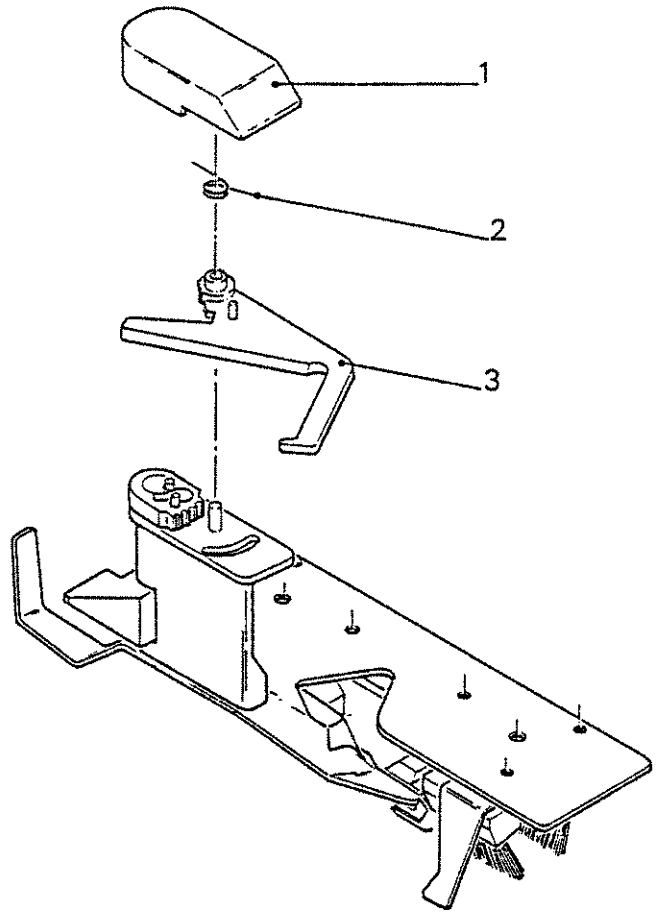

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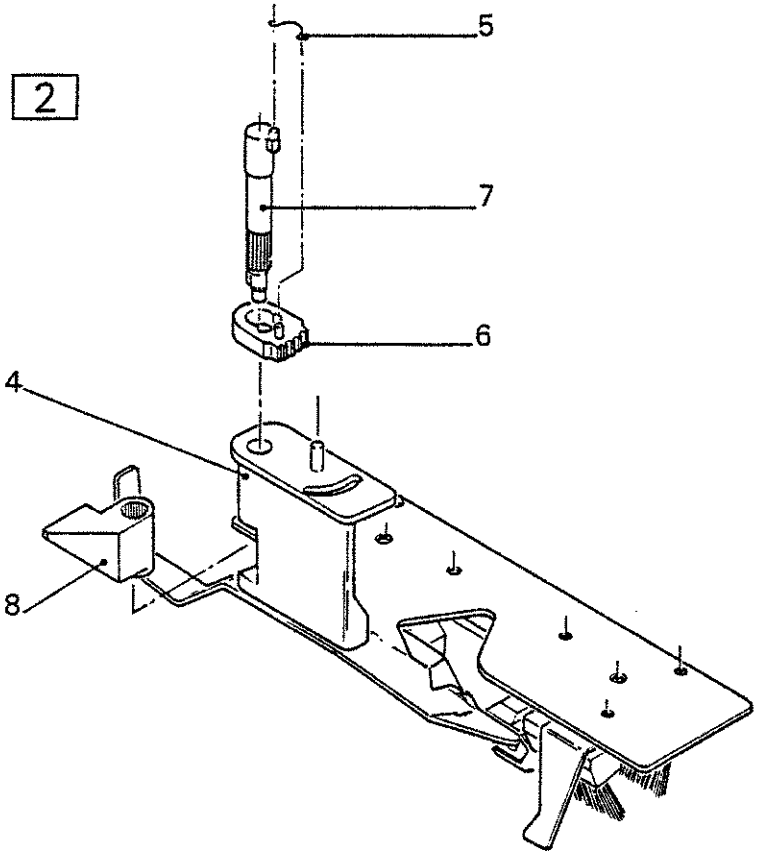


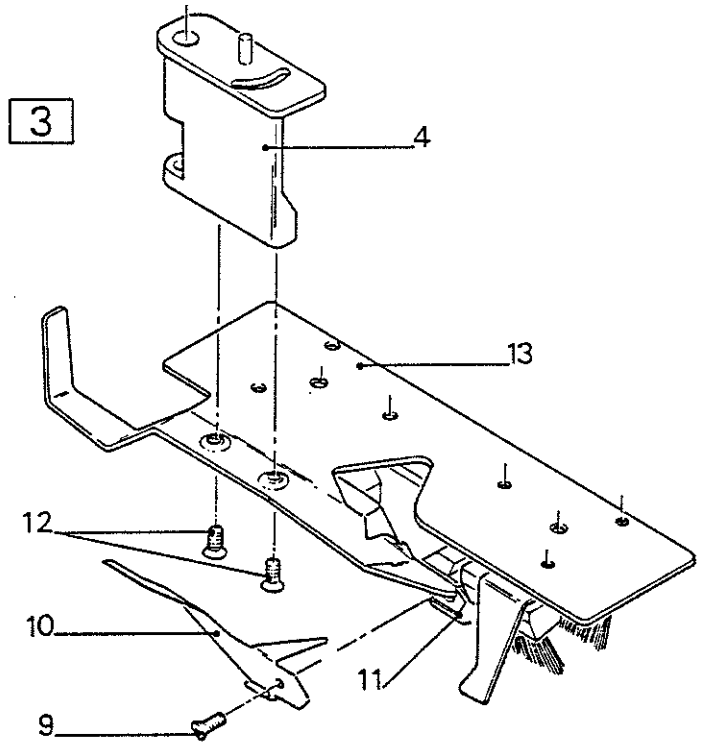
1 - Remove cover (1) from the finger bracket (4)
Recover the drawbackspring (2) of the gripfinger (3)
Remove the gripfinger (3) from its shaft on the finger bracket (4)

2 - Unhook the pinion spring (5)
Take off the assembly driving pinion (6) and the driver shaft (7) from its location in the finger bracket (4)
Recover the driver (8)

3 - Unscrew the fixing screw (9) to release the right guide (10) from the yarn-guide support (11)
Dismount as well the finger bracket withdrawing both screws (12)

4 - Unscrew and withdraw both screws (14) fixing the brushes (15)
Recover the brushes.
The yarn-guide support is now released from the brushes which were holding it.

5 - Take off the holding plate (18)
Separate the left guide from the yarn-guide support unscrewing screw (17)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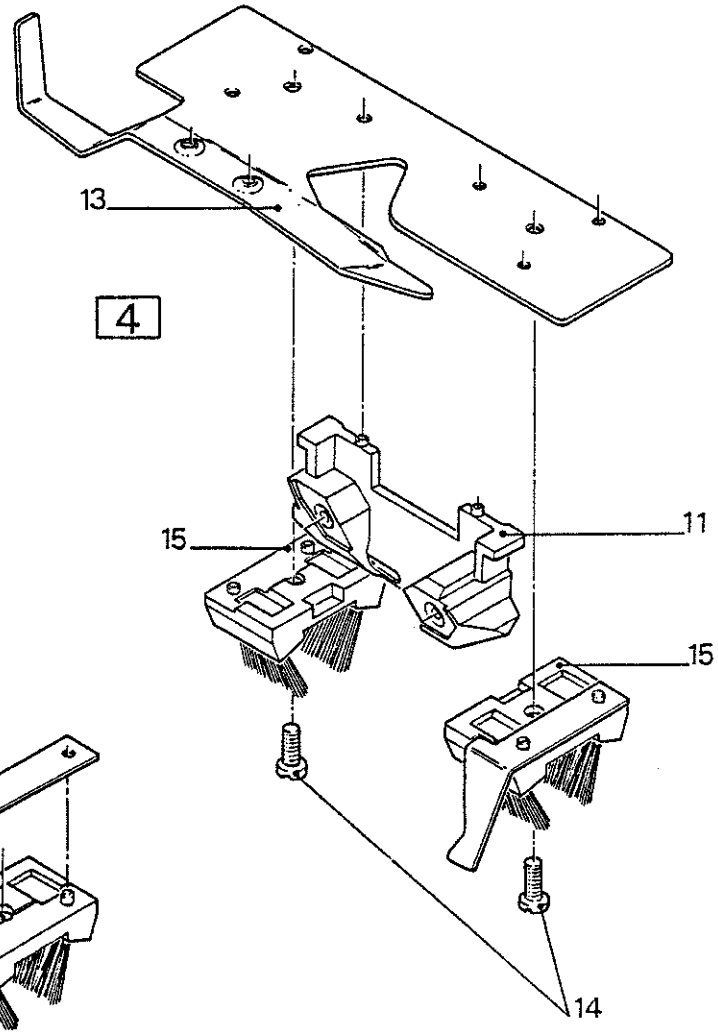
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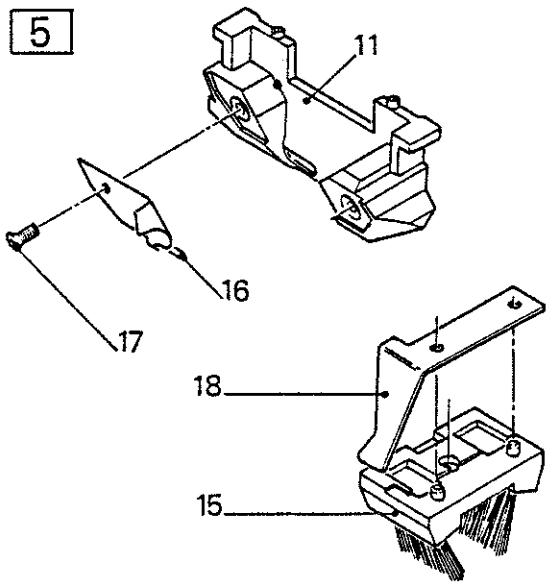
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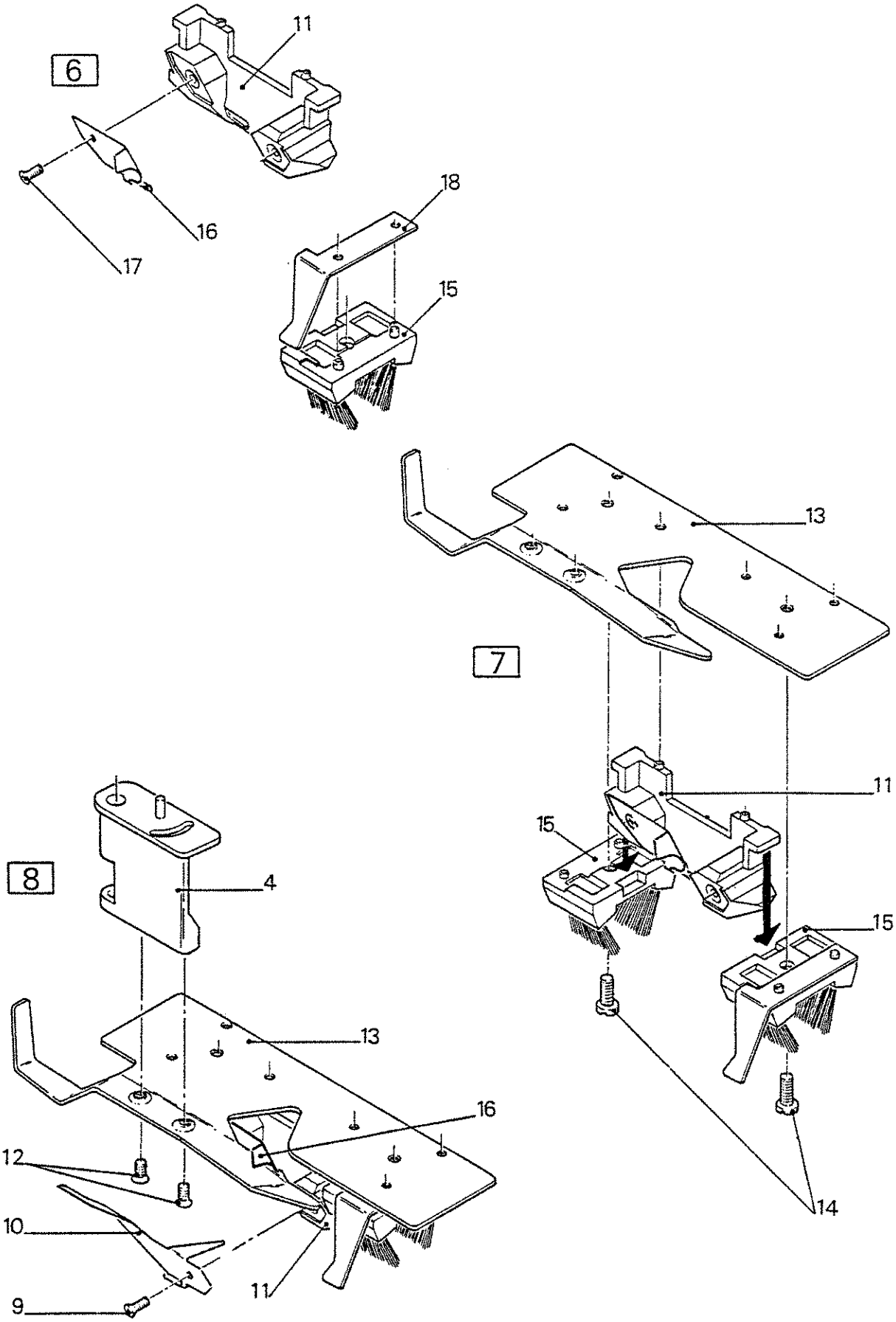
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For remounting, proceed the following way :

6 - First take the right brush (15) and position the holding plate (18)
Set the left guide (16) with the yarn-guide support (11) by means of the fixing screw (17)

7 - Position both brushes (15) to place the yarn-guide support (11) in front of the notches in the brushes.
Fix the assembly brushes and yarn-guide support under the bracket plate of the changer (13) by means of both screws (14)
Mind the position of the yarn-guide support (11) on both centering pins as well as the position of the left guide (16) on the bracket plate (13)
(See drawing [8])

8 - Set and fix the finger bracket (4) on the bracket plate of the changer (13) by means of both screws (12)
Fix the right guide (10) on the yarn guide bracket (11) with screw (9).

9 - Introduce the driver shaft (7) into the driving pinion (6)
Position the driver (8) in its location in the bottom of the finger bracket (mind the way !)
Introduce now the assembly driving shaft and driving pinion into its location in the finger bracket (4.)
The guiding-mark on the shaft (7) ensure its good position in the driver (8)
Place spring (5) on the pins located on shaft (7) and driver (6)
Watch carefully the drawing to respect the mounting way of the spring (5)

10 - Place the gripfinger (3) onto the shaft of fingerbracket (4)

Warning : When the driving pinion (6) is lined up with the finger bracket (4) the gripfinger (3) must be completely backwards, against the stopper (see detail drawing on picture [10])
Replace cover (1) keeping the spring (2) in position.

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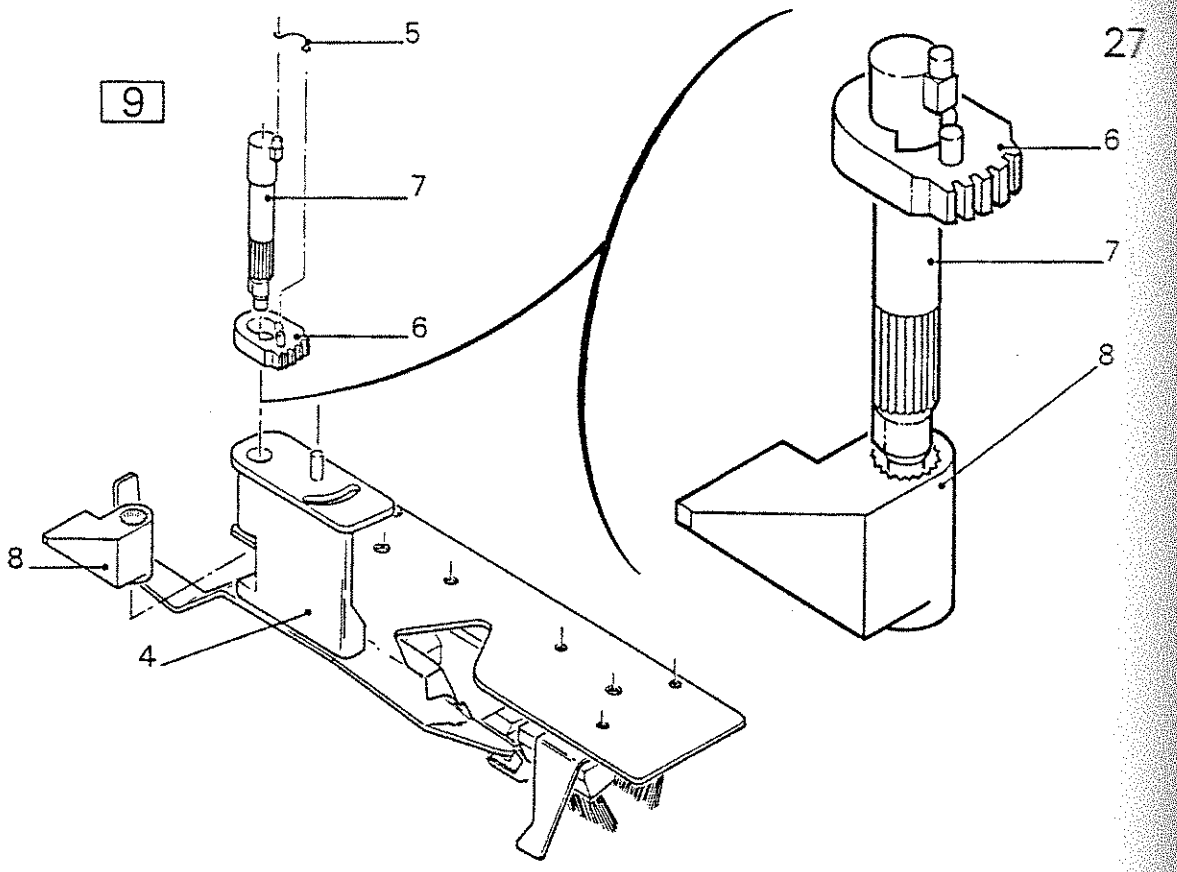

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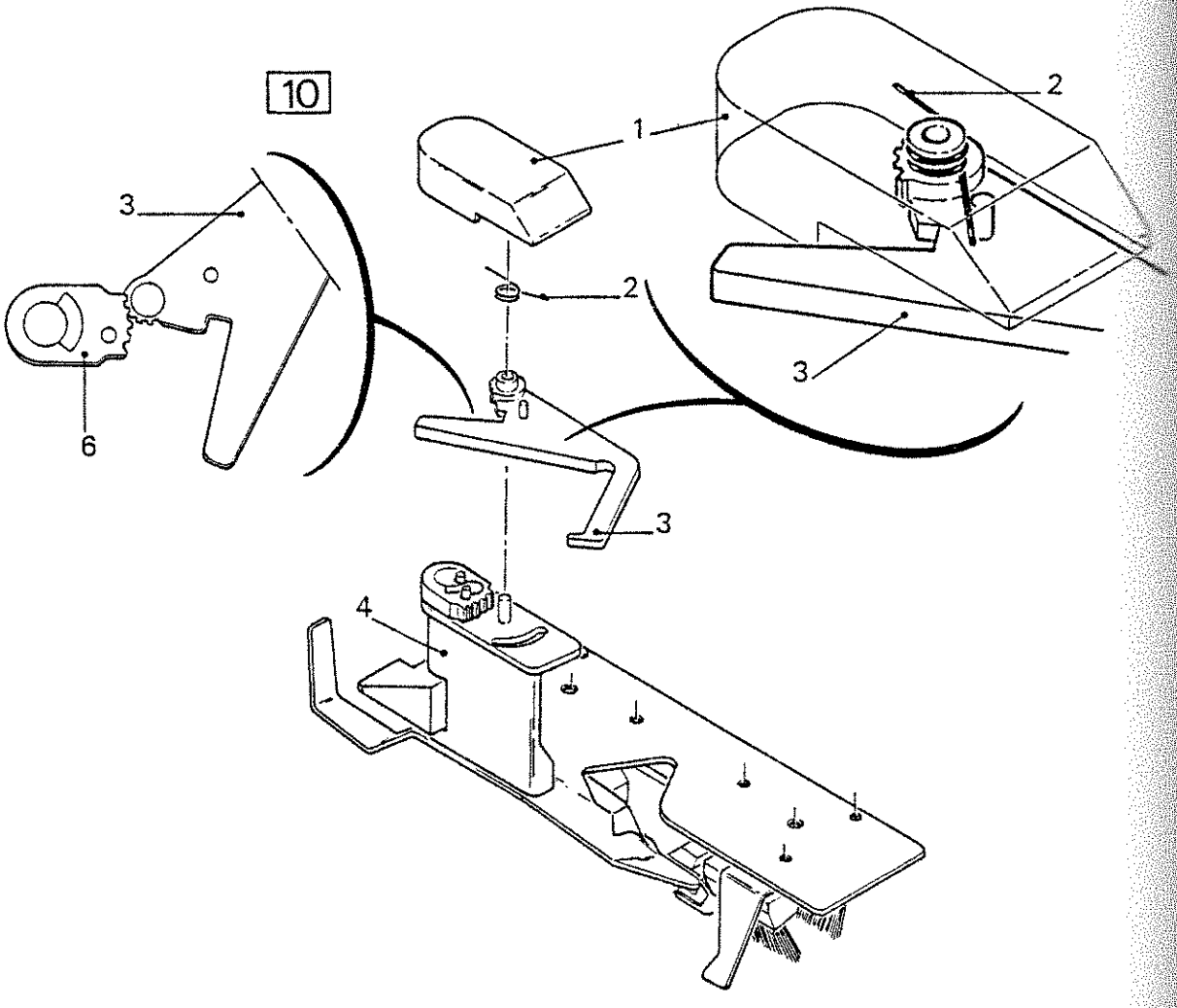

MOTOR DRIVE

PUTTING BACK

AND

CENTERING

OF

LEADING RACK

PUTING BACK OF THE LEADING RACK

When the motor does not reverse any more, it is possible that the leading rack is out of its housing.
We shall learn to put it back on the easiest way.

1. Remove the back cover (1) withdrawing the two protecting plugs (2) and the two fixing screws (3).

CAUTION : Don't touch the printed circuit since the condensors placed on it remain loaded.
To unload them, move the direction indicator several times up and down or pass a screwdriver flat along the rear face of the printed circuit.

2. Untighten slightly screw (4) from right reversing plate guide (5) to allow to release nut (6) pushing it towards the end of the rail.

3. Bring slider (7) on stop opposite side of motor.

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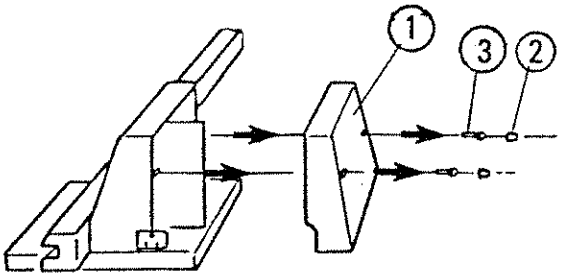

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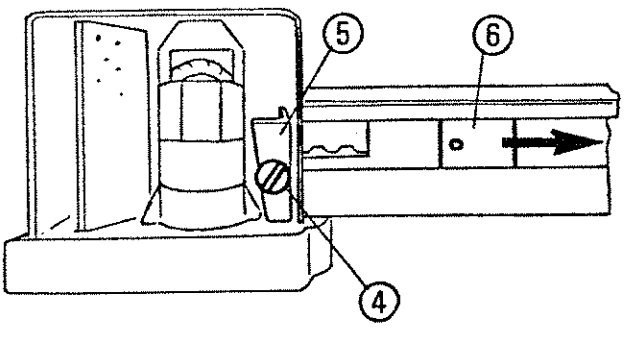

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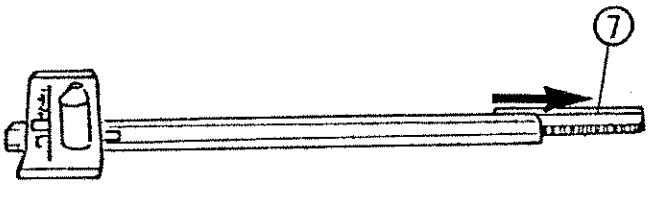

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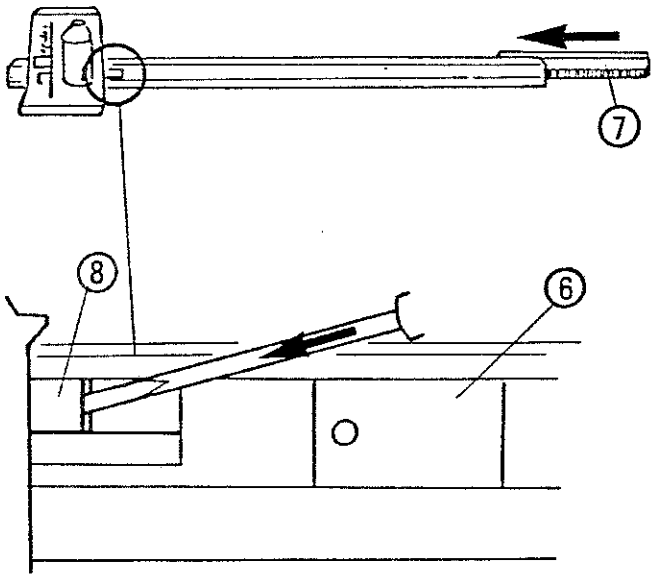

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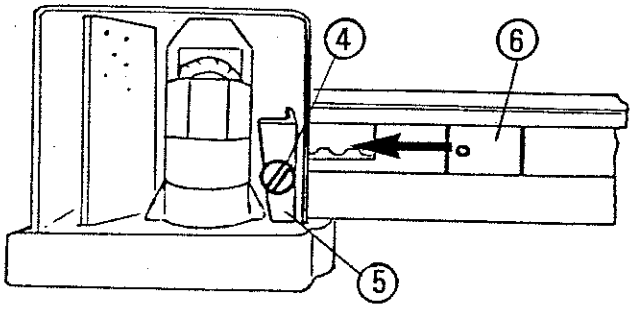

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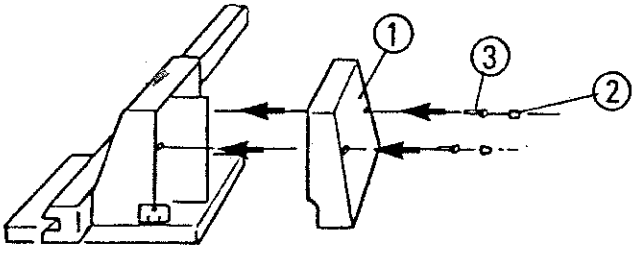

4. Leading rack (8) appears in the opening which was hidden by nut (6).
Placing the point of a screwdriver in the vertical slot of the leading rack, drive it carefully towards the motor and in the same time, push slowly slider (7) towards the motor, to engage teeth of the leading rack onto corresponding teeth of the pinion. As soon as you feel that the teeth of the rack are in gear with those of the pinion, release the screwdriver and continue pushing smoothly on the slider.
The rack is put back now in good position.
However you have to check its centering (see page 5).

5. Set again nut (6), then right reversing plate guide (5) and fix the whole by means of screw (4) without tightening it.

6. Replace back cover (1) by means of the two screws (3).
Don't forget to put back the two protecting plugs (2).

CENTERING OF THE LEADING RACK

Once the leading rack put back in its place, it is necessary to check that the stroke of the slider is well centered on the whole length of the rail.

Proceed the following way :

1. By means of the hook of the latch needle tool remove protecting plug (9) from right protecting end part.
   Unscrew slightly screw (11) allowing thus to remove the end part (it is not necessary to unscrew completely this screw).

2. Push slider (7) in stop on motor side.
   Move the two knobs for cursor on position 40.
   By means of a 10 mm pipe-wrench turn slightly intermediary pinion bracket (12) counterclockwise.
   In this moment the leading rack can be deplaced along the rail pushing it by a finger.
   Place the end of the leading rack on a level with the end of the rail.
   Plug the speed controller into the connecting socket and into the wall-plug.
   Press on the speed controller : the slider in its total stroke has to be centered on the extremities of the rail.
   If it projects beyond more one side than the other, lead the slider again in stop on motor side. Turn slightly the intermediary pinion bracket (12) allways counterclockwise by means of the 10 mm pipe-wrench and deplace the leading rack one or more teeth on the side where the slider projects beyond the rail in its total stroke.

3. Put back the right protecting end part (10) by tightening screw (11).
   Don't forget protecting plug (9).

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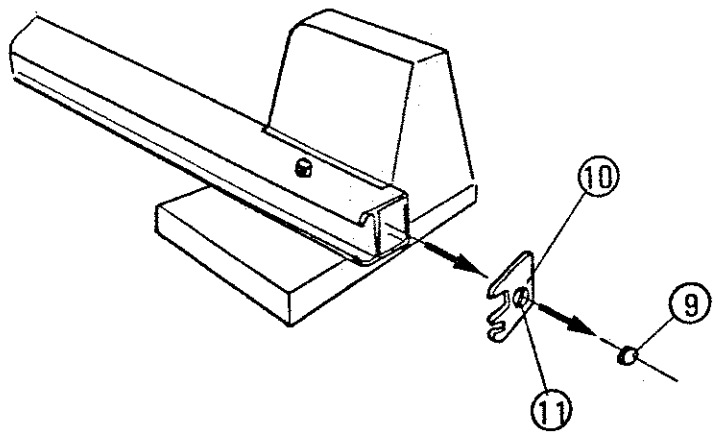

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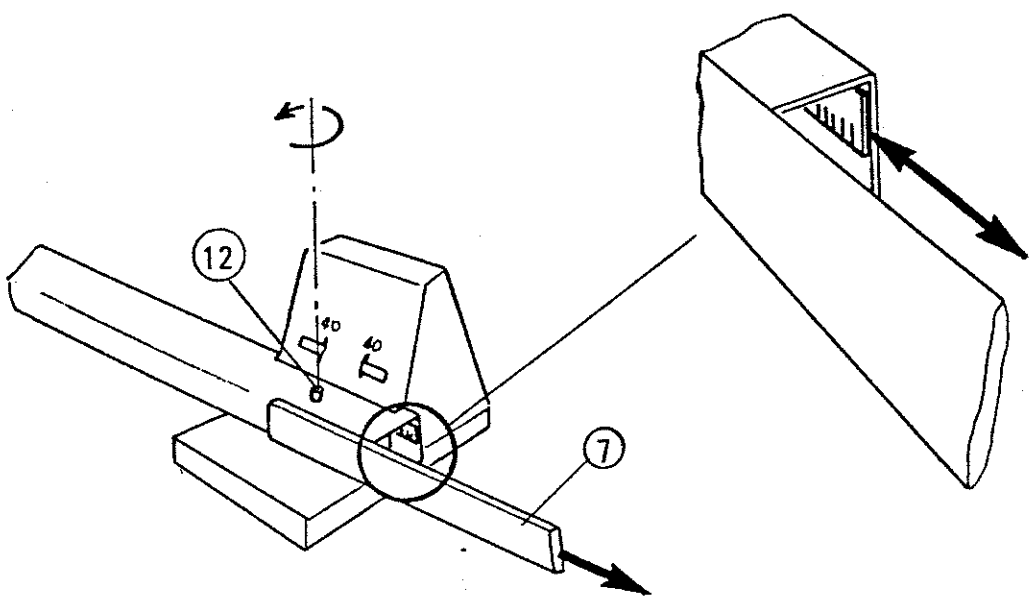

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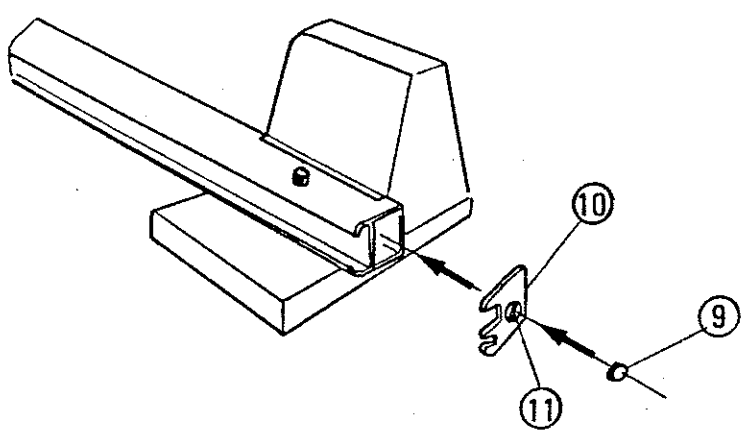


DISASSEMBLING REMOUNTING AND SETTINGS OF THE KNITTING RETAINER

DISASSEMBLING OF THE KNITTING RETAINER

1. By means of a 2,5 mm Allen key unscrew the four screws (1) with their washers to free the two retaining plate assemblies (2) .

1a. Recover the two lifting springs (3) and the two cam pushers (4) .

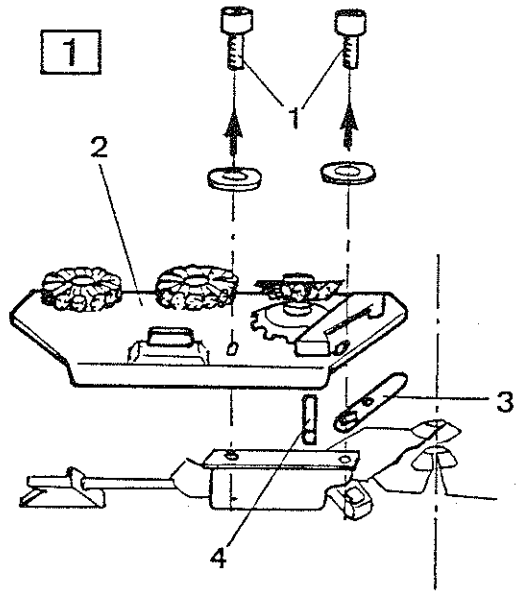
2. Take one retaining plate (2) and unhook the needle lift (5) .

3. Unscrew the three screws (6) to free the three retaining wheels (7) .

4. - 4a.

Align the opening of the wheel (8) with the axle of the retaining wheel (9) and by means of a screwdriver make swivel the wheel to lift and withdraw it.

Disassemble, if necessary, the other retaining plate (2) the same way.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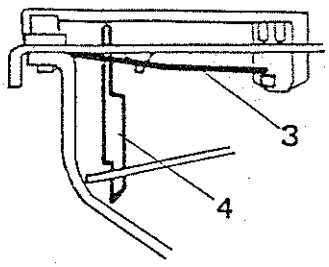
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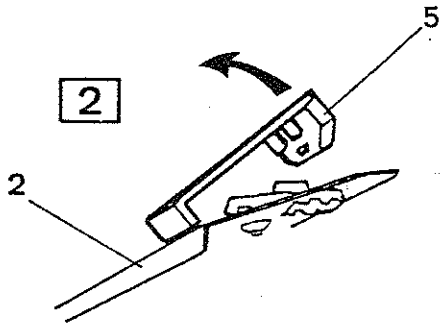
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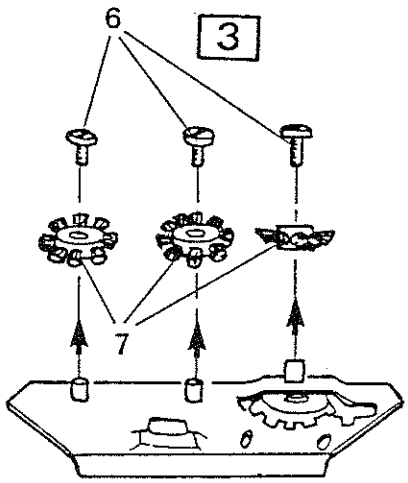
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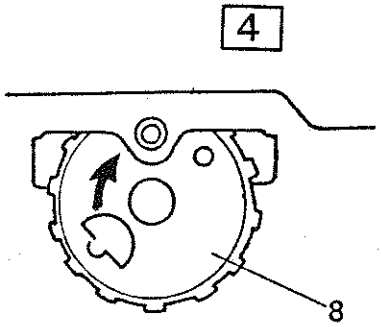
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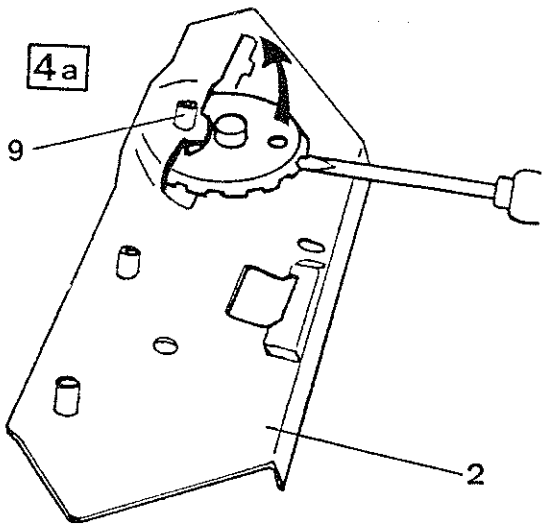
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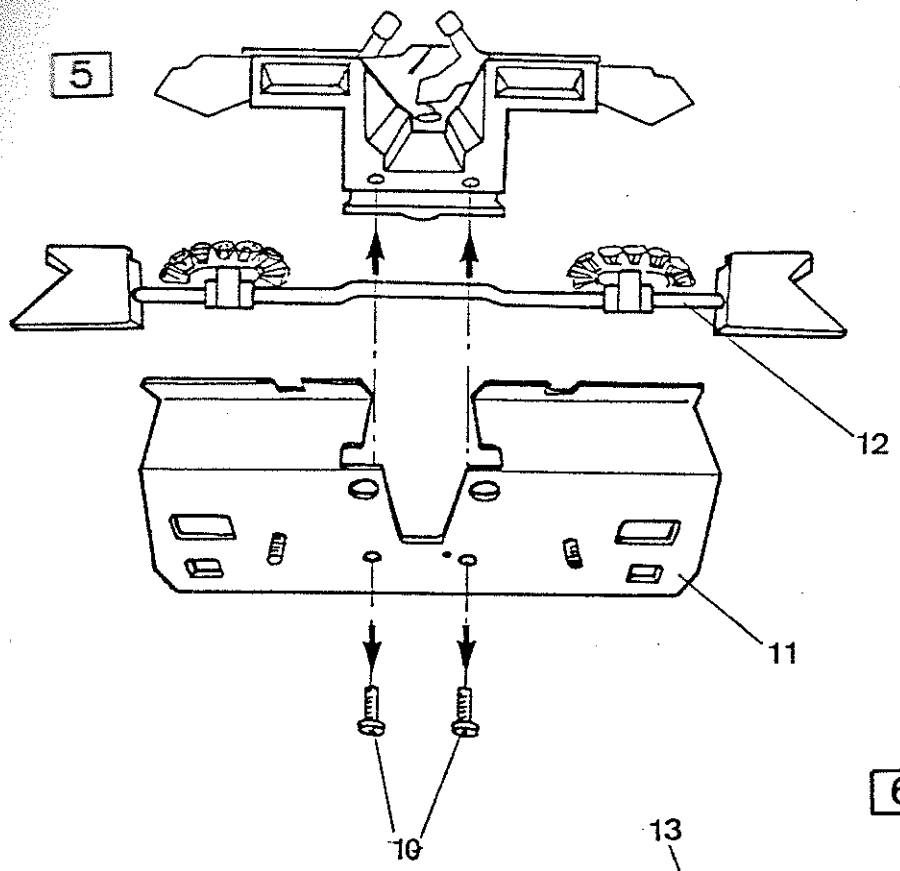
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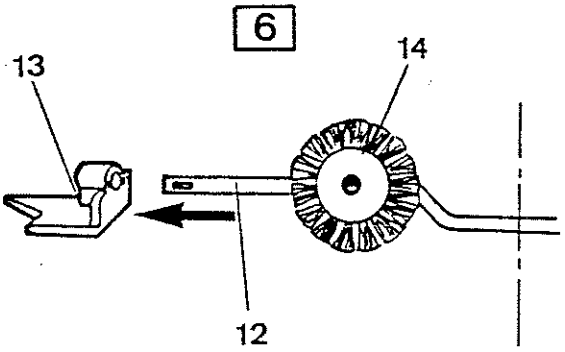
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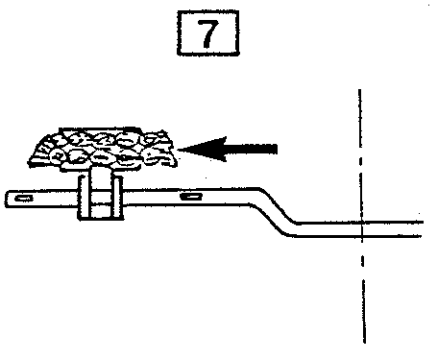
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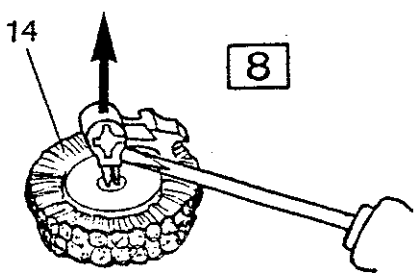
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5. Take the rest of the knitting retainer assembly.
   Using a cross-shaped screwdriver, unscrew the two screws (10) to remove the knitting retainer cover (11) and then the crankshaft (12).

6. The two weaving yarn-guides (13), as well as the two weaving wheels (14) equipped with their brackets, are assembled by pression on the crankshaft (12).
   Pull the weaving yarn-guides outside to remove them.

7. Proceed the same way to remove the weaving wheels with their brackets, but arriving to the end of the crankshaft, swivel the wheel 90° towards the front to pass the positionning snugs of the weaving yarn-guides.

8. To separate the weaving wheel (14) from its bearing :
   introduce a screwdriver between the wheel and the bearing and swivel the screwdriver to remove the wheel.

9. Take the double yarn-guide unit (15), unscrew the two screws (10) and remove the two deflectors (16).

10. Unscrew afterwards the two screws (17) to separate the double yarn-guide (15) from the yarn-guide holder (18).
Recover the baffle-plate (19).

11. Unscrew the last screw (17) and remove the positioning spring (20).

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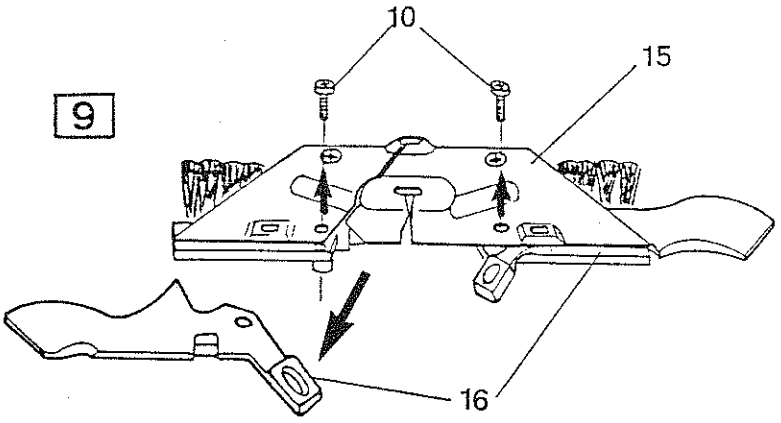

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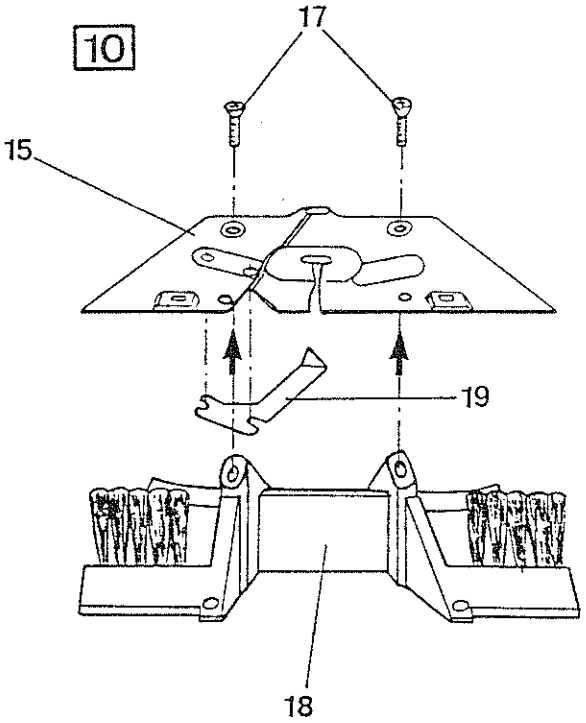

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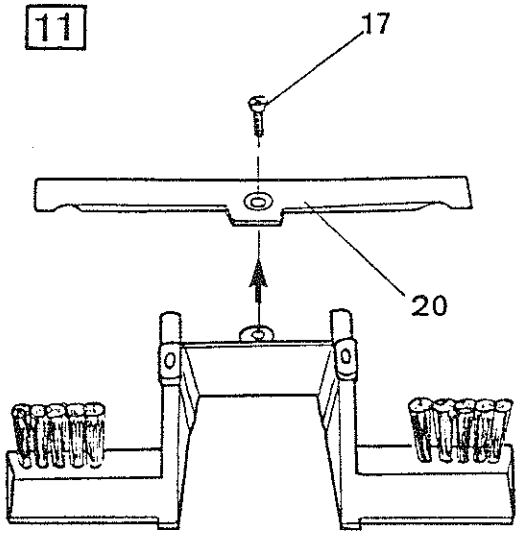

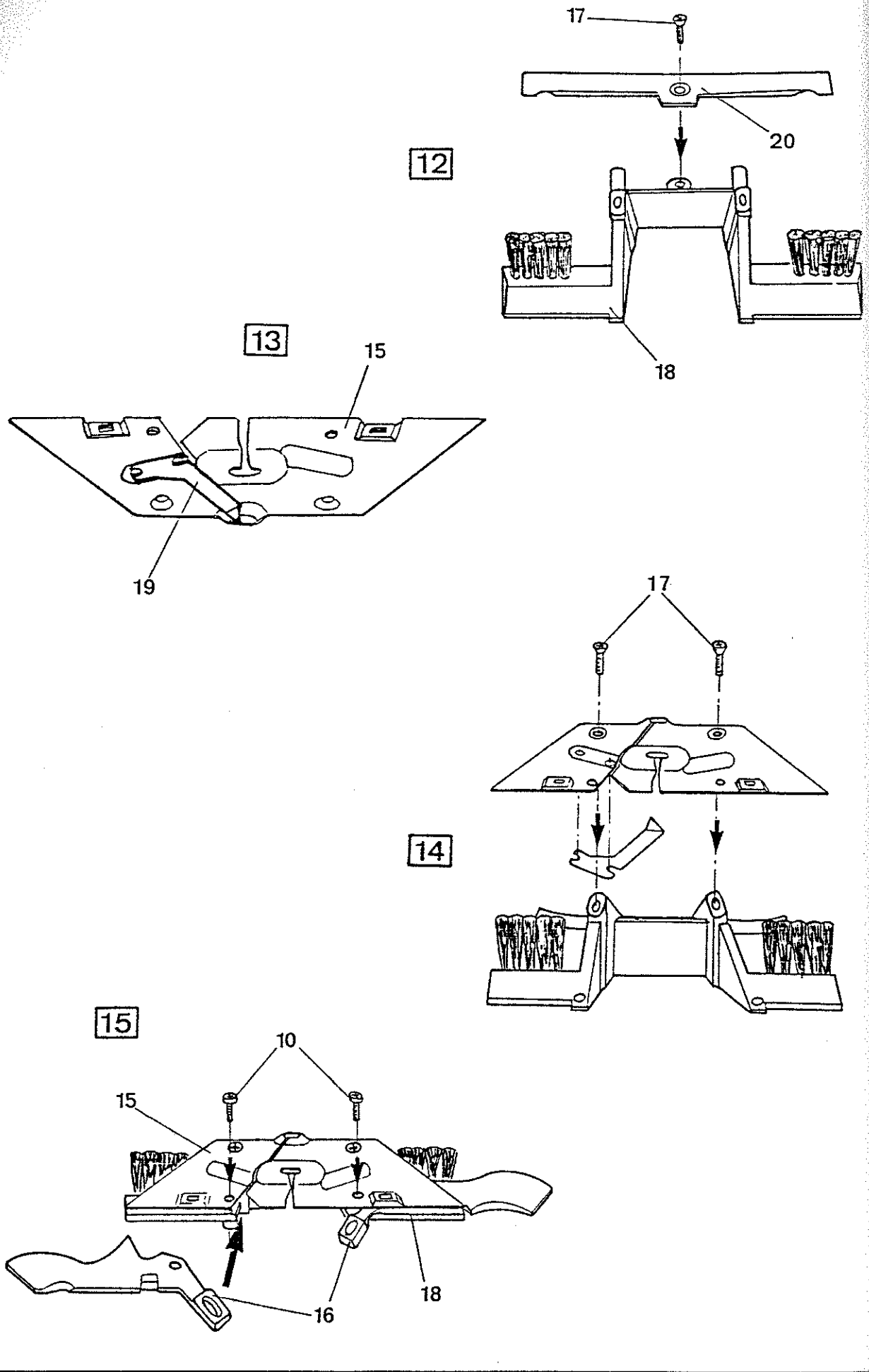
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REMOUNTING OF THE KNITTING RETAINER

12. Take the yarn-guide holder (18) , brushes upwards.
Set the positioning spring (20) , milled part of the hole upwards and fix it by means of a screw (17) .

13. Put the double yarn-guide (15) , bright side against the table, and set the baffle-plate (19) .

14. Hold these two pieces together, turn them over and fix them on the yarn-guide holder by means of screws (17) .

15. Introduce the two deflectors (16) under the double yarn-guide (15) and fix them by means of two screws (10) without tightening them.
The deflectors have to move freely between the double yarn-guide (15) and the yarn-guide holder (18) .

16. To fit toghether the weaving wheels (14) with their bearings : clip the wheel onto the split axis, observe the way.

17. Take the crankshaft (12) . Introduce it into the bearings' openings : weaving wheels (14) towards you, watch carefully the way. Once the positionning snugs of the weaving yarn-guides passed over, swivel the wheels upwards to fix them definitiv_ly on the corresponding snugs.

18. Set the two weaving yarn-guides (13) , mind the ways.

19. Take the double yarn-guide unit (15) fitted together previously.
Place the crankshaft assembly (12) .
Cap the whole by the knitting retainer cover (11) (the bearings of the weaving wheels (14) have to enter in their corresponding openings, as well as the two snugs of the yarn-guide holder (18)) and fix it by means of the remaining screws (10) . Check the good swiveling of the crankshaft (12)

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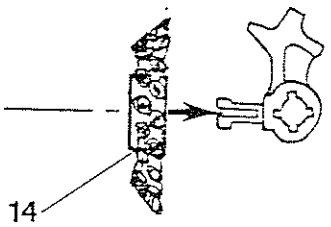

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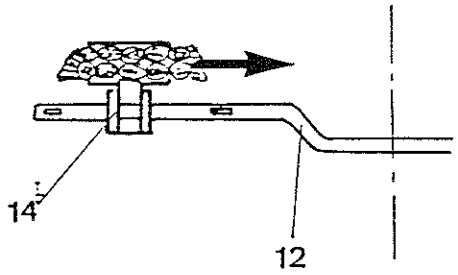

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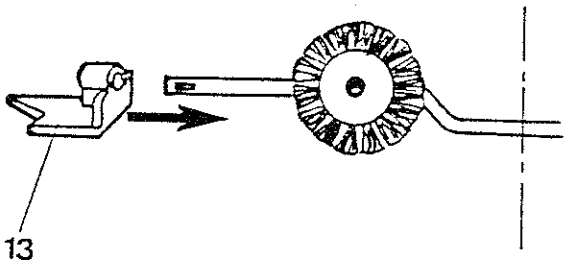

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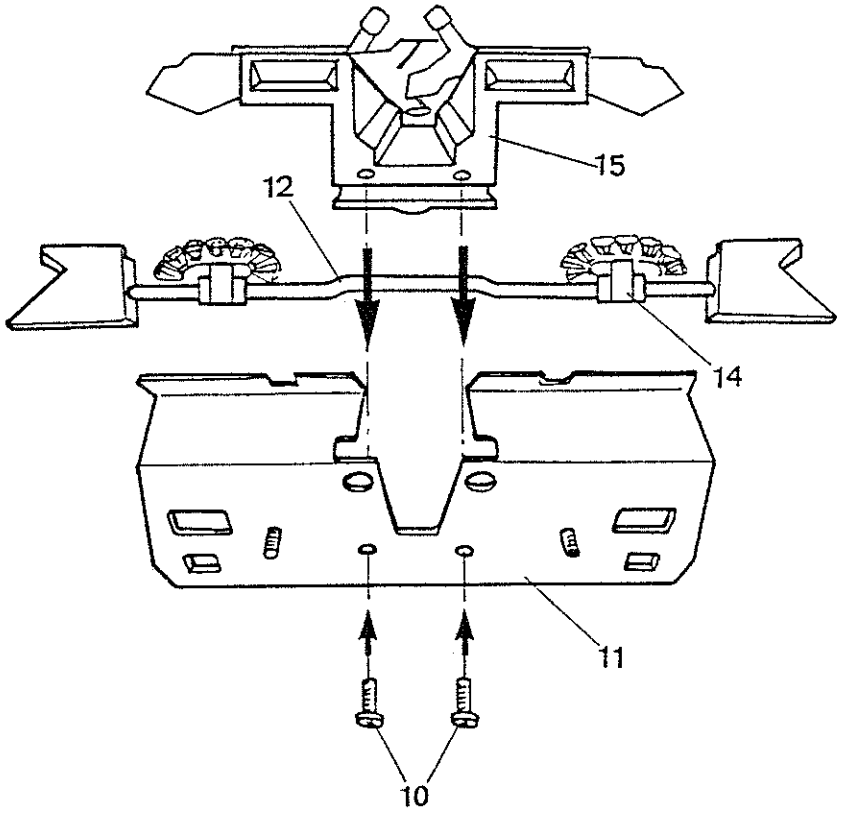

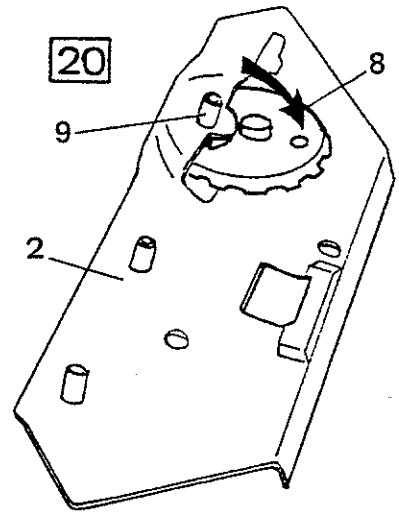
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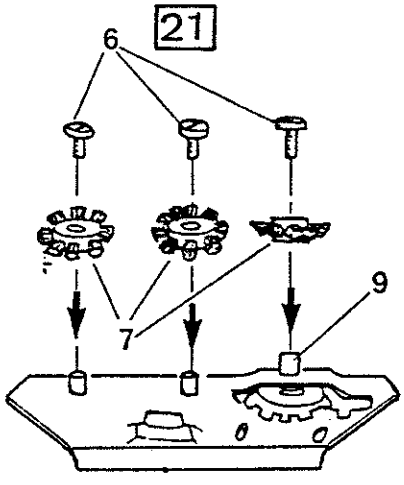
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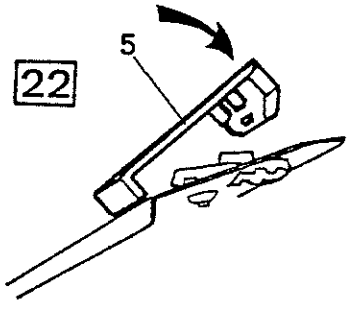
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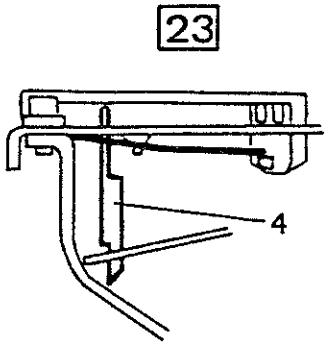
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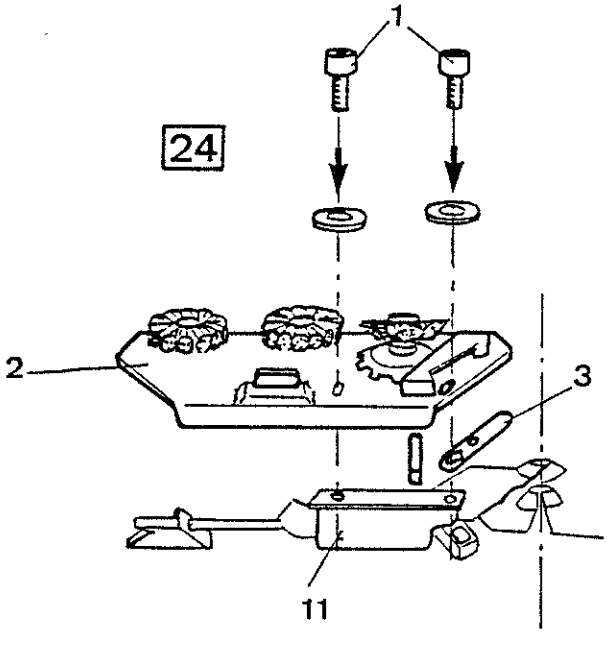
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20. Take one retaining plate (2). Align the opening of the wheel (8) with the axel of the retaining wheel (9) and press the wheel onto its axel.

21. Then set the retaining wheel (7), cut on the slant, onto the axel (9) and fix it by means of a screw (6). Watch the way. Set the two other retaining wheels (7) onto their corresponding axles (there is no way to respect) and fix them by means of screws (6). Assemble, if necessary, the other retaining plate the same way.

22. Place the left retaining plate on the table. Take the left needle lift (5), introduce its small hook into the corresponding slot and lower it towards you. Do the same thing for the right retaining plate.

23. Set two small cam pushers (4), the short part downwards, chamfer towards the front.

24. Take the left retaining plate assembly (2), set the lifting spring (3) and holding it in position, put the assembly onto the knitting retainer cover (11). Fix it by means of the screws (1) and their washers, using a 2,5 mm Allen key. Don't bloc these screws before adjusting the retaining plates (see farther on). Fix the right retaining plate assembly the same way.

SETTINGS OF THE KNITTING RETAINER

Each knitting retainer is adjusted on the machine and on the carriage it will knit with. A bad adjustment of the knitting retainer involves dropped stitches or jammed carriage on needles.
The adjustment has to be checked and eventually set again if :

- the knitting retainer is adapted on another machine or carriage than that it was supplied with
- the knitting retainer was damaged (dropped, transport ...)

Three adjustments have to be carried out :

- the height of the main yarn-guide with regard to the needles
- the lateral position (or centering) of the main yarn-guide with regard to the needles.
- the distance between the retaining plates of the knitting retainer and the flow-combs of the needle bed.

To make it easier, proceed first of all to a preliminary adjustment for the height and the centering.

PRELIMINARY ADJUSTMENT OF HEIGHT :

1. Remove the knitting retainer from the carriage.

2. Near to the handle on the carriage remove covers (1) of the fixing buttons (2)

3. Align each fixing button's slot with its opening in the cover near the handle : screws (3) appear.

4. Tighten or untighten screw (3) to pass about 1 mm the setting gauge (8) beyond the plate holder (6).

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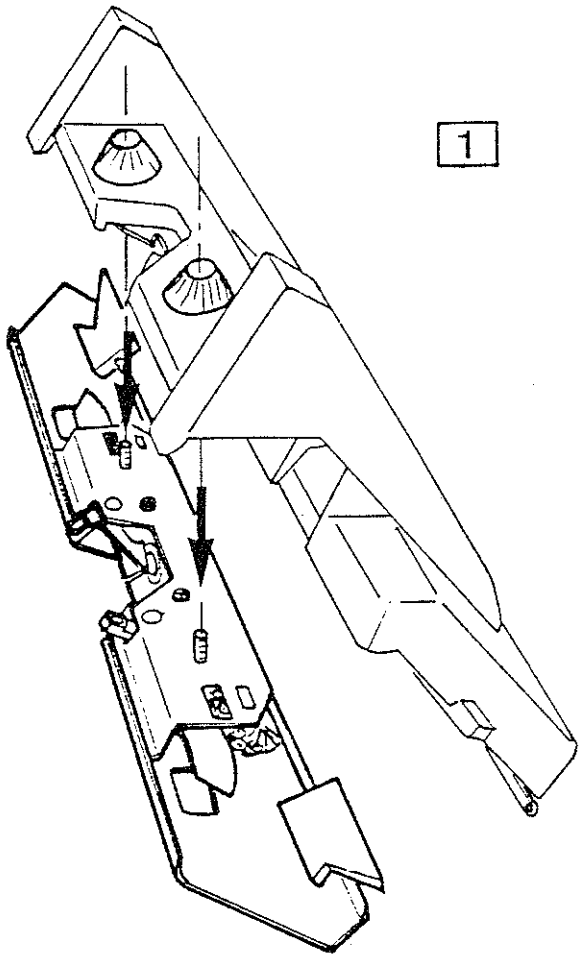

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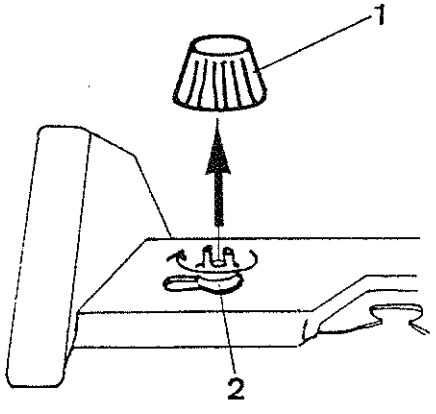

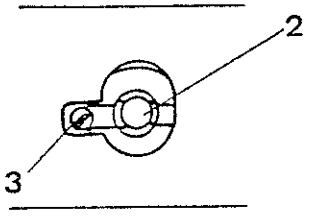

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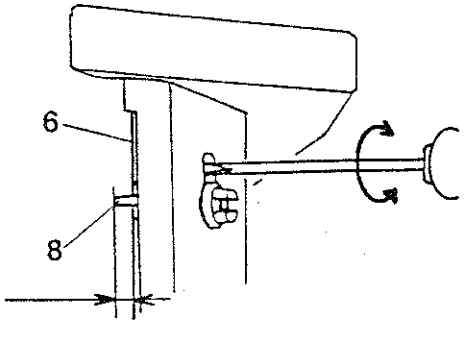

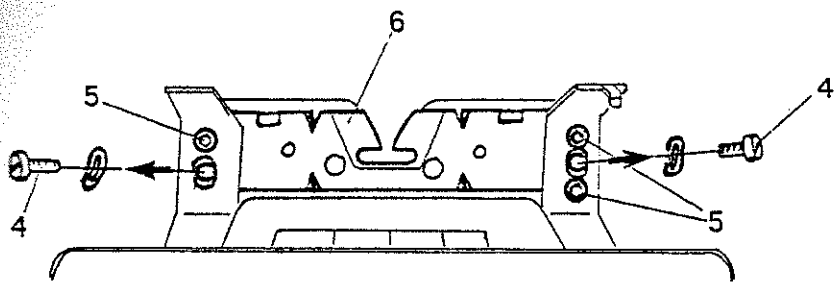

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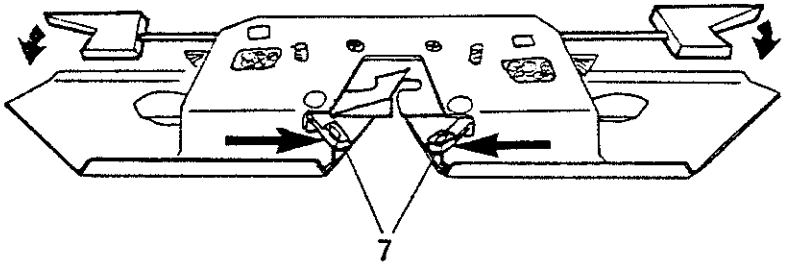

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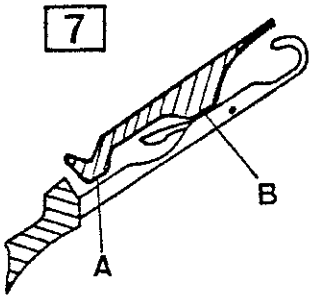

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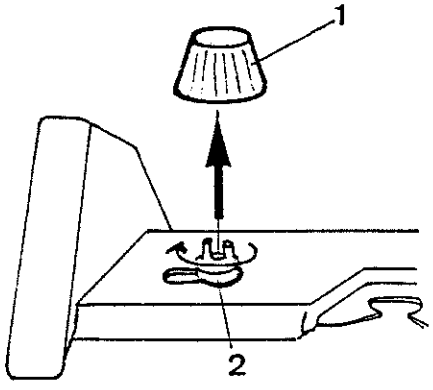
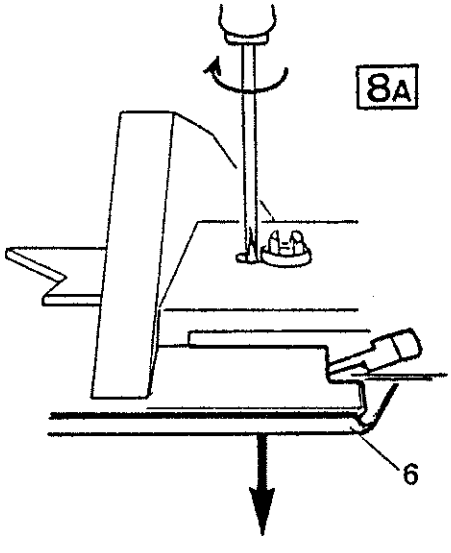


8A



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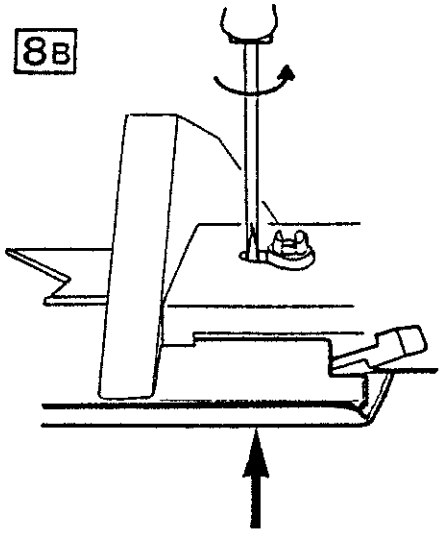


PRELIMINARY ADJUSTMENT OF CENTERING :

5. Remove the knitting retainer from the carriage and untighten slightly the three screws (5) . Remove the two screws (4) with their spring washers. Plate holder (6) can now be deplaced laterally. Set it so that the tappings of screws (4) in the plate holder (6) be in the middle of the elongated holes corresponding to screws (4) in the handle brackets.
Reset the two screws (4).

ADJUSTMENT OF HEIGHT :

Set in position 3 about 40 needles (open latches) in one end of the needle bed.

6. Move the carriage, fitted with the knitting retainer, across these needles, secondary yarn-guide open (buttons (7) pushed towards the center), weaving effect device in lifted position.

7. The main yarn-guide has to be the nearest possible to the needles.
At this moment, the secondary yarn-guide has to touch lightly the latches of the needles.

8. The adjustment is carried out by means of two screws accessibles after having removed covers (1) of the fixing buttons (2).

8A. By tightening these screws, the setting gauges press on plate holder (6) , which press on the knitting retainer and the main yarn-guide moves downwards.

8B. On the contrary, by untightening these screws, the main yarn-guide moves upwards

CENTERING :

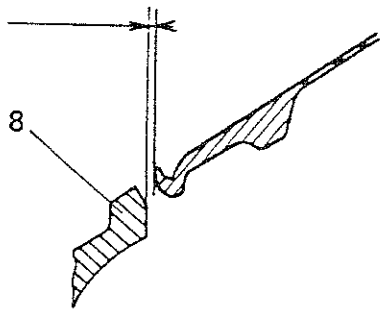
9. Move the carriage fitted with the knitting retainer across the needle bed (secondary yarn-guide open, weaving effect device in lifted position).
The main yarn-guide has to be about 1 mm from the flow-combs of the needle bed (8).

10. The adjustment is carried out by means of two screws (4) . Remove the knitting retainer from the carriage. Untighten slightly the two screws (4) and the three screws (5) if it is not yet done. You can deplace now the plate holder (6) laterally.
Set the plate holder (6) so that the main yarn-guide be 1 mm from the flow-combs of the needle bed.
Check the good alignment of the plate holder compared with the handle cover.
Make a trial with the knitting retainer fitted on the carriage to test distance of 1 mm.
Continue in this manner until obtaining the best result.

ADJUSTMENT OF PLATE ASSEMBLIES :

11. This adjustment has to be carried out at last, after having adjusted the height and the centering.
Each plate assembly (9) has to be about 1,6 mm from the flow combs of the needle bed. To make it easier, you can use à 1,6 mm gauge having the length of the plate (ex. : teeth of the black selector, furnished with the accessories of the machine).
This adjustment is carried out, for each plate assembly by means of two 2,5 mm female hexagon-head screws.
By untightening these screws, the plate assemblies can be moved horizontally.
Adjust the two plates in an identical manner placing the teeth of black selector (11) between the plate and the flow-combs of the needle bed.
Check the good alignment of the two plates with each other and with the needle bed.

9



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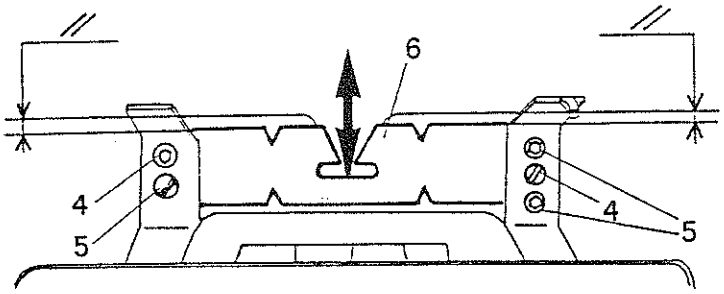

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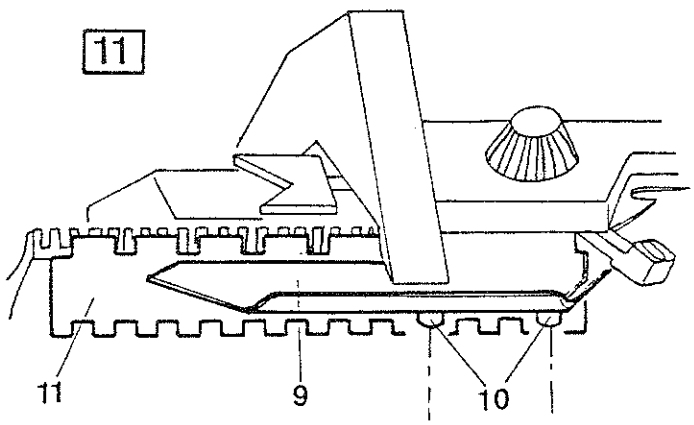
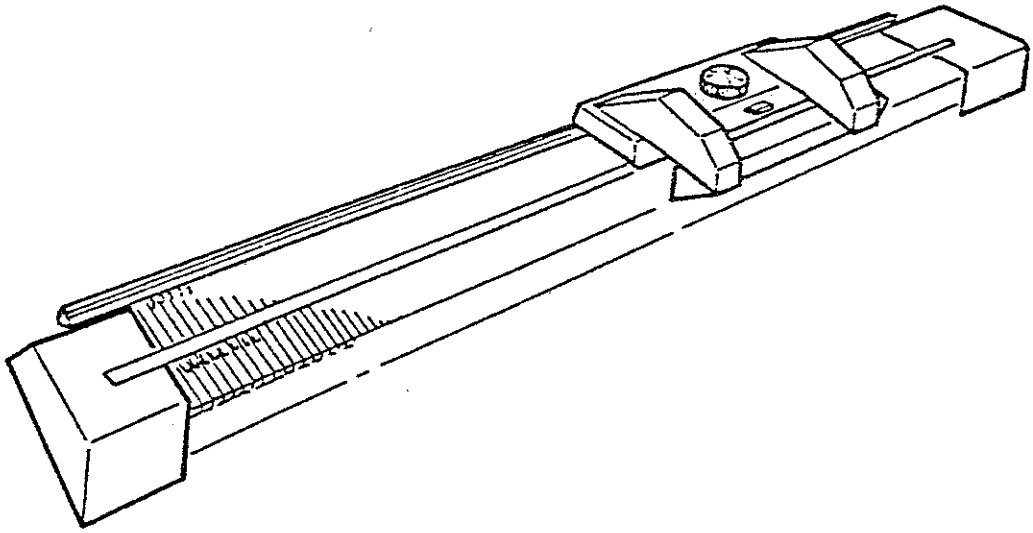


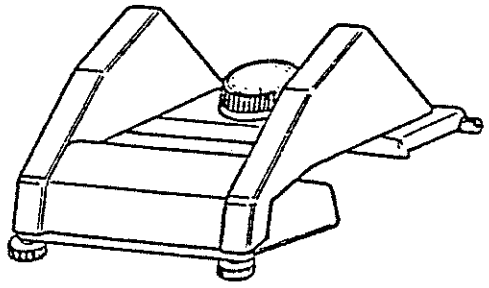
SB 100

MT 100

S 7

D 7



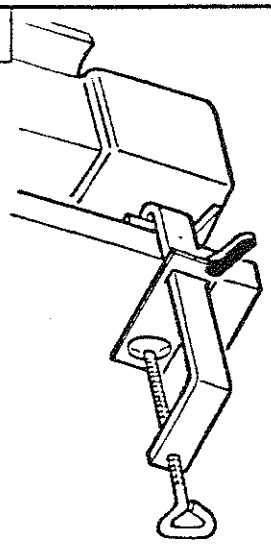


INTARSIA

SUMMARY

I. DISASSEMBLING OF THE NEEDLE BED

1

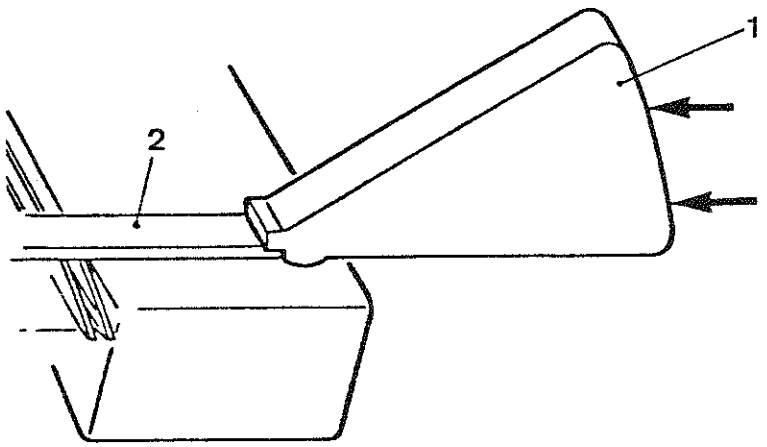


Fix the machine on the table by means of the two clamps and withdraw the carriage.

2

Using the slider rail pusher (1) packed with the machine, push the slider rail (2) from right to left and take it away.

Caution :
If you push it from left to right, the screws located under the slider rail will tighten even more.
This will make it difficult to move and could damage the bed segment.



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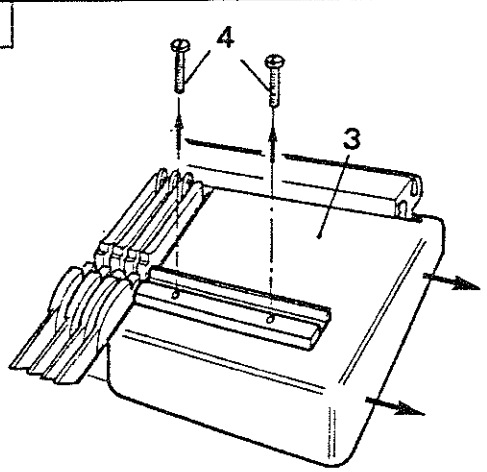
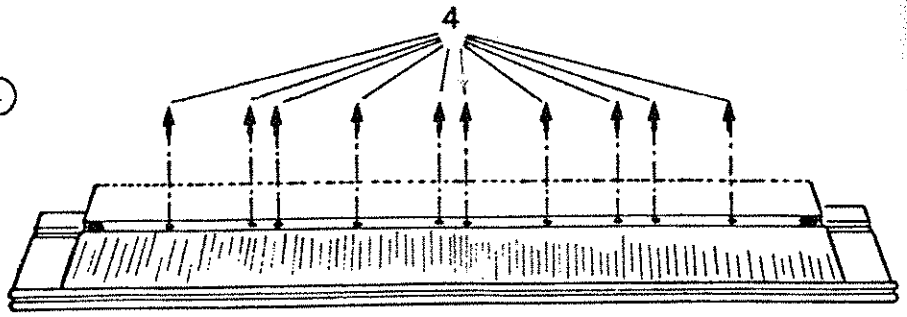


Remove the right hand side clamp.
Withdraw the end cover (3) unscrewing the two screws (4).
Proceed the same way on the left hand side.

4

Remove all the bed segment fixing screws (4) except those at the two ends.



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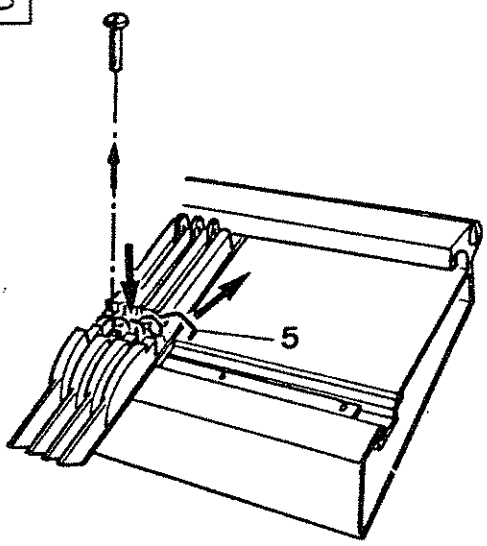
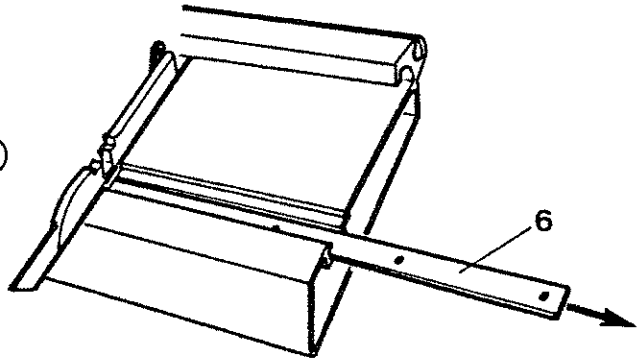


Keeping the brake spring (5) pressed against the needle bed, unscrew the right hand side end screw and unhook the brake spring. Take off the left hand side end screw to release the brake spring completely.

6

Withdraw the 2 bed retaining bars (6) hooked together



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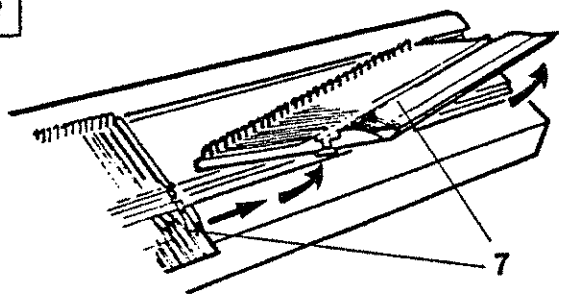
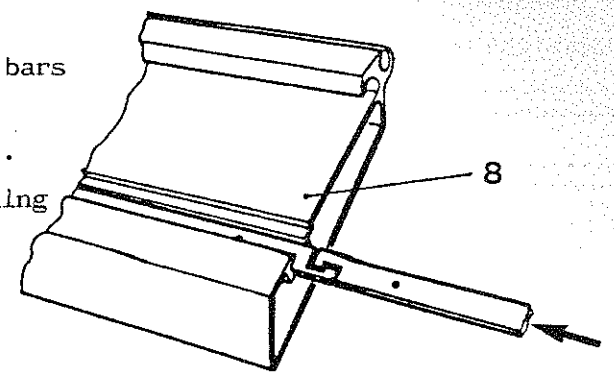


You can remove now the four needle bed segments (7) with the needles.

II. REMOUNTING OF THE NEEDLE BED

8

Place the bracket for needle bed (8) on the table. Attach the 2 bed retaining bars together and gently push them into their housing, making sure they do not separate. Position the assembly of tne 2 bed retaining bars in the middle of the bracket for needle bed.



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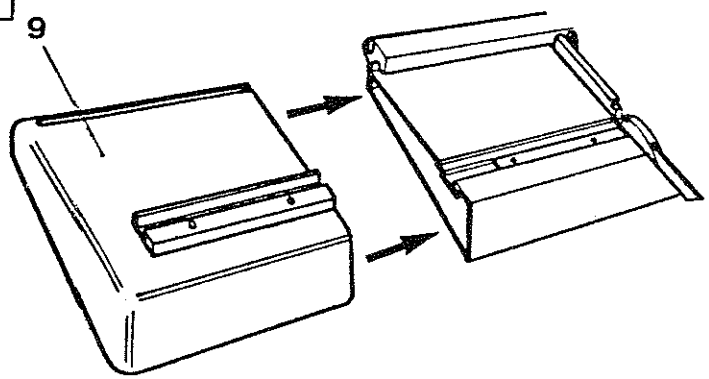
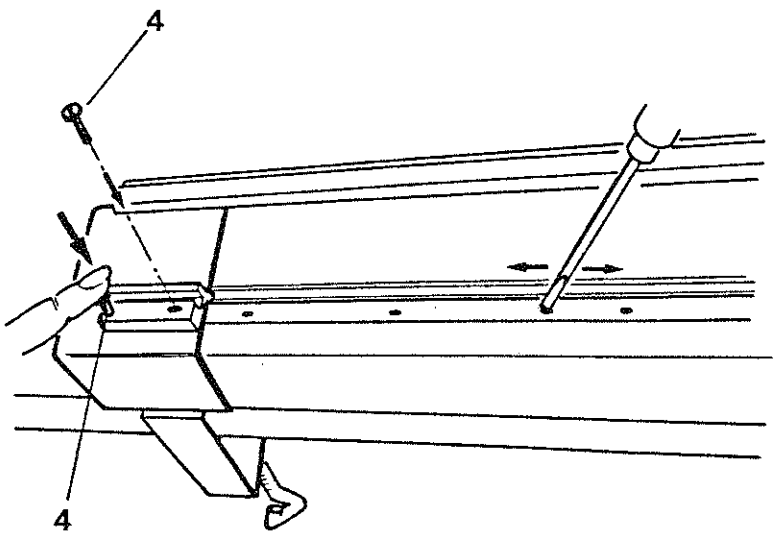
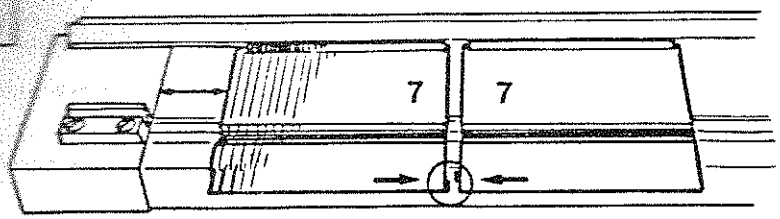


Fit the left hand end cover (9) and fix it on the table with a clamp.

10

Put the left hand end screw (4) in its housing, Ensure it aligns with the threaded hole in the bed retaining bar.
Drive in the screw without tightening it.
Fit the second screw of the end cover and screw it, but still without tightening it.



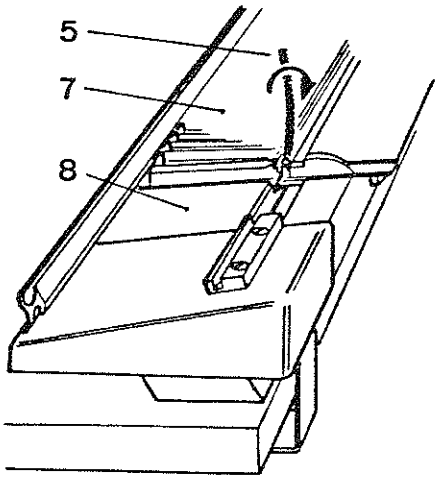


Place the four needle bed segments 7 on the needle bed bracket. Interlock them.

Leave a space of about 3 or 4 cm between the left hand side end cover and the left segment. Check if all the needles are in place.

12

Hook the end of the brake spring (5) on the left, between the needle bed's segment (7) and the bracket for needle bed (8) . Make it swivel in the direction of the arrow to position it correctly.



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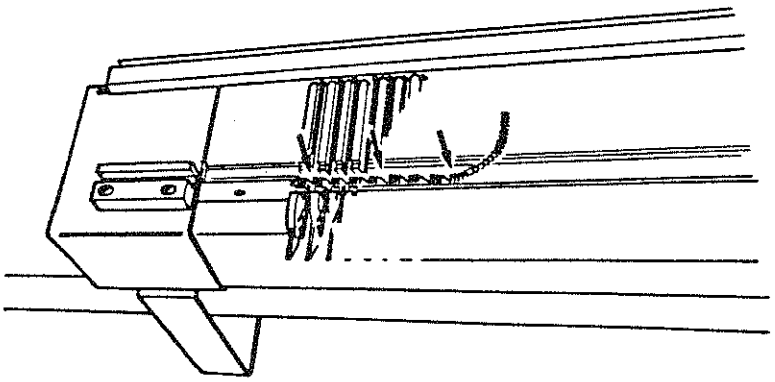
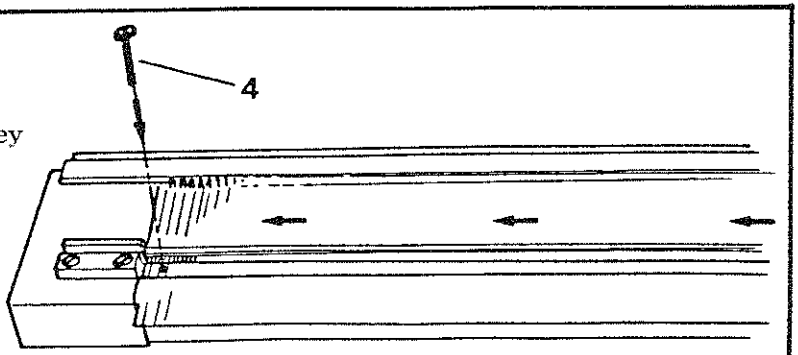


Leave two or three turns free, then stretch the spring over about the half of the length of the segment distributing the turns evenly between the needles.

14

Holding the spring, push the needle bed segments until they stop against the left hand cover. Fix the left end of the spring with a screw (4)



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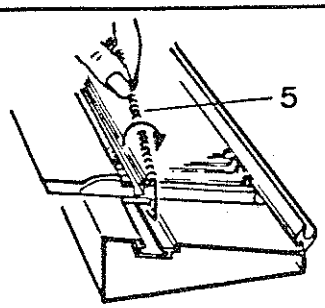
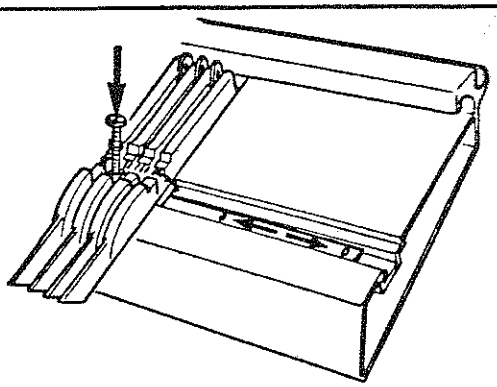


Hook the end of the brake spring (5) on the right.
Here too make it swivel in the direction of the arrow to position it correctly.

16

Put the right hand end screw in its housing, ensuring it aligns with the threaded hole in the retaining bar.
Drive in the screw without tightening it.



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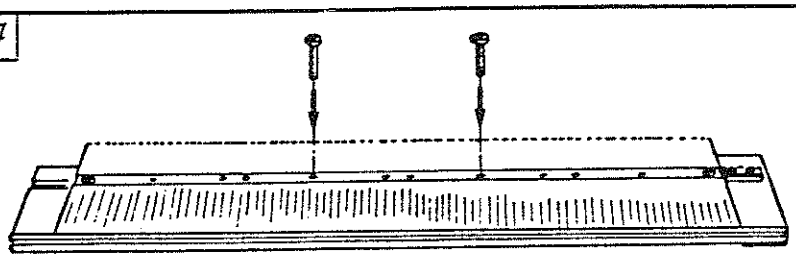
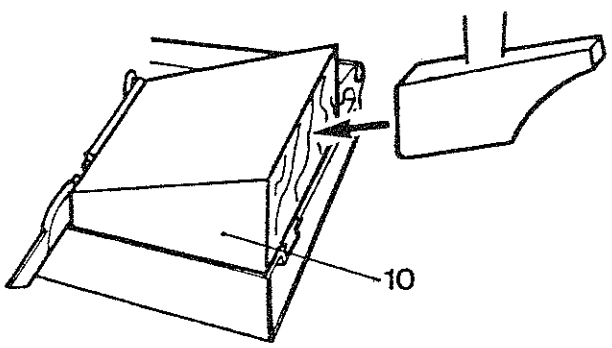


Fix the two segments in the middle with their central screws.
Don't tighten them.

18

By means of a wooden wedge (10) and a hammer couple up the segments with each other if necessary.
Caution : Don't damage the edge of the needle bed's segment.



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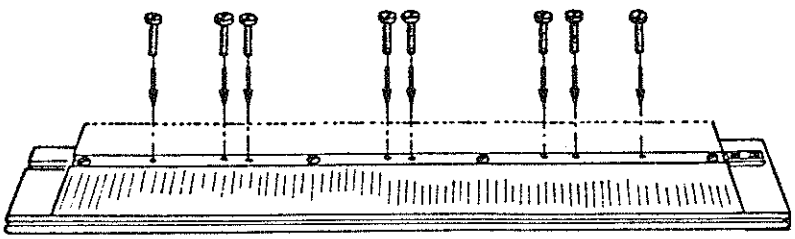
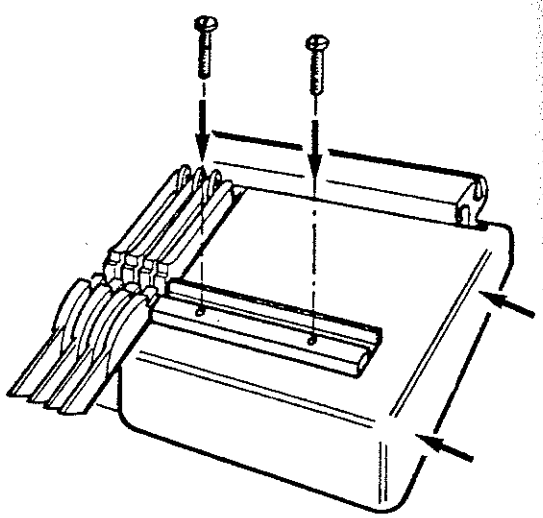


Drive in one after the other the eight remaining screws. To avoid crushing the needle bed's segments it is very important not to tighten these screws.

Fit the right hand end cover and fix it by means of the last two screws. Don't tighten them too much.
Fix the machine on the table by means of the two clamps.



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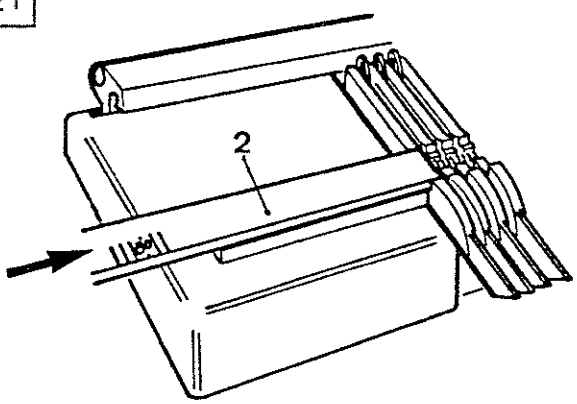
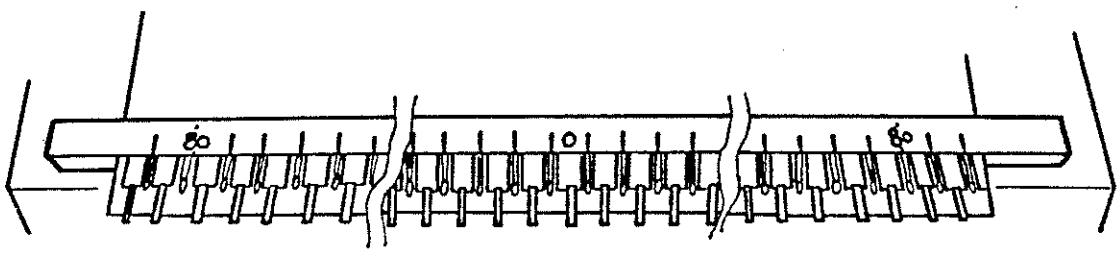


Introduce the slider rail (2) from the left side and push it using the pusher from left to right to place it.
Each time you pass a screw, press on the slider rail.

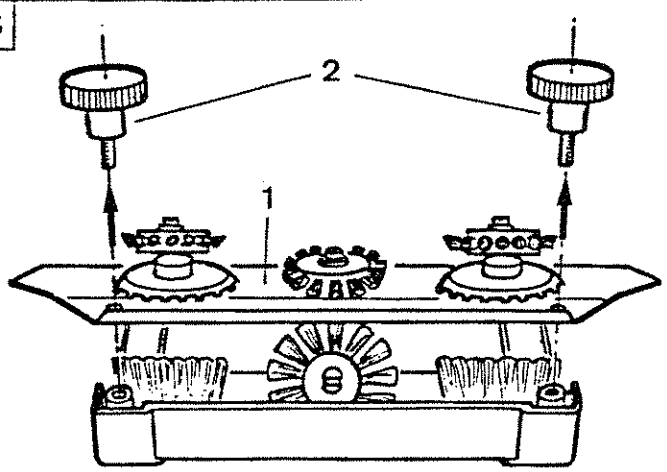
22



Align the last needles in the needle bed with the last graduations on the slider rail. Align the center needles exactly with the two graduations on both sides of 0 in the center of the slider rail.

III. DESASSEMBLING OF THE CARRIAGE

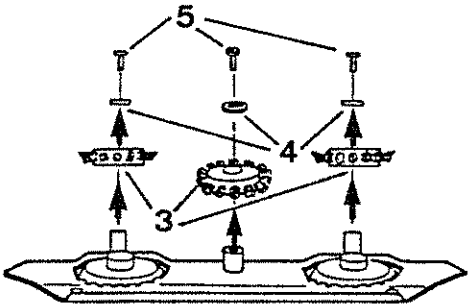
23



Unscrew both fixing knobs (2) in order to remove the retaining plate (1)

24

Disassembling of the retaining plate : Remove the retaining wheels 3 with the screws (5) and the washers (4)



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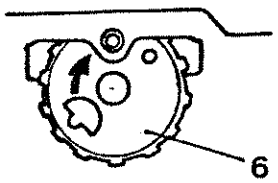
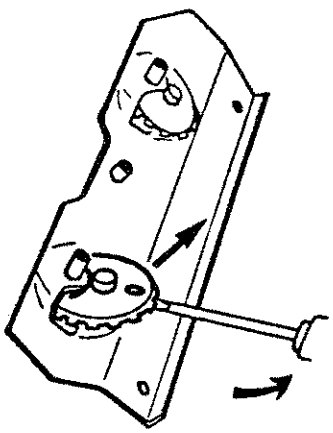
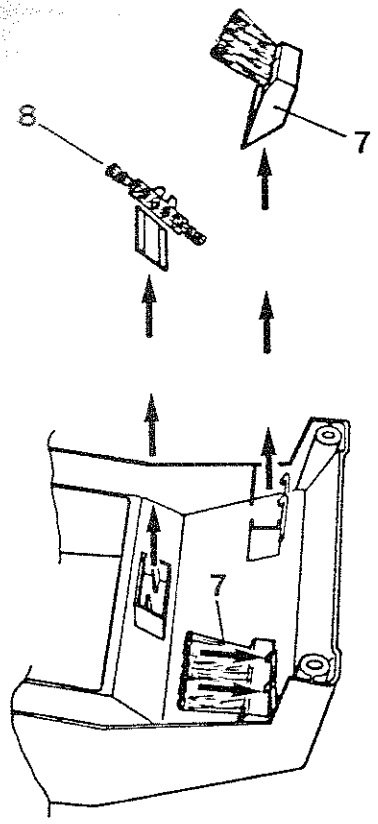


Align the opening of one of the knitting retainer wheels (6) with the shaft of the corresponding retaining wheel.

26

With a screwdriver, make it swivel to remove it

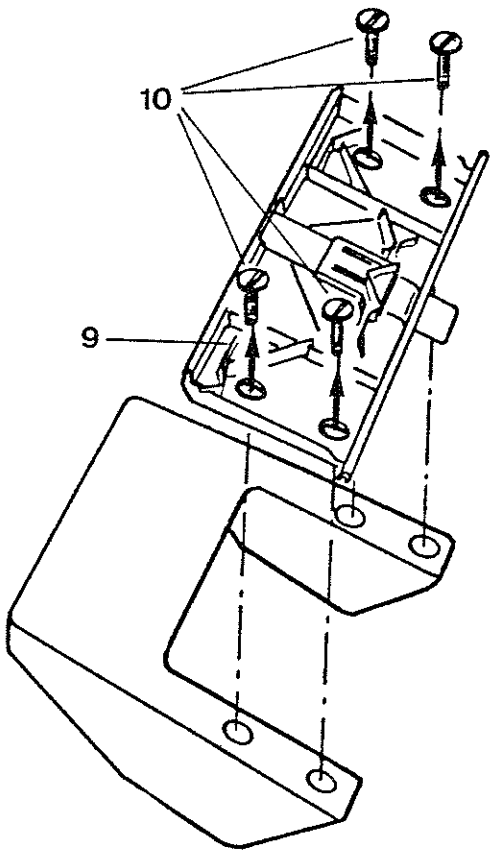




Take the carriage. Push on both pins to remove each brush (7) from its location. Also take off the retaining wheel (8) with its bracket.

28

Separate the carriage base plate (9) from the handle by unscrewing the four fixing screws (10)



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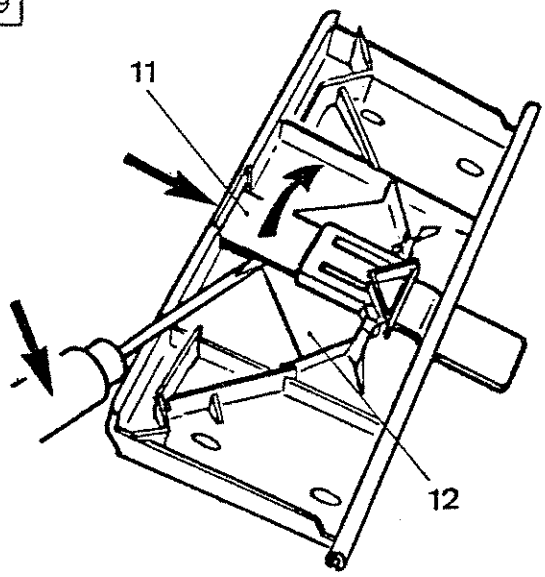
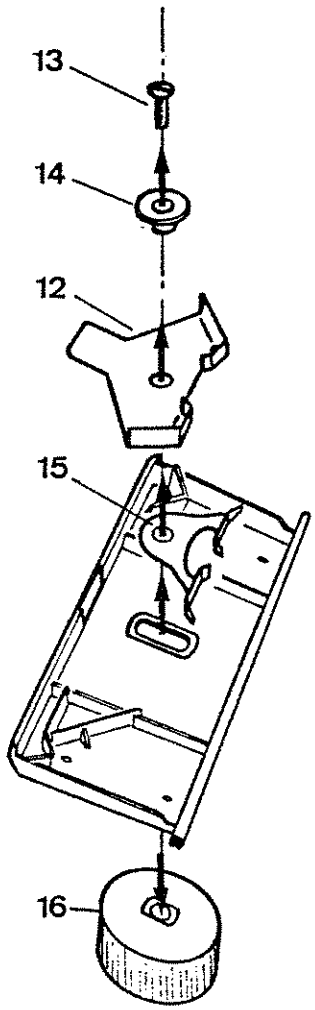
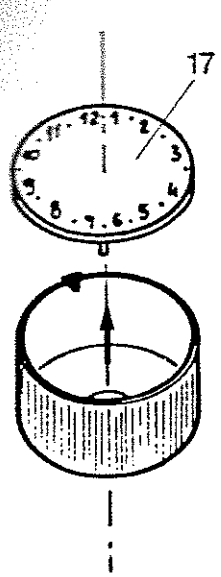


Push the stitch cam (11) into lower position. Whilst pushing, lift it with a screw driver from the stitch size cam (12) . Then remove it from its location.

30

Take off the screw (13) , the shouldered washer (14) , the stitch size cam (12) , the positioning spring (15) and the stitch size knob (16)

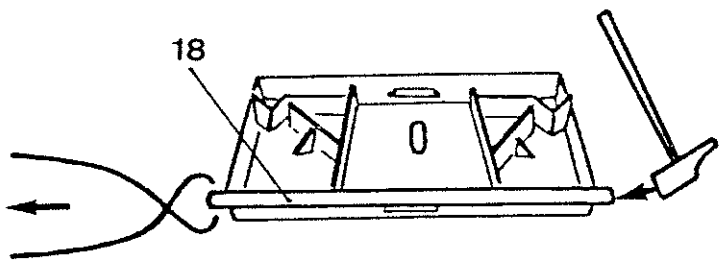




You can now separate the graduated stitch size dial (17) from the stitch size knob.

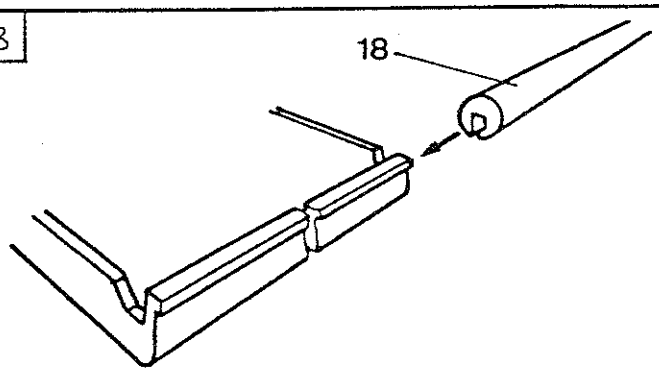
32

In order to change the slider (18) of the carriage, it's easier to use a hammer and pliers.



IV. REMOUNTING OF THE CARRIAGE

33

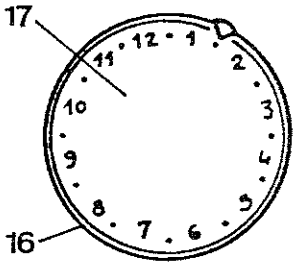


Set the slider (18) onto the base plate. Make it pass equally both sides of the base plate.

The direction is important.

34

Assemble the graduated stitch size dial (17) with the stitch size knob (16) . The pointer of the knob must be at the number 1,5.



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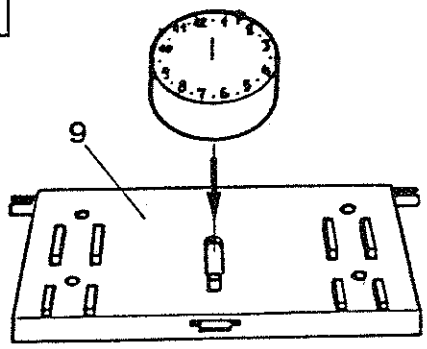
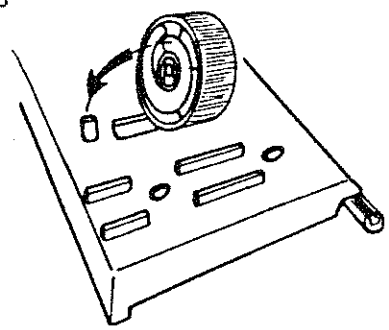


Set the stitch size knob onto the base plate (9)

Caution : Place the number 12 on the side of the slider,

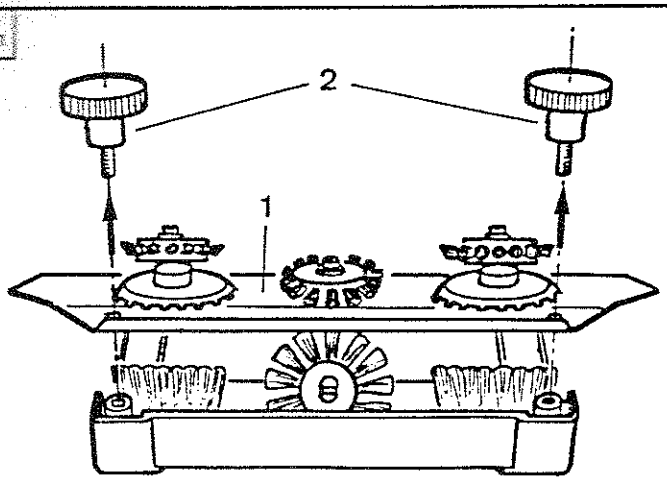
36



so that the pin on the base plate goes into the guiding groove inside of the knob.

I. DESASSEMBLING OF THE CARRIAGE

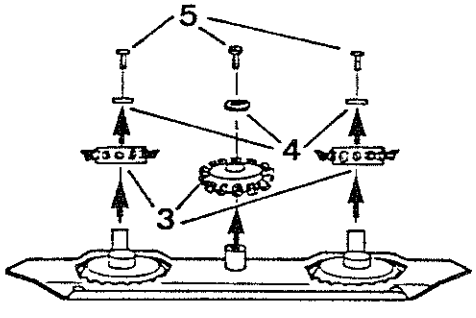
44



Unscrew both fixing knobs (2) in order to remove the retaining plate (1)

45

Disassembling of the retaining plate : Remove the retaining wheels 3 with the screws (5) and the washers (4)



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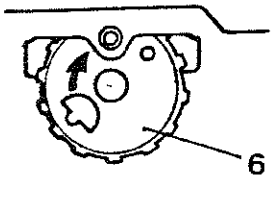
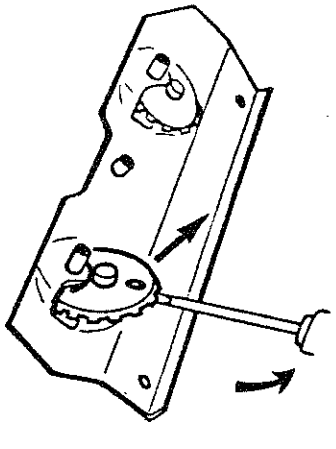


Align the opening of one of the knitting retainer wheels (6) with the shaft of the corresponding retaining wheel.

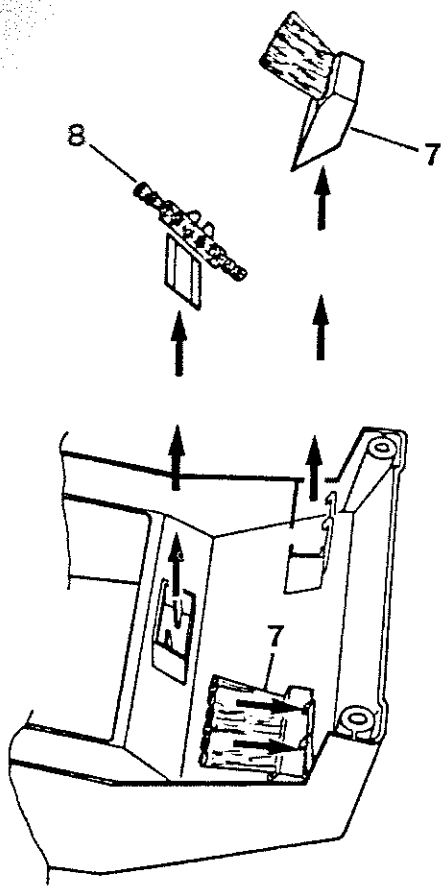
47

With a screwdriver, make it swivel to remove it



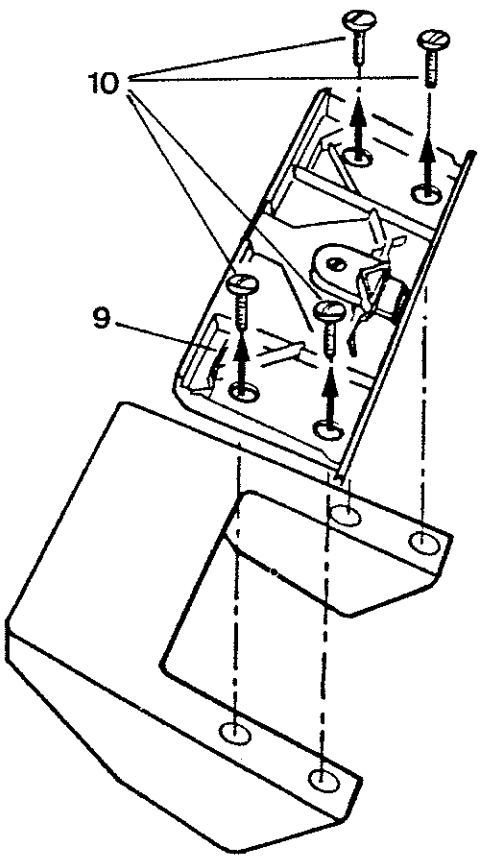
83

INTARSIA



Take the carriage. Push on both pins to remove each brush (7) from its location. Also take off the retaining wheel (8) with its bracket.

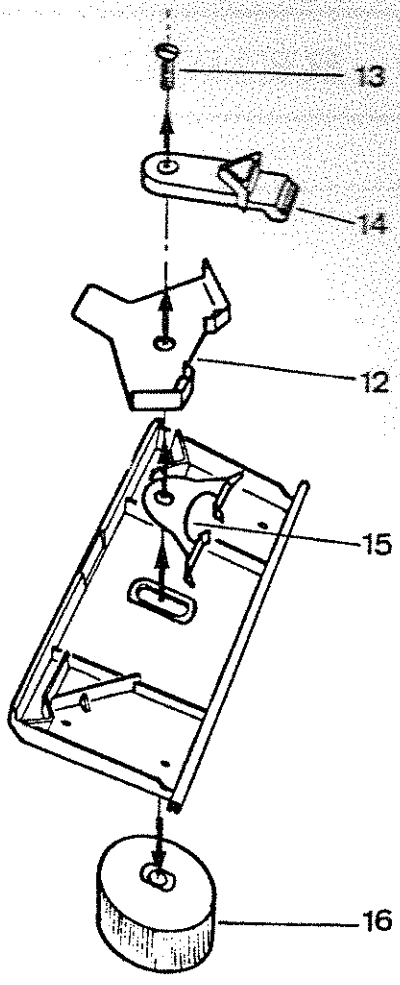
49



Separate the carriage base plate (9) from the handle by unscrewing the four fixing screws (10) .

50

Take off the screw (13) ,
The intarsia stitch cam (14) ,
the stitch size cam (12) ,
the positioning spring (15) and
the stitch size knob (16) .



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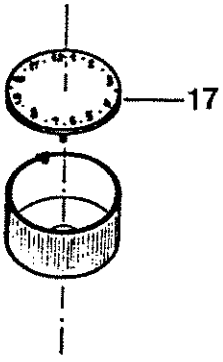
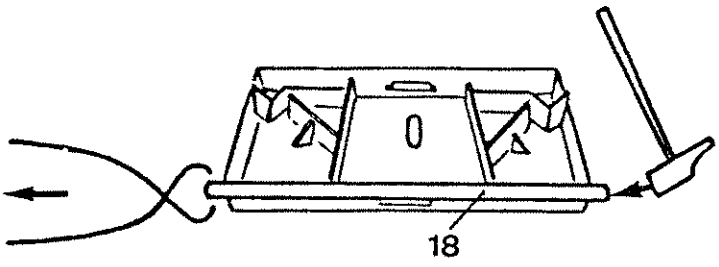


You can now separate the graduated stitch size dial (17) from the stitch size knob.

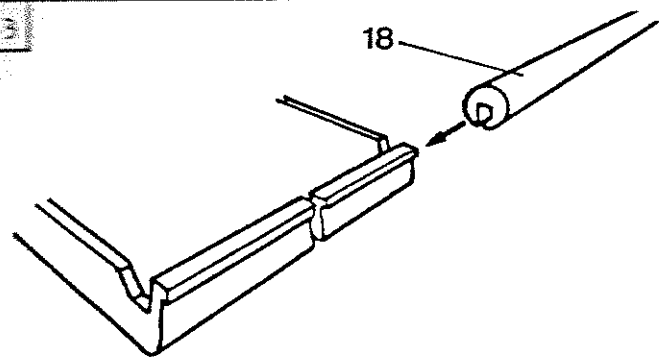
52

In order to change the slider (18) of the carriage, it's easier to use a hammer and pliers.



II . REMOUNTING OF THE CARRIAGE

53

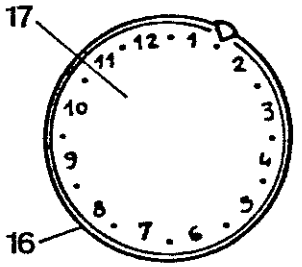


Set the slider (18) onto the base plate. Make it pass equally both sides of the base plate.

The direction is important.

54

Assemble the graduated stitch size dial (17) with the stitch size knob (16) . The pointer of the knob must be at the number 1,5.



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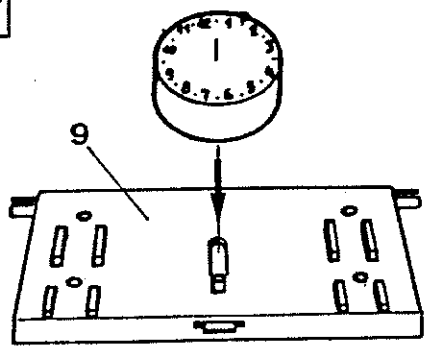
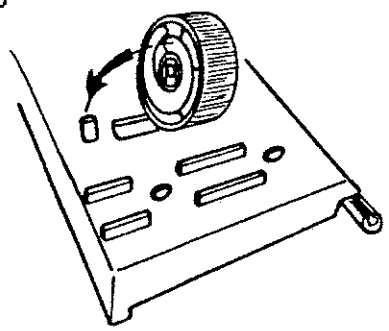


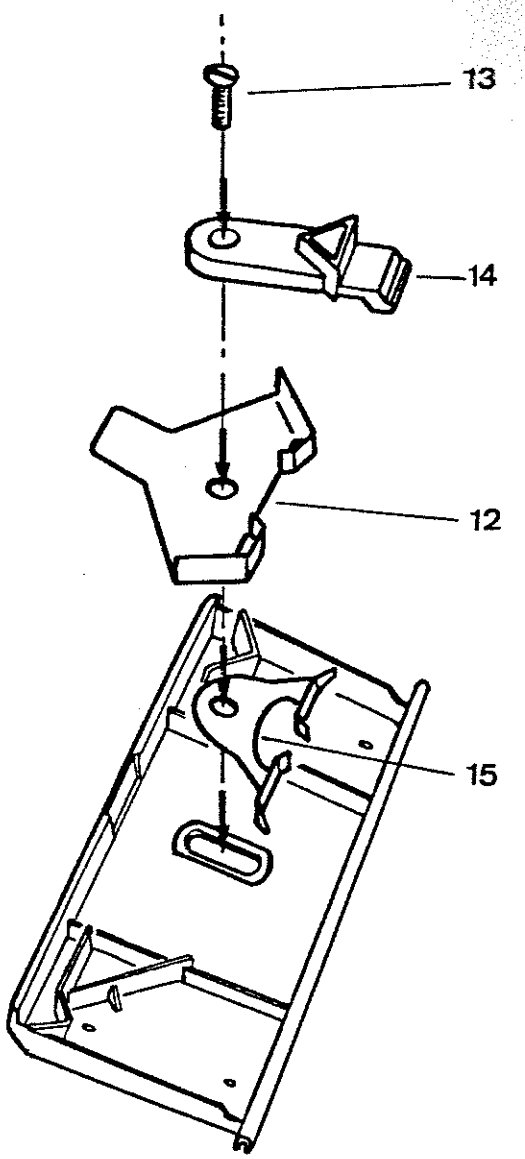
Set the stitch size knob onto the base plate (9)

Caution : Place the number 12 on the side of the slider,

56

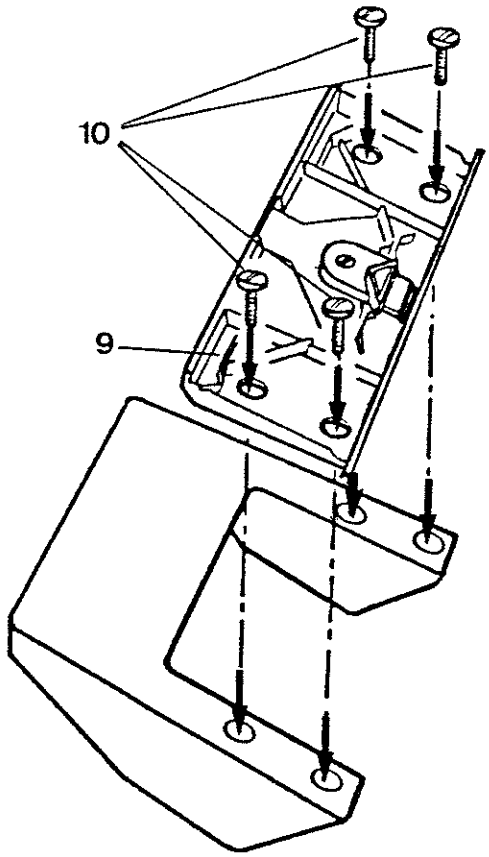


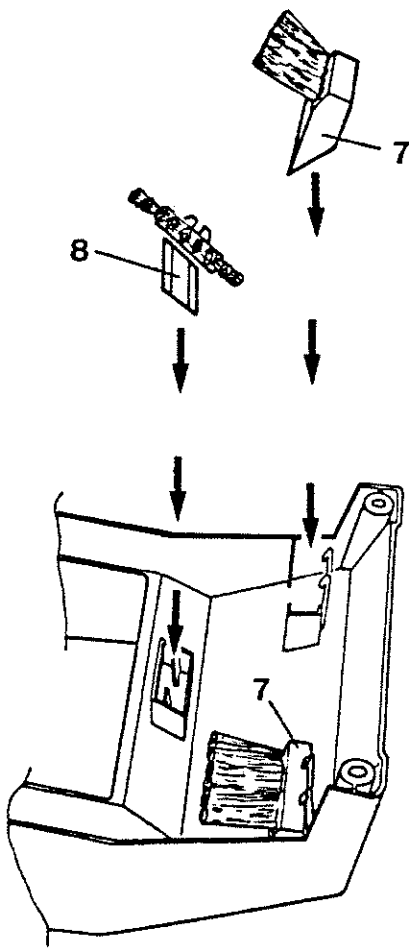
so that the pin on the base plate goes into the guiding groove inside of the knob.



Keeping the stitch size knob against the base plate, turn the carriage upside down.
Fit the positioning spring (15) , the stitch size cam (12) and the intarsia stitch cam (14) .
Fix the whole with the fixing screw (13) .

Set the base plate (9) onto the handle and fix it with the 4 corresponding screws (10) .





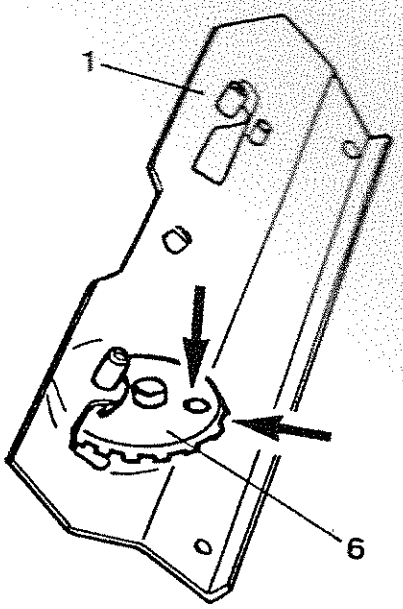
Put the 2 brushes (7) in their housing as well as the retaining wheel (8)

60

Remounting of the retaining plate :

Take the retaining plate (1) as well as both knitting retainer wheels (6) .

Align the opening of one wheel with the corresponding retaining wheel's shaft on the wheel to set it properly.



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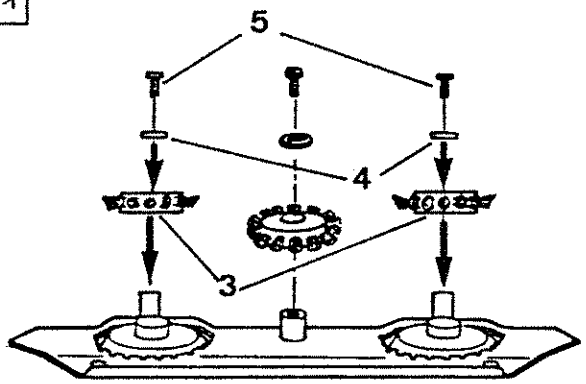
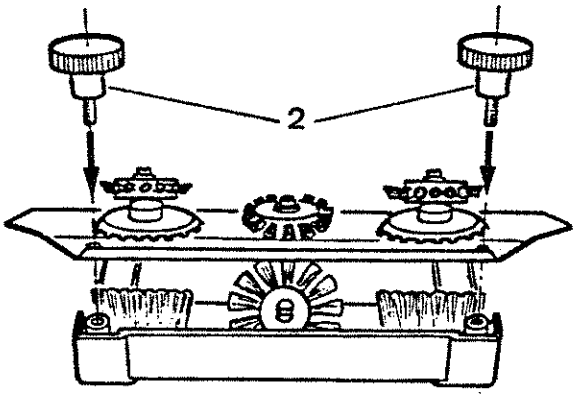


Set the 2 retaining wheels (3) (the bevelled ones) on their shafts and fix them by means of the screws (5) and the washers (4) . Pay attention to the drawing to avoid reversing the direction Set the last retaining wheel on its shaft and fix it as well.

62

It remains only to fix the retaining plate on the carriage by means of the two fixing knobs (2) .



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WHITE

Instructions for Mechanics

Model 1502 1602

INSTRUCTIONS FOR MECHANICS

FRONT CARRIAGE

DISASSEMBLING OF BOTTOM SIDE :

BACK CARRIAGE

NEEDLE BEDS ADJUSTMENT

NEEDLE BEDS

FRONT NEEDLE BED

BACK NEEDLE BED

OTHER OPERATIONS ON FRONT NEEDLE BED

FRONT CARRIAGE

I - Disassembling of the cover :

- Turn carriage upside down
- Unscrew both screws A of carriage locking lever
- Unscrew the 4 fixing screws B of the cover
- Return carriage while holding cover C against carriage
- remove cover C, needle selector buttons and needle return buttons E

II - Replacement of a selector wheel with shaft :

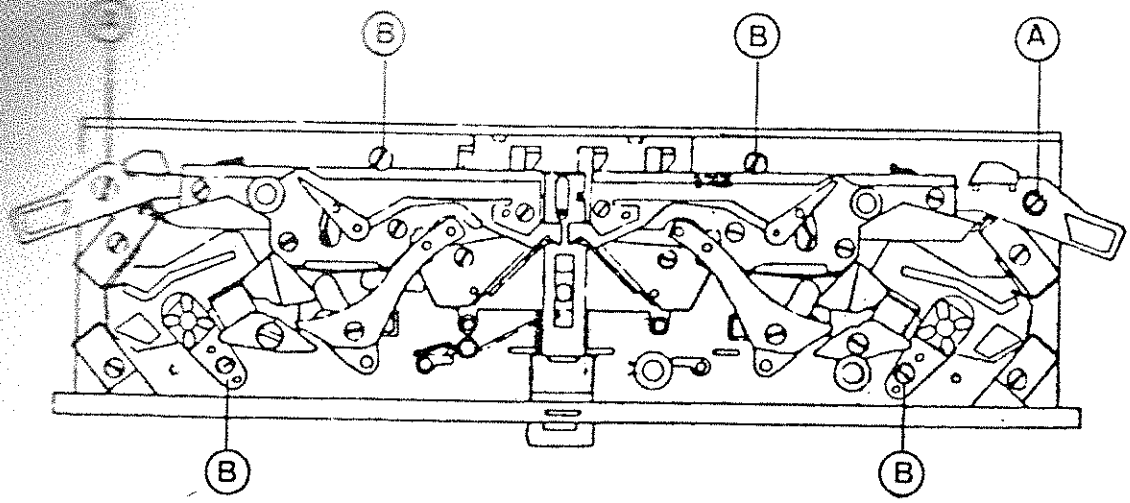
- Remove needle selector wheel spring G, needle selector wheel assembly H and orientation spring M

- Set in the new selector wheel assembly H , needle selector spring G and orientation spring M . Take care to set spring G properly into grooves I

III - Replacement of a coupling catch :

- Unscrew the screws J and take coupling catch K and coupling catch spring L away

- Remount new coupling catch


B
B
A
B
B

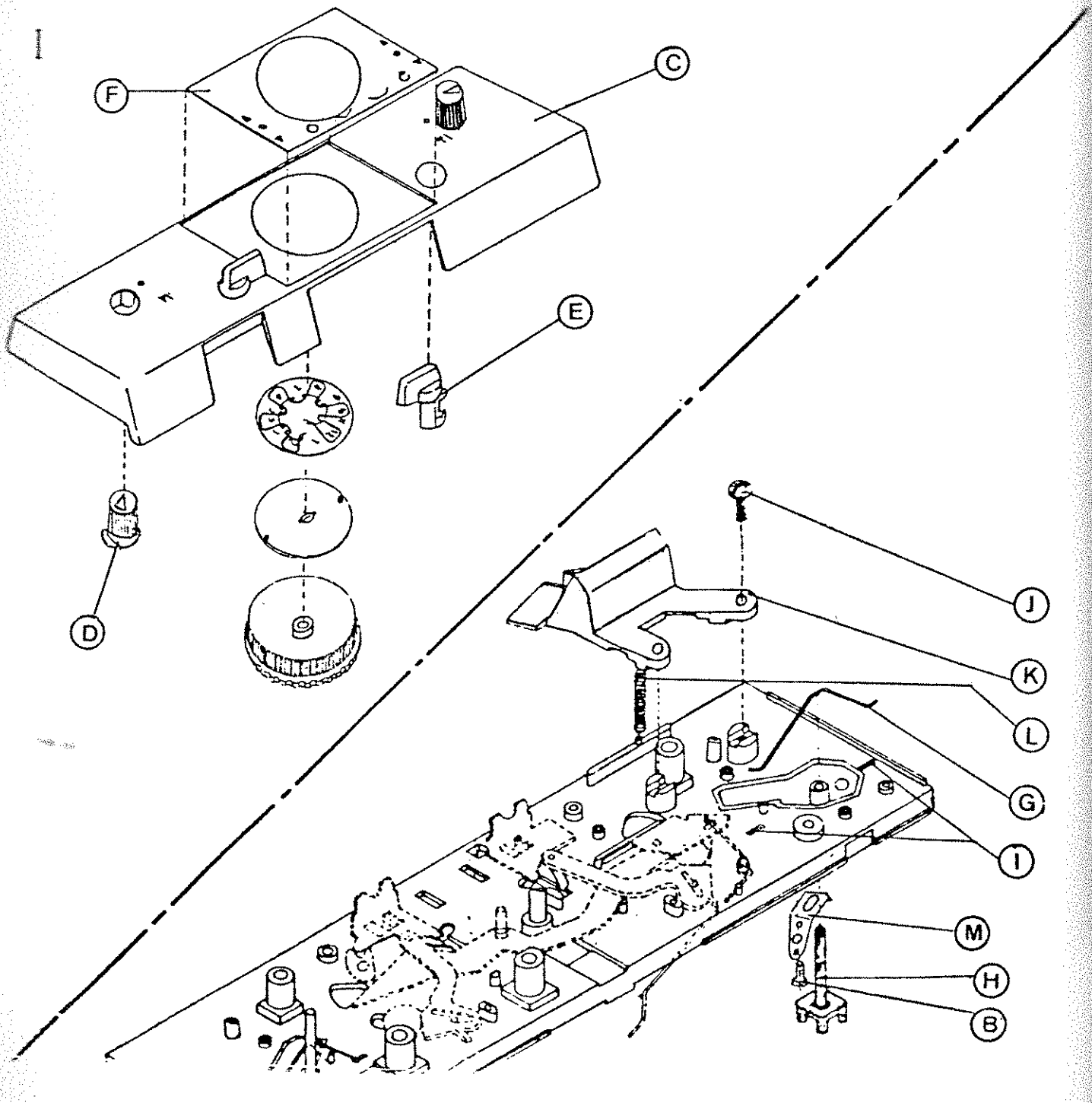

F
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Fig. 2

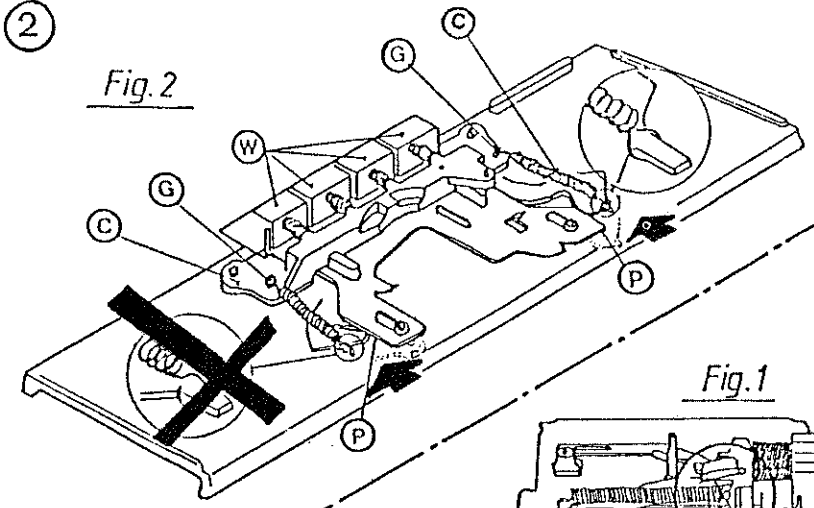
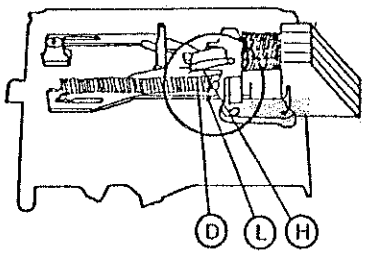
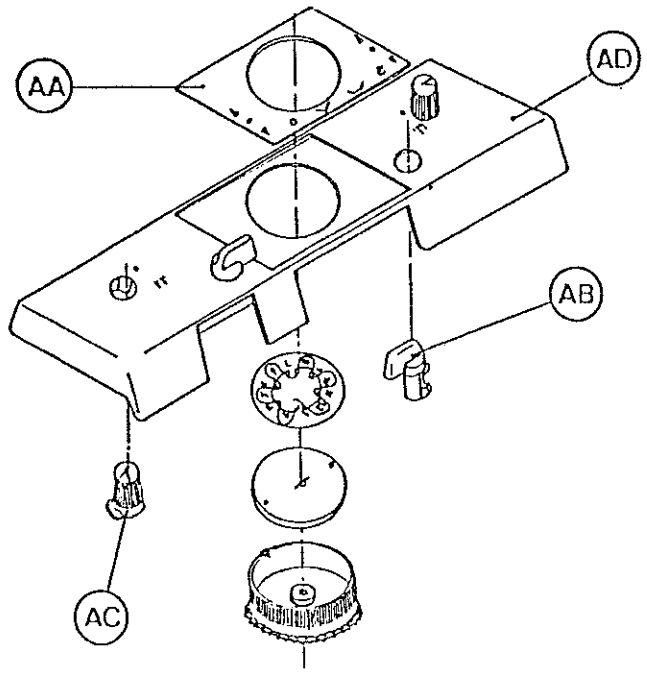


Fig. 1





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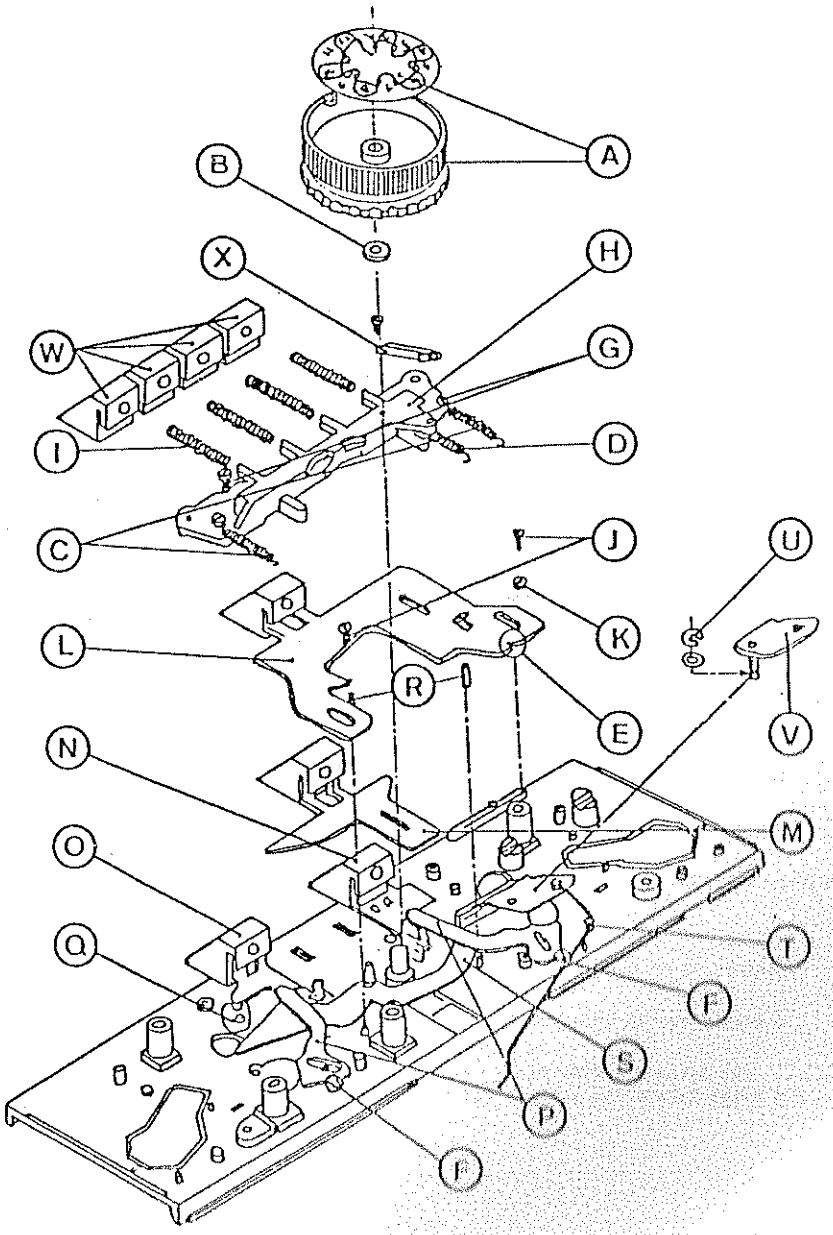


IV - Removal of engaging plate :

- Pull upwards stitch size dial and stitch size dial indicator plate A in order to remove them
- Unhook return springs C and D from tucking cam engaging plate L and stitch cam engaging lever
- remove both selector keys engaging plate bridge fixing screws G, while holding the engaging plate bridge against the carriage base plate
- Remove both fixing screws G and both return springs C
- Remove the selector key engaging plate bridge together with the 4 selector Keys springs I
- remove the 3rd return spring (D),
- Remove tucking cam engaging plate L , stocking stitch engaging plate M circular knitting engaging lever O and cancellation key tripping plate N
- Remove stitch cam right and left engaging levers P and secondary stitch cam stop plate Q
- Remove both tucking cam engaging pins R
- In order to remove the main stitch cam stop plate S :
  - . Unhook and remove its return spring T
  - . Remove main stitch cam stop plate, cam retaining clip U and stop plate cam eccentric washer to be find on the other side of the carriage base plate
  - . Remove main stitch cam stop plate V and main stitch cam stop plate S

V - Reassembling of cover : proceed the reverse

- Set main stitch cam stop plate S and main stitch cam stop plate cam V
- Fix them with the washer and the retaining clip U on the opposite side of the carriage base plate
- Set in the return spring T
- Check if S can slide along
- Set the cancellation key tripping plate N , taking care to compress the selector key locking plate return spring (on the opposite side of the carriage base plate)
  Depress key N into cancelling position
- Set secondary stitch cam stop plate Q, the flat side being in line with the main stitch cam stop plate S
- Set the stitch cam engaging levers P
- Set circular knitting engaging plate O , the nose of it being engaged into the notch of the secondary stitch cam stop plate Q
- Set the stocking stitch engaging plate M next to the cancellation key tripping plate N
- Set in both tucking cam engaging pins R
- Set the tucking cam engaging plate L , the screws J and the washers K
- Set the selector key engaging plate bridge, the 4 selector key springs I being engaged into the selector keys W and round the engaging plate bridge noses H
- Push engaging plate bridge H into position, then drive in screws G 2 or 3 threads

Hook spring D round the guide plate H , the ring of the spring being set upside (fig.1), in order to prevent it from being wedged between the engaging plate bridge H and the engaging plate L

- Hook the 2 springs C left round the lugs under the head of the screws G and tighten those screws.

Nota : After screws G have been tightened, the springs have to be caught with the screws, but not wedged

- Hook the middle spring D round tucking cam engaging plate L
- Before hooking the 2 other springs C round the stitch cam engaging levers, bring those closer to the selector keys W (see fig.2)
- Check that selector key W and levers P are working, keys being cancelled. The levers P have to come in upper position as shown in fig.2
- If stitch size dial has to be replaced, the "6" of the stitch size dial indicator has to be set next to the flat of the support .
  While setting up, put if necessary the washer B onto the central shaft
- Press down simultaneously stitch size dial and stitch size indicator plate, the "12" being set next to the selector keys W and the arrow pointing to "1"
- engage stitch size dial indicator plate by pushing it down as much as possible
- Turn dial A in order to make it possible for the stitch size dial index spring X to come into position
- Set keys selection plate AA in position on the carriage cover AD
- Set needle return buttons AB in position, the rod of the needle return cam being caught into the hole of the button
- Set both needle selector button AC in position, the arrow pointing to the middle of the carriage
- Cover the assembly with the carriage cover AD , the buttons AC pointing to "O"
- Turn the assembly upside down, while keeping it fastened together. Drive in the 4 cover fixing screws.
- Set the carriage locking levers with their fixing screws, making sure the noses of the locking levers are engaged under the needle track and the carriage locking lever springs are not wedged under the locking levers.

DISASSEMBLING OF BOTTOM SIDE

I - Removal of a needle track :

It is not necessary to remove the carriage cover

- Depress stocking stitch key together with jacquard key
- Unscrew and remove the 4 screws A
- It is then possible to :

  a) replace the selector key locking plate return spring C
  b) replace the spring D of the neele return cam J
  c) replace the check cam E or the upper jacquard cam F (on back carriage)

II - Replacement of selector key locking plate I :

- Remove both needle tracks BB'
- Keep the 4 keys depressed
- Liberate the locking plate I by lifting it slightly and sliding it the way opposite to its return spring C

III - Setting of a needle track :

- Depress stocking key together with jacquard key
- Prepare the needle track B

  a) Bring the needle return cam J to medium position

  b) Set the spring of needle return button in position on the shaft of the cam
- hold the carriage with one hand , the bottom side being vertical
- Push with a finger the needle return button against the carriage base plate and make sure the arrow is showing the central position
- Hold the needle track B above its housing and introduce it.

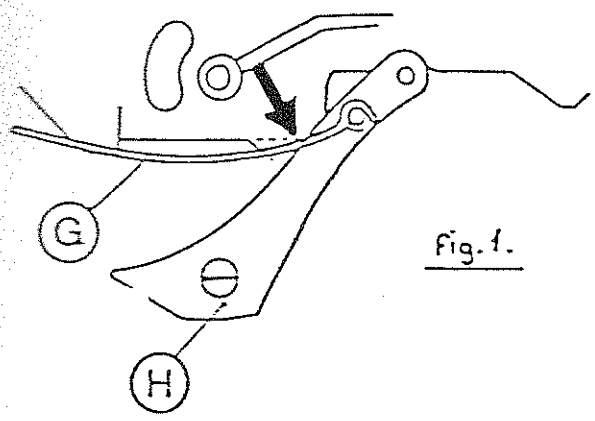
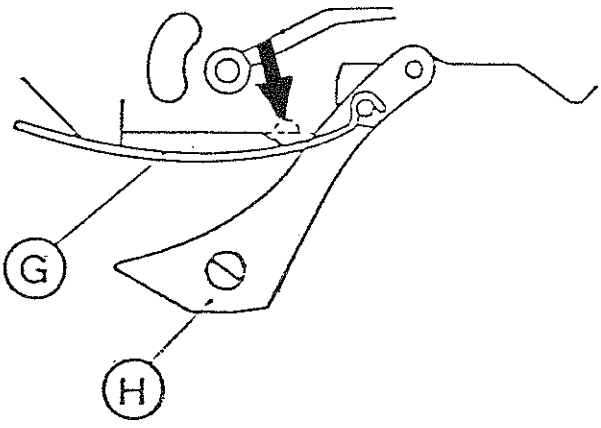
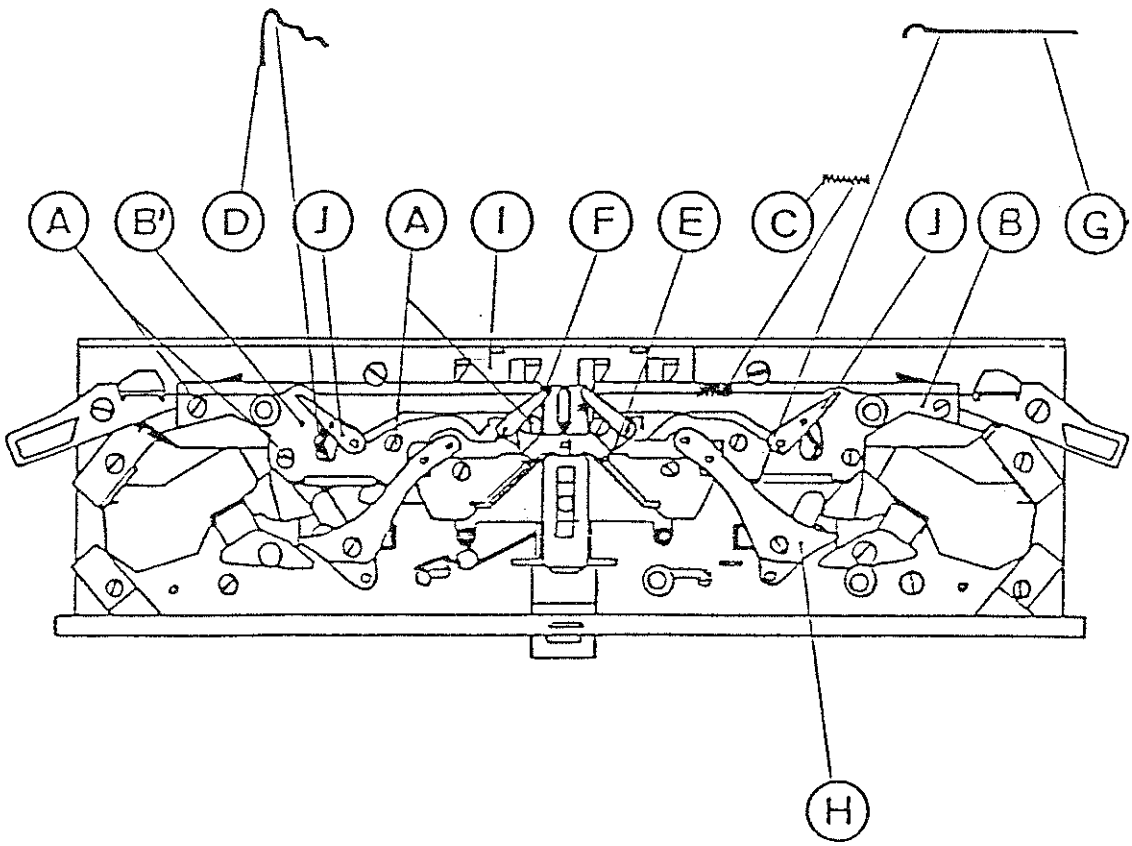
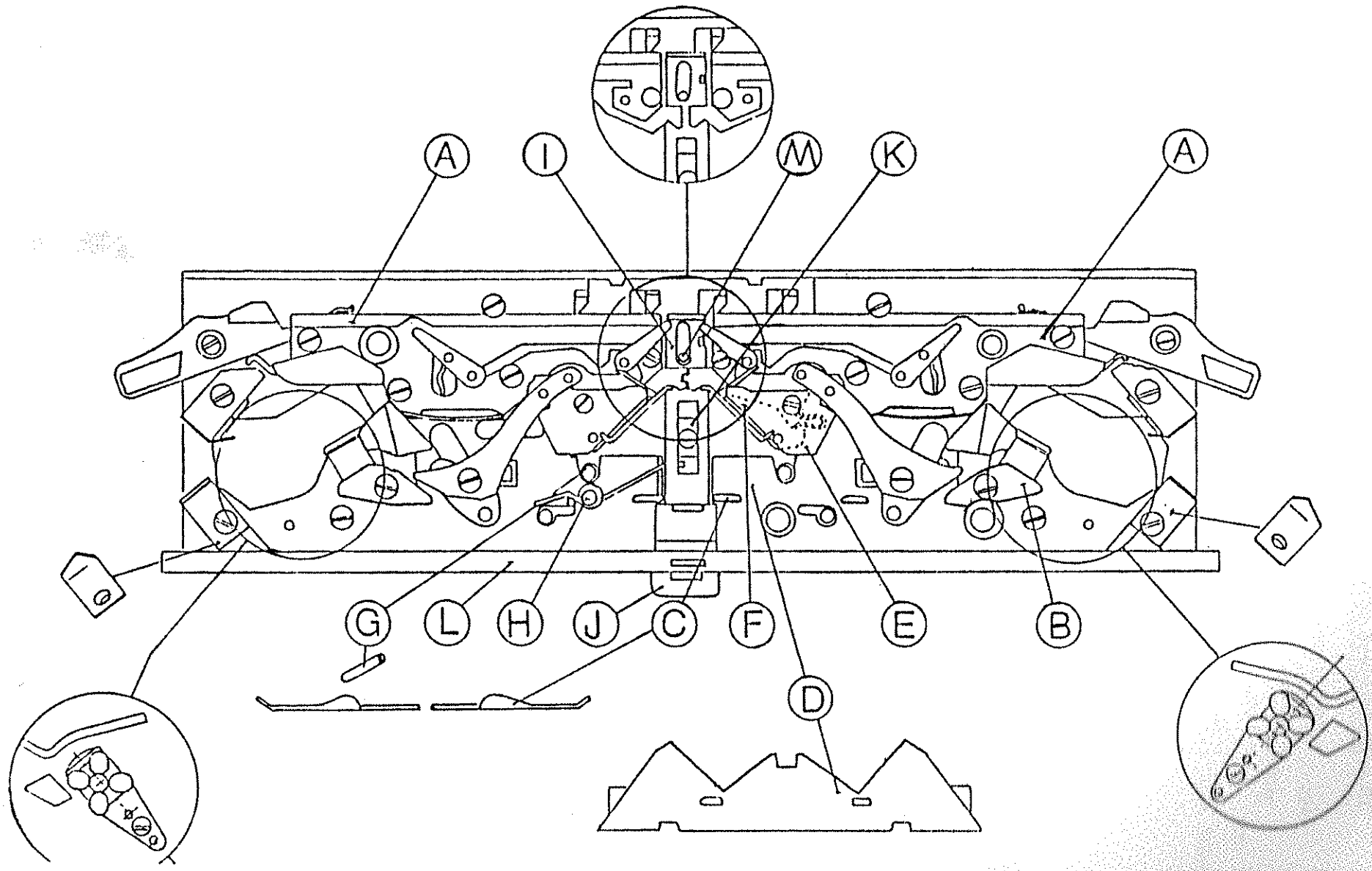


Fig. 1.






A
I
M
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L
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F
E
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D

IV - Replacement of a jacquard cam engaging plate :

- Remove needle track A
- Remove one fixed cam B
- Remove the needle rail C
- Remove the rear tucking cam D . Mind the tucking cam engaging pins G
- remove the lower jacquard cam retaining plates E and the lower jacquard cams F
- Remove jacquard cam engaging plate I return spring H
- Depress partialy jacquard key J in order to make it possible to put a shim (4 mm allen key) between the central boss K of the carriage base plate and the slot of the plate I
- With a screw-driver, taking support against the slider 1 , bring the key J against the cover
- While holding key J with one hand, use the other one to remove the jacquard cam engaging plate I. Take care not to loose the jacquard key in the carriage cover.

V - Setting of jacquard cam engaging plate :

- Begin the introduction of the new jacquard engaging plate I
- Bring it in locked position, by depressing the key J completely

Nota : when unlocked, the engaging plate I must be able to come against its guiding pin M without having the key against the carriage cover

- set return spring H
- Set the other parts in the reverse of their unsetting

DISASSEMBLING OF BOTTOM SIDE

I - Replacement of double positioning spring A : left : 7 033 right : 7 034

Be sure to set the spring in the right position, against the heel of the assise B while remounting (see detail 1)
Do not invert left and right spring.
Be careful to needle depressor cams for back carriage on single bed (see detail D)

II - Lower positioning spring C : left 8 202 right 8 203

Do not invert left and right spring. To remount, see detail 2

III - Removal of stitch cam F :

1 - Depress stocking stitch key

2 - Removal of right fixed cam D and selector positioning spring E :

If this pperation is carried out in order to replace a stitch cam F, first release the fixed cam D next to the stitch cam which has to be replaced.

a) Unscrew fixing screws G

b) Lift fixed cam I for 2 or 3 mm by the bottom

c) Release it from under the needle track H and the needle rail I

d) Remove fixed cam D and the corresponding selector positioning spring E

3 - Removal of needle rail I and tucking cam J :

a) Cancell keys

b) Lift needle rail I (it is not necessary to remove the second fixed cam)

c) Lift the tucking cam J by its lower left corner, high enough to enable it to pass over the bosses L of the carriage base plate and pull it towards the slider M . The tucking cam J return spring K release itself from under the lugs of the carriage base plate, thus liberating this cam

Nota : take care not to loose the 2 engaging pins N . It is then possible to replace the jacquard engaging plate return spring O

4 - Removal of lower jacquard cam retaining plate P :

a) Unscrew fixing screw V while maintaining the retaining plate P

b) Remove retaining plate P , taking care not to loose lower jacquard cam R return spring Q

c) If necessary, remove Q and R

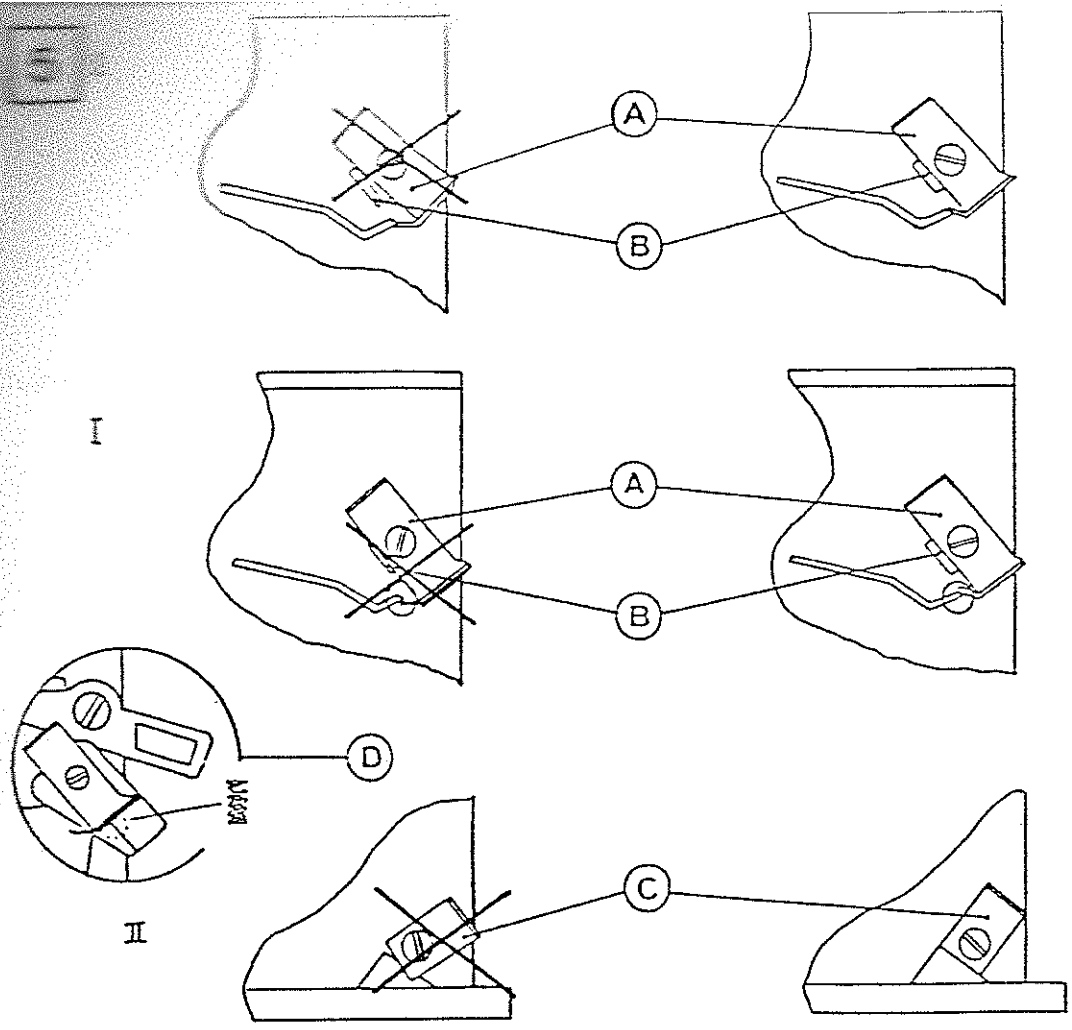
5 - Removal of stitch cam F :

a) Depress stocking stitch key

b) Unhook and remove stitch cam return spring S by releasing it from its housing

c) Loosen stitch cam F fixing screw T and remove it

Nota : Cross piece for stitch cam and stitch size dial indicator shaft can not be removed.


A
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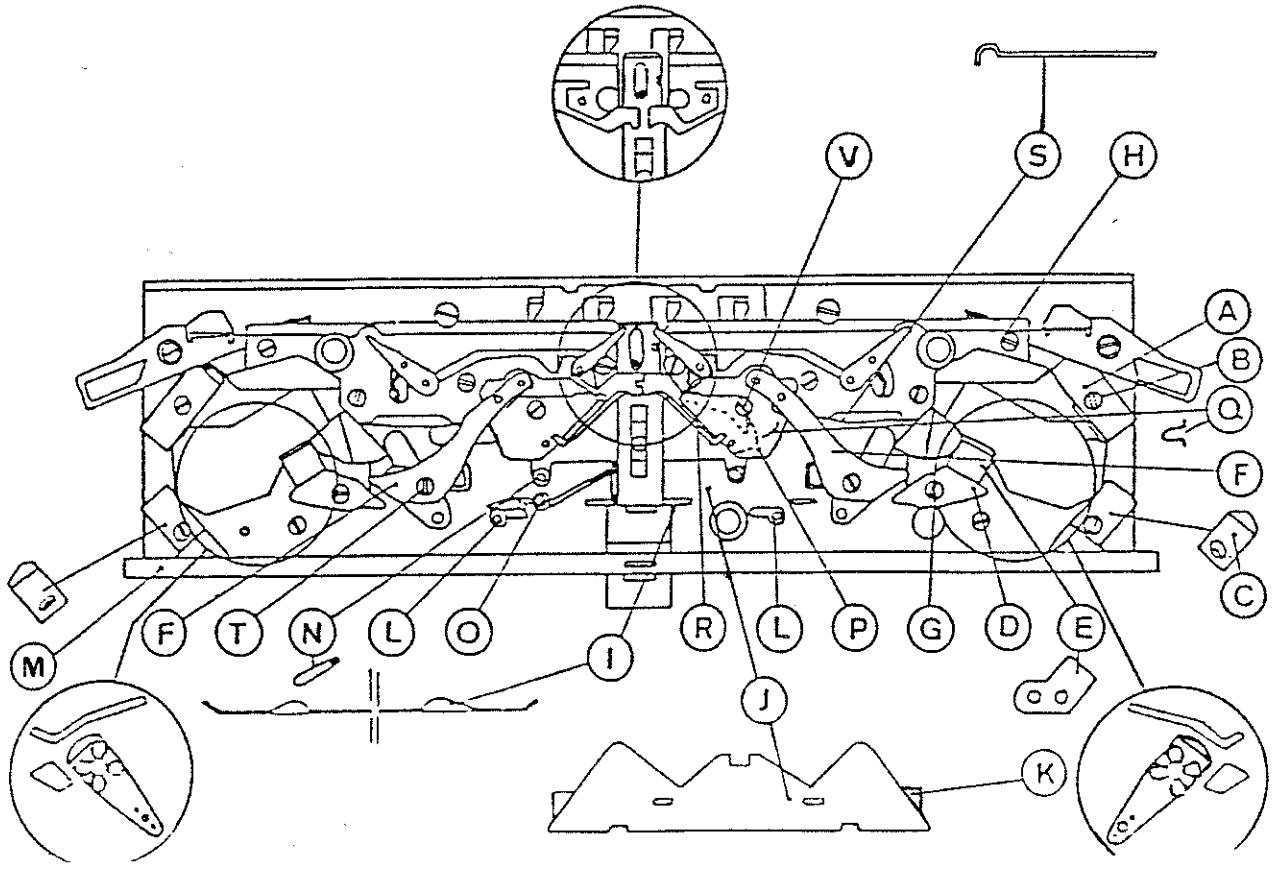
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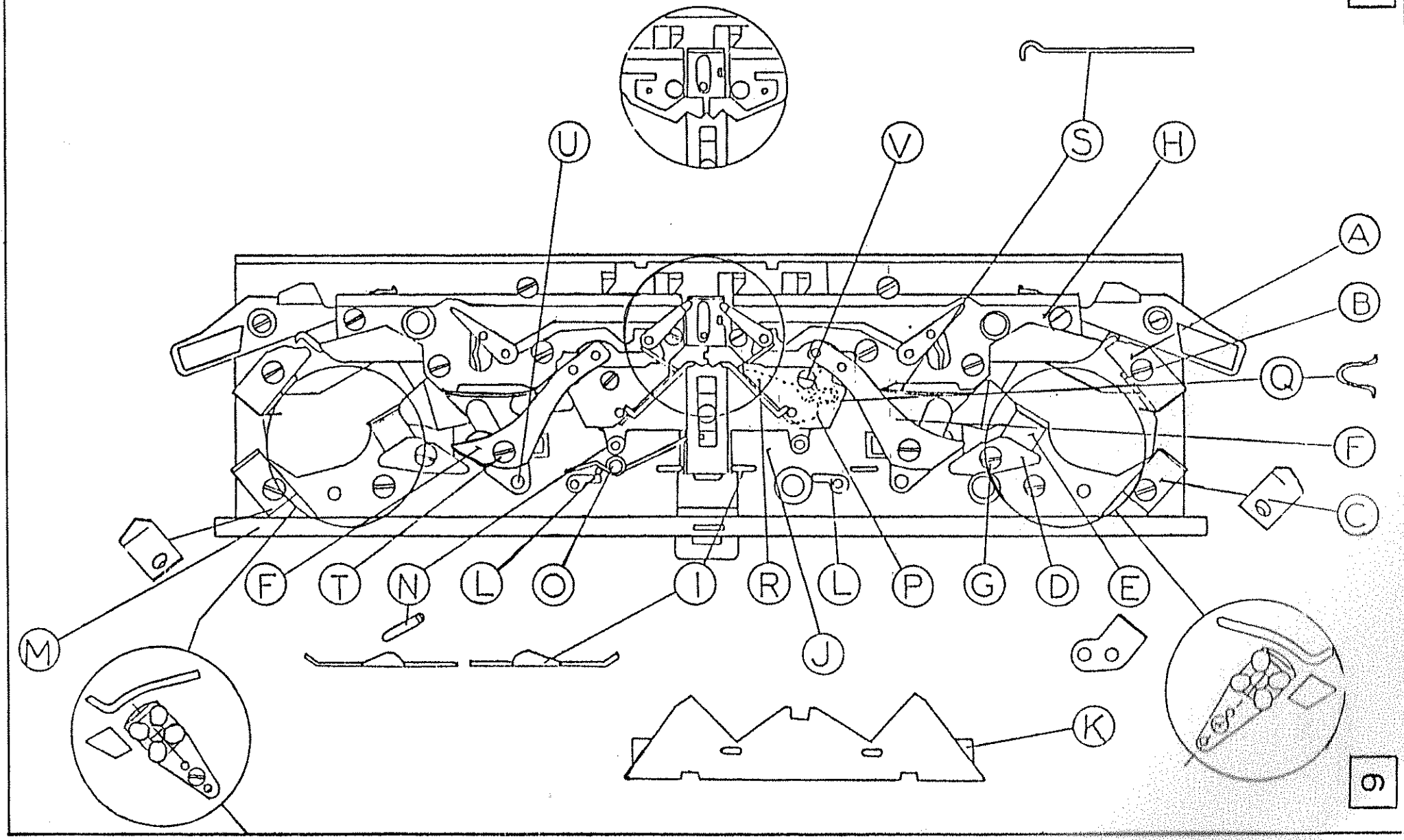
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2 - Reassembling :

1 - Setting of a stitch cam F ;

- Depress stocking stitch key
- Engage the hook of the stitch cam return spring into the narrow groove of the stitch cam F stud (see fig.1 p.3)
- set stitch cam F and stitch cam return spring S in position, taking care not to bent the spring which has to be straight when not strained.
- Screw up stitch cam F on the cross piece for stitch cam, taking care to have one of the holes U of the cross piece coinciding with the blind hole of the carriage base plate.
- Setting of stitch cam : cancell all the keys, stitch size dial on 9. The space between the lower part of the stitch cam an the lower slider of the carriage must be the same on both side (for left and right stitch cam). If not, loosen or tighten the screw of stitch cam stop (under stitch cam F)

2 - Setting of a lower jacquard cam R :

- Depress jacquard key together with stocking stitch key. To have jacquard key depress, it is necessary to depress in the same time both jacquard and stocking stitch keys.
- Set jacquard cam R and return spring Q
- Set jacquard cam retaining plate P and fixing screw V
- Check if jacquard cam R and stitch cam F are working

3 - Setting of a tucking cam J :

- Cancell the keys
- Make sure both tucking cam engaging pins N are in their housing
- Hold tucking cam J by its left edge
- Engage the right end of the spring K under the snug of the carriage base plate, by pushing it with a point of a tool
- Press tucking cam J down, while maintaining the head of it nearly 8 mm away from needle rail M and a short distance above the cams.
- Press left end tucking cam return spring K in order to introduce it under the snug, then aline the cam (bring the cam to level)

4 - Setting of a needle rail I, fixed cam D and selector positioning springs E

- Engage one of the end of the needle rail I on the tenon of the already mounted fixed cam D
- Push needle rail throughly towards this fixed cam, while maintaining the opposite end a bit higher in order to make easier the setting of the second fixed cam D
- Set selector positioning spring E on the corresponding stud
- Make sure the stitch cam F return spring S is in its housing. Depress stocking stitch key.
- Bring in the tenon of fixed cam D slantwise in order to introduce its guide under the needle track H
- Introduce its tenon into the needle rail I and push them simultaneously down against the carriage base plate
- Before screwing up fixed cam D, cancel keys in order to make sure the stitch cams F don't get caught on the needle rail I
- Push positioning spring E against fixed cam D
- Set in and tighten fixing screw G

BACK CARRIAGE

I - Disassembling of the cover :

- Remove brush support J + main yarn guide K unscrewing the 2 fixing buttons J on the handles
- Take off the covers U of buttons
- Unscrew the 3 screws O and P of handles, the 2 screws G, then proceed the same way as for front carriage

Before removing row counter cam K, (or row counter cam bracket for motor-drive) it is necessary to swivel it ant to remove screw N

II - Replacement of main yarn guide K :

Unscrew the 2 fixing screws L

III - Disassembling of lower part :

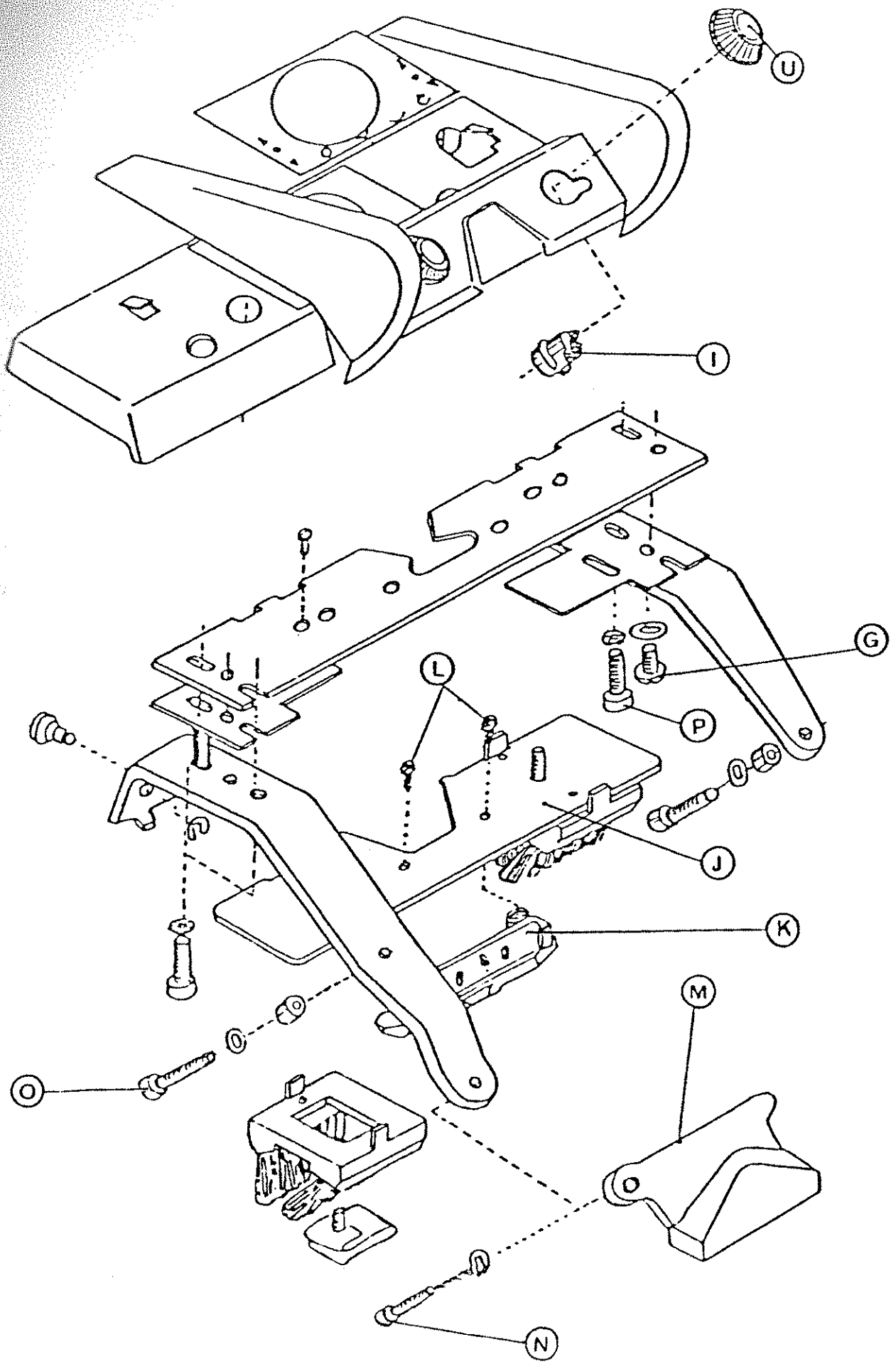
Proceed as indicated for front carriage.
When remounting needle rail A, it is important that jacquard key B is depressed simultaneously with stocking stitch cam C , so that the upper jacquard cams D will be on the right side of the jacquard cam engaging plate F (see fig.1 p. 8)

IV - How to remount the cover :

Proceed as indicated for front carriage.
Do not forget the 2 fixing screws O and screw P

V - How to replace a latch brush :

- Loosen srew R
- Take off spring S and brush T
- Replace latch brush
- Set again spring S
- Tighten screw R again


U
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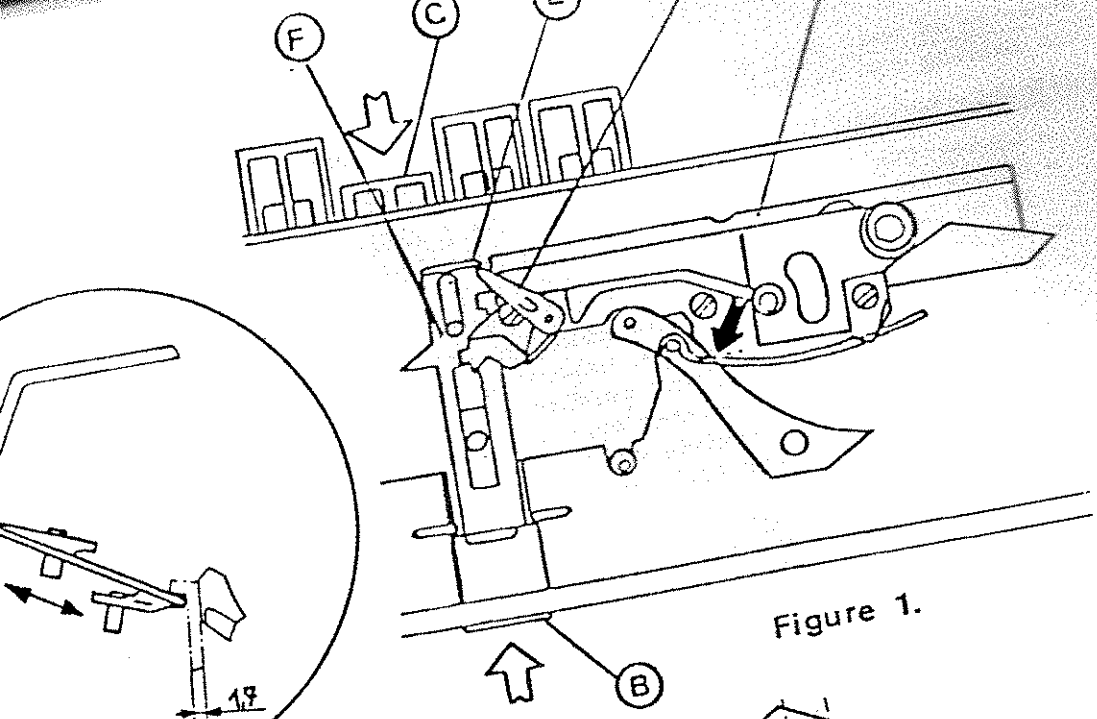
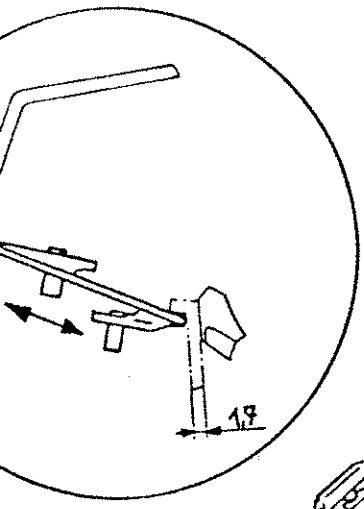


Figure 1.



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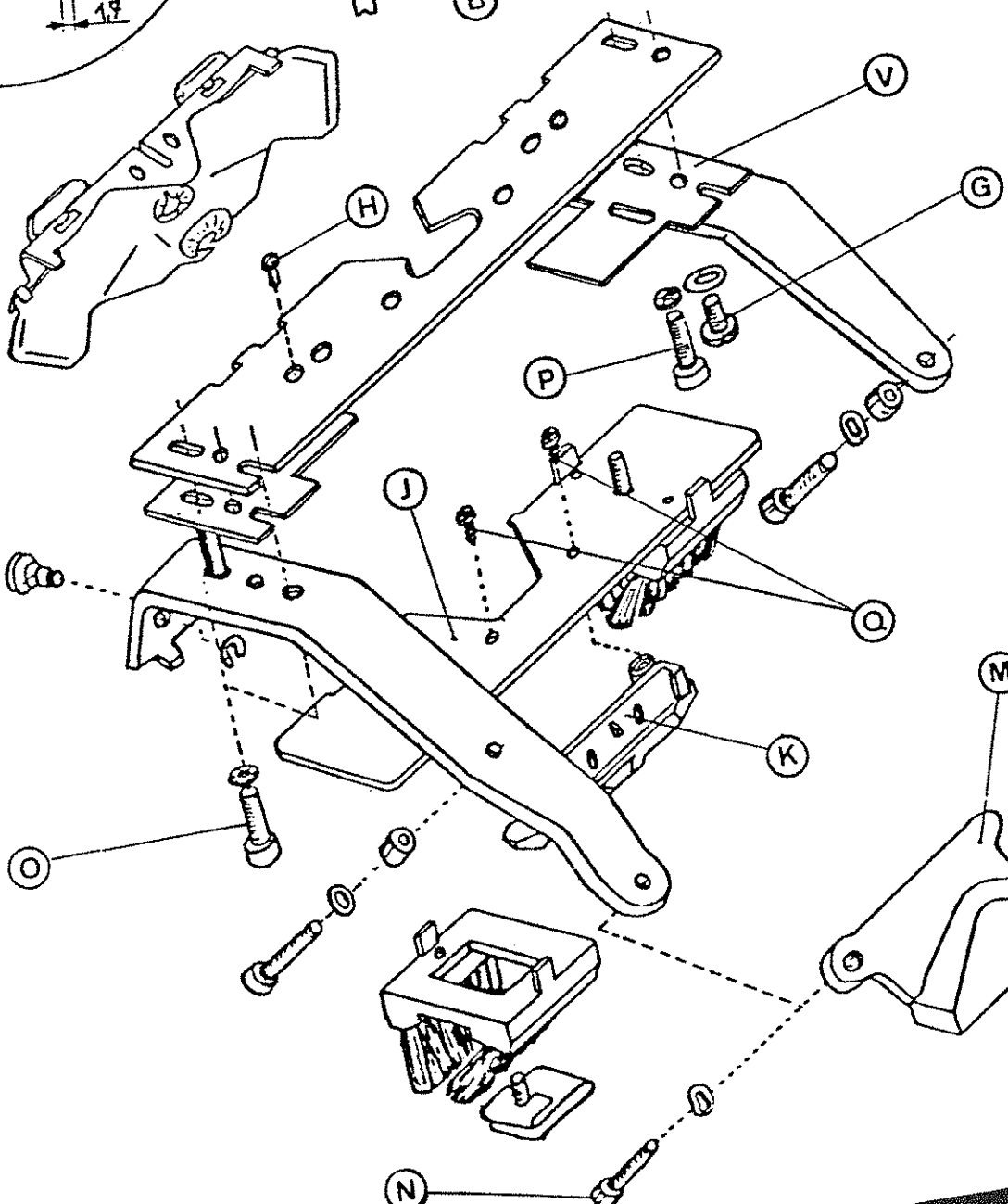
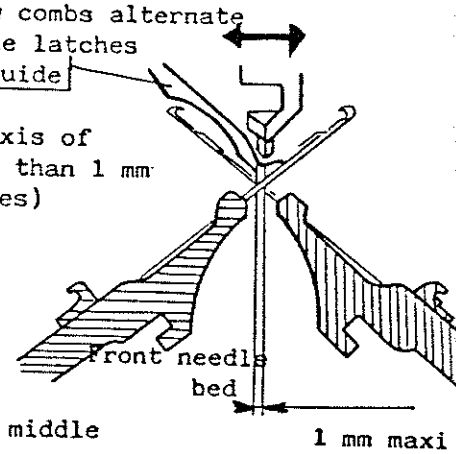


IV - Centering of main yarn guide :
This setting can be done without dismounting the carriage's cover.

1 - Double bed machine :

- Loosen the 2 screws G of handles, the 2 screws O and screw P
- Center main yarn guide K by moving lateraly the brush bracket J and check if it is in line with the cover edge.
- Set second yarn guide, needle bed space on 5, flow combs alternate
- Bring a few needles in upper position and oppen the latches
- Set brush bracket sothat the nose of second yarn guide stays slightly on the front needles

Be careful : the space between main yarn guide and axis of the V of needles must never be superior than 1 mm towards the back (= towards front needles)



2 - Single bed with knitting retainer :

- Take off knitting retainer
- Loosen the 2 screws P and O of brush bracket
- Take off the 2 screws G , the brush bracket plate moves lateraly
- Set it so that the threading of screws G is in the middle of the oblong holes in the handles
- Check if brush bracket is in line with the cover
- Tighten again the 3 screws P and O and screws G

V - Setting of height of main yarn guide :
This setting can be done without dismounting the cover.

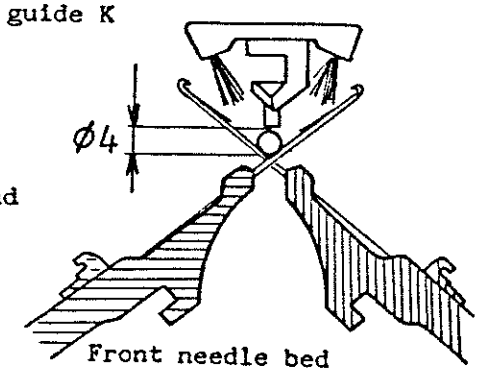
- Remove the covers U of fixing buttons I on the carriage
- Set the buttons I so that the 2 screws H are accessible with a screw-driver

1 - On double bed machine :

- Bed space on 5, flow combs alternate
- Bring a few needles in upper position and put a Ø4mm gauge in the "V" thus formered
- With the 2 screws H, set the height of main yarn guide K by bringing it into contact with the gauge
- Set covers U into position again

2 - On single bed machine :

- Take off knitting retainer
- Tighten or loosen screws H so that the vertical end of spring V is out of 1 or 2 mm
- Set the 2 springs V in the same way



VI - Setting of the plates of knitting retainer :

The knitting retainer is set on the carriage and the carriage is on the needle bed.

Place one gauge (thickness 1,7 to 2 mm) between the plates of knitting retainer and the flow combs, and set the space with the 2 screws W (fig.2)

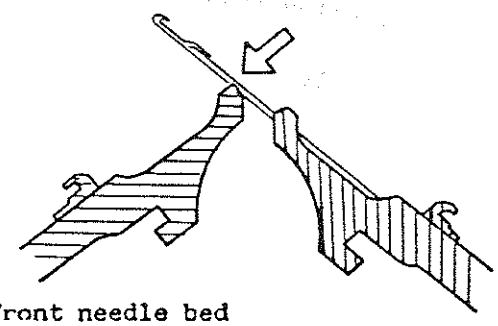
Set the second plate in the same way

Check if the 2 plates are in the same level together, and in linewith the needle bed.

NEEDLE BED SETTINGS

I - Checking of front needle bed level, when set in upper position, space selector on 6 :

The front flow combs have to be behind or in level with the back needles.
If not, make settings again.

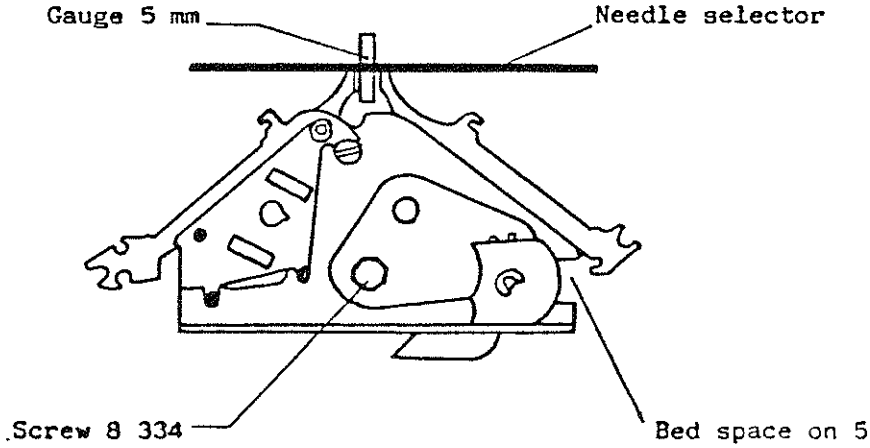


Front needle bed

II - Setting of needle beds space and height :

- Slightly loosen the 2 screws 8 334 or the nuts 9 003
- Setting of height or space are made simultaneously begining on one side
- Place a flat assy like a needle selector on the flow combs : it must be on the same level with end bracket support.
- Bed space on 5 (coming from 6 to 5) : place the gauge of 5 mm between the 2 needle beds (needle 40). The gauge must be locked between the 2 beds.
- Make all the settings by moving the front needle bed space selector hinge plate. Move this plate upwards or downwards to set the height, lateraly to set the space.

Nota: Begin to set one side, tighten slightly the screws.
Set the other side in the same way. Check again on all the length and tighten strong the screws at each side.



NEEDLE BEDS

I - Replacement of a needle :

Refer to instruktion book.

II - Removal of a needle brake spring :

- Remove needle retaining wire A (the bent end of the wire is at the right end side of the machine)
- Unscrew top slide rail B . In order to reach every slide rail fixing screw, it is necessary :
  . For front needle bed : to bring it in lower position
  . For single bed machine : to remove the right end cover and back needle bed reinforcing plate cover
- Turn machine upside down, so that the top slide rail B will lay on the table, then unscrew without taking them off the 6 top slide rail fixing screws C (unloosable screws)
- Return machine in its right position, while holding top slide rail against needle bed, in order to prevent needles from falling
- Remove top slide rail, release brake spring D from hooking drop E
  In order to prevent spring from jumping, just hold it with 2 fingers about 2 inches from its end.

III - Setting of a new needle brake spring :

Displace croswise the 2 or 3 last spires of the spring and press them.

- Fasten the spring to its hooking drop, 2 or 3 of its spires being outside left. Hold inserted end with one hand, and with the other one, extend the spring in order to fasten it to the other hooking drop.
- Pass the edge of the handle of a transfer tool over the spring, in order to bring the spires between the needles, starting in the middle of the needle bed.
- Machine being set on the edge of a table, screw up at first the 2 hinge screws C , then turn machine upside down and screw up the 4 screws left.

IV - Replacement of a lower slide rail F :

- Turn machine upside down, loosen lower slide rail mounting screws G 4 or 5 turns.
- Slide in new lower slide rail, make sure the mark "90" corresponds to the last needle, then tighten mounting screws.

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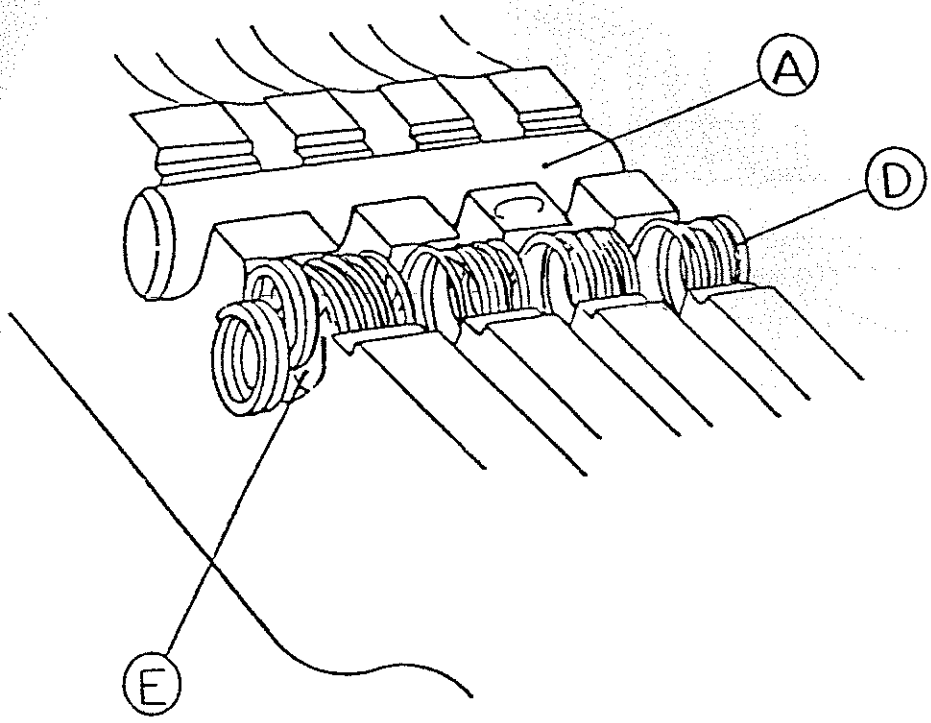

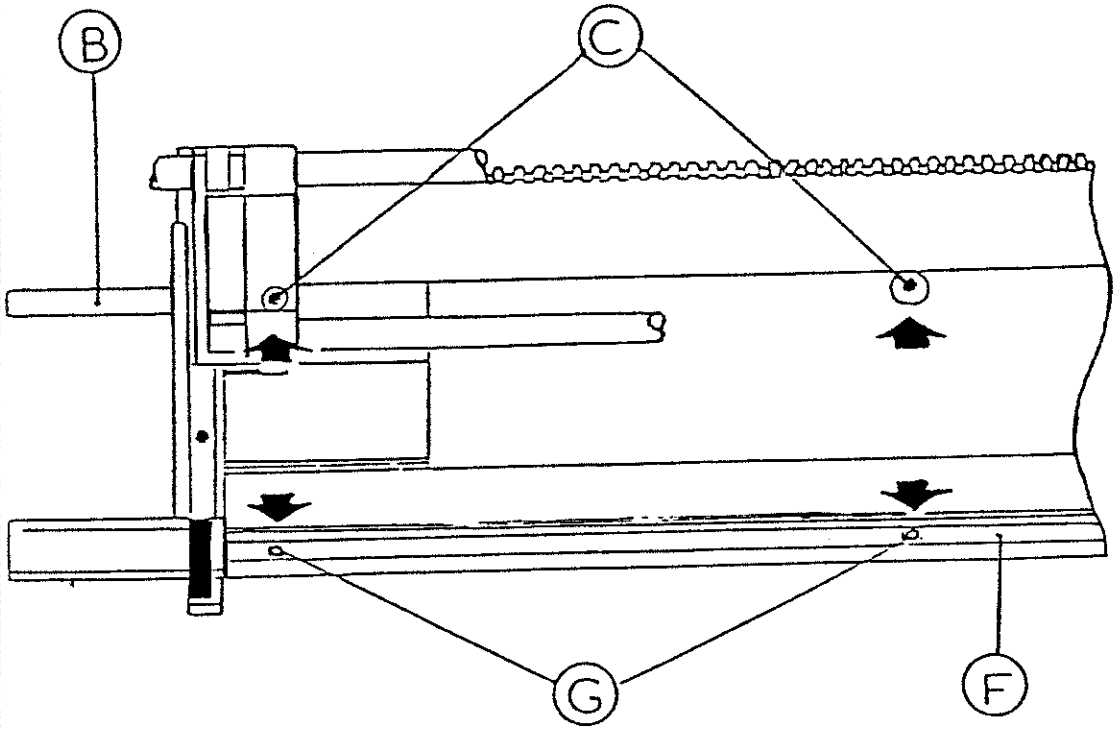

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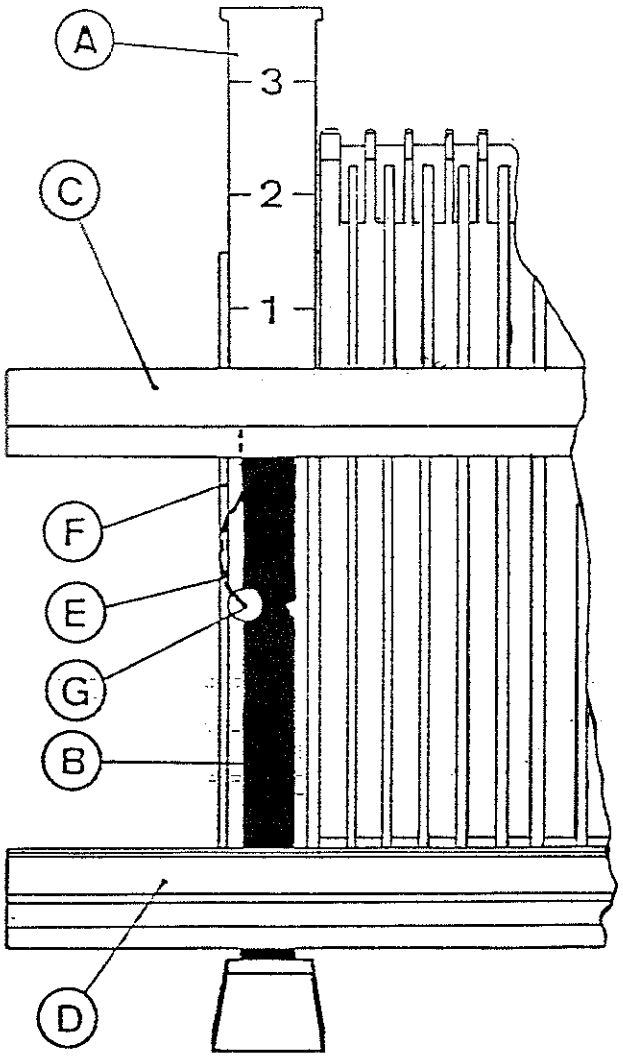

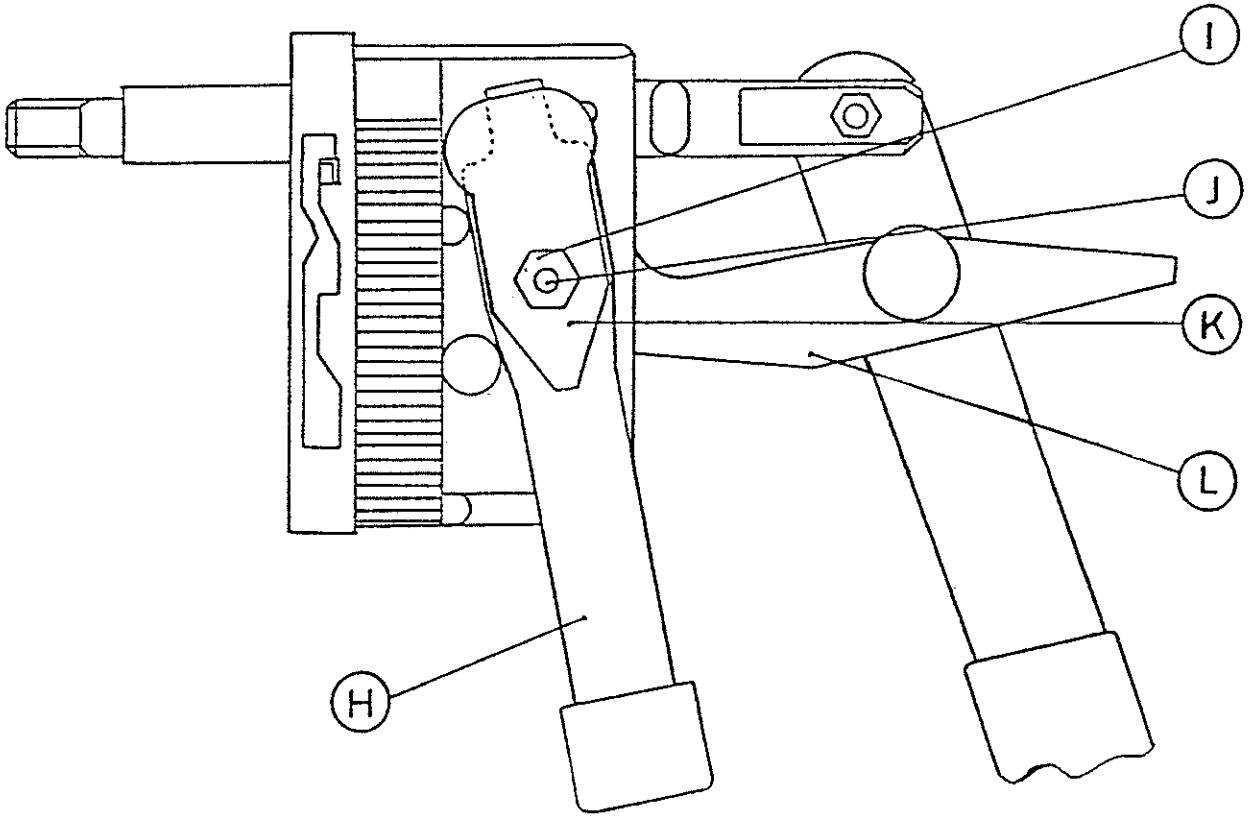

FRONT NEEDLE BED

I - Replacement of a release lever :

- Remove needle retaining wire and put front needle bed in lower position
- Remove the needle position scale A that covers the release lever to be replaced, sliding it upwards
- Unscrew top slide rail C end fixing screw and loosen the 2 lower slide rail D end fixing screws (2 mm Allen key)
- Lift slightly top slide rail C in order to free release lever B
- Remove release lever lateraly, while pulling lower slide rail D forwards Take care not to loose release lever spring E

  To set release lever, proceed the reverse. To set release lever spring, put lever in engaged position, that is to say, button being outside.
- Push the spring E down between top slide rail C and front bed guide F, so that the curve be outside and the short leg below.
- With the point of a screw-driver set between the lever and the short leg of the spring, bring the spring leg into the slot G of the lever.
- Set the needle position scale A , or , if necessary, replace it. Set needle retaining wire and tighten screws which had been loosen before.

II - Dismounting of front needle bed :

- Remove needle retaining wire
- Remove both needle position plates A. Depress both bed positioning levers in order to unlock the front needle bed from its guide, then remove it by sliding it down.

This makes possible to carry out following operations :

a) on the needle bed : replacement of a needle bed guide, then replacement of front needle bed positioning gear.

b) On the machine : replacement of intermediary lever H
Prepare new intermediary lever, loosen nut I and maintain from below racking lever catch hinge screw. Hold it until new lever has been set. Set new lever, curved part upside, then intermediary lever retaining plate K and nut I

BACK NEEDLE BED

I – Dismounting of back needle bed :

- Clamp the knitting machine on a table
- Remove both end covers
- Loosen on both ends the 2 screws A half a turn, and shouldered screws B of 3 turns
- Remove by lifting it the rear assembly, reinforcing plate etc..., and put it on a table, reinforcing plate upside
- Remove the 4 end plate spacer mounting screws C
- Remove from one end the back needle bed end plate D by unscrewing both screws A
- Remove both needle bed reinforcing plate

II – Setting of reinforcing plate on the needle bed :

1) Reinforcing plate has not to be replaced : (one of the needle bed end plates having been left fixed to the reinforcing plate)

- Set spacers, shouldering being introduced into boring of the needle bed by the side of the non-removed needle bed end plate
- Slide the reinforcing plate on the needle bed
- While maintaining the spacers, screw up and tighten both end plate mounting screws C
- Place opposite end spacers, set needle bed end plate, introduce and tighten both corresponding end plate mounting screws
- Drive in both back needle bed reinforcing plate fixing screws A, leaving a 4 mm interval between the screw head and the plate D

Nota : If both end plates have been removed from reinforcing plate, carry out the assembling as indicated hereunder

2) Reinforcing plate has to be replaced :

- Set and clamp needle bed end plates and spacers on both ends
- Drive in the 4 needle bed reinforcing plate fixing screws A 3 or 4 turns into the back needle bed end plate
- Set in the new reinforcing plate fixing screws A leaving a 4 mm play between screw head and end plate D
- Set the back needle bed assembly on the end bracket and tighten on both ends the shouldered screw B at first, then both needle bed reinforcing plate fixing screws A

Nota : Loosening of clamps may easy the setting of back needle bed assembly in the slots

- Set end covers

Nota : While setting the right end cover make sure the bent end of needle retaining wire is set properly and is not caught by the end cover

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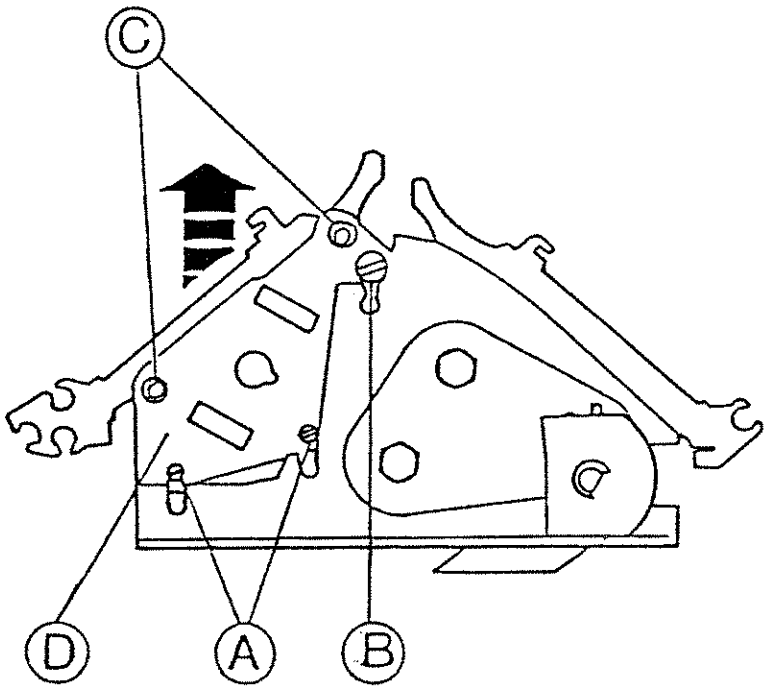

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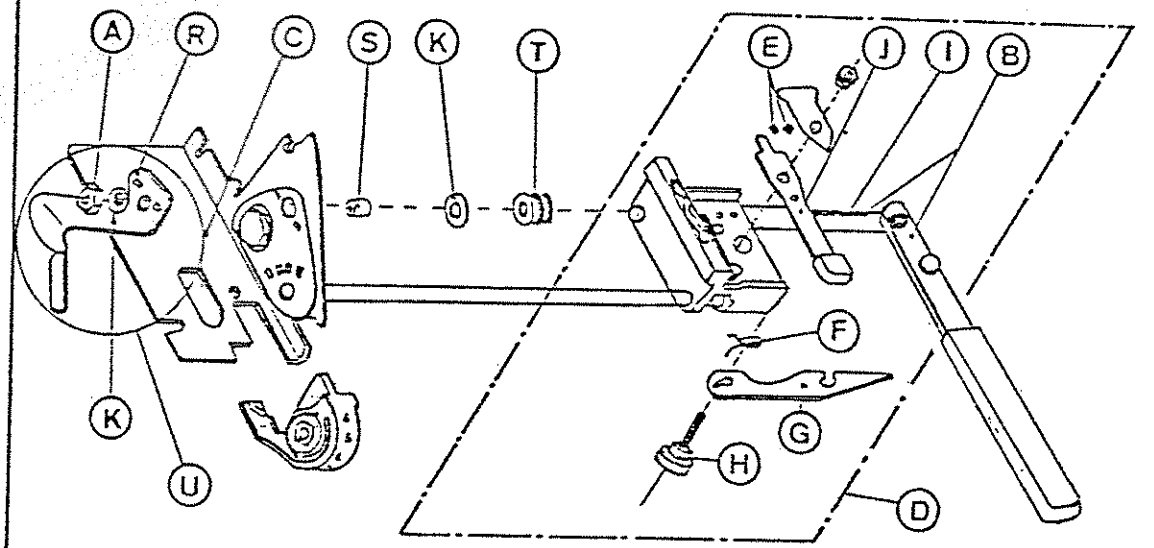

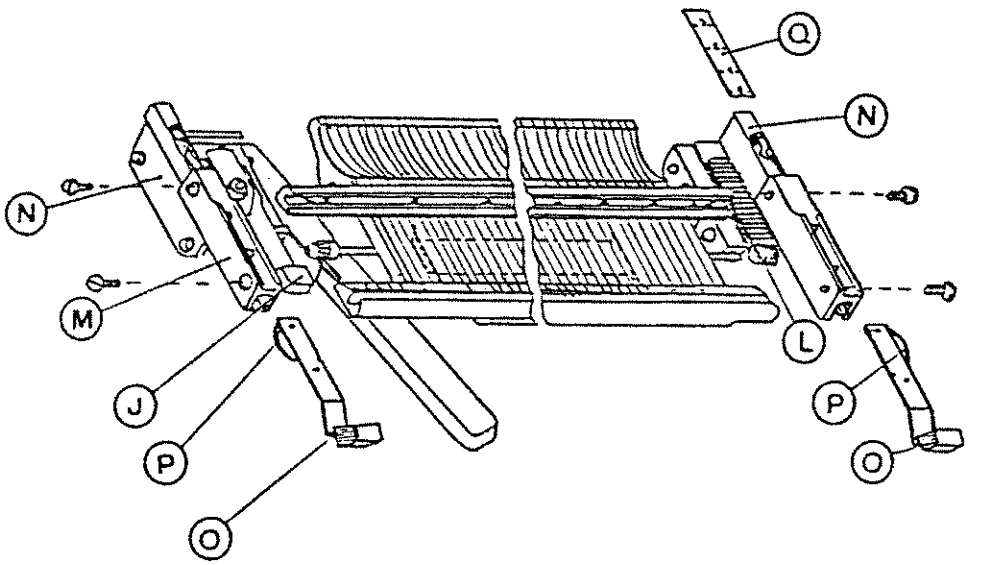

III - Removal of racking lever latch :

- Unscrew completely nut A in order to release from needle bed end bracket C the assembly D composed of racking index pin and front needle bed support assembly, as well as assembly U : racking position lever R and washer K
- Take care not to loose both balls Ø 5

IV - Setting of racking lever latch spring F and racking lever latch G :

- Set racking lever latch spring F in its housing with radial pin set below
- Set in racking lever latch G
- Introduce hinge screw of racking lever latch H, then switvel this assembly
- Introduce racking index pin I into the end bracket C, while holding hinge screw of racking lever latch H
- Set both balls Ø 5 , intermediary lever J etc... (see III-1)
- Before setting racking index pin nut A, make sure washer K, washers T and socket S are in right position
  Holding lever R pushed towards the front, tighten nut A until flow combs are exactly opposite

V - Setting of front needle bed :

- Bring intermediary lever J in a vertical position
- Hold front needle bed between thumbs and forefingers, so that it will be possible to act upon front needle bed positioning gears L
- Engage both needle bed guides M for 2 cm uppon the front needle bed support N
- Continue to push them in with the hand palms, while depressing front needle bed release levers O with the thumbs and guiding the gears L with the forefingers in order to present them simultaneously at the end of the racks.
- When gears L are fully engaged, check at the edge of the needle bed supports N that the needle bed is at the same level on both ends
  A 3 mm shift would indicate a bad setting
  Should this happen, it would be necessary to carry out that operation once again, by releasing the needle bed from its supports emough to make it possible to set it properly
- With one hand, hold needle bed in position, in order to make it possible for the other hand to set the front bed release lever O and its spring P in position
- Set needle position scales and needle retaining wire

VI – Replacement of a space selector lever :

- Remove left end cover D

- Remove retaining clip E, set space selector lever A at position 3 and remove it carefully to the left side.
  Do not loose small roller and spring.
  It is better to clamp the knitting machine on a table on right hand side

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