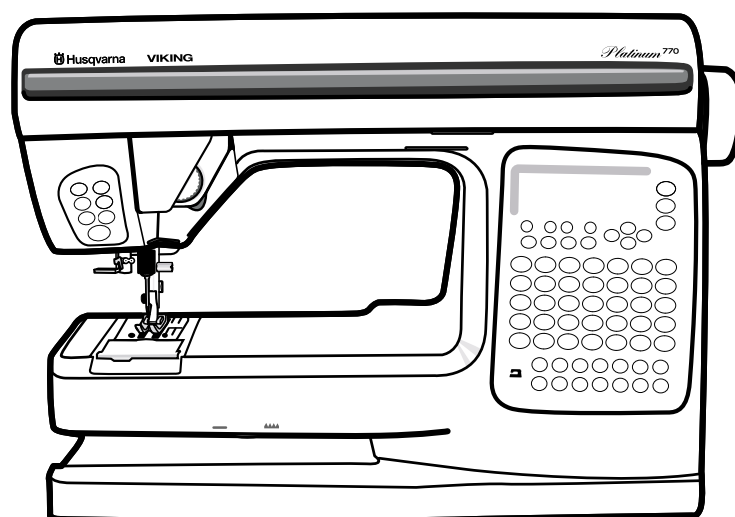


SERVICE MANUAL



Platinum 770

Contents

Directions for use	3
ESD	3
Service tools	4
 SETTINGS	 5
1. The play of the hook gear	6
2. Setting the hook in relation to the feeding eccentric (after feeding)	7
3. Belt tension, arm/lower shaft belt	8
4. Belt tension, motor belt	8
5. Setting the feed dog in relation to the presser foot	9
6. Basic setting - the step motor of the needle	10
7. Setting of the needle in relation to the presser foot	12
8. The gap between the needle and the hook	13
9. The timing of the hook in relation to the needle	14
10. The needle height	15
11. Presser foot parallelism to the feed dog	16
12. Presser foot height to the stitch plate	16
13. Setting the stitch plate (the hook cover) in relation to the needle in the feeding direction.	17
14. The sideways setting of the stitch plate (the hook cover) in relation to the feed dog.	17
15. The height of the hook	18
16. Feed dog height	19
17. Threading device	20
18. Stitch length balance basic setting	21
19. Pre-setting the step motor of the feed dog	21
20. Stitch length balance	22
21. Lower thread tension (thread tension of the bobbin case)	23
22. Upper thread tension	24
23. Setting the thread take-up spring	25
24. Disconnection when winding the bobbin	26
 Service program	 27
Functions of the service menu -Sensor check	28
 Covers	
Dismantling and Mounting	
Upper rear cover	29
Lower rear cover	29
Front cover	30
 Base Plate	 31
Transformer	32
Circuit board - Circuit diagram	33
Sewing head	34
The step motor of the needle	35
The hook cover compl, step motor house.	36
Hook compl.	37
Feeding unit	38
The feeding unit step motor	39
Bobbin winding device	40

Directions for use

These service instructions are intended to be used by service workshop personnel, or by salesmen who carry out servicing their own districts. They assume a thorough knowledge of the handling of precision appliances and accessibility to service tools.

The manual is divided into two sections and covers all service operations and checks which should be carried out when making a complete overhaul of a sewing machine.

The first section deals with the various settings which must be maintained to ensure that the machine functions satisfactorily.

The second section covers dismantling and mounting instructions.

The diagrams only give indication as to where the detail or mechanism is located in the machine. For more detailed information regarding the construction, etc., refer to the diagrams in the spare parts list.

ESD

ATTENTION!

It is of the utmost importance that precautions are being taken in order to avoid damage of the electronics by electro static discharges ESD (=Electro Static Discharge). To avoid that these errors arise it is important to handle loose circuit boards in a controlled way.

Always use wrist band 412 23 02-01 when servicing.

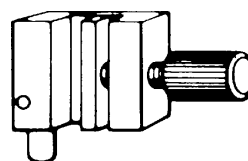


Service tools

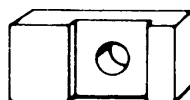
A reasonable requirement in a domestic sewing machine is that it should be able to sew all types of fabrics used in the home. The settings made when assembling and sewing in the machines are those most suited to give the best results in the majority of fabrics and fabric combinations. In doing so, consideration has been given to the requirements of different markets. This does, however, mean that when sewing extreme fabrics, better results may be obtained in certain cases by altering the settings. It must be pointed out that these altered settings can cause poorer results on more normal fabrics. How the different standard ratings are set can be seen from the description under each setting instruction. The following list of setting gauges and service tools is intended as an instruction about the special service tools needed to servicing this machine.

1. On several different occasions the needle is used as a setting gauge.
The setting ratings are adapted to needle 90.
Make sure to use an undamaged needle.

2. Gauge for setting the timing of the hook in relation to the needle .
Ref. No 411 17 52-01.



3. Gauge for the feed dog lift.
Ref. No 411 49 93-01.



4. Gauge for the needle height .
Ref. No 412 35 29-01.



5. Alan key - Shortened 2.5 mm
Ref. No 412 27 65-01

6. Alan key 2 mm
Ref. No 411 86 00-01

7. Alan key 1.5 mm
Ref. No 411 66 89-01



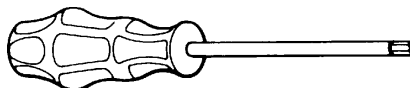
8. Distance gauge 0.05-1,00 mm
Ref: No. 412 38 85-01



9. Angel key Torx 6
Ref No 412 27 67-01

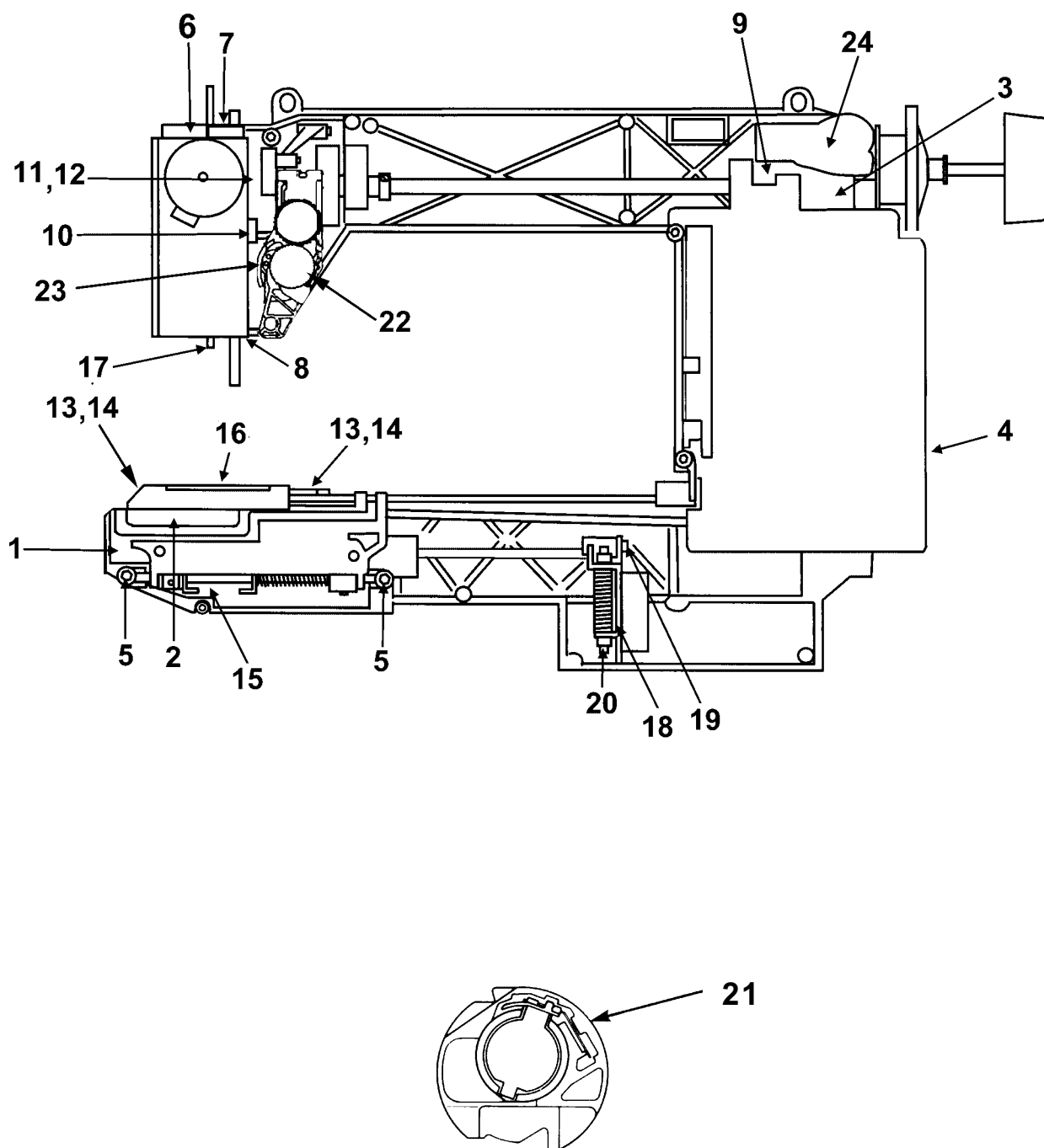
10. Screwdriver Torx 10
Ref. No 412 36 48-01.

11. Screwdriver Torx 20
Ref. No 412 36 49-01.



12. Screwdriver Torx 25
Ref. No 412 36 50-01

SETTINGS



1. The play of the hook gear

It is impossible to obtain an equally large play in one rotation of the cog wheel, but it should be as small as possible at the tightest spot during the revolution.

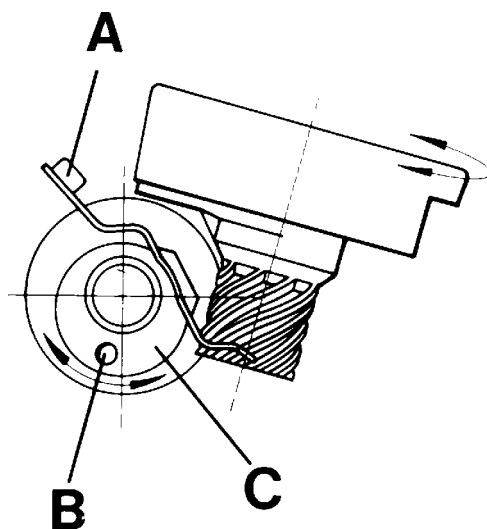
Check

1. Rotate the hook back and forth and check the play.
2. Do this check on at least 3 different spots during the revolution of the cog wheel.
(Move the cog wheel with the hand wheel).

Adjustment

1. Loosen, screw (A) in the bearing clamp
2. The play can now be adjusted by turning the eccentric bearing (C).

NOTE! The hole (B) in the bearing shall always be on the lower half.



2. Setting the hook in relation to the feeding eccentric (after feeding)

Check

1. The needle shall be in its centre position, straight stitching.
2. Set the tip of hook (A) so is centred behind the needle, the tap of the worm gear should now be positioned according to fig. 1.

Note! The position of the upper pin shall be aligned with the frame opening.

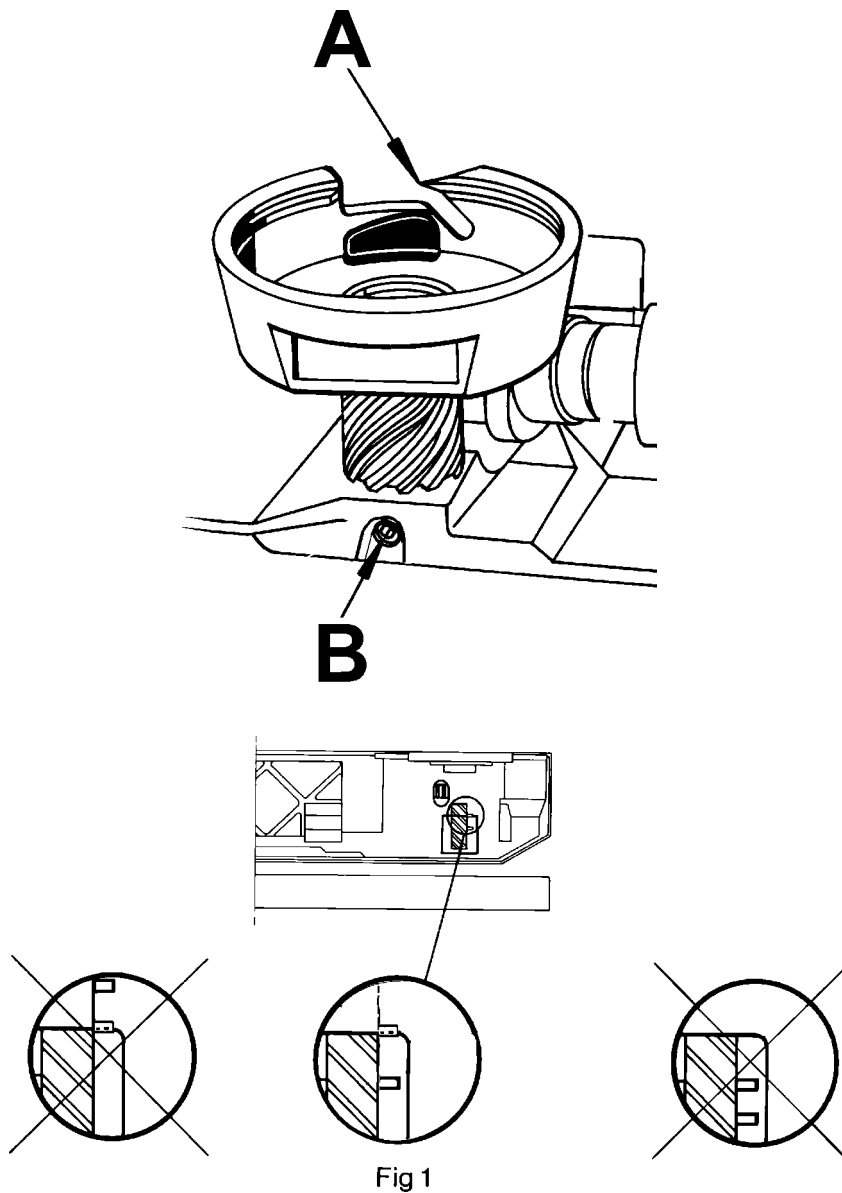
Alt. Check

1. When the two taps of the worm gear are positioned according to fig. 1 the tip (A) of the hook should point straight backwards.

Note! The position of the upper pin shall be aligned with the frame opening.

Adjustment

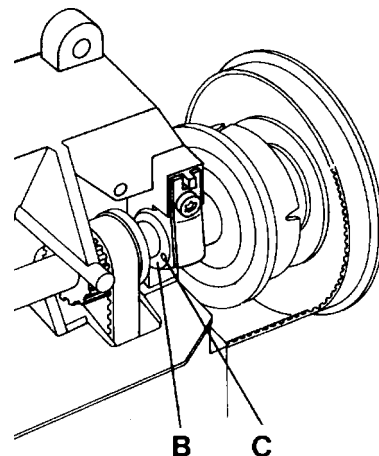
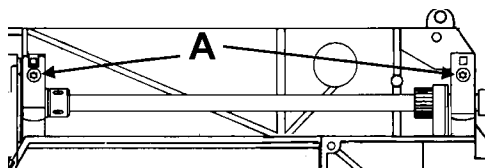
1. Loosen screw (B). Remove the hook and set it into its correct position.



Note! The position of the upper pin shall be aligned with the frame opening.

3. Belt tension, arm/lower shaft belt

1. Dismount rear cover and front cover.
2. Dismount the bobbin winding device.
3. Loosen the two screws (A) of the bearing clamps.
4. The belt tension can now be adjusted by turning bearing (B) which is eccentric.

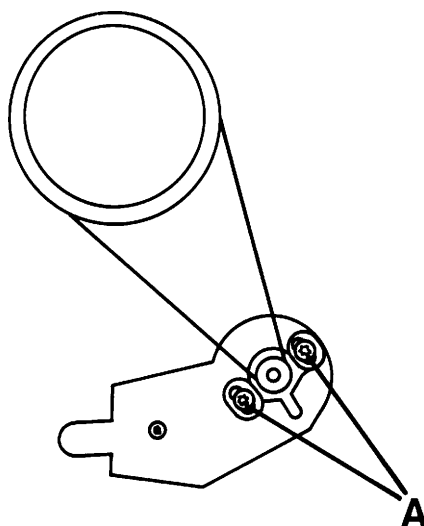


NOTE! The hole (C) should always be on the front half.

4. Belt tension, motor belt

1. Dismount rear cover .
2. Loosen the 2 screws (A) and adjust the belt tension by displacing the motor.

NOTE! The adjustment of the arm/lower shaft belt affects this adjustment.



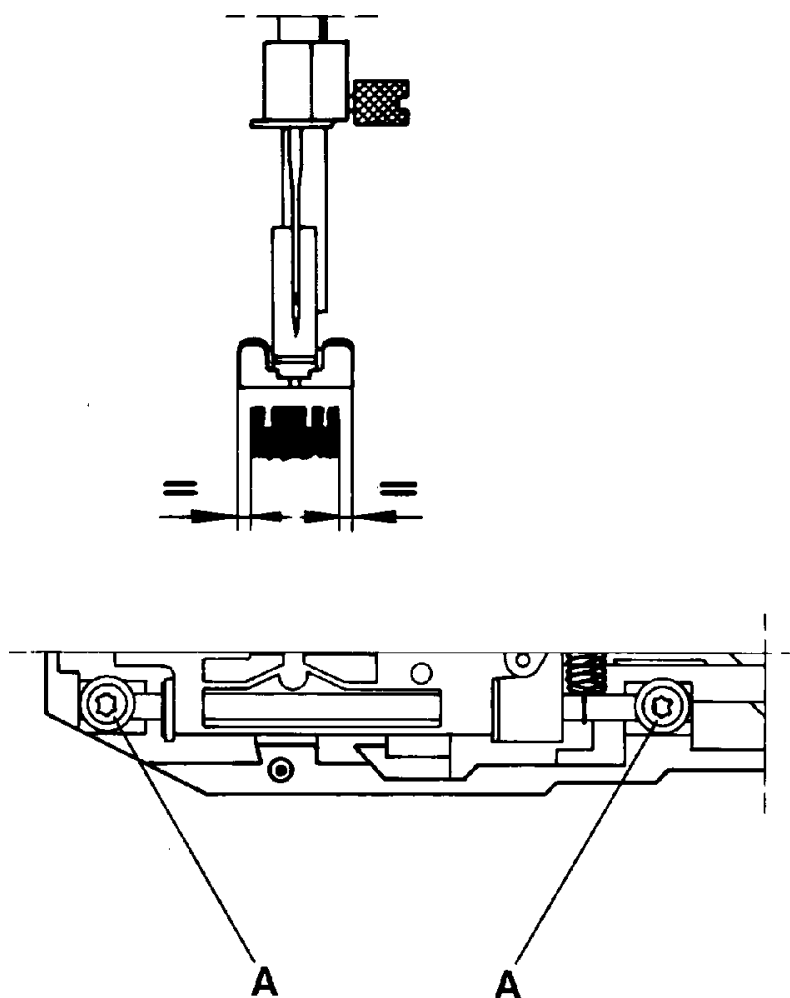
5. Setting the feed dog in relation to the presser foot

Check

1. Sideways the hook should be symmetrically set in relation to the presser foot.

Adjustment

1. Loosen the 2 screws (A) in the feeding device.
2. Move the feeding device sideways until the feed dog is right below the presser foot.
3. Tighten the screws.



6. Basic setting - the step motor of the needle

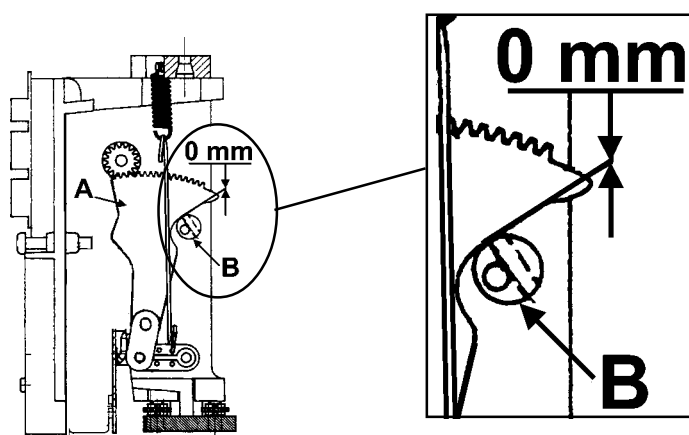
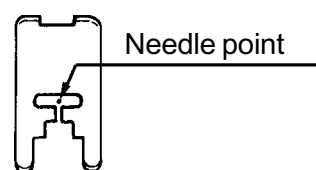
Check

1. Insert a new needle size 90 universal in the machine.
2. Set the needle in its upper turning position.
3. The needle should always get to the centre position, when the main switch is turned on repeatedly.

Check

1. Go to the service program of the machine.
 2. The needle should be in its upper turning position.
 3. Press Key No 9 - The needle should now take its centre position in the presser foot.
 4. Press key No 10 - The needle shall now take its left position.
- The gap between the segment (A) and the calibration stop (B) should now be zero (0 mm).

Note! The position of the eccentric.



Adjustment

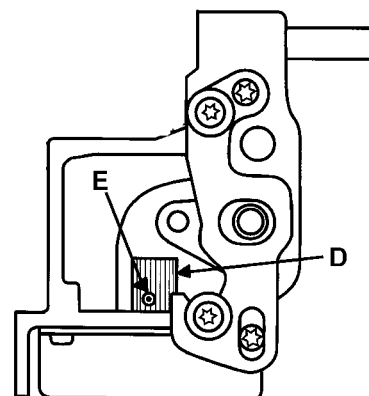
Go to the service program of the machine.

The needle should be in its highest position.

Press key No 4

Loosen screw (E) in the cog wheel (D) on the step motor shaft.

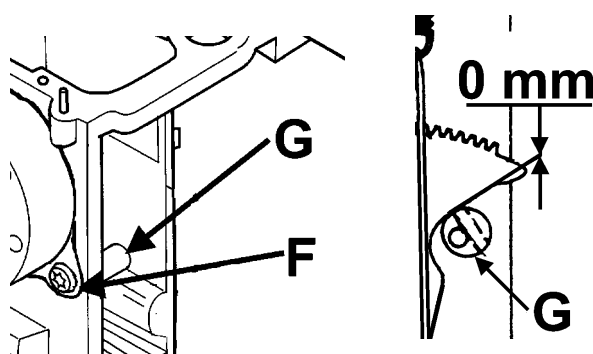
Turn the cog wheel until the needle is in the centre of the presser foot.



Press Key No 5

Loosen screw (F) in the calibration stop (G) and turn it until the gap is correct (0mm).

Note! The position of the eccentric.



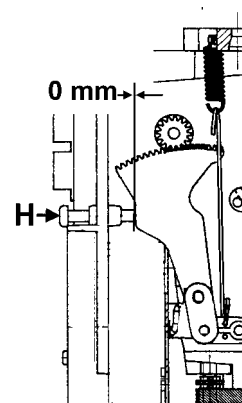
Press Key No 6

Turn the screw (H) until the gap is correct (0 mm).

This setting is only a sideways limitation.

Press Key No 9

The needle should now take its centre position into the needle hole of the presser foot.



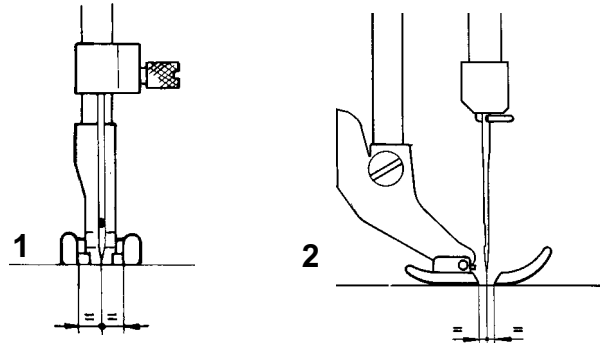
7. Setting of the needle in relation to the presser foot

Check

Insert a new needle size 90 universal in the machine.

When the machine is set at straight stitching centre position, the needle bar shall be set in such a way that a needle 90 passes through the centre of the needle hole in the presser foot.

- 1 = seen from the front
2 = seen from the side



Adjustment

1. Turn on the main switch

Keep the machine set at straight stitching centre position
alt. service program, press Key No 9

2. Loosen the two screws (A) and (B).

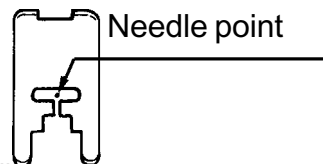
Move the needle bar with the two eccentric screws (C) or (D) until the requirement is obtained.

- The length movement is adjusted by moving the eccentric screw (C)

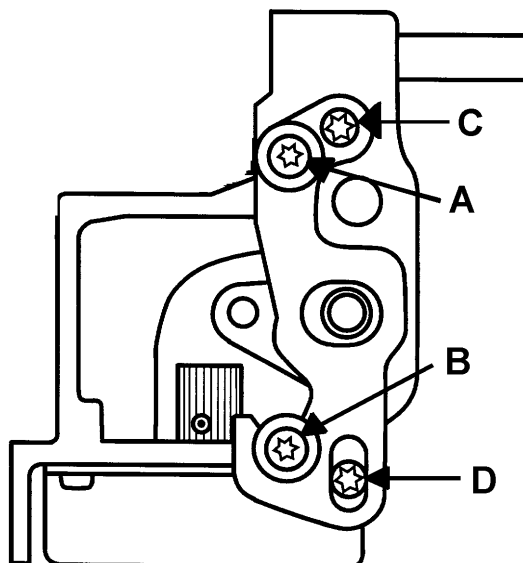
- The side movement is adjusted by moving the eccentric screw (D)

3. Tighten the screws (A) and (B).

4. Check the setting by turning the main switch on and off a couple of times.



NOTE! "The Setting of the needle in relation to the presser foot" affects the function of "6. Basic setting - the step motor of the needle".



8. The gap between the needle and the hook

Check

1. Set the machine on straight stitching.
2. Insert a new needle size 90 universal in the machine.
3. Rotate hand wheel until the tip of the hook arrives behind the needle.
4. Check the gap by pressing a small screw driver against the needle.
The gap should be as small as possible, but max 0.15 mm.

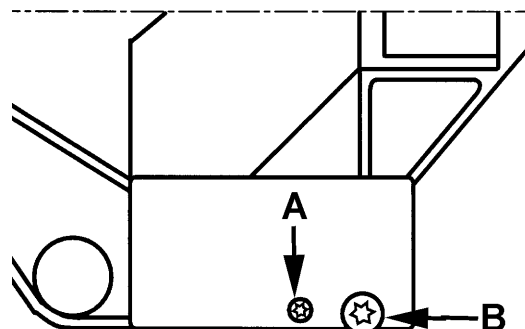
Adjustment

If the gap is too large:

1. Loosen the screw (A).
2. Turn screw (B) clockwise until the needle touches the tip of the hook
3. Turn screw (A) until the gap is correct

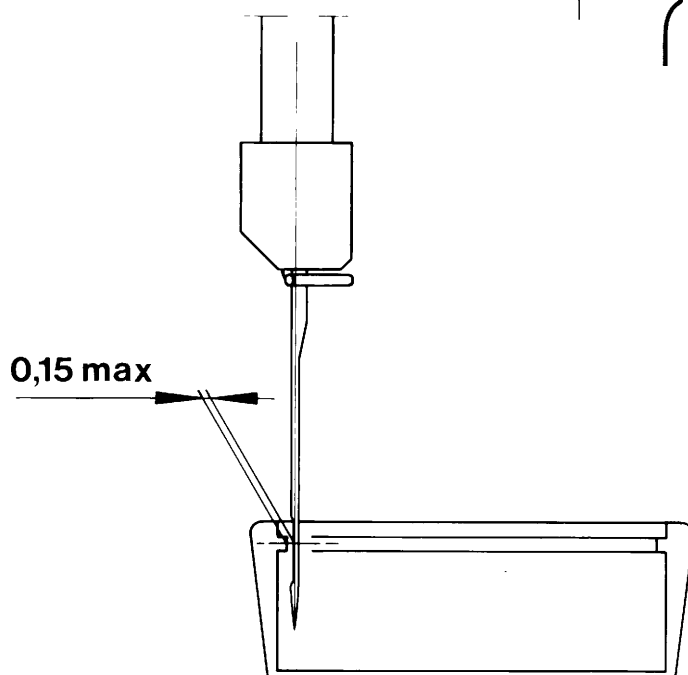
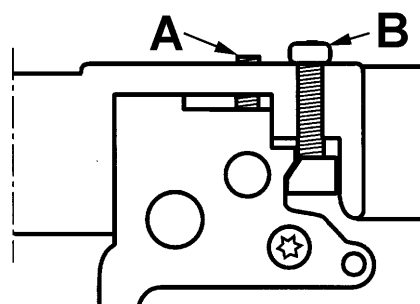
If the gap is too small:

1. Loosen the screw (B)
2. Turn screw (A) to make the gap larger and then loosen the screw (A) again.
3. Turn screw (B) clockwise until the needle touches the tip of the hook
4. Turn screw (A) until the gap is correct



NOTE! Always tighten screw (A).

Check!



9. The timing of the hook in relation to the needle

Check

- Set a new needle size 90 universal into the machine
- Dismount the stitch plate, bobbin case holder and the bobbin case.
- Set machine on straight stitching.
- As the needle is moving upwards, the tip of the hook should pass behind the centre of the needle, when the needle is 2.5 mm above its lower turning position.

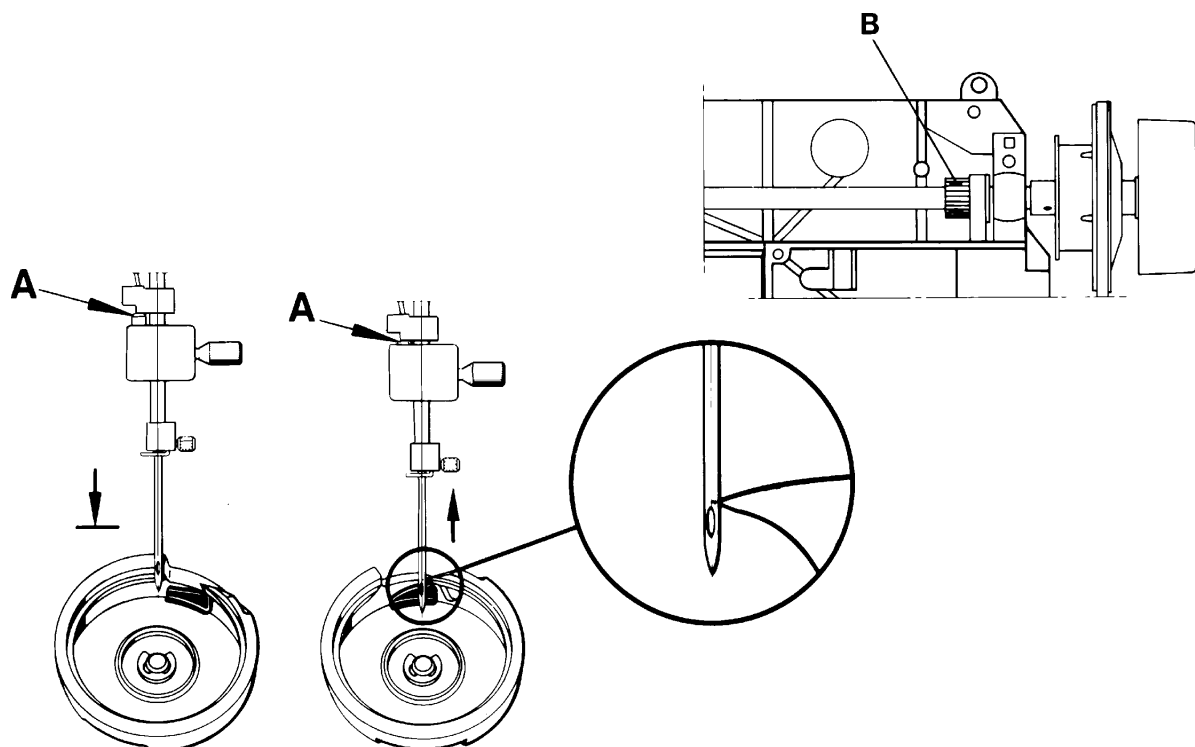
NOTE! Before any adjustment is done check that the setting "2. Setting the hook in relation to the feeding eccentric" is correct.

Check with setting gauge 411 17 52-01.

1. Turn the handwheel until the needle is at its lower turning position.
2. Place the setting gauge on the needle bar so that the springloaded stud (A) just touches the needle bar frame and tighten the screw.
3. Move the needle upwards with the handwheel until the springloaded stud (A) rests against its stop in the setting gauge.
4. The tip of the hook should now be behind the centre line of the needle.

Adjustment

1. Remove the blank pointed screw (B) and loosen the other 2 screws in the belt wheel of the arm shaft.
2. Repeat checking points 1, 2 and 3 with setting gauge 411 17 52-01 .
3. Hold the arm shaft and turn the hook until its tip arrives behind the centre line of the needle.
4. Tighten one of the black screws.
5. Make sure the screw descends into the groove of the shaft so that the belt wheel is placed correctly sideways.
6. Check.
7. Tighten all the screws.



10. The needle height

Check

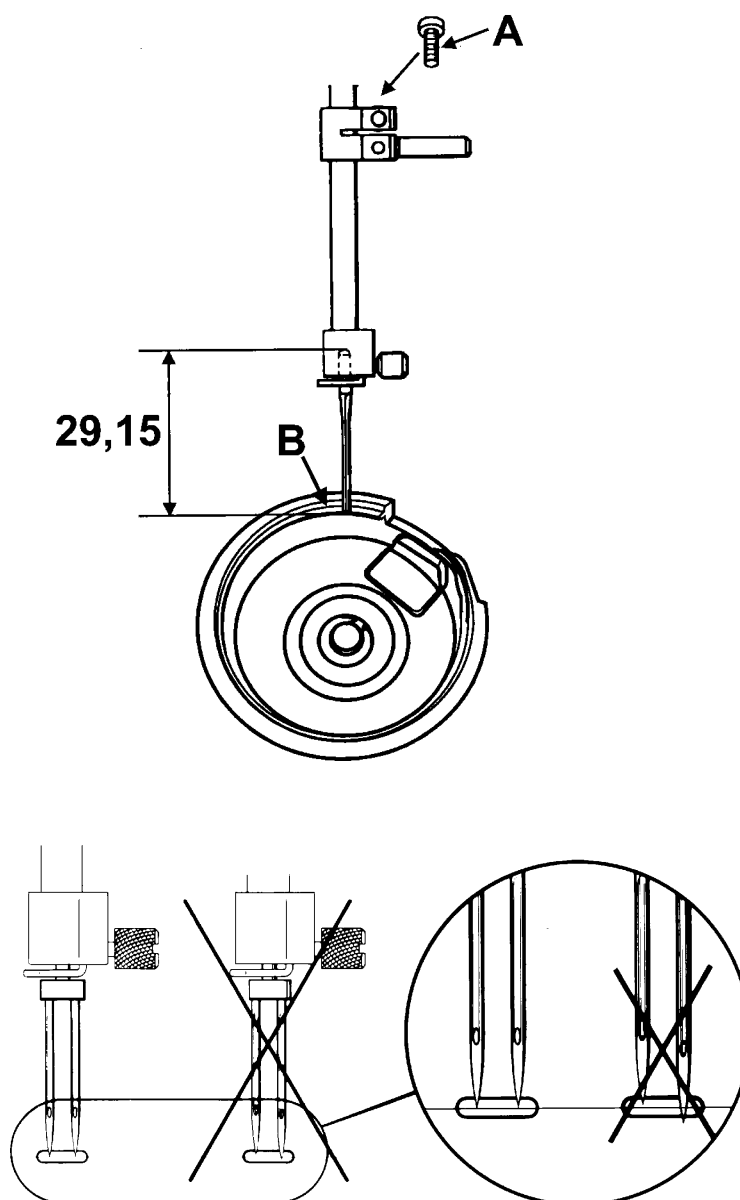
1. Bring the needle into its lower turning position.
2. The gap between the upper end of the needle and the surface (B) of the hook ring should be 29.15 ± 0.2 mm.

The check is executed with a polished needle 90 which is 29.15 mm long.
Order nr. 412 35 29 - 01

Adjustment

1. Bring the needle to its lower turning position.
2. Loosen screw (A) and move the needle bar until the correct measure is obtained.
3. Tighten the screw.

NOTE! Check by means of a twin needle that the needle bar is not twisted. May cause jump stitches when sewing with a twin needle.



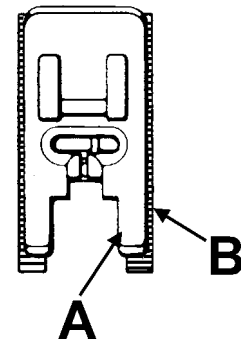
11. Presser foot parallelism to the feed dog

Check

The presser foot (A) should be parallel to the feed dog (B) .

Adjustment

1. Loosen screw (C) and turn the presser foot until it is parallel to the feed dog.
2. Tighten the screw (C).



12. Presser foot height to the stitch plate

Check

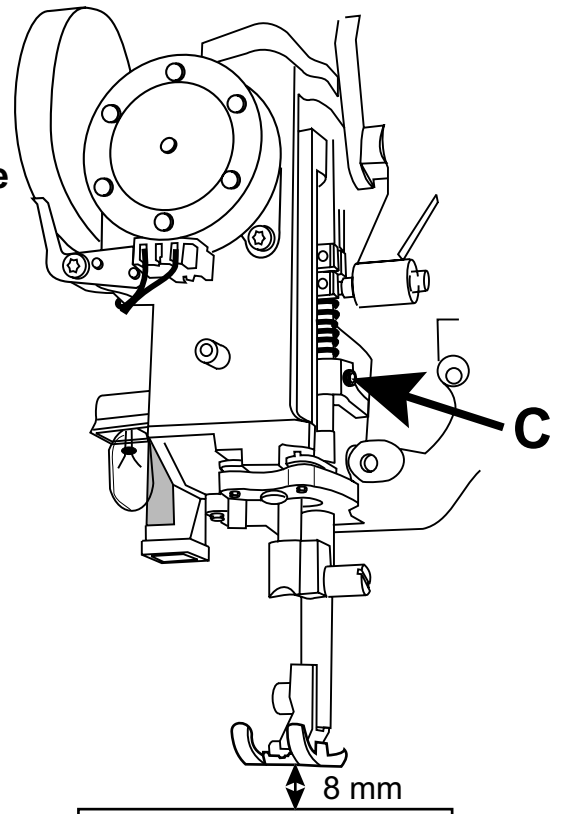
When the presser foot is in its highest lifting position it shall be approx. 8 mm above the stitch plate.

Adjustment

1. Loosen screw (C) and turn the presser foot until it is parallel to the feed dog groove of the stitch plate and its lifting height is approx. 8 mm.
2. Tighten the screw.

Note! This setting affects:

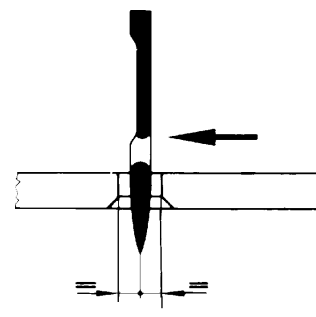
11. Presser foot parallelism to the feed dog



13. Setting the stitch plate (the hook cover) in relation to the needle in the feeding direction.

Check

1. Insert a new needle size 90 universal in the machine.
2. In the feeding direction the needle should descend right into the middle of the needle hole of the stitch plate.



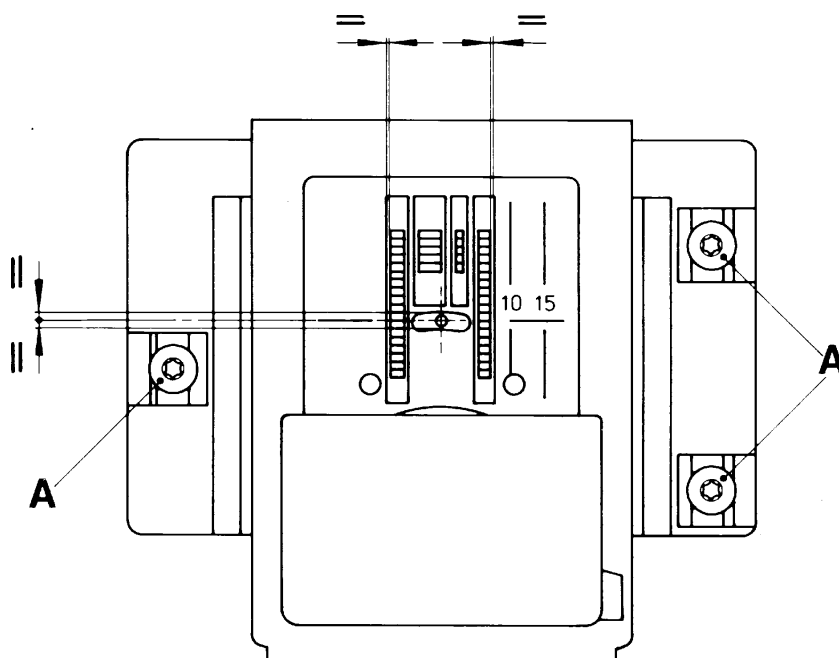
14. The sideways setting of the stitch plate (the hook cover) in relation to the feed dog.

Check

The feed dog must not touch the stitch plate at any point.

Adjustment

- Loosen the 3 screws (A) of the hook cover and move it so that:
- the needle sideways descends in the middle of the stitch plate.
 - the feed dog does not touch the stitch plate.



15. The height of the hook

Is checked between the bobbin case and the case holder.

Check

The distance between the bobbin case and the case holder should be $0.5^{+0.1}_{-0.05}$ mm.

The check is carried out with the front cover mounted at the tightest spot between the bobbin case and the case holder. Check at the two marked positions according to fig. 1.

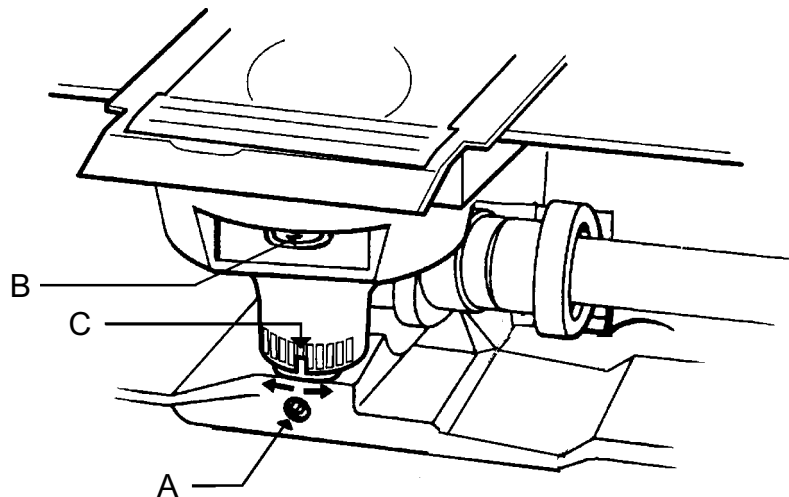
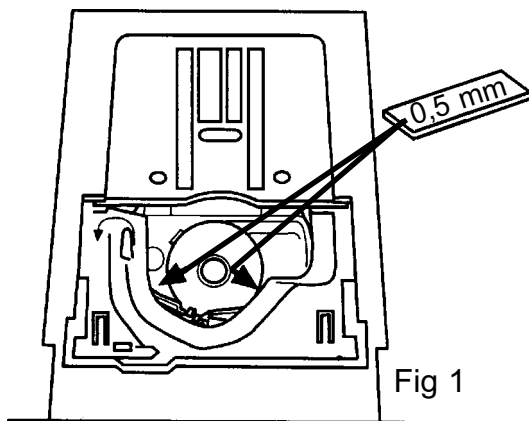
Adjustment

1. Loosen screw (A).
2. The gap between the hook and its cover can now be adjusted by turning the stud (C) right or left.
 - To the right, the gap becomes larger.
 - To the left, the gap becomes smaller..
3. When the adjustment is done. Remove stitch plate, bobbin case holder and bobbin case.
4. Push the hook shaft (B) downwards and tighten the screw (A).
5. Re-check.

Note! This setting affects:

- 1. The play of the hook gear.
- 9. The timing of the hook and the needle
- 10. The needle height

Check with distance gauge 412 38 85-01.



16. Feed dog height

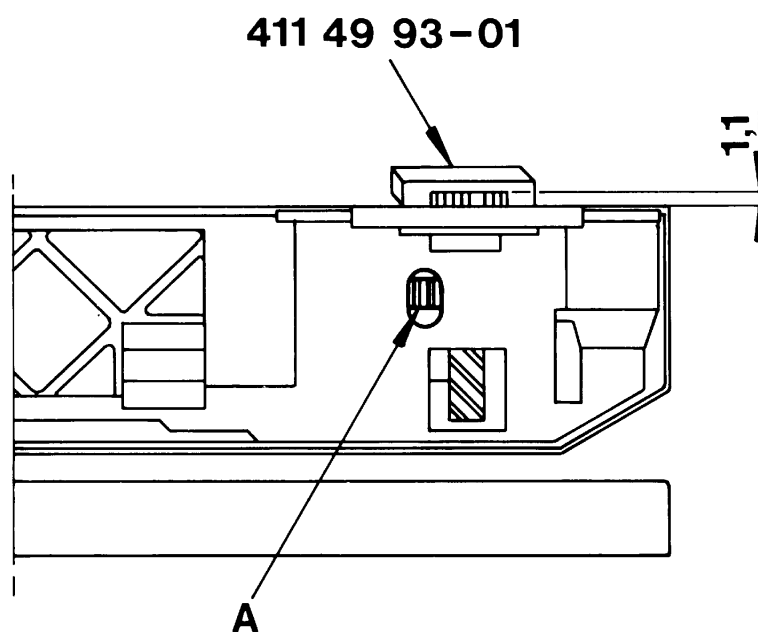
Check

1. Bring the feed dog to its highest position.
2. The top of the feed dog should be 0.9-1.1 mm above the stitch plate.

Check with setting gauge 411 49 93-01

Adjustment

1. Bring the feed dog to its highest position.
2. Adjust with a screw driver the adjustment nut (A) until a correct feed dog height (0.9-1.1 mm) is obtained.



17. Threading device

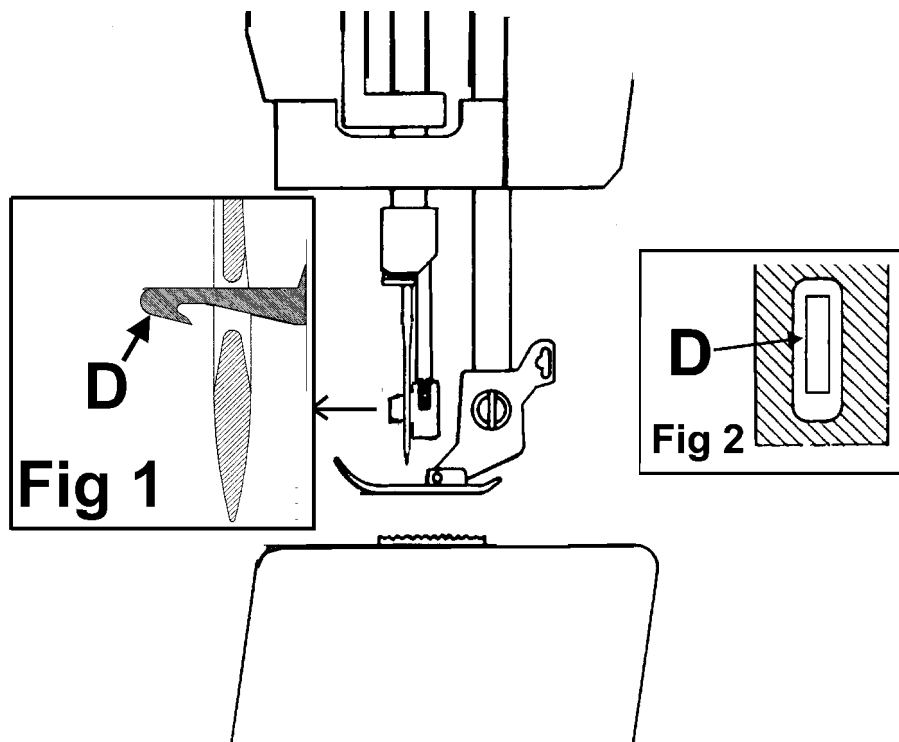
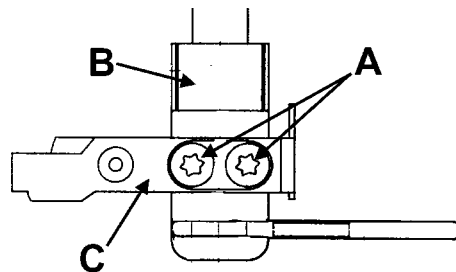
Check

1. Insert a new needle.
2. Bring the needle to its highest turning position.
3. The threader hook shall go smoothly into the needles eye. See Fig 1 and Fig 2.

Adjustment

1. Loosen the the two screws (A) on the back of the threader head (B).
2. Move the thread head (B) so that the threader hook (D) does not touch the needle heightways (See fig 1)
3. Move the thread hook holder (C) so that the threader hook (D) does not touch the needle sideways (See fig 2) .
4. Tighten the screws.

NOTE! Both settings are adjusted at the same time



18. Stitch length balance basic setting

19. Pre-setting the step motor of the feed dog

Check 1

The feed dog should after turning the mains switch several times on and off always reach such a position that 2.5 mm straight stitching will be obtained.

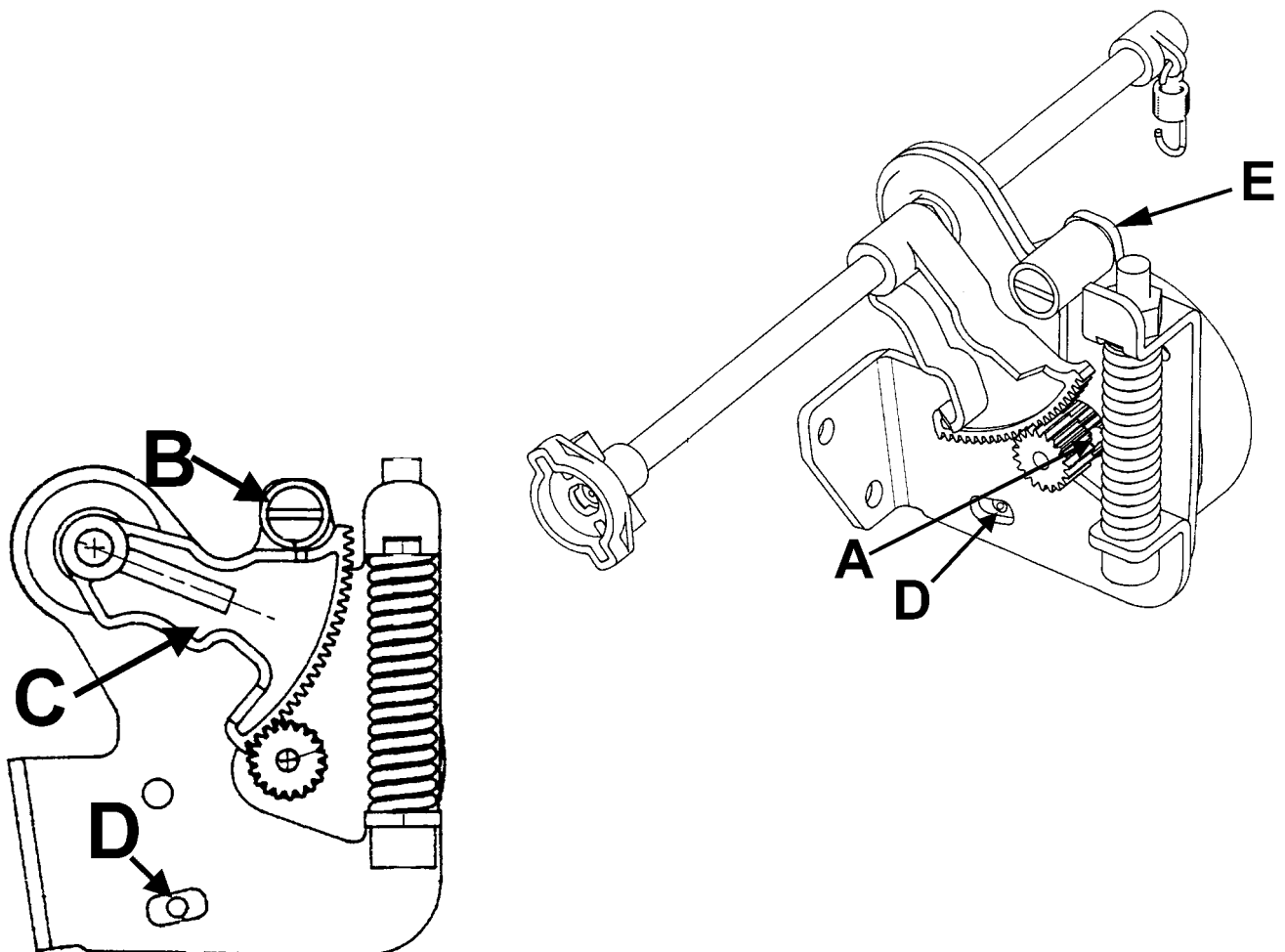
Check 2

1. Go to the service program.
2. Press key No 7 the feed dog shall now stand still when the foot control is pressed (0-feeding).
3. Turn the hand wheel until the needle arrives at its lower turning position.
4. Press key No 8 The gap between the segment (C) and the calibration stop (B) should now be Zero (0 mm).

Adjustment

Note! Make sure that distance is equal on both sides of the stop screw (D) before a basic setting is performed.

1. Press Key No 7 .Loosen the screw (A) of the cog wheel and turn it until the feed dog comes to a stand-still when the foot control is pressed.
2. Turn the hand wheel until the needle arrives at its lower turning position.
3. Press key No 8.
4. Loosen screw (E). Turn the eccentric calibration stop (B) until the gap between segment (C) and the calibration stop (B) is 0 mm.
5. **Turn the machine off and Re-enter the service program.**
6. Repeat checking points 2, 3 and 4.

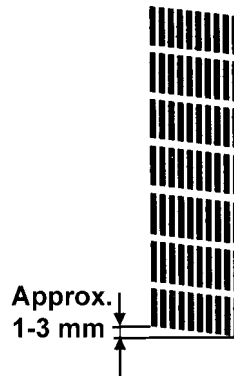


20 Stitch length balance

Check

- A Both columns of the buttonhole shall be of the same density.
- B The machine shall sew a motif according to the symbol.
- C The darning stitch no 25 shall look according to ill. (Use the service program - button n 18)

Note! When controlling or adjusting the stitch length balance the electronic buttonhole balance shall be zeroed (see below).

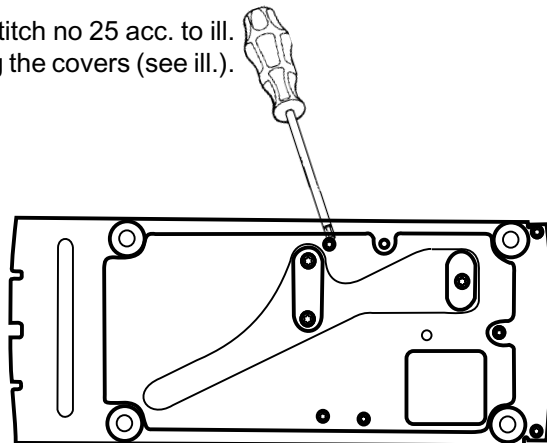
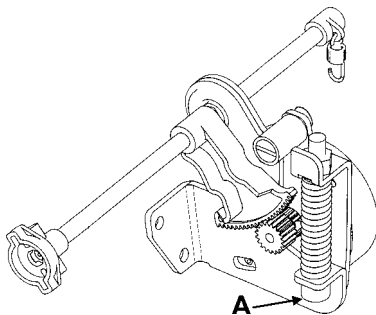


Fine adjustment

Press key nr. 18 of the service program.

Turn screw (A) until the machine sews mending stitch no 25 acc. to ill.

This adjustment may be done without dismounting the covers (see ill.).



Electronic Buttonhole balance

Can be carried out on any of the buttonholes.

Press <= and => simultaneously until the text BAL flashes in the left part of the display

Instead of the stitch length a balance value is shown:

If you want a denser left column press stitch length key (+).

If you want a less dense left column press (-).

The balance can be set between -5 and +5. The balance value in the display changes in steps each time you press.

The machine always remembers the most recently set balance value.

21. Lower thread tension (thread tension of the bobbin case)

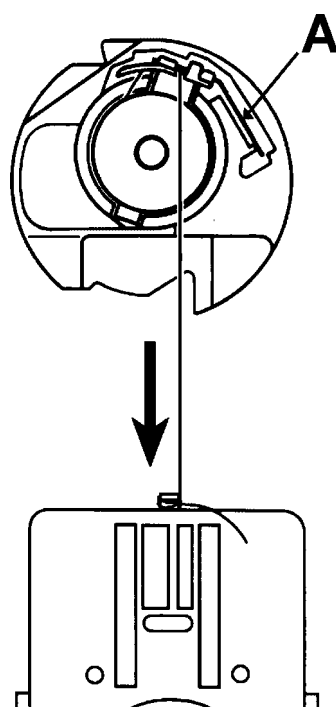
Check

1. Insert a full bobbin into the bobbin case.
2. The thread tension spring of the bobbin case shall give a resistance of 12 - 20 g when pulling the thread slowly.

Adjustment

1. Turn screw (A) until the correct thread tension is obtained.

NOTE ! Before any adjustment is made remove any loose pieces of thread or fluff from the thread tension discs



22. Upper thread tension

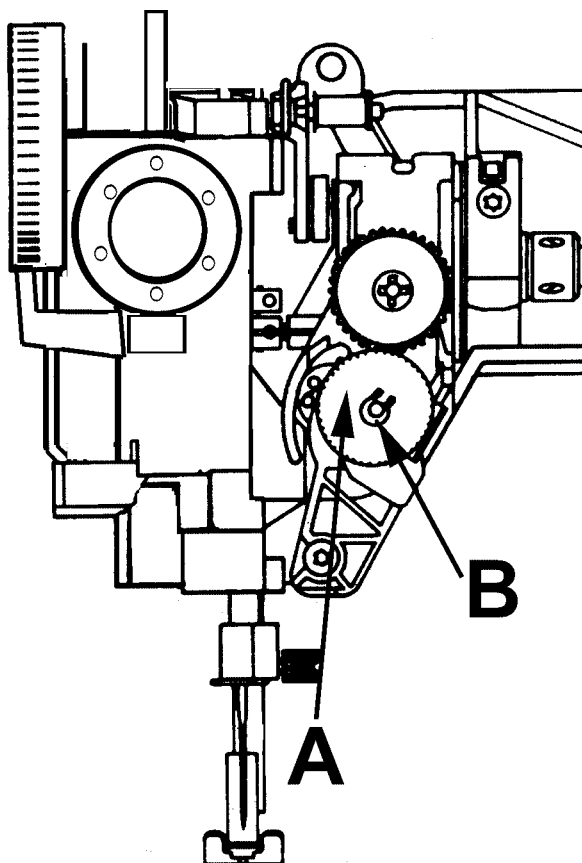
Check

A correct take-up should be obtained at straight stitching and zig-zag in cotton, when the thread tension dial is set within the area of 3-5.

Adjustment

1. Run the machine and turn the thread tension dial (A) until a correct take-up is obtained.
2. Loosen locking washer (B).
3. Remove the thread tension dial (A) and put it back on the shaft with No 4 front of the index.

NOTE ! Before any adjustment is made remove any loose pieces of thread or fluff from the thread tension discs



23. Setting the thread take-up spring

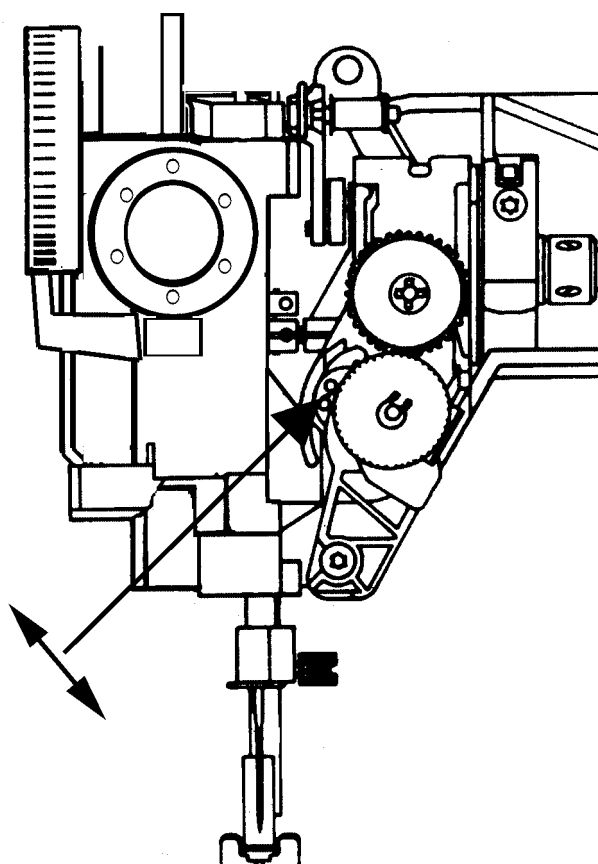
Check

The thread take-up spring should have completed its movement when the tip of the needle reaches the fabric but not the needle eye. The check has to be carried out in straight stitching in cotton.

Adjustment

Turn the thread tension body with a screw driver until a correct thread take-up is obtained.

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



24. Disconnection when winding the bobbin

Check

When winding up the lower thread onto the bobbin the machine should stop when there is a min. of 1 mm between the edge of the bobbin and the thread.

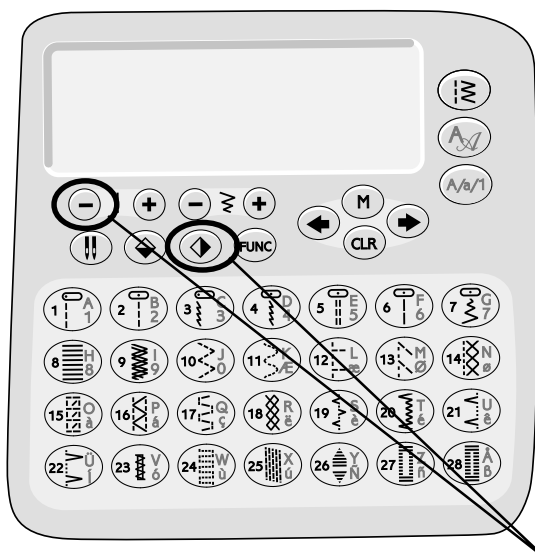
Adjustment

Turn by means of a screwdriver torx the disconnection (A) until the correct amount of thread is obtained.

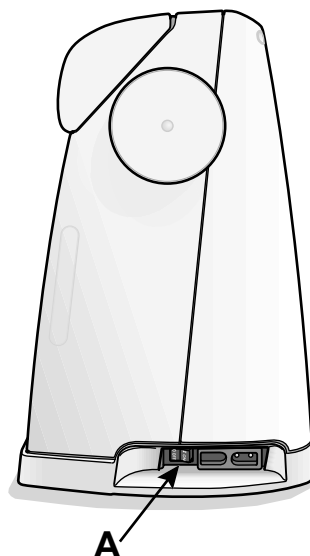


Service program

In order to facilitate the checking and setting of the different functions of the machine there is a service program.



Press



Handling

Go to the service program of the machine by pressing **minus stitch lengths** and **the mirror side to side** while the main switch (A) is switched on. The display will now show the Platinum service menu 1.

Service program

In order to facilitate the checking and setting of the different functions of the machine there is a service program.

Handling

Get into the service mode of the machine by pressing the minus stitch lengths and mirror side to side while the mains switch is turned on. This is indicated when the code letter is shown (=key 1).

Functions of the service program

- Key 1** Shows the code letter of the program memory of the circuit board.
- Key 2** Display test. All symbols light up and a squared pattern should change between 4 different squared patterns, after the check is done it will go back to key 1.
- Key 3** Is used to set the display contrast.
To change the contrast use the arrows on the right side of the foil key board.
- Key 4** Is used for the centre position of the needle in straight stitching.
The step motor of the needle is now in its centre position.
Setting nr. 6
- Key 5** Is used when pre-setting the step motor of the needle.
The step motor now takes its LEFT calibration position.
Setting nr. 6
- Key 6** Is used when pre-setting the step motor of the needle.
The step motor now takes its RIGHT calibration position.
Setting nr. 6

- Key 7** Is used when coarse-adjusting the stitch length balance.
The feed dog should now stand still (0-feeding).
Setting nr. 18
- Key 8** Is used when pre-setting the feeding step motor.
The step motor now takes its calibration position.
Setting nr. 19.
- Key 9** Is used for checking the centre position of the needle in straight stitching. Setting nr. 6
- Key 10** Needle in upper position :
Is used for checking the Pre-setting of the step motor of the needle.
Needle in lower position:
Is used for checking the Pre-setting of the feeding step motor.
- Key 11** Sensor check. See Function of the sensor menu
- Key 18** Is used when fine-adjusting the stitch length balance.
Setting nr. 20.
- Key 20** The machine sews signs B,P,R,S.
- Key 21** Log Menu - On time
Indicates how many hours and minutes the machine has been on.
- Key 22** Log Menu - Sewing time
Indicates how many hours and minutes the machine has been sewed on.

Note! Not mentioned keys are not used on service or have no function.

Functions of the sensor menu - Sensor check

Operation

Get into the service program.

Check that the shaft sensor (stop right function) works.

It controls when the step motors have to be reset, it reads the speed and the stop right functions.

The function is correct if numbers **S:1-S:4** are shown in the middle of the display, while the handwheel is turned around slowly.

S/F	Check of the armshaft sensor
N/F	Check of the needle sensor
W. stop	Check of the bobbin winding sensor
Sensor foot	Check of the button hole sensor.
	The button hole sensor must be conneted.
	When the red wheel is turned it should be 1 to 4 filled squares if the function is correct.

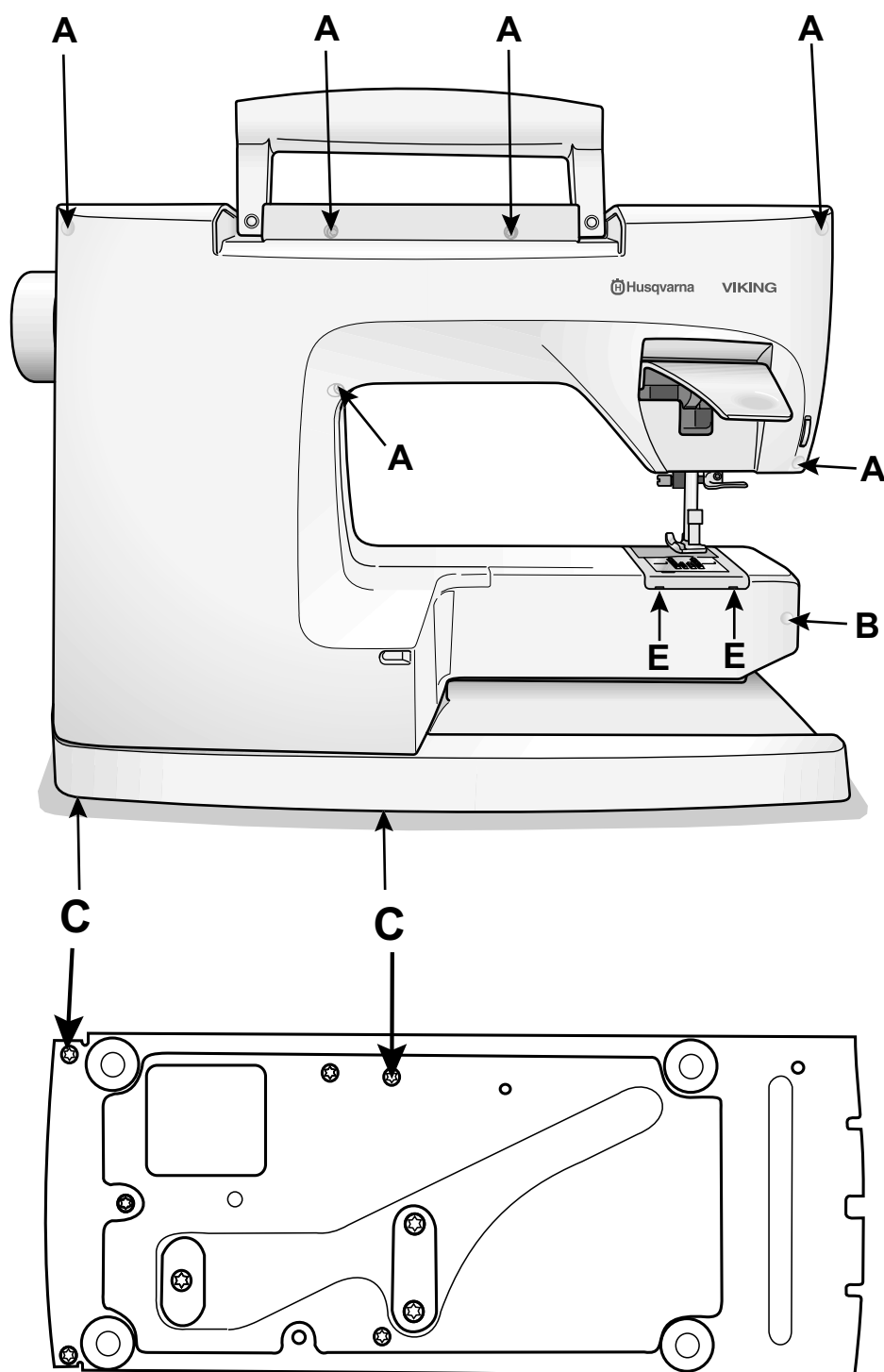


Rear upper cover

1. Remove the six screws (A) for the upper back cover.
2. Remove the two screws (C).
3. Remove the rear upper cover.

Rear lower cover

1. Remove the screw (B) for the lower cover.
2. Cautiously bend with a screwdriver in the two sockets (E) under the stitch plate in order to expose the hook and remove the rear lower cover.



Front cover

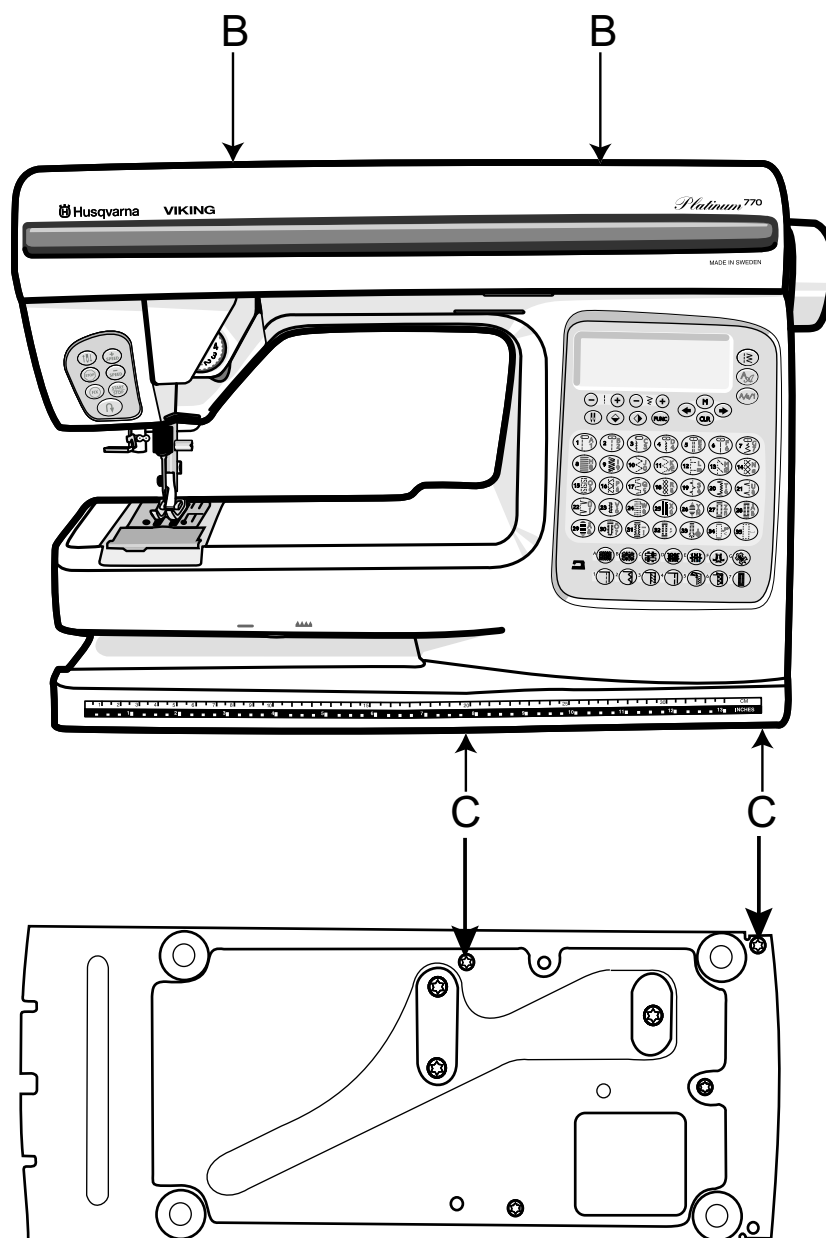
Dismounting

1. Dismount the rear covers.
 2. Remove the button for the bobbin winding sensor stop, by pulling it straight out.
 3. Remove the two screws (B) from behind.
 4. Remove the two screws (C) in the base plate.
 5. Turn the hand wheel until the needle is in its lowest position, so the thread take up lever is out of the way.
 6. Carefully bend away the front cover from the hand wheel and pull it straight out.
- NOTE! Pull carefully the front cover away in order not to damage the foil key board cables.
7. Loosen the LEFT band cable of the foil keyboard from the circuit board by pulling the outer covering of the white switch outwards.
 8. Loosen the MAIN band cable of the foil keyboard from the circuit board by pulling the outer covering of the white switch outwards.

Mounting

Mount in reverse order

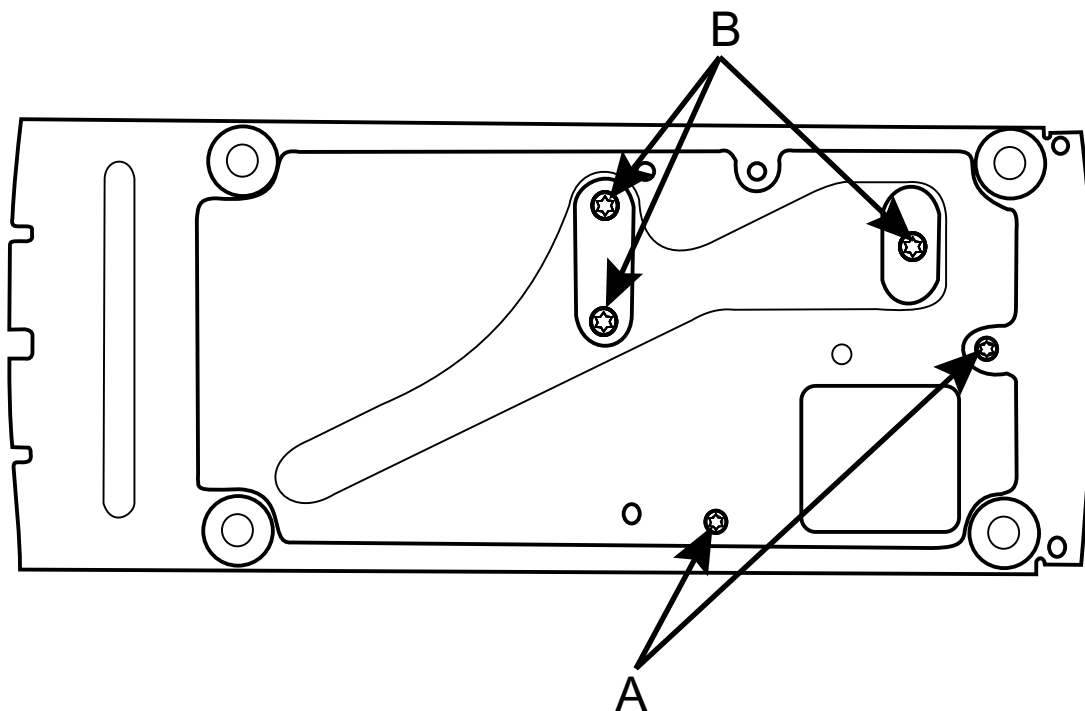
Note! Before mounting the front cover make sure that the feed dog lowering is in up position.



Base Plate

Dismounting

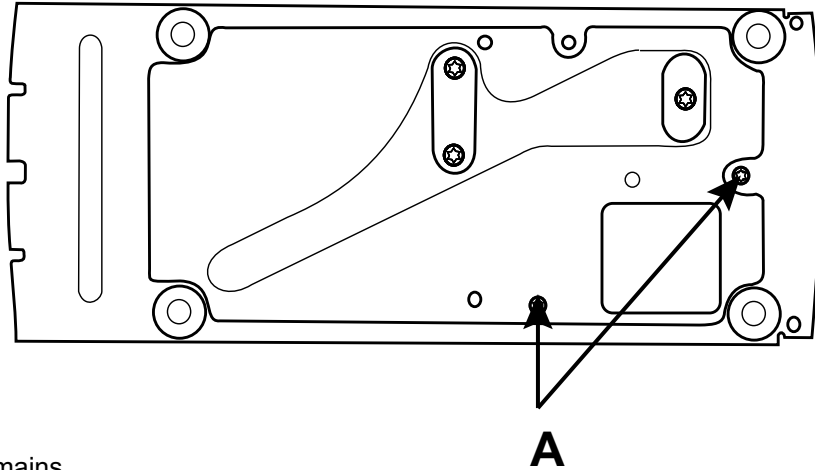
1. Dismount the upper and lower rear cover.
2. Dismount front cover.
4. Dismount the 2 screws (A) for the transformer.
3. Dismount the 3 screws (B).



Transformer

Dismounting

1. Dismount rear cover .
2. Loosen the two screws (A) of the transformer from below in the base plate.
3. Push the transformer to the right so that the mains switch part is exposed from the base plate and lift it upwards.
4. Disconnect the cable to the circuit boards from the transformer.



Checking the transformer

Connect the transformer to mains.

Measure the tension and resistance between the contact pins.

1-3 shall be approx. 13 Volt AC Lamp, computer.

4/5-6/7 shall be approx. 28 Volt AC Step motor, drive motor.

2-8 shall be approx. 100-0 k Ohm Foot control connected

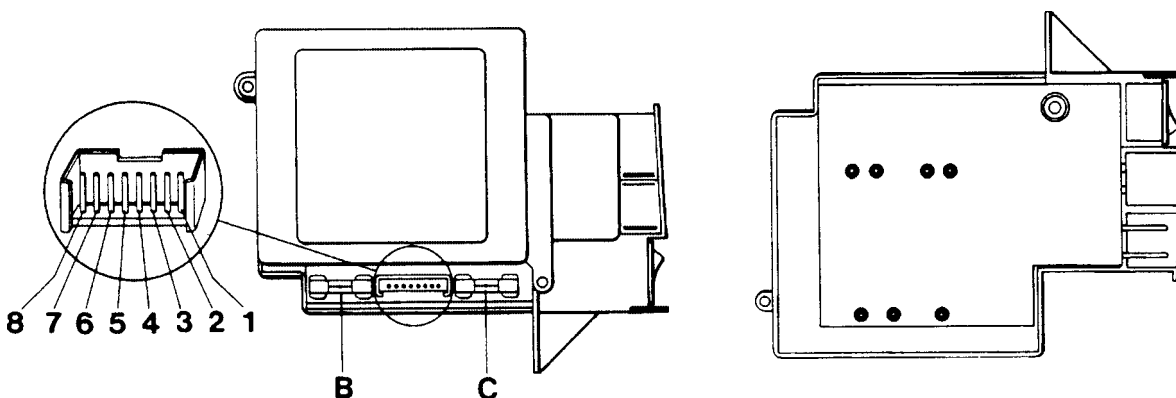
Fuses

On the circuit board of the transformer there are two fuses.

They can be exchanged without disassemble the transformer.

Fuse (B): for 120 V machines 3.5 A/250 V
 for 220 V machines 6.3 A/250 V

Fuse (C): 2 A/250 V



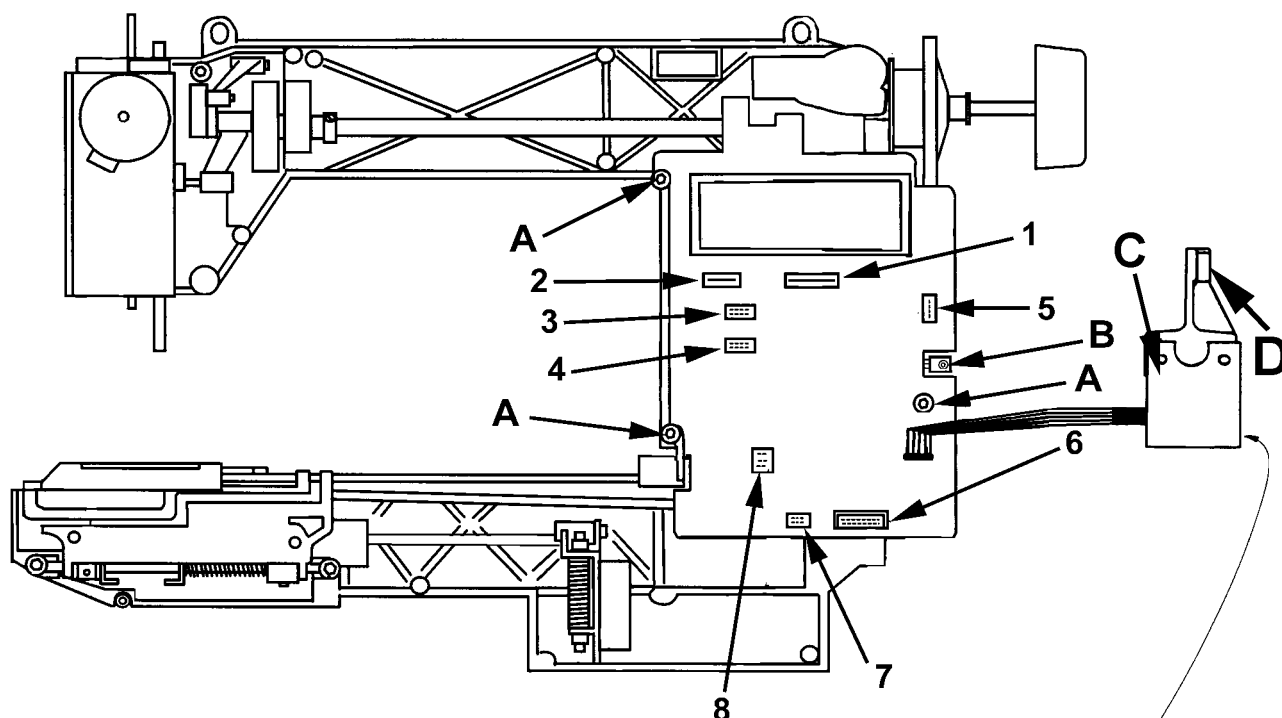
Dismounting the transformer and the circuit board

1. Remove the lower part of the transformer casing.
2. Remove the soldering from the 7 connections of the transformer to the circuit board.
3. Remove the circuit board.

Circuit board - Circuit diagram

Dismounting

1. Dismount rear covers.
2. Dismount front cover .
3. Remove the screw (D) holding the stop right sensor board(C)
4. Remove the 3 screws (A) and the screw (B) holding the circuit board, the cooling plates



5. Loosen the cables from the circuit board according to below:

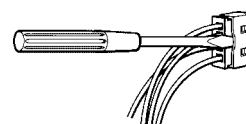
- (1) Left foil key board
- (2) Right foil key board
- (3) The step motor of the needle.
- (4) The step motor of the feeding unit.
- (5) Buttonhole counter
- (6) Transformer
- (7) Lamp.
- (8) Motor "mounted from the rear", red cable down.

6. Lift out the board from the machine.

7. Cautiously snap the circuit board (C) of the arm shaft sensor off its support by bending its lower end outwards and thereafter pulling it downwards.

Note!

1. Contacts (3), (4), (5) and (7) can be loosened by cautiously bending away the outer covering with a thin screwdriver.
2. Check that the lower shaft sensor board is mounted at a distance of approx. 1 mm from the screen, lower shaft sensor (see ill.)



Sewing head

Dismounting

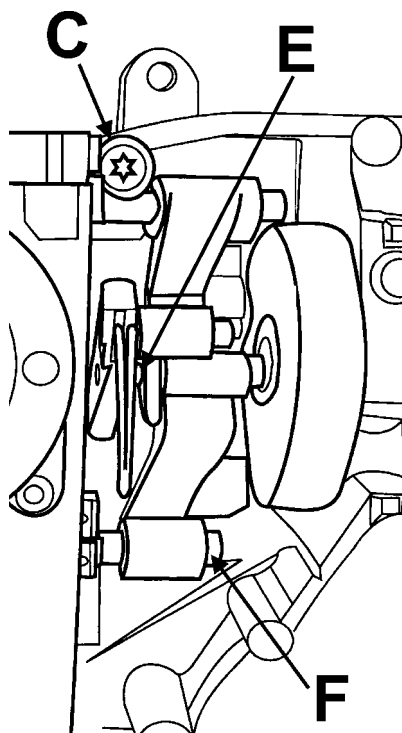
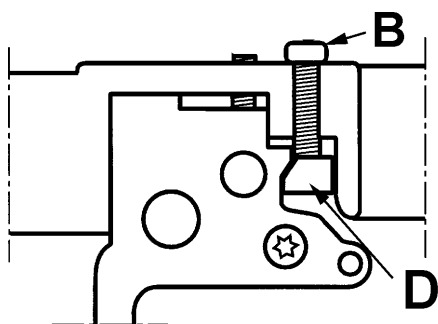
1. Dismount rear covers and front cover.
2. Dismount the presser foot holder and needle.
3. Dismount the main board .
4. Loosen screw (B) and remove the block (D) by pushing the screw (B) down.
5. Remove screw (C).
6. Unhook the sewing head from the sewing machine arm.
7. Unhook the sewing head from the stud (E) of the thread take-up lever and the connecting rod (F).

Mounting

1. Hook on the sewing head to the connecting rod (F) and the stud(E) of the thread take-up lever.
2. Place sewing head in the machine.
3. Tighten the screw (C).
4. Mount the block (D) together with the screw (B) in the machine and tighten.
5. Mount the main board.

Set thereafter:

8. The gap between the needle and the hook
6. The centre position of the needle.
7. Setting of the needle in relation to the presserfoot.
10. Needle height
17. Threading device.
20. Stitch length balance



The step motor of the needle

Dismounting

1. Dismount rear covers .
2. Dismount front cover .
3. Dismount the main board .
4. Dismount the step motor by removing the 2 screws (A,E) .

Mounting

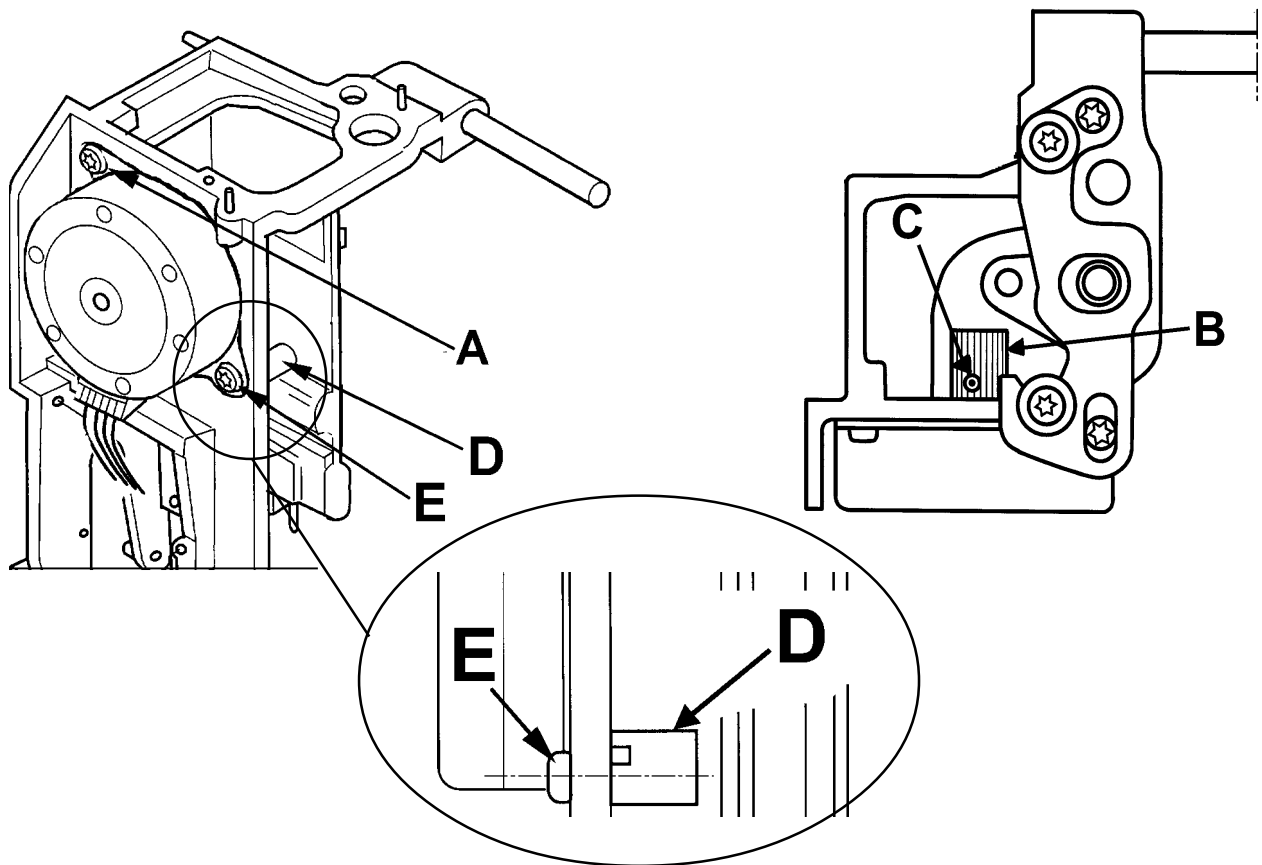
1. Mount an A-foot and a new 90 needle
2. Set the needle manually in its centre position
3. Position the cogwheel (B) so that the screw (C) is pointing upwards.
4. Mount the step motor and tighten the screw (A).
5. Mount the calibration stop (D) and the screw (E) .

Note the position of the calibration stop.

6. Mount the board.

Set thereafter:

6. The centre position of the needle.



The hook cover compl

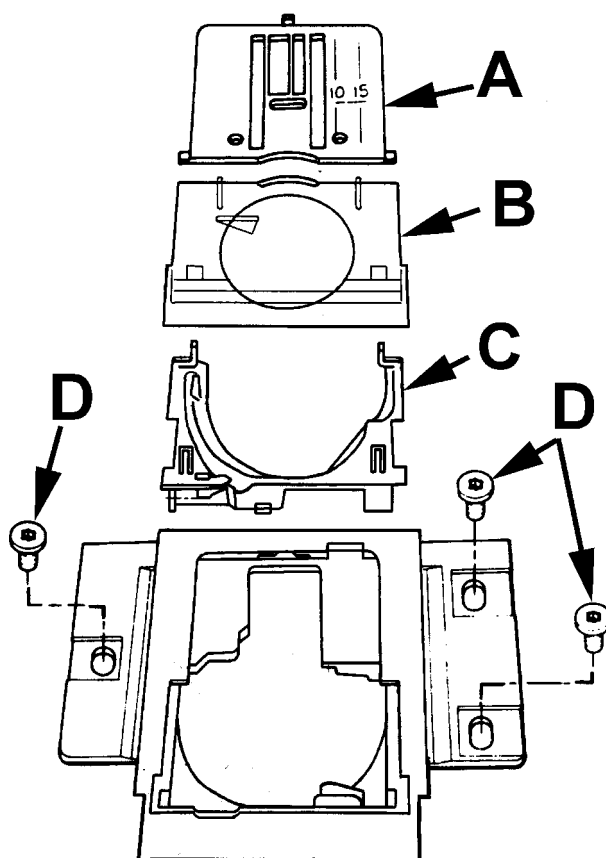
Dismounting

1. Dismount the rear covers and the front cover .
2. Raise the presser bar to its highest position.
3. Remove the needle.
4. Dismount the presser foot holder.
5. Dismount the stitch plate (A),
the bobbin window (B)
the bobbin basket holder (C) and the bobbin basket.
7. Dismount the 3 screws (D) on the hook cover
8. Dismount the hook cover.

Mount in reverse order

Set thereafter

13. Setting the stitchplate (hook cover)in relation to the needle in feeding direction.
14. The sideways setting of the stitchplate (hook cover) in relation to the presserfoot.
15. The height of the hook.



Hook compl.

Dismounting

1. Dismount rear cover and front cover .
2. Dismount the hook cover.
3. Loosen the screw (A) and lift hook compl. (B).

Mounting

1. Turn the hand wheel so the two taps of worm gear are positioned according to fig 1.
2. Position washer, adjustment stud and dust shield onto the arm. With the adjustment stud forward.
3. Place the hook so that the tip (C) points straight backwards.
4. Press the hook shaft downwards so that it is without play and tighten screw (A).

Note! The position of the hook in relation to the lower shaft must not be changed.

Set thereafter:

2. Setting of the hook in relation to the feeding eccentric.
1. Play of the hook gear.
5. Setting of the feeding unit sideways.
8. Gap between the needle and the hook.
13. The setting of the stitch plate (hook cover) in relation to the needle in the feeding direction.
14. The sideways setting of the stitch plate (hook cover) in relation to the presserfoot.
15. The height of the hook.
9. Timing of the hook in relation to the needle.
10. Needle height.
20. Stitch length balance.

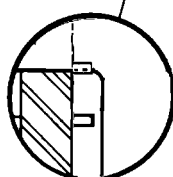
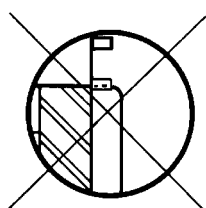
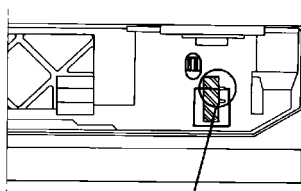
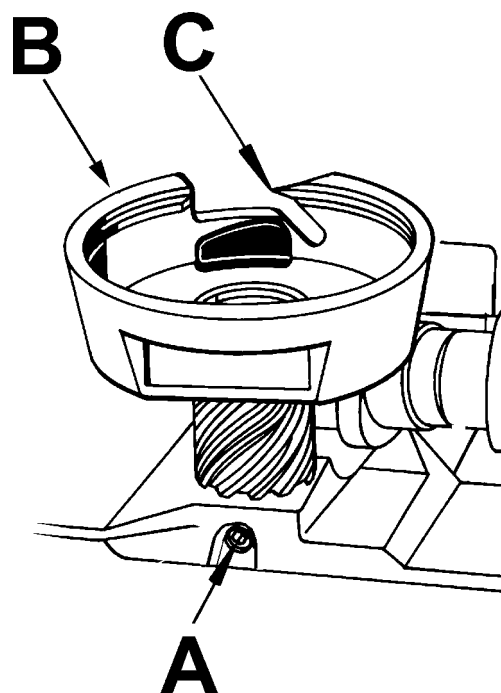
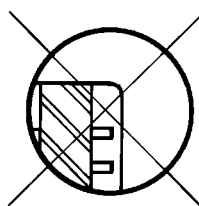


Fig 1



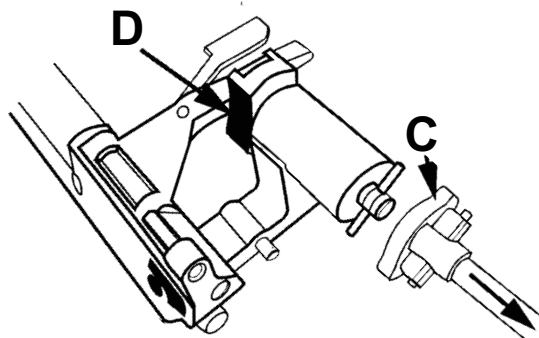
Feeding unit

Dismounting

1. Dismount rear and front covers.
2. Dismount the hook cover.
3. Dismount the hook compl.
4. Dismount the needle and the presser foot holder and set the feeding eccentric straight backwards (Needle in the highest position).
5. Dismount the 2 screws (B).
6. Disconnect the cross joint (C) by pushing the feeding shaft to the right.
7. Lift out the complete feeding unit.

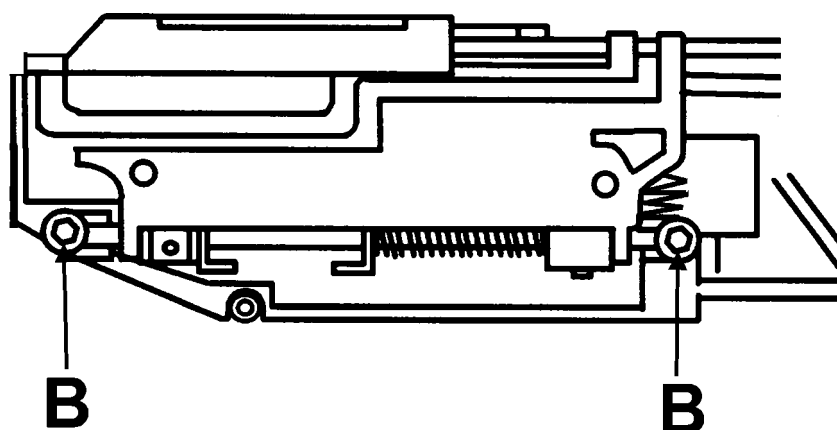
Mounting

1. Set feeding eccentric straight backwards.
2. Set the guide (D) in the correct position see illustration.
3. Insert feeding unit and connect the cross joint.
4. Mount the presser foot and the presser foot holder
5. Set the feed unit side ways (setting No 5) and tighten screws (B).
6. Mount the hook
7. Mount hook cover and needle.



Set there after

5. The setting of the feed unit sideways.
2. Setting of the hook in relation to the feeding eccentric.
 1. Play of the hook gear.
 8. Gap between the needle and the hook.
13. The setting of the stitch plate (hook cover) in relation to the needle in the feeding direction
14. The sideways setting of the stitch plate (hook cover) in relation to the presserfoot.
15. The height of the hook.
9. Timing of the hook in relation to the needle.
10. Needle height.
16. Feed dog height
18. Stitch length balance, basic setting
19. Pre-setting the feed dog step motor.
20. Stitch length balance, fine adjustment



The feeding unit step motor

Dismounting

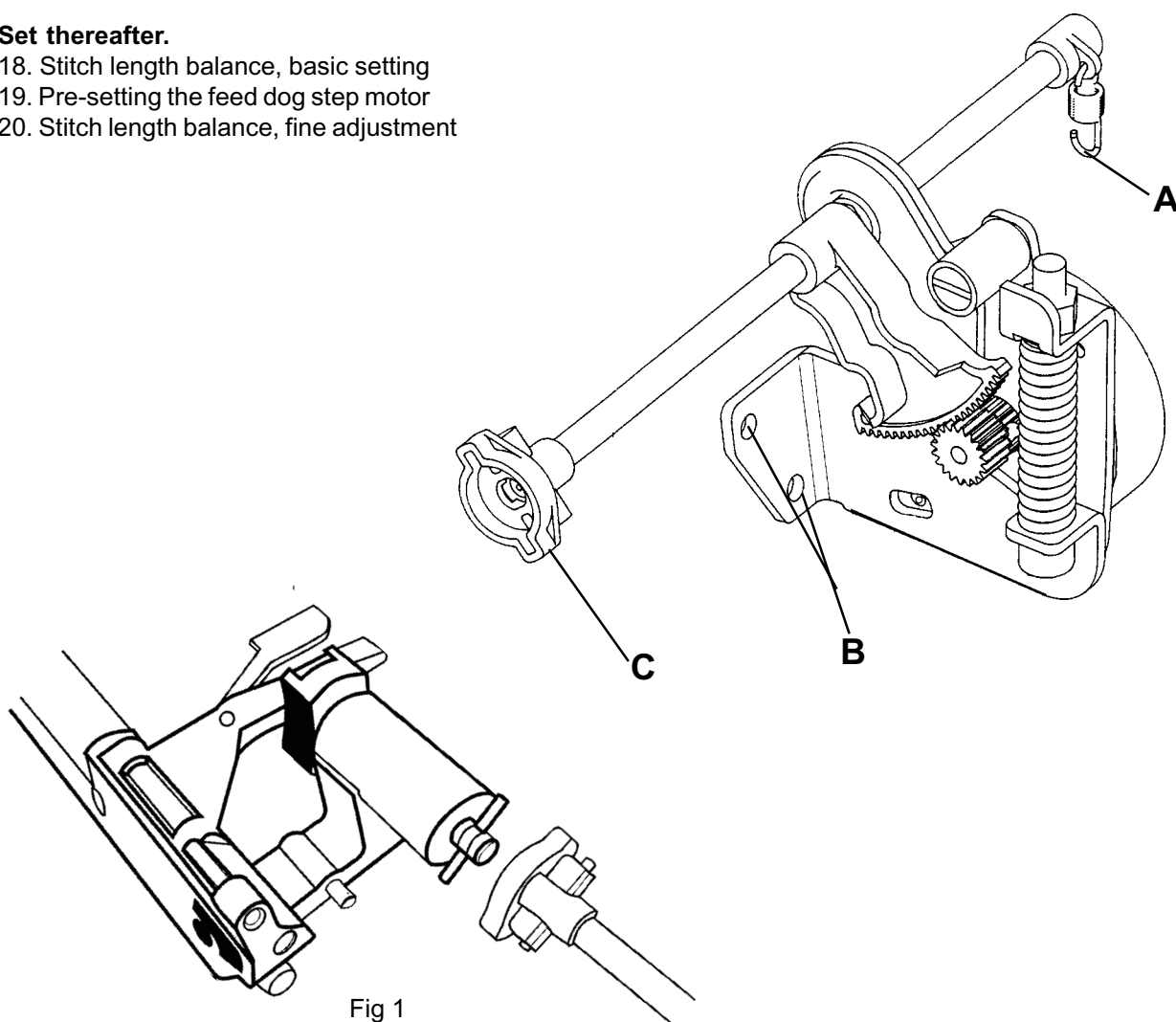
1. Dismount rear cover and front cover.
2. Dismount the circuit board.
3. Dismount the base plate.
4. Unhook spring (A) at the end of the segment shaft.
5. Remove the screws (B) of the step motor frame, expose the cross joint (C) between the step motor feeding shaft and the feeding unit by pushing the shaft to the right.
6. Lift the step motor compl. out of the machine.

Mounting

1. Position the step motor compl.
2. Connect the connection (C) between the segment shaft of the step motor and the feeding unit.
- Note!** Location of the guide (see Fig 1). Do not turn 180 degrees wrong!.
3. Tighten screws (B).
4. Mount the spring holder and spring (A).
5. Mount the base cover and main circuit board.

Set thereafter.

18. Stitch length balance, basic setting
19. Pre-setting the feed dog step motor
20. Stitch length balance, fine adjustment



Bobbin winding device

Needle- and feeding movement should be disengaged when the "bobbin shaft with its rubber ring" is pushed against the ring (B), and engaged when it is pushed back.

Dismounting

1. Dismount rear covers and front cover.
2. Dismount the screw (A).

Mounting

1. Keep the bobbin device in extended position.
2. Push ring (B) against the hand wheel.
3. Push the rubber ring (C) of the bobbin device against ring (B).
4. Tighten the screw.
5. Check.

Note! With the bobbin device in the extended position there should be a small play when pushing the ring (B) against the hand wheel.

