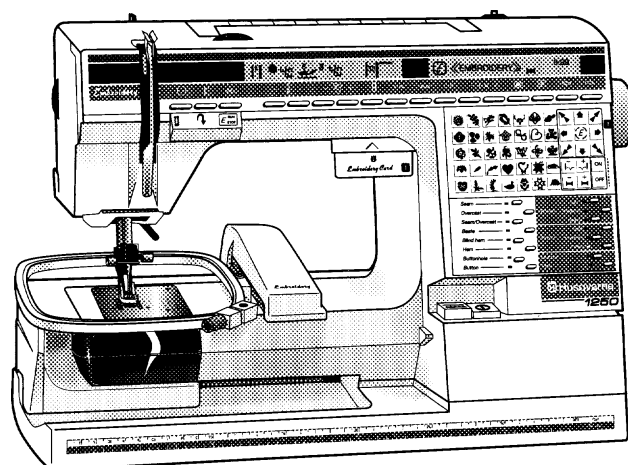




# SERVICE MANUAL

## MODEL

### 1250 WITH EMBROIDERY UNIT

This service manual is a complement to 104 72 30-26:  
The machine can be compared to model 1200.

# Contents

## **Sewing Machine**

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## **Embroidery unit**

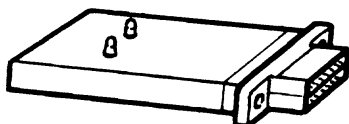
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## Service tools

**Adapter** to check the signals of the machine to the embroidery unit. To be used together with the service cassette.

Ref. no.: 412 42 12-01



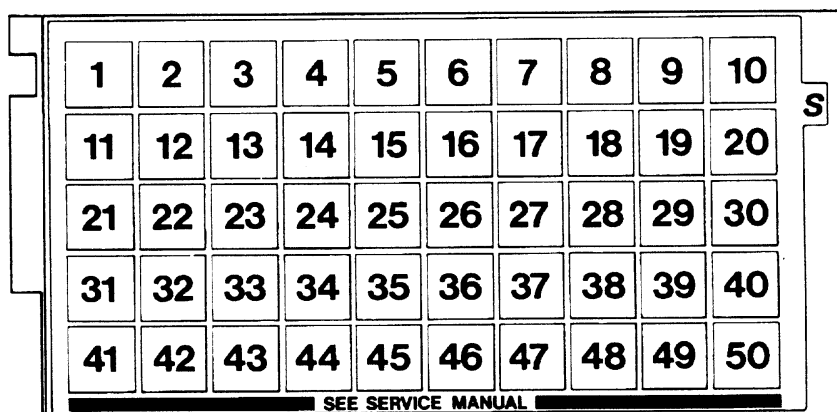
**Other service tools** are mentioned in the service manual 104 72 30-01

## Service cassette model 1250, 1200, 1100

In order to simplify the control and the setting of the different functions of the machine there is a service cassette. This is used with the service program of the machine.

### *Handling*

- \* Insert the cassette into the cassette recess of the front cover.
- \* Get into the **service program** of the machine by holding the reverse feeding button and ( - ) stitch length pressed while turning on the main switch.



Ref. no.: 412 17 29-15 (same as for models 1100 and 1200)

## Functions on the service cassette 1100, 1200

Page reference from keys 1 -14 refers to service manual 104 72 30-01.

**NOTE!** Before the test, lift up presser foot.

- Key 1** Shown in the right display.  
Number and revision of the program memory.  
Which cassettes the program memory contains.  
Which cassette is in the machine.  
Check can be made that the machine reads the correct cassette being inserted.  
The letter of the cassette has to be in accordance with the one shown on the display.
- Key 2** Display test where all symbols light up on both displays.
- Key 4** Check that the arm shaft sensor (stop right function) works.  
The latter looks after when the step motors have to be reset, it reads the speed and the stop right functions.  
A square is shown in the right display.  
If this square jumps around clockwise between 4 positions, 2 up and 2 down while "slowly" pulling the machine around with the handwheel, the function is correct.
- Key 5** Is used when setting the step motor of the sewing head.  
The step motors set themselves into the calibration position.  
Setting **no 5** (P.26).
- Key 6** Is used when setting the step motor of the sewing head.  
Setting **no 5** (P.26).  
The setting of the needle in relation to the presser foot.  
Setting **no 6** (P.27).
- Key 7** Is used when setting the step motor of the thread tension.  
Setting **no 13** (P.33).  
The step motor now takes its calibration position.
- Key 8** Is used when checking the setting above.  
The thread tension pulley shall set at 5.5 (=normal position).
- Key 9** Is used when pre-setting the step motor of the guide.  
Setting **no 21** (P.41).  
The step motor now takes its calibration position.
- Key 11** Is used when setting the stitch length balance. Setting **no 20** (P.39- 40).  
The feed dog shall stand still (0-feeding).
- Key 12** Is used when setting the stitch length balance. Setting **no 20** (P.40).  
The machine now sews stitch L-48 (rabbit) of the L-cassette.

|                  |                                                                                                                                                                                                    |
|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Key 13</b>    | Is used when setting the stitch length balance. Setting <b>no 20</b> (P.39-40). The machine sews the signs C,D,B,P,S,T,8.                                                                          |
| <b>Key 14</b>    | Is used when setting the stitch length balance. Setting <b>no 20</b> (P.39-40). The machine now sews stitch A38 which should have a rectangular aspect.                                            |
| <b>Key 15</b>    | Used to check the sideways movement of the embroidery unit.                                                                                                                                        |
| <b>Key 16</b>    | Used to check the movement of the embroidery unit in the feeding direction.                                                                                                                        |
| <b>Key 17</b>    | Used to check sew with the embroidery unit together with the service memory card.                                                                                                                  |
| <b>Key 18</b>    | Indicates the memory card which is in the machine (e.g. OTP:001), and which program revision the memory card has (e.g. REV:105).                                                                   |
| <b>Key 19</b>    | Used with the adapter to check that the guiding signals of the machine to the embroidery unit are correct.                                                                                         |
| <b>Key 20</b>    | Checking the upper thread guard. A square is shown in the right display. If it changes between 2 different positions while the thread take-up spring is moved up or down, the function is correct. |
| <b>Key 29,30</b> | Used to erase everything programmed in the programmable memories of the machine. First press 29, then 30.                                                                                          |

**NOTE!** Not mentioned keys are not used at service or are without function.

# Setting of the thread take-up spring

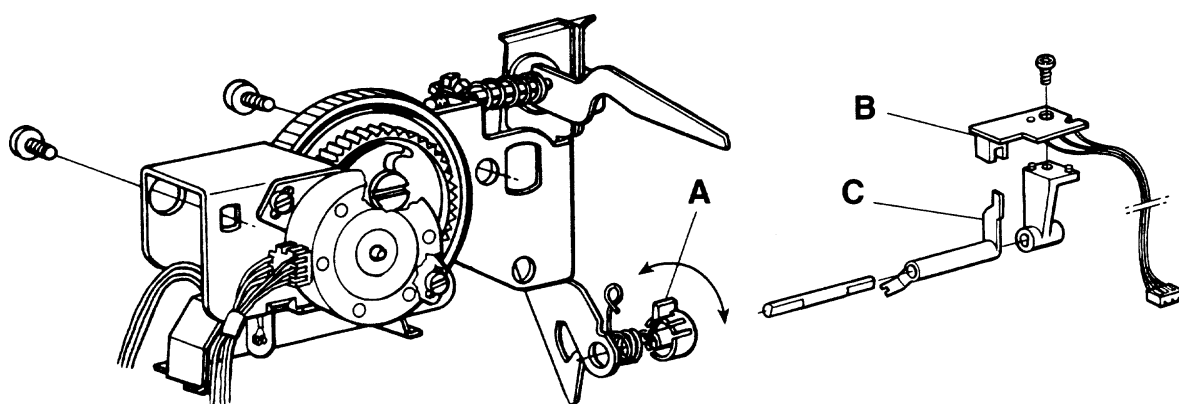
## Requirements

The thread take-up spring should have fulfilled its movement when the needle point reaches the fabric, but before the eye of the needle does so.

Check at straight stitching 2.5 mm in fine fabric.

## Adjustment

Turn the casing of the thread tension (A) by means of a screwdriver until the correct thread take-up is obtained.



# Upper thread guard

## REQUIREMENTS

If the upper thread is finished or breaks the machine shall stop.

This is done by means of a photo-diode (B) on the casing of the thread tension which reads the movement on the screen (C) which moves simultaneously with the thread take-up spring. The machine must be threaded in order to activate the upper thread guard.

## Dismounting

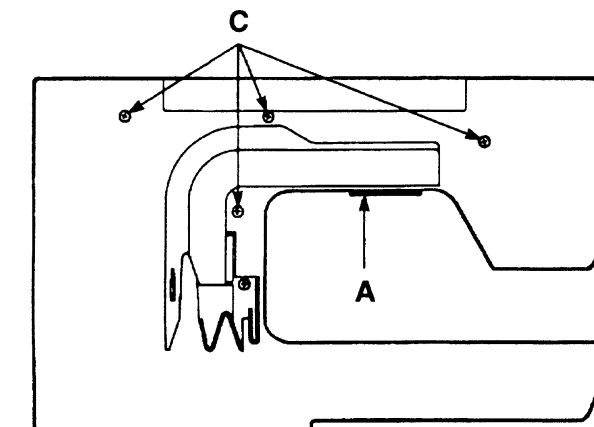
In order to be able to dismount the upper thread guard you must first dismount the sewing head and thereafter the thread tension device.

**NOTE!** The setting of the thread take-up spring affects the function of the upper thread guard.

## Front cover

### *Dismounting*

Turn off the main switch.  
Dismount the rear cover and the lamp guard (A).  
Loosen the 4 screws (C).  
Press the buttons for On/Off and for the feed dip.  
Push the cover carefully upwards.  
Remove the cables connected to the LCD-board.



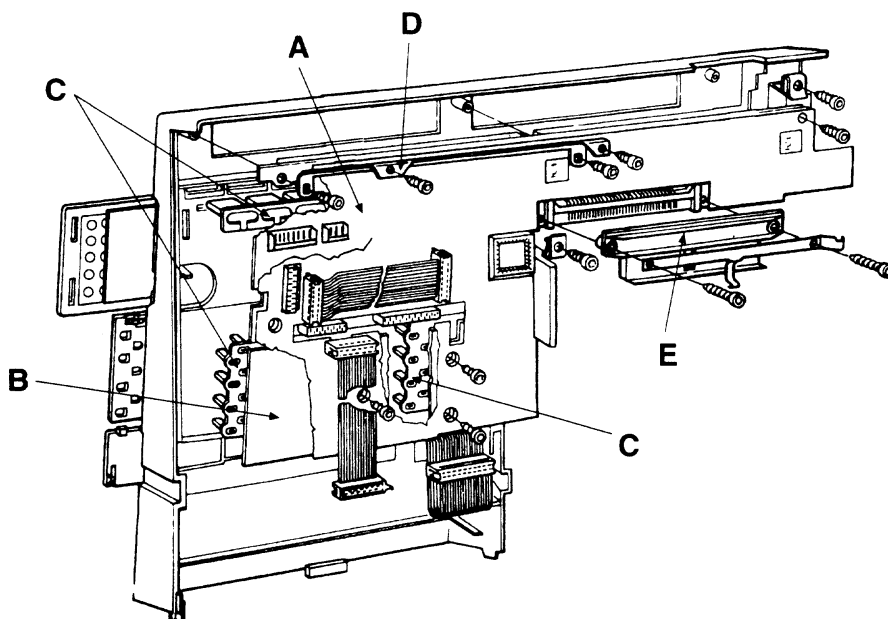
## The parts of the front cover

### *Dismounting*

Loosen the cords from the LCD-board.  
Loosen the screws that hold the LCD-board; guide board and the guide of the memory card.  
The LCD-board may now be removed and thereafter the guide board.

### *Mounting*

Fit in the 3 rubber push-button assemblies (C) into their guides.  
Fit the guide board (B) into its place.  
Attach the LCD-board (A) under the hook on the lower edge, fit support (D) into its place.  
Fit the insulating plate and tighten the screws.  
Fit the guide (E) and the spring of the memory board into place and tighten the screws.



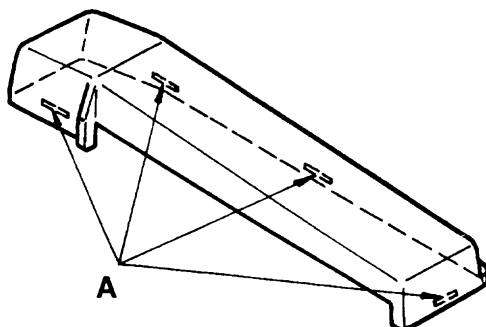
## Lover Y-slide

### *Dismounting*

Cautiously bend the cover so that the 4 snaps (A) are exposed and lift the cover upwards.

### *Mounting*

Place the cover over the plate and press the snaps.



## Cover upper part

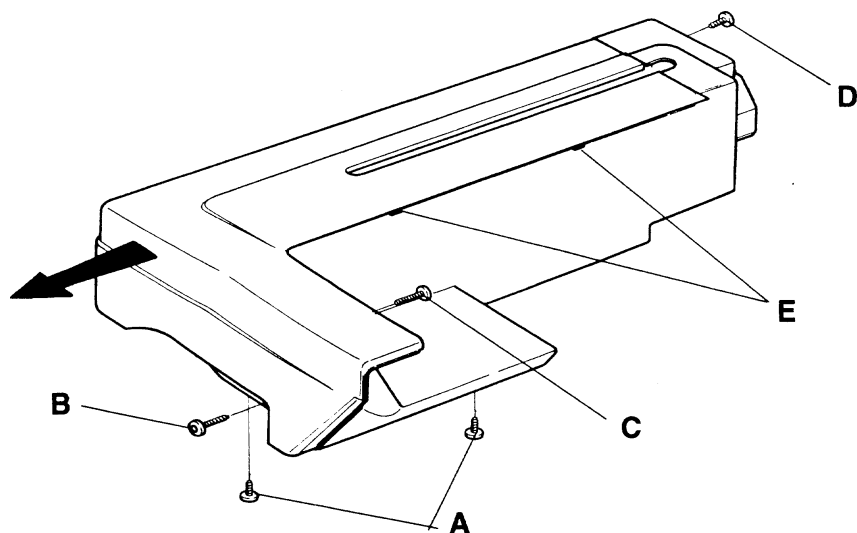
### *Dismounting*

Loosen the 2 screws (A) under the embroidery-unit, the screw (B) on the outside of the gable, screw (C) on the inside of the gable and screw (D) on the other gable. Remove the cover in the direction of the arrow from the embroidery unit.

### *Mounting*

Mount in reverse order.

**NOTE!** Make sure that all guides (E) on the inside of the cover are being put correctly.



## Cover lower part

### *Dismounting*

Loosen the 2 screws (A) on the underneath of the cover.

Cautiously pull away the cover from the embroidery unit in order not to damage the circuit board and the cables.

Loosen the cable from the circuit board.

### *Mounting*

Insert the embroidery unit into the cover.

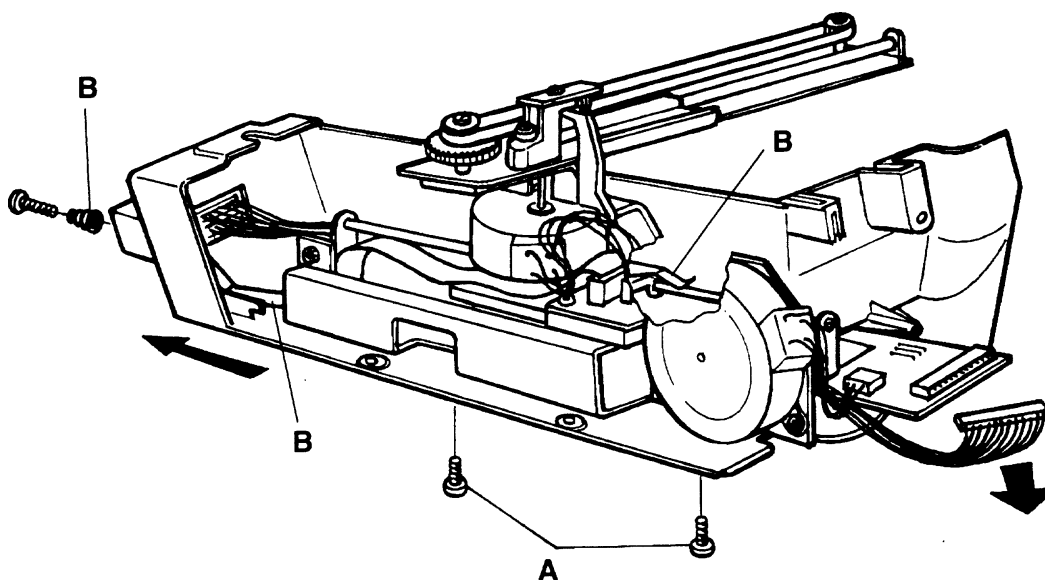
Make sure the cables are not squeezed between the cover and the body of the embroidery unit.

Loosen the lid on the underside of the cover and guide the cable into its place. The lid is glued and may be glued again after dismounting.

Connect the cord to the circuit board.

Tighten the screws.

**NOTE!** Check that the 3 earthings (B) for ESD (electro static discharge) are correctly positioned.



## Y-unit

### Belt tension

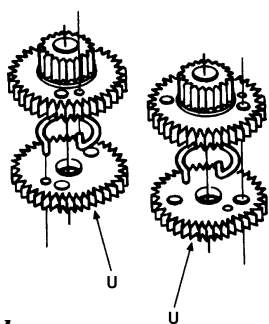
The belt shall be adjusted in such a way that, when the Y-slide is in its end position, it should be possible to push in the belt approx. 3 mm with a force of 2 newton.

Adjust by loosening screw (A) and moving the belt wheel until a good belt tension is obtained.

### Right angle between X- and Y-unit

The Y-unit shall be mounted at right angles to the X-unit.

Adjust screws (E), alternatively (D).



### Wheel gear

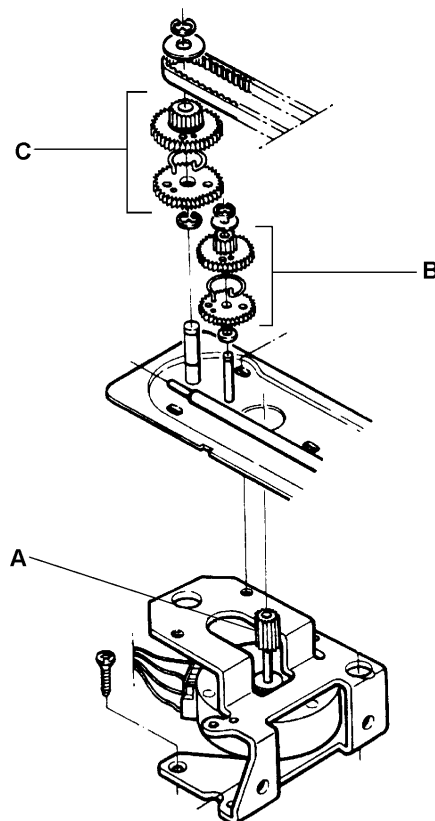
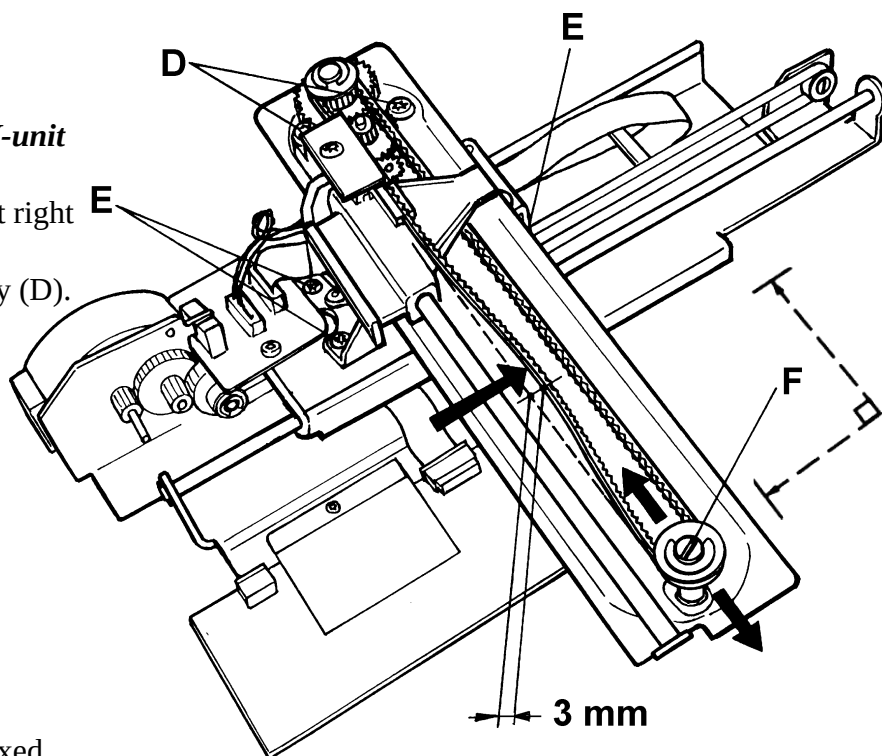
The wheel gear consists of a fixed cog wheel (A) on the step motor shaft, a split intermediate gear with a spring between (B), and a split cog wheel with a spring between on the belt wheel (C). There shall be some play between the cog wheels which will be absorbed by the spring pressing apart the two cog wheel halves.

When mounting the play may be set by only mounting one half of the cog intermediate gear, loosening the screws (D) and pushing the cog wheels away from each other.

Therafter mount the split cog wheels.

The spring between the cog wheel parts shall be mounted with its ends in the small holes, and the cog wheel parts shall be bent apart so that 2 of the large holes come to face each other.

**NOTE!** The flat cog wheels are marked with a U which shall be turned away from the other cog wheel part.

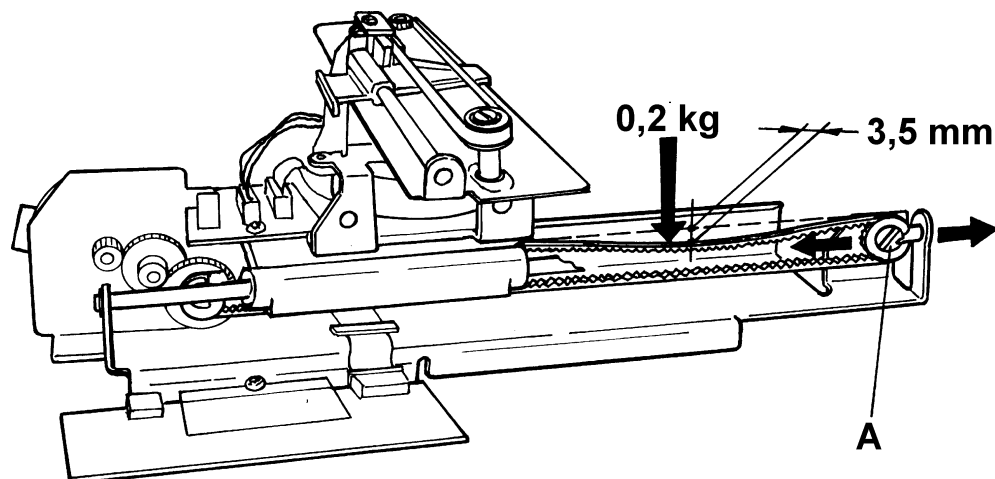


## X-unit

### *Belt tension*

The belt shall be adjusted in such a way that, when the Y-slide is in its end position, it should be possible to push in the belt approx. 3,5 mm with a force of 0,2 kg.

Adjust by loosening screw (A) and moving the belt wheel until a good belt tension is obtained.



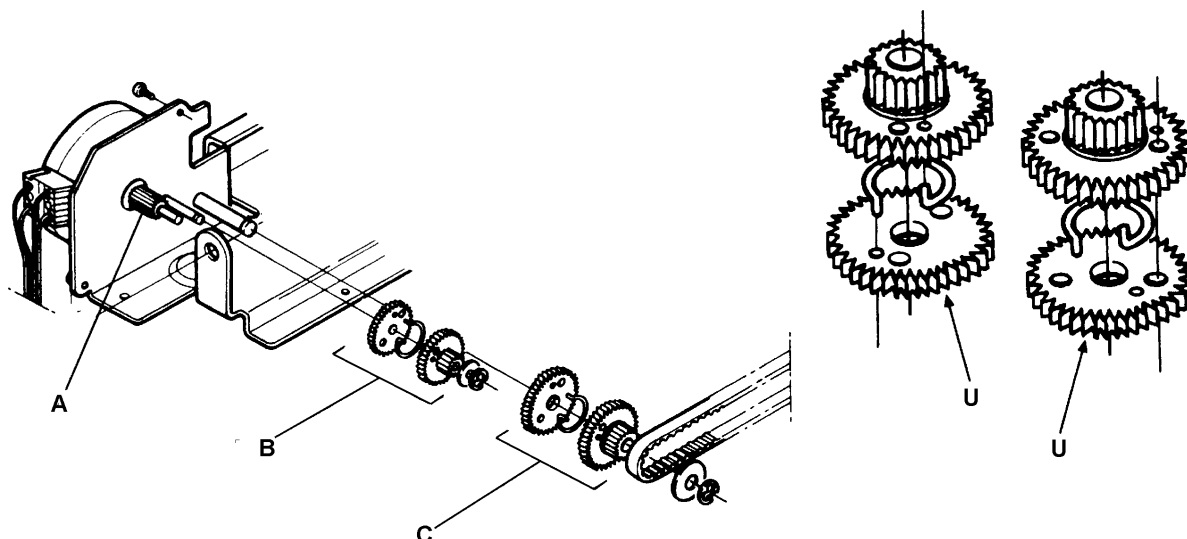
### *Wheel gear*

The wheel gear consists of a fixed cog wheel (A) on the step motor shaft, a split intermediate gear with a spring between (B), and a split cog wheel with a spring between on the belt wheel (C).

There shall be some play between the cog wheels that will be absorbed by the spring pressing apart the two cog wheel halves.

When mounting the spring between the cog wheel parts shall be mounted with its ends in the small holes, and the cog wheel parts shall be bent apart so that 2 of the large holes come to face each other.

**NOTE!** The flat cog wheels are marked with a U which shall be turned away from the other cog wheel part.



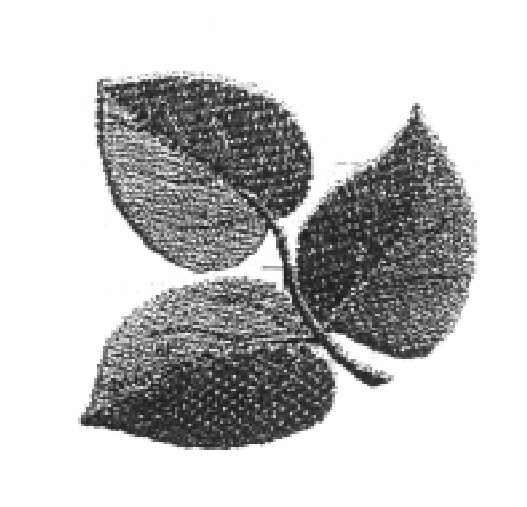
## Control stitch

To obtain a good thread tension when sewing with the embroidery unit use embroidery thread and thread the lower thread through the hole in the finger of the bobbin case.

Use the following embroidery threads:

Upper thread: Thread thickness no 40 (ex. Madeira no 40)

Lower thread: Thread thickness no 70 (ex. Madeira no 70)



## **Fault finding diagram.**

### ***The machine cannot read the memory card.***

1. Check with another memory card. If the machine reads that one, the first one was defective.
2. If the machine does not read the second memory card, change the LCD-board of the machine.

### ***The embroidery unit only feeds sideways.***

1. Check according to the service program key no. 19 and the adapter in the recess of the machine for the embroidery unit.  
If XY-PORT FAIL is indicated. Change the LCD-board of the machine.
2. If XY-PORT OK is shown, the machine is OK and the fault is in the embroidery unit.
3. Check all the cables and cable connections of the embroidery unit.
4. Check according to the service program key no. 16. If there is no movement in the feeding direction, change the circuit board of the embroidery unit.

### ***The embroidery unit only feeds in the feeding direction.***

1. Check according to the service program key no. 19 and the adapter in the recess of the machine for the embroidery unit.  
If XY-PORT FAIL is indicated. Change the LCD-board of the machine.
2. If XY-PORT OK is shown, the machine is OK and the fault is in the embroidery unit.
3. Check all the cables and cable connections of the embroidery unit.
4. Check according to the service program key no. 15. If there is no sideways movement, change the circuit board of the embroidery unit.

### ***The embroidery unit does not feed at all.***

1. Check according to the service program key no. 19 and the adapter in the recess of the machine for the embroidery unit.  
If XY-PORT FAIL is indicated. Change the LCD-board of the machine.
2. If XY-PORT OK is shown and the diodes do not shine, change the circuit board of the machine.
3. If XY-PORT OK is shown and the diodes of the adapter are shining, the machine is OK and the fault is in the embroidery unit.
4. Check all the cables and cable connections of the embroidery unit.
5. Check according to the service program keys no. 15 and 16. If there is no movement, change the circuit board of the embroidery unit.

### ***The machine does not stop when the upper thread is finished or breaks.***

1. Check key no. 20 according to the service program. If the result is OK.
2. Check the setting of the thread take-up spring and the thread tension.
3. If the result is not OK according to the service program.
4. Check the screen between the photo-diode of the upper thread guard and its smooth running.
5. Check the cables to the upper thread guard.
6. Try a new upper thread guard.
7. Change the LCD-board.

***The embroidery unit does not sew the pattern correctly***

1. Check the movement of the embroidery unit by means of keys no. 15 and 16 of the servic program.
2. Sew the control stitch of the machine by means of the control memory board and key no.17 of the service program.
3. Check that there is no sluggishness or play in the embroidery unit.
4. Check the belt tension of the embroidery unit.
5. Check the thread tension of the machine.
6. Check if there are strange noises in the end position of the embroidery unit when turning it on. If so, try a new circuit board (with photo-diodes) in the embroidery unit.