TITAN DK 3700C

English

OPERATOR'S MANUAL

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TITAN DK3700C CONTENT

CHAPTER 1 : INSTALLATION & OILING

1. INSTALLATION

A.The complete machine (with motor and table)

When the machine is delivered completely with table and motor follow the instructions on the pictures in the manual to assemble the table and the motor. The package contains all the fasteners (screws, bolts etc.) necessary for the installation.

1. Take the sewing machine out of the package.
2. Place the anti-vibration isolator blocks in the recesses arranged to this effect in the frame of the table.
3. Carefully lower the machine to rest on these anti-vibration isolators.
4. Take the 1 litre oil bottle out of the package container.
5. Unscrew the filler plug located in the upper part of the machine and poor 1 l of oil into the machine.
6. Check the oil-level on the sight-glass at the base of the machine.
7. Do NOT run the machine with the oil level lower than the minimum level line.
8. Screw the filler plug back on.
9. The electronic motors are leaving the factory ready to run on 220V/monophase.
10. Use the belt to connect the motor with the sewing machine. Take care not to tighten the pulley too strong between the two axes. This could bent the axes and damage some internal parts in the machine or the motor.
11. Verify that the direction of rotation of the sewing machine is correct.
12. Connect the electrical cables.
13. Connect the pneumatic cables.
14. After having put the machine into operation, it is advised to run the machine at very low speed (200-300 rpm) for a few minutes in order to allow the oil to reach the needle bar.

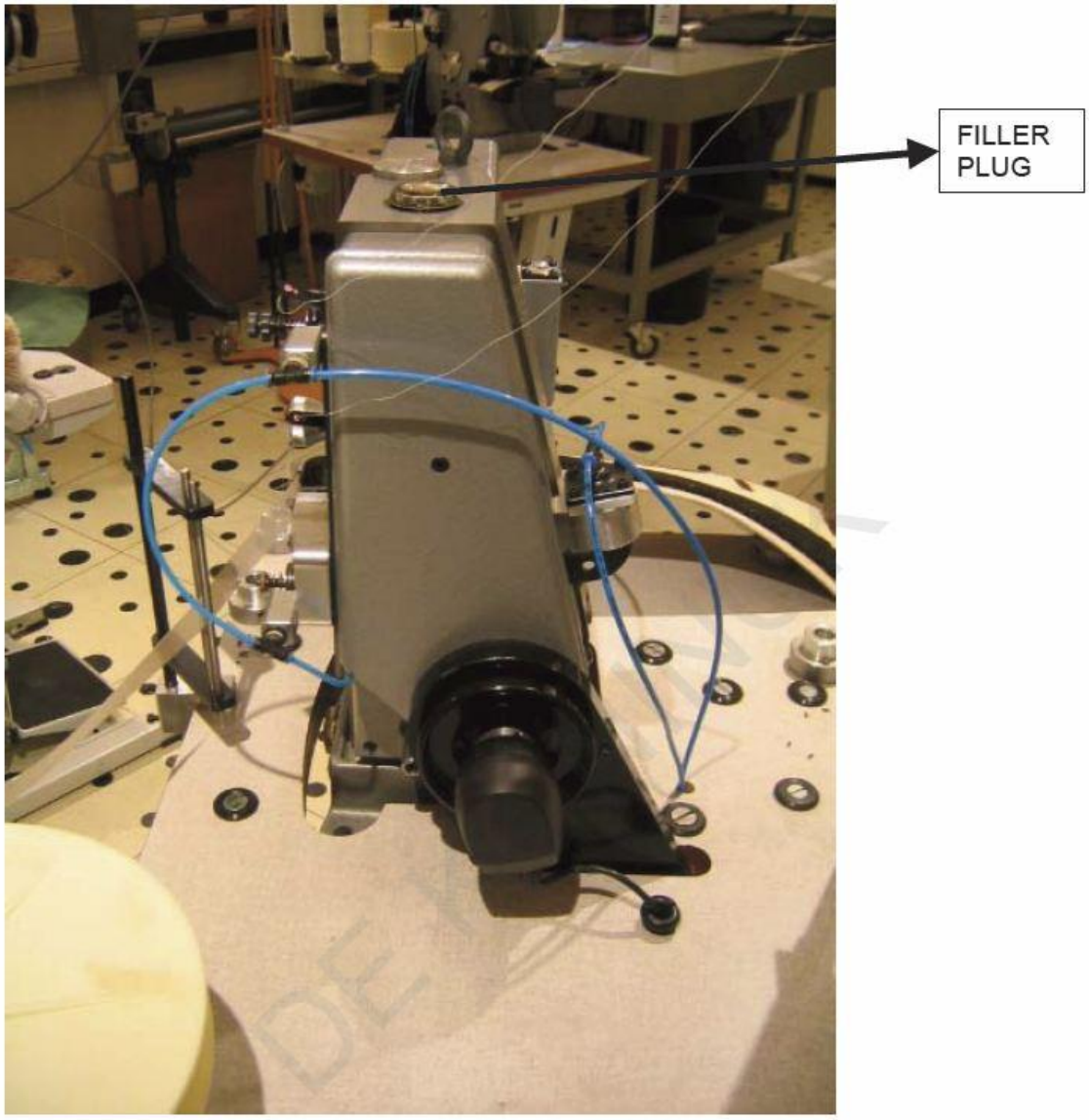
B. Head only

The TITAN sewing head requires a drive motor with following specifications :

- Motor rating : ¾ HP (Horse Power)
- Motor speed : 2800 rpm
- The V-belt (delivered with the sewing head) should be connected with a pulley of 70 mm in diameter to the motor.

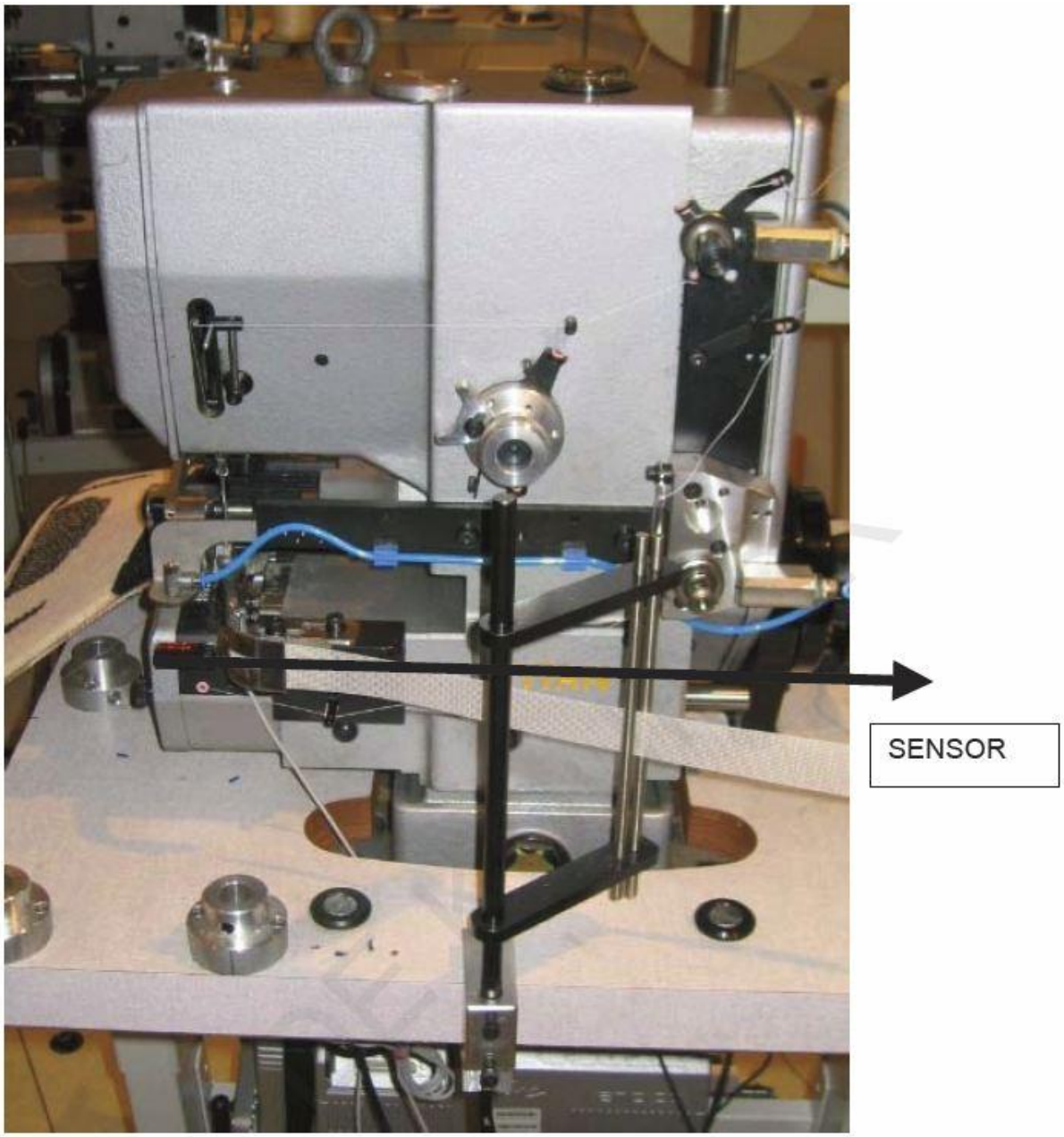
ITEM2.

ANTI VIBRATION ISOLATOR BLOCS



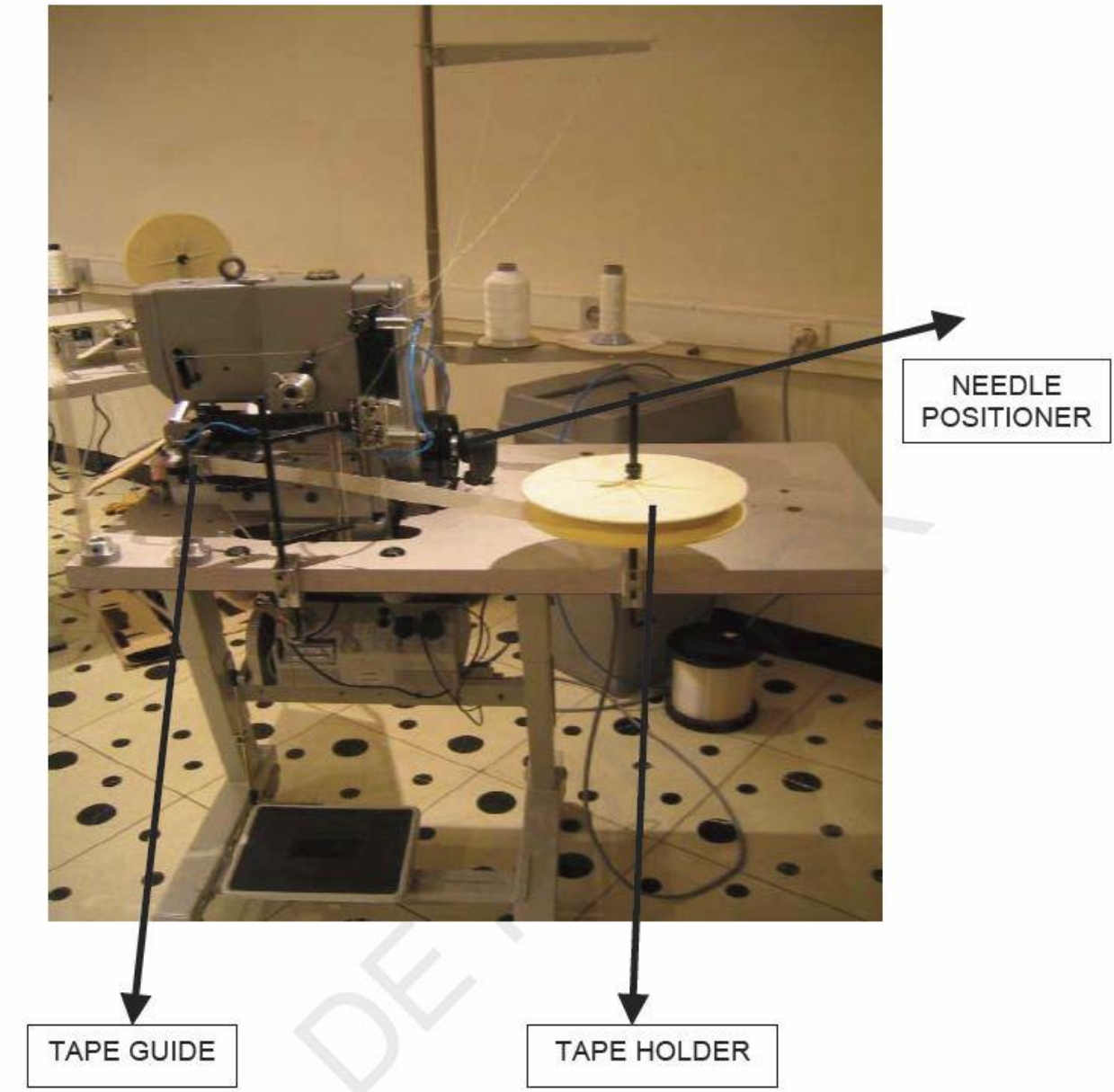
ITEM5.

FILLER PLUG TO PUT THE OIL IN.



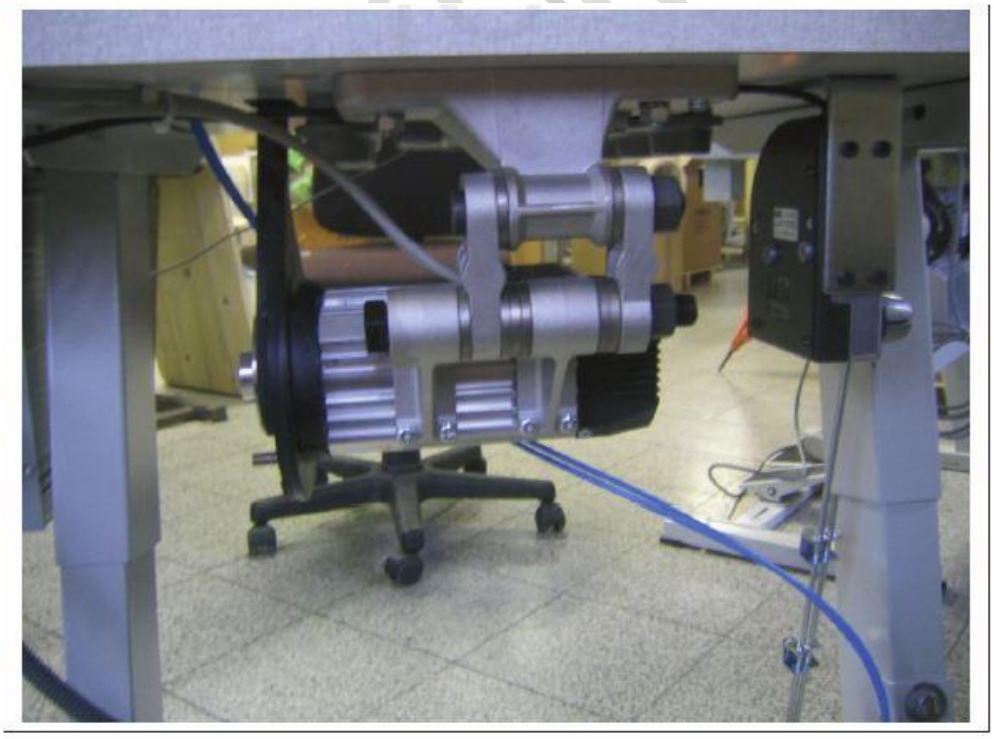
ITEM12.

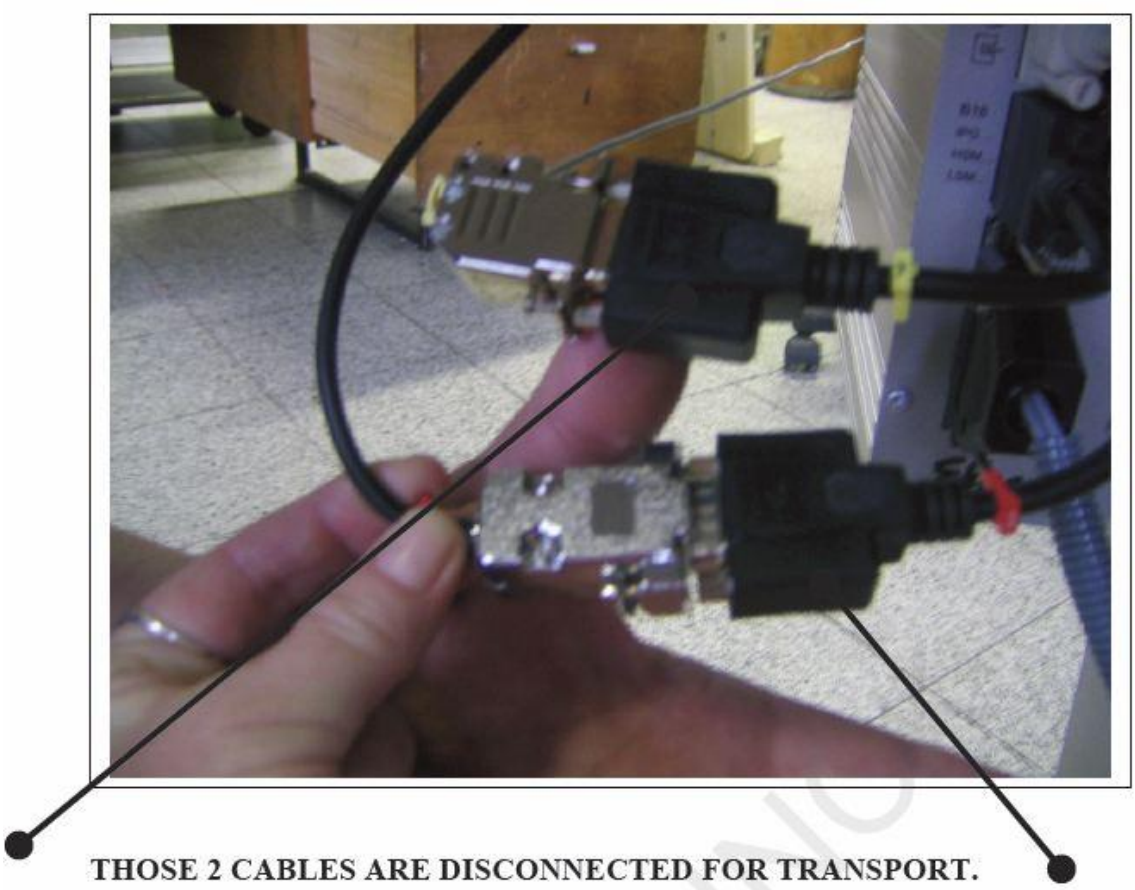
THIS IS THE SENSOR ON THE MACHINE.


NEEDLE POSITIONER
TAPE GUIDE
TAPE HOLDER

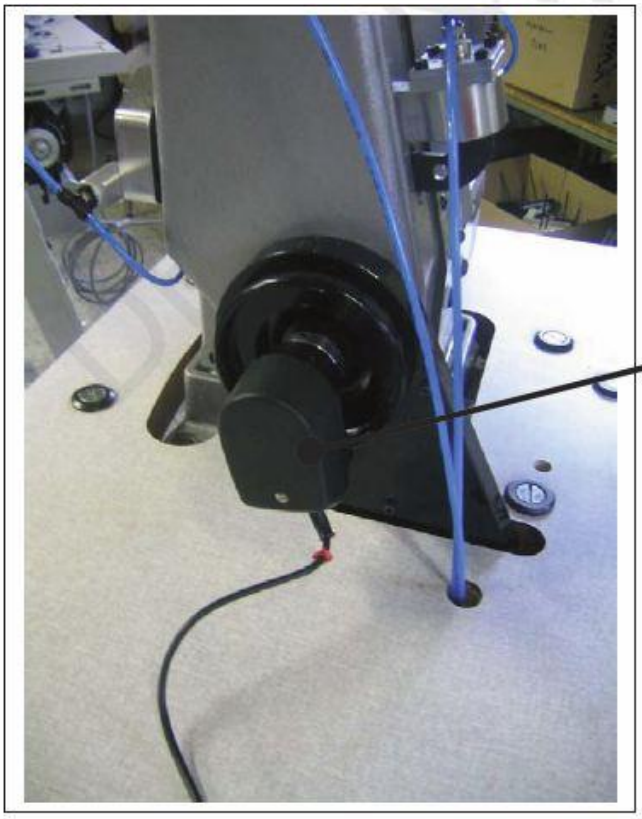
INSTALLATION ELECTRONIC MOTOR

SWITCH ON/OFF ON MOTOR

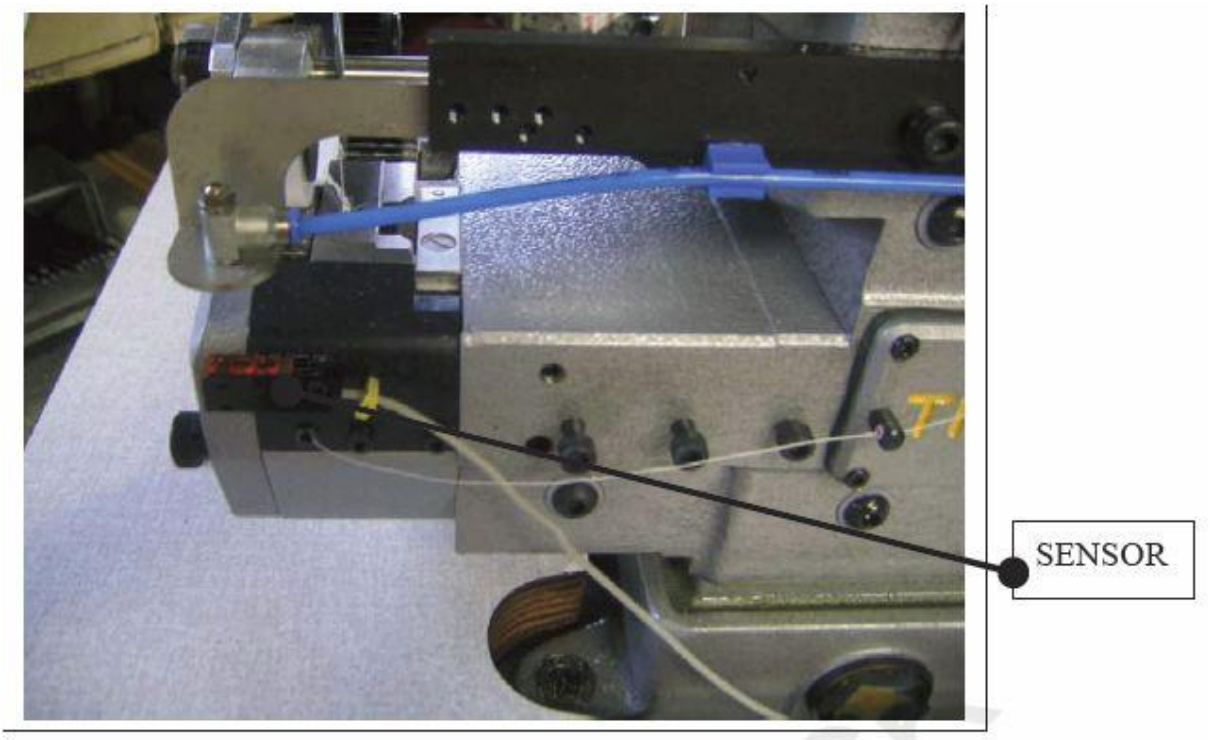




THOSE 2 CABLES ARE DISCONNECTED FOR TRANSPORT.



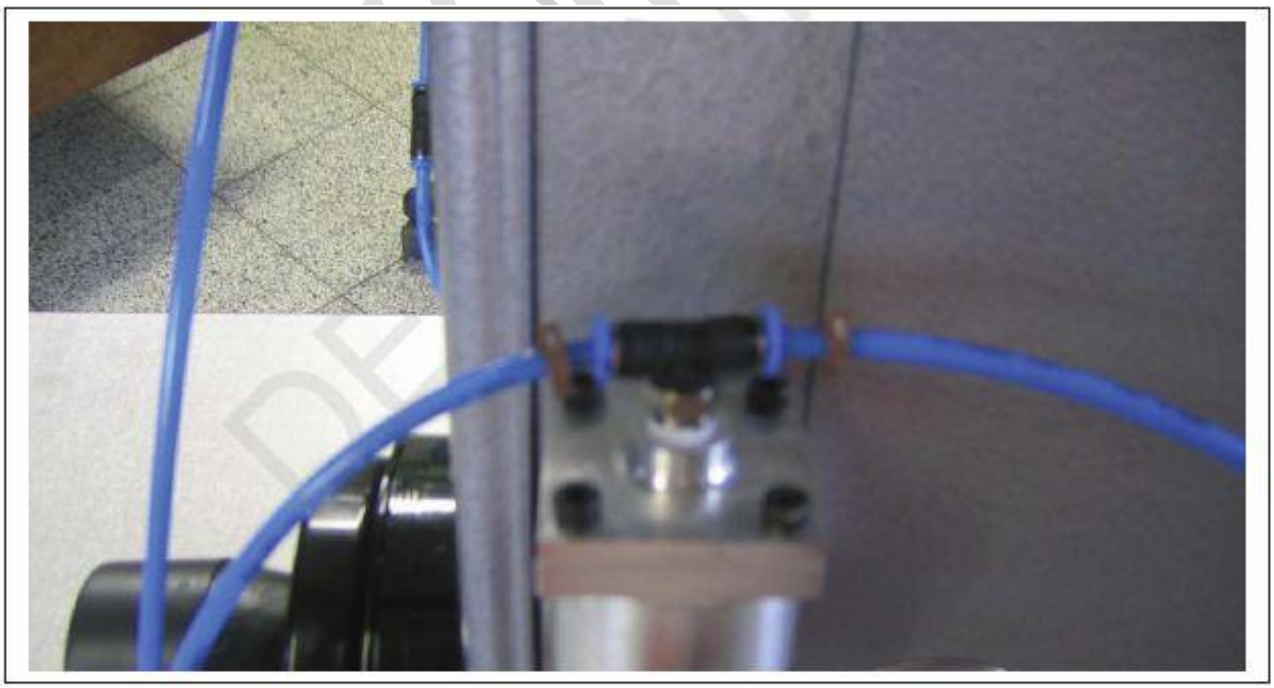
RED MARK IS THE CONNECTION TO THE POSITIONER



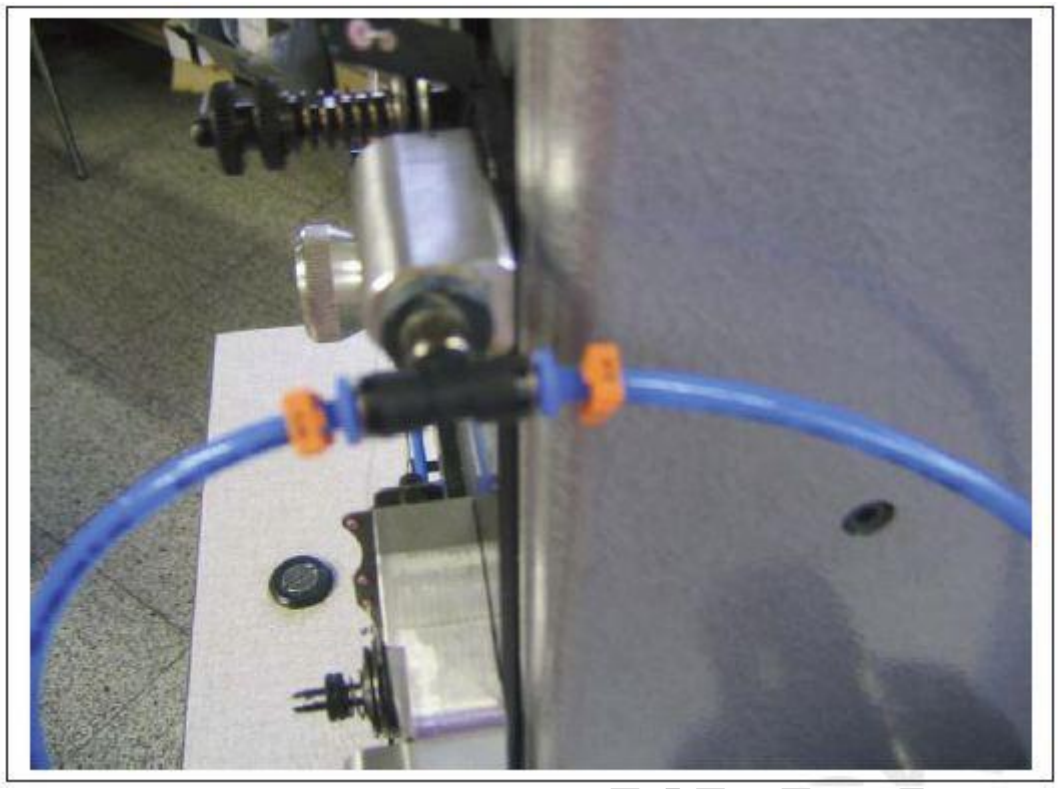
YELLOW MARK IS THE CONNECTION TO THE SENSOR

USE THE BELT TO CONNECT THE MOTOR

PNEUMATIC TUBES



BROWN MARKED TUBE TO THE **BROWN** MARKED TUBE



ORANGE MARKED TUBE TO THE **ORANGE** MARKED TUBE

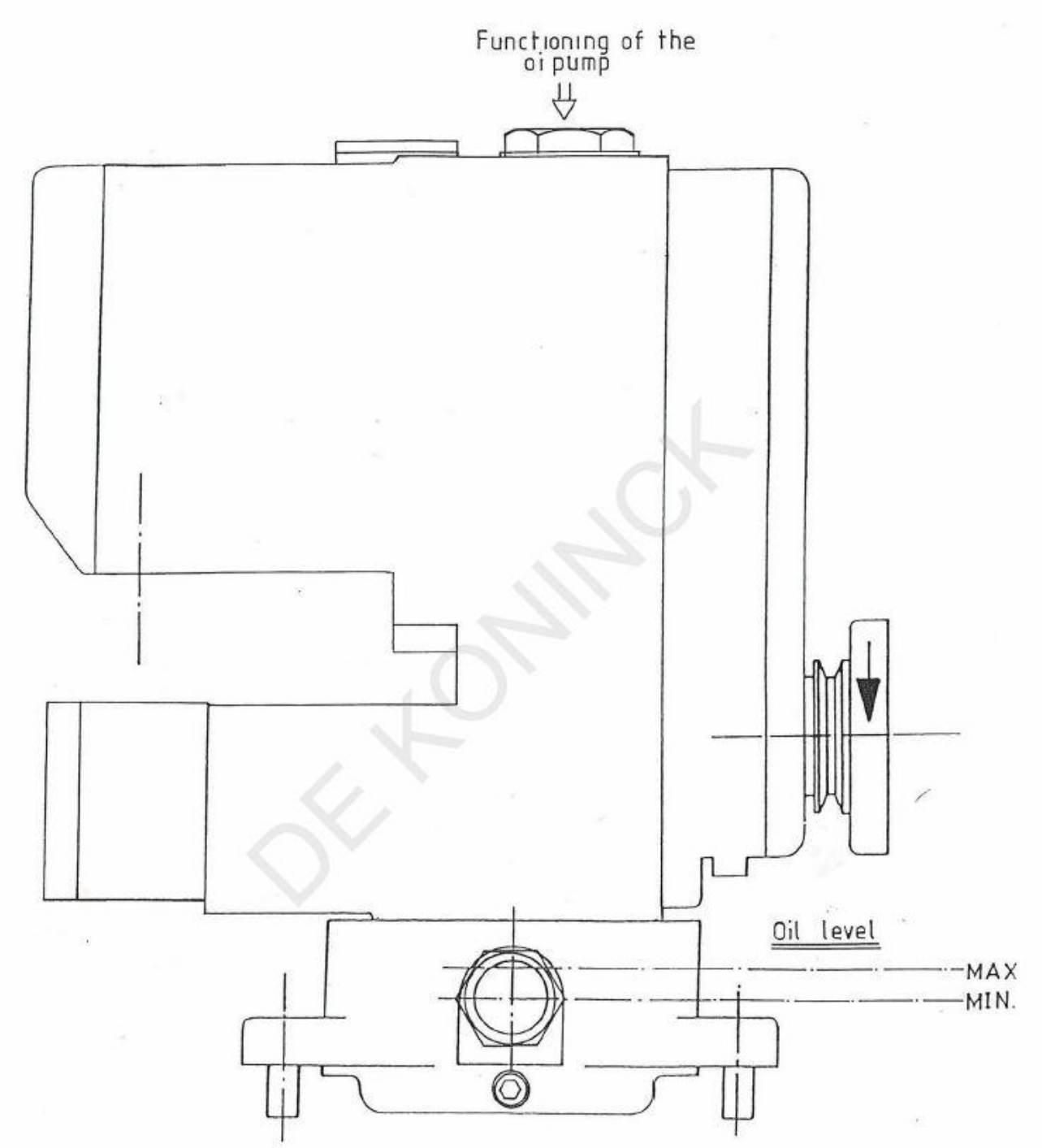


Fig 2

The DK 3700 is designed in such way that all moving parts are running on ball or needle bearings. The frame is hermetically closed to dust or other abrasive materials which could eventually enter the mechanism. A high flow impeller oil pulp running at low speed (200 rpm) is fitted into the machine so that inside the machine head an oil rain is created, which reaches all the parts of the machine.

The quantity of oil can be checked at all times by looking at the oil level sight-glass situated at the base of the machine.

The correct functioning of the oil pump can be checked as following :
Look at the sight-glass situated in the upper part of the machine, when running the machine. If you see the oil splashing around than the pump is functioning normally.

HOW TO CHANGE OR ADD OIL

- Place a recipient underneath the sewing head.
- Unscrew the lid situated in the base of the machine.
- Let the oil flow freely out of the machine .
- Screw the lid back on.
- Unscrew the oil plug on the top of the machine
- Fill the machine with approximately 1 l oil with viscosity 15 W 30

TYPE OF OIL : Viscosity 15 W 30

Recommended oil type for these machines : SHELL TELLUS 37,
BP ENERGOL HLP 46 or
any similar oil grade

NOTE : Use of oil with a lower viscosity will result in poor lubrication of the spare parts inside the machine, and these will wear out abnormally, resulting in break down of the machine.
Conversely, high viscosity oil will cause clogging of the oil lines, which in turn will cause poor lubrication and abnormal wearing out of the internal parts, resulting in break down of the machine.

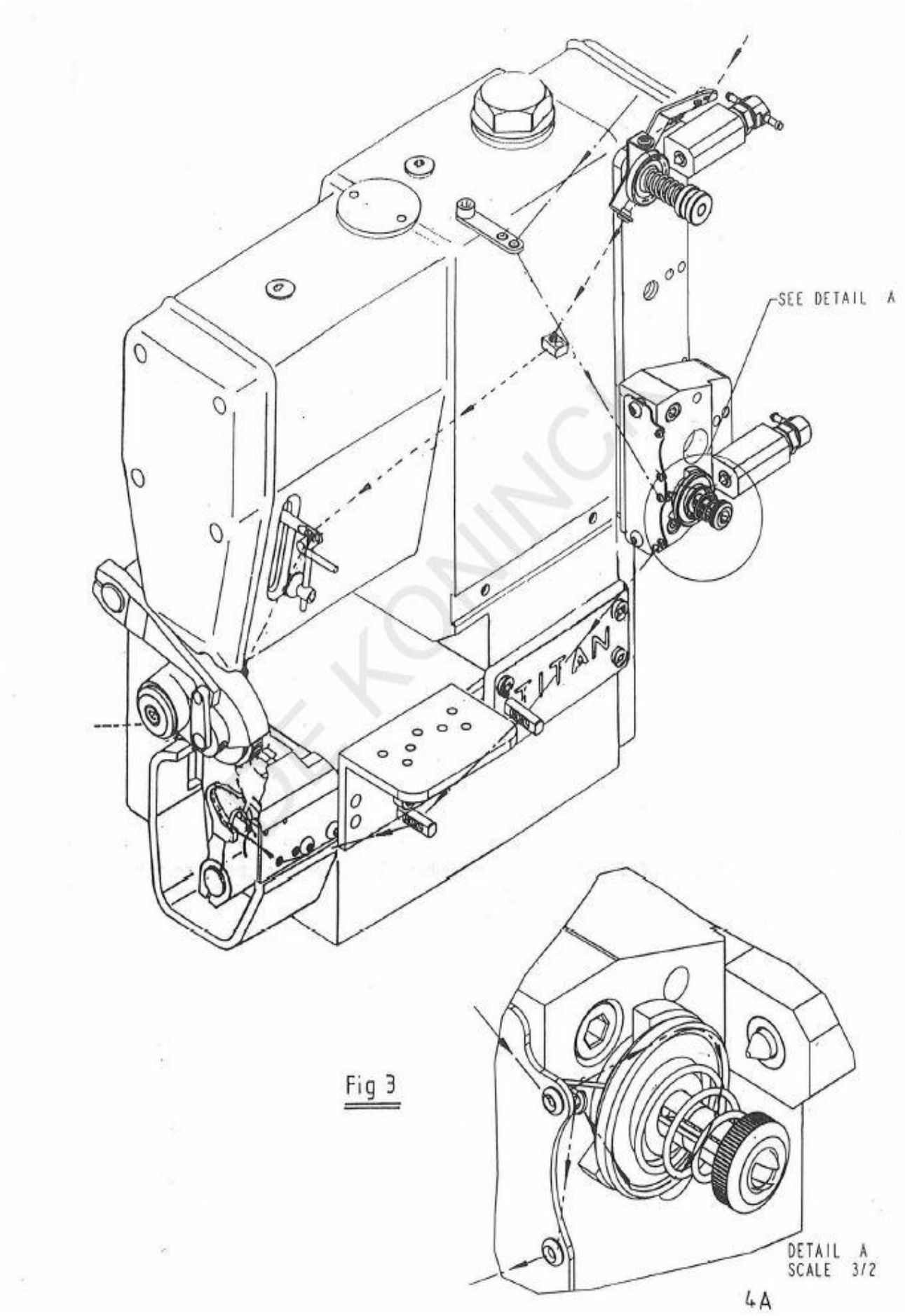


Fig 3

4A

CHAPTER 2 : THREADING

1. TYPE OF YARNS

- Needle yarn : polyamid yarn type NYLBOUD COATS thickness 30 or 40
- monofilament type : incolor 520 CBL

- Looper yarn : polyamid yarn type NYLBOUND COATS thickness 30 or 40
- It is not advised to use monofilament yarn for the looper yarn, as this will cause false stitches and thread breakage.

2. THREADING DIAGRAM

Thread the needle and looper yarns as seen on Fig 3.

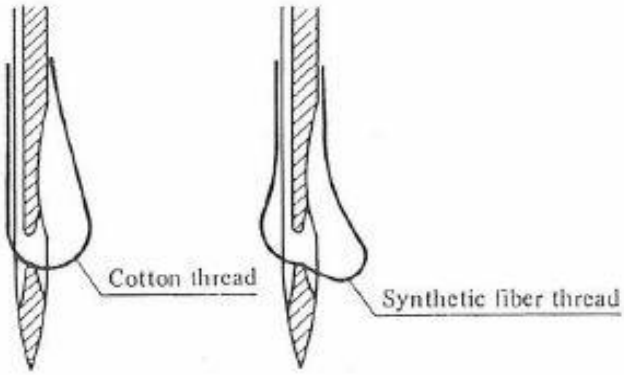


Fig 4

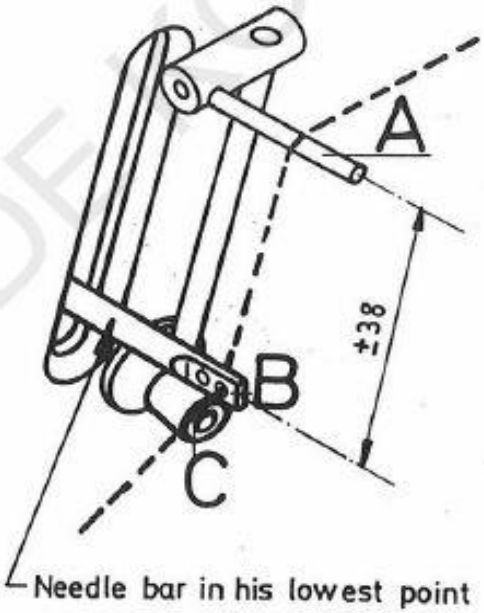


Fig 5

CHAPTER 3 : HOW TO OBTAIN A CORRECT STITCH ?

1. TENSIONS

Tensions should be adjusted very accurately.

- If too high : the yarns will influence the material in such way that it will gather and the layers of material will be shifting. At high speed the yarn may break.
- If too low : Faulty stitches will be produced and a gathering of the yarn loops around the looper will occur.

2. NEEDLE YARN

In order to form a correct stitch, the point of the looper has to pick up the loop formed by the spreader when the needle is at its lowest point. The size of this loop can be increased by placing the yarn guide A from Fig 5, higher in the holder C. The loop will be reduced when the guide A is placed lower. The optimal distance between the threader B and the yarn guide A is +/- 38 mm when the needle is its lowest dead point.

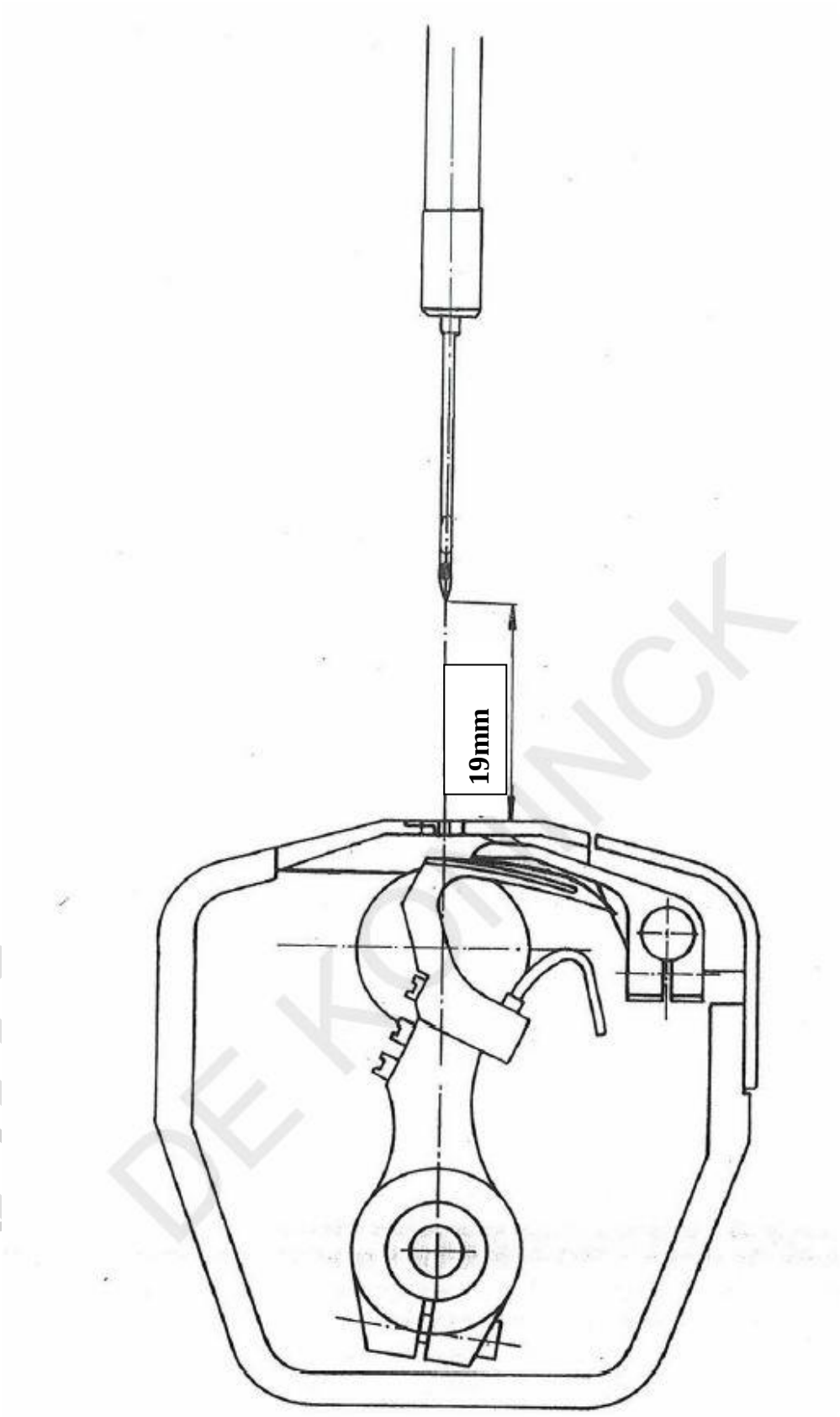


Fig 6

- 6A-

Needle in his higher point

CHAPTER 4 : MECHANIC ADJUSTMENTS OF THE HEAD

1. NEEDLE

When the machine is used continuously for 1 or 2 shifts a day, the needle should be replaced every day or two.
If the needle is worn out, false stitches can occur and the thin needle can break and cause damage to other parts in the machine. Therefore we advise to check regularly the condition of the needle.

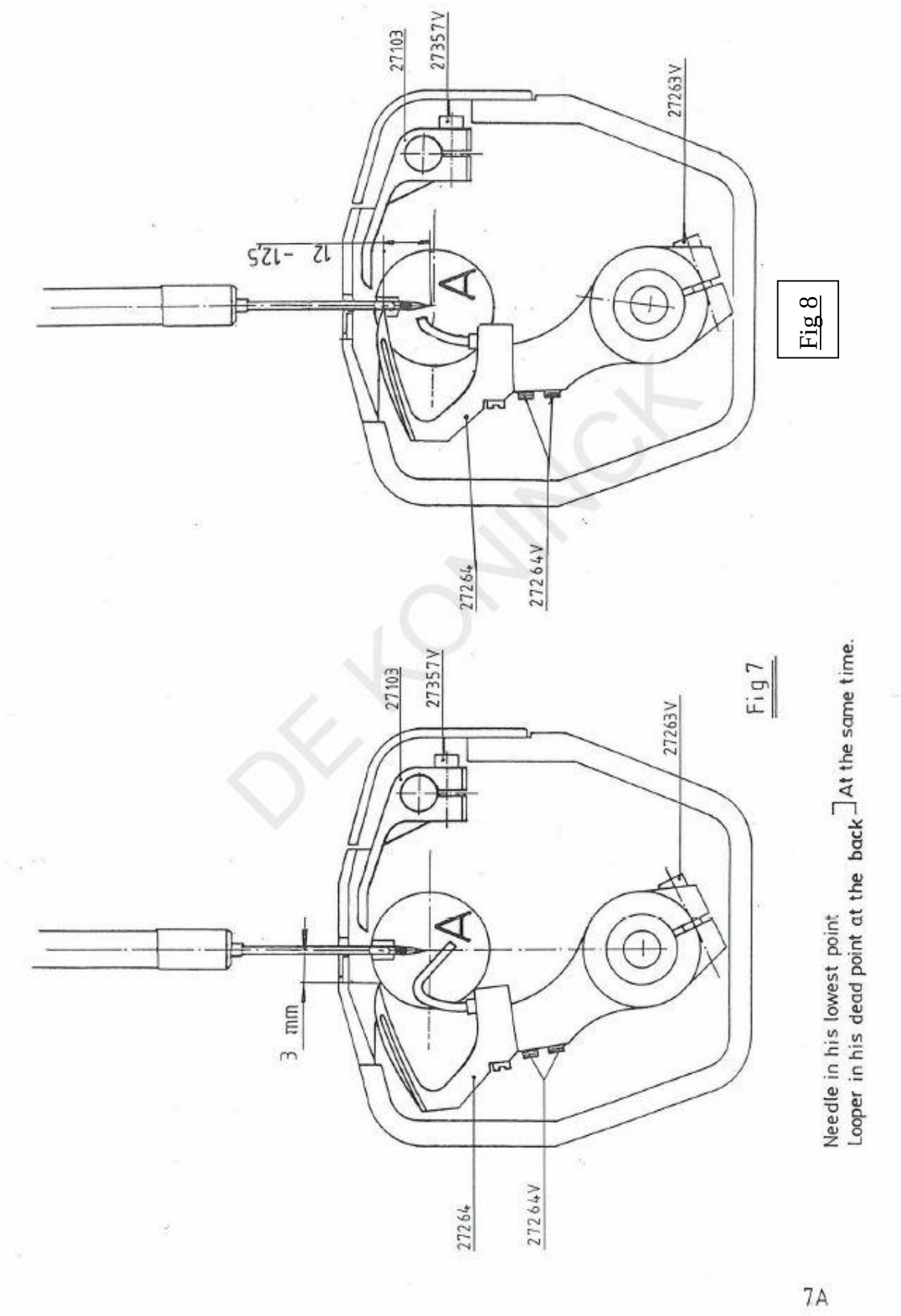
During sewing, a cloud of dust will build up on the needle holder. It is therefore strongly advised to first remove any dust that may have accumulated prior to fitting a new needle. If not , dust accumulation in the needleholder will change the position of the needle, which in turn will result in false stitches and may in the end cause abnormal wear on some internal parts of the machine.

To replace the needle

- Take the accumulated dust round the needle bar away
- Loosen the screw on the needle bar and remove the used needle
- Place the new needle in the right position with its flat side on the left side and push it fully home into the needle holder.
- Check by turning the flying wheel if the flat side of the needle can pass next to the point of the looper without touching it.
- Fix the needle in this position with the screw, and follow the instructions in following paragraph to obtain the right positioning of the needle with the other parts involved in stitch formation (= looper, spreader).

Correct needle position

Put the needle in its highest dead point and measure the distance between the point of the needle and the needle plate. This should be exactly 19 mm .(Fig 6)


27103
27357V
27263V
12 - 12,5
A
27264
27264V
Fig 8
27103
27357V
27263V
3 mm
A
27264
27264V
Fig 7
Needle in his lowest point
Looper in his dead point at the back
At the same time.
7A

2. LOOPER

At the end of each stroke the needle yarns are surrounding the looper and the threads are pulled to form the stitch. This repetitive movement is in the end making a groove in the looper. This groove will cause thread breakage, and faulty stitches. At that moment the looper should be replaced. To avoid this situation, it is advised to check the quality of the looper on regular bases
(one time a day).

Replacement of the looper

- Loosen the screw 27357V and remove the spreader 27103 Fig 7
- Loosen screw 27263V
- Remove the looper in its looperholder
- Loosen the screws 27264V in the holder
- Replace the looper 27264 with a new one
- Place the looper in a parallel position with the looper holder
- Replace the looper holder again on its axis
- Position the looper correctly (follow instruction in following paragraph)
- Replace the spreader

POSITIONING OF THE NEEDLE COMPAIRED TO THE LOOPER

It is clear that the needle and the looper have to pass very near to each other without touching each other. Therefore after replacement of one of these parts or both the position of these parts should be carefully checked in order to obtain a perfect stitch.

Proceed of follows :

- Turn the flying wheel and put the needle in its highest position.
- Check that the distance between the point of the needle and the needle plate is exactly : 19 mm.
- Turn the flying wheel and bring the looper in its most backwards position.
- The distance between the point of the looper and the central axe of the needle should be 3 mm Fig7**.**
- When turning further at the flying wheel, check it the point of the looper passes exactly in the middle of the flat side of the needle and that the distance between the looper and the needle at that point is about 0.1 mm.
- Check also the position of the needle guide . The needle guide should be positioned in such a way that it is very near the needle but it doesn't touch it.
- Turn the flying wheel further and check also if : when the looper is coming back , it crosses the needle exactly in the center of the flat side of the needle (as seen in FIG 8).

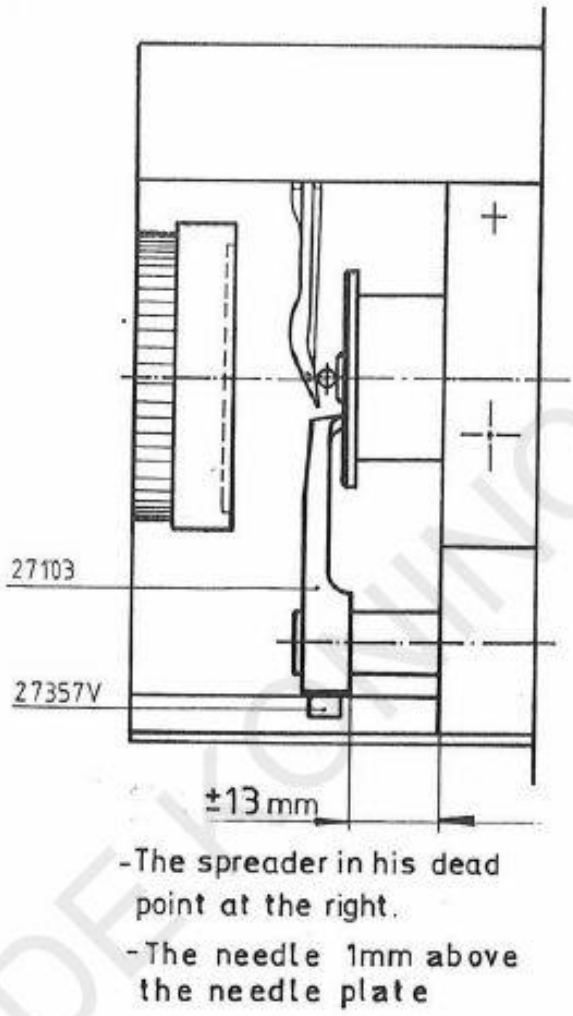

27103
27357V
±13 mm
-The spreader in his dead point at the right.
-The needle 1mm above the needle plate

Fig 9

3. SPREADER

The spreader 27103 is used to spread the thread that is fixed to the underside of the needle plate in the fabric and on the other side through the eye of the looper so that at the right moment the thread is released and pushed to the right. The needle can then pass through the formed loop and complete the formation of the stitch.

Replacement of the spreader

1. Loosen the screw 27357V of the spreader Fig9.
2. Remove the spreader from its axis
3. Place the new spreader. Check that the spreader is positioned just above the looper (max distance : 0.1 mm) and in such a way that it just doesn't touch the transport wheel.
4. If the distance is larger the spreader can't take the thread from the looper and therefore faulty stitches will occur.

ADVANCED SETTINGS

Setting of the momentum Fig 9.

1. Take the old spreader from its axe.
2. Turn the flying wheel until the looper is in its most advanced forward position.
3. Loosen the screws 27350V and turn the eccentric 27350 in counter clock-wise direction until the axe 37353 is in its most advanced leftward position.
4. Take a comparator (see accessories for DK 3700) and place the end on the end of the axe 37353. Set the instrument on O and turn then the eccentric 27350 in counter-clockwise direction. This will cause a displacement of the axe 37353 to the right. When the comparatror shows a displacement of 3.4 to 3.7 then fix the eccentric 27350 with the screws 27350V.
5. Turn the flying wheel until the axe 37353 is in its most advanced right-hand position. Place now the new spreader on its axis. Check if the position between the inner side of the spreader and the inner back side of the machine is about +/- 13 mm.
6. Turn the flying wheel until the point of the spreader is positioned above the looper.
7. Check if the distance from the point of the speader doesn't exceed 0.1mm above the back of the looper.

Turn the flying wheel and check that the spreader and the looper don't touch each other or other parts when moving.

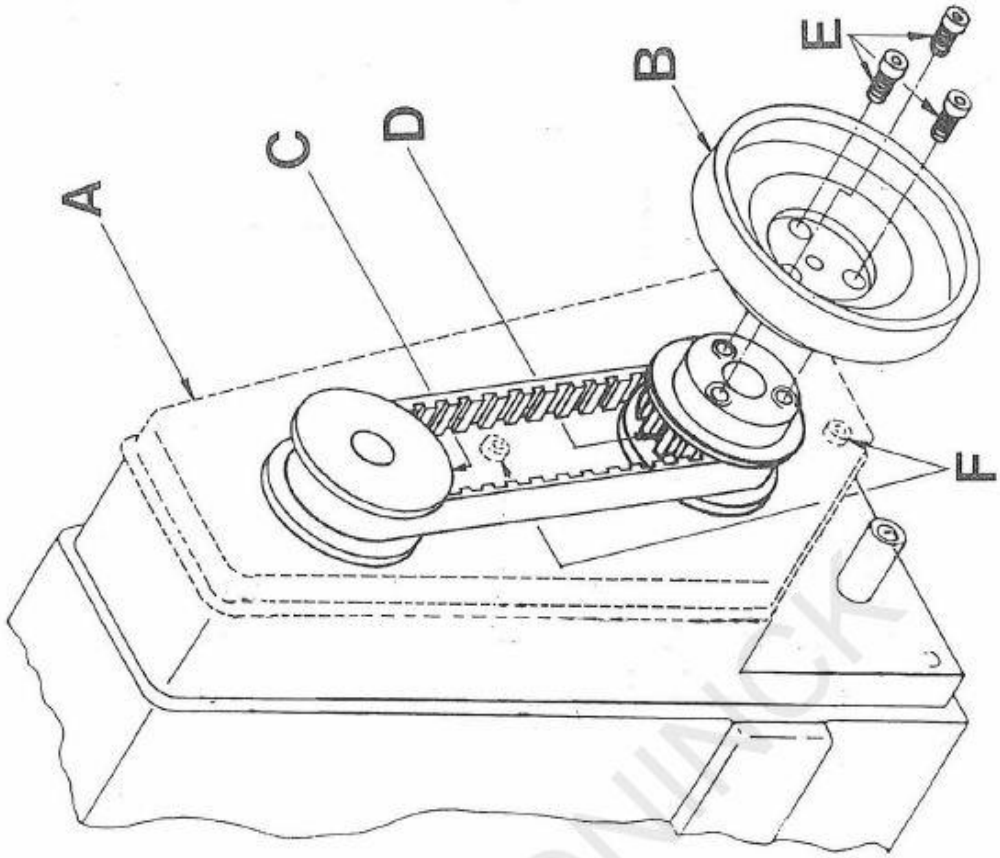


Fig 11

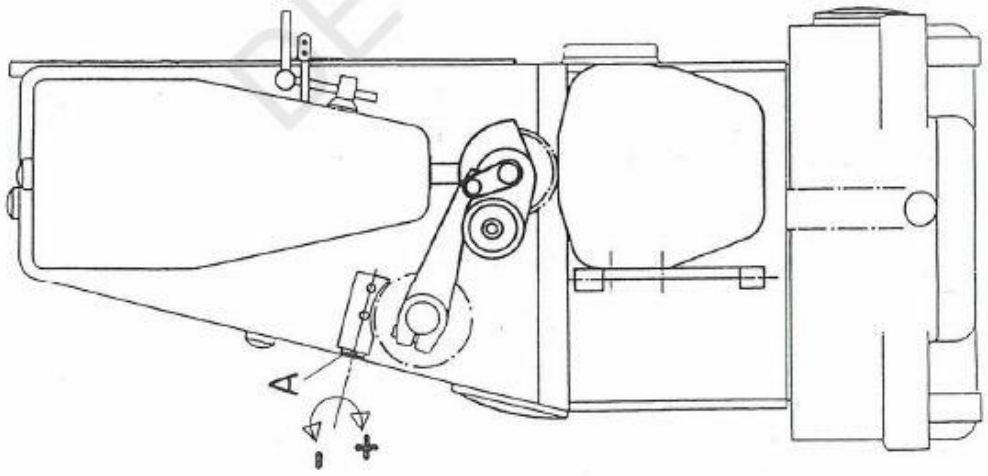


Fig 10

4. UPPER AND LOWER TRANSPORT

It is important to have the right pressure on the transport wheels.
To much pressure will cause an abnormal wearing of the transport wheels.
If the pressure is too low, the carpet won't be transported correctly or slipping can occur.

To change the pressure :

To change the pressure on the transport wheels Fig10 :

1. Turn the screw A in Fig A CLOCKWISE to INCREASE the pressure
2. Turn the screw A in Fig A COUNTER-CLOCKWISE to DECREASE the pressure on these wheels.

5. DRIVING BELT

When the machine leaves the factory, all parts are perfectly synchronised. If the belt is wearing out, the synchronisation between the upper and lower transport mechanism will be lost. If this is the case the belt should be replaced as follows :

1. Remove the needle from the machine.
2. Unscrew 3 x E (see Fig 11) and remove the wheel B
3. Unscrew 2 x F and remove the belt protection lid A
4. Both screws C and D must be loosened by one turn (two screws in each, indicated under C and D)
5. Both gears can then be pulled from their axis while the old belt still remains in its place.
6. To fit the new belt, both gears should be placed into the belt and fitted at the same time on both axis.
7. In order to set the machine, the lower gear must be fixed with the 2 screws D.
8. Screws C which are still loose enable to move the upper gear with regard to the axis until a correct setting is obtained according to Fig 2 page..
9. Fix the screws C and reassemble the parts in the opposite sequence as described in the beginning of this paragraph. (Step 3 then 2 then 1).

CHAPTER 5 : FOLDERS

1. DIMENSIONS

IMPORTANT INFORMATION ABOUT FOLDERS FOR DK3700C

Facts to consider when ordering a machine : TITAN DK3700C

The sewing machine can handle the most difficult carpet qualities. There is no mechanical limit due to the sewing head.

REMARK : a good test is to sew some carpet WITHOUT ribbon, to see if the stitch formation is done correctly.

But the **HEART** of the machine is the **FOLDER**

There are several points which are important to consider when ordering a folder.
If customer wants to make corners inside the folder :

1. COMBINATION of 4 x thickness of ribbon + thickness of carpet should not exceed 12mm (because the maximum opening of the folder = 12mm).

FORMULA : (4 X R) + (1 X C) = 12 mm

R= thickness of the ribbon.
C=carpet thickness (compressed).

CONCLUSION : SEWING HEAVY QUALITIES OF CARPET WITH THICK RIBBON IS **NOT POSSIBLE** (due to limited needle bar height.)
ADVISE : When choosing a thin quality of ribbon, the customer will be able to finish a larger range of carpets.

For Example : (see formula).

If customer chooses a 0.6 mm thick ribbon
12 mm – (4 x 0.6 mm) = Maximal CARPET THICKNESS up to 9.6 mm

Ribbon of 0.8 mm thickness :
12 mm – (4 x 0.8 mm) = Maximal CARPET THICKNESS up to : 8.8 mm

Ribbon of 1.0 mm thickness :
12 mm – 4 mm = Maximal CARPET THICKNESS : 8 mm

2. TAPE WIDTH / IMPORTANT NOTICE

Important to know is that the width of the ribbon must be EXACT.

For example : Folder of 150 mm : if the ribbon is 151 mm, it will NOT RUN SMOOTLY THROUGH the folder, and after sewing the carpet will show waves (not enough ribbon for the carpet. This is due to the fact that the ribbon is held up in the folder, and therefore is slightly stretched, after sewing the tape is returning to its normal size, on light or medium thick carpet you will see big waves of slightly folded carpet. To be sure measure the width of the tape and look the size of the tape (first digit market in the folder.) Another test is introduce the tape in the folder, pull the tape on one end to feel the resistance of the tape in the folder.

If the ribbon is 147 mm (-3 mm), the ribbon will not be stitched properly on the upper side or underside of the carpet. The top or the bottom of the tape will not be attached to the carpet.

RULE : Folder width = X then
WIDTH OF RIBBON : X-2 mm Maximal deviation of your tape

3.GLUE GUN

The folded corners are always finished with a DOT of HOT GLUE coming out of a glue gun. These devices can be bought in every professional tool shop.
Type of glue for TEXTILES.

4. LAST CORNER IS ALWAYS MADE BY HAND.

Folded by hand and glued with hot glue.

5. PADDING UNDERNEATH THE RIBBON.

Is always possible.
Proceed as follows : Use antislip synthetic fabric to place underneath the carpet.
Cut it in strips of certain widths. Glue it at regular intervals on the carpet.
But DON'T put padding on the CORNERS.
Stop the STRIP just before. Sew the ribbon around the carpet with your usual folder.

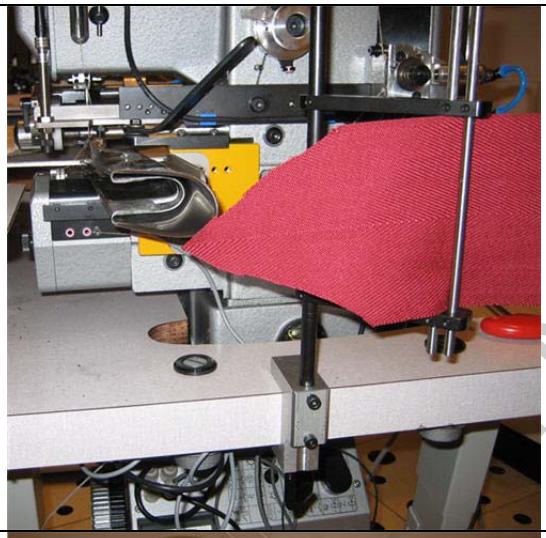
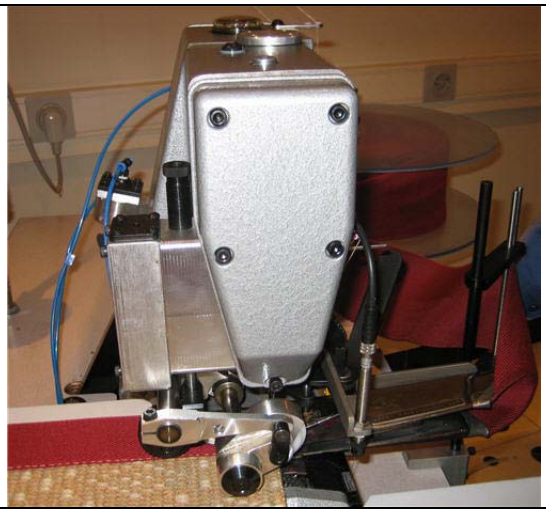
6. THICKNESS OF CARPET VERSUS OPENING OF FOLDER.

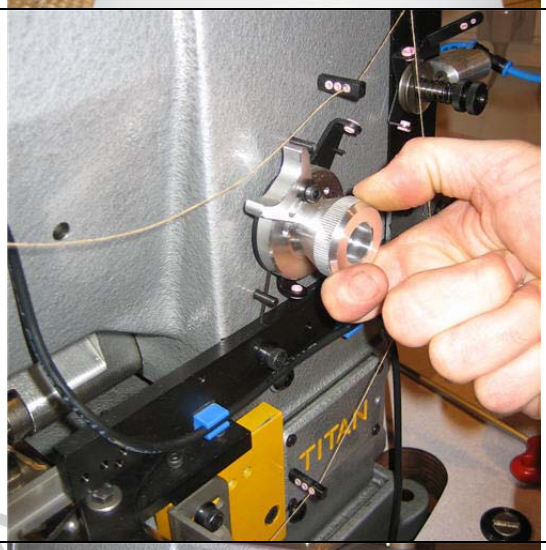
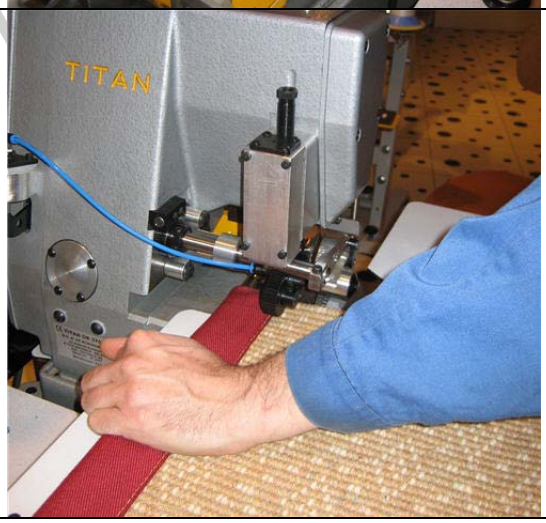
We strongly advise to use FOR THE SAME WIDTH OF RIBBON : TWO FOLDERS.
One for THIN or MEDIUM qualities of carpets.
One for THICK Quality of carpets. (see limitation above).
REASON : Better sewing result
BECAUSE : the opening of the folder should match as closely as possible the thickness of the carpet.
FOR EXAMPLE :Thick carpet will not enter the folder if the opening is too small. Thin carpet will enter and be sewn, but the ribbon will be loose around the carpet.When using a folder with opening of 12 mm to sew a ribbon around a carpet of 5 mm thick, there will be 12 – 5 mm = 7 mm /2 = 3.5 mm of ribbon left over between the edge of the carpet and the edge of the ribbon.
Loosely folded ribbon around carpets are not selling well to the final customers.

CHAPTER 6 : HOW TO SEW CORNERS WITH LARGE RIBBONS

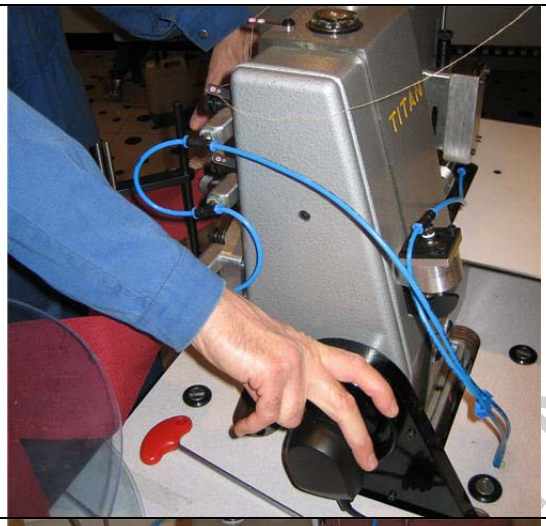
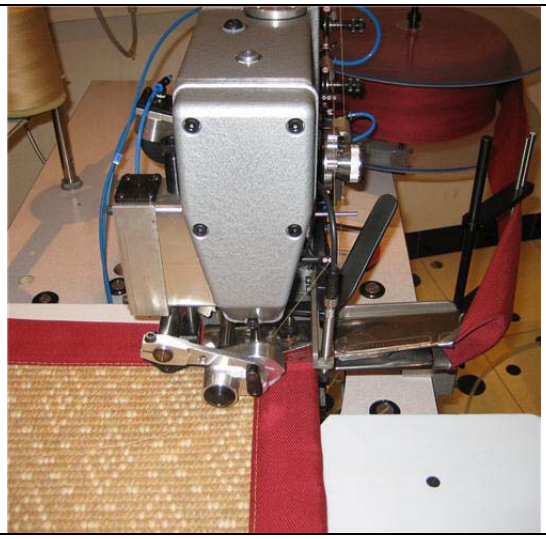
1. Cut the beginning of the ribbon into an arrow, in order to introduce the ribbon easier in the folder.
2. Introduce the ribbon in the folder.
3. Put the carpet in the folder, and pay attention to push the carpet completely till the end of the folder.
4. Start sewing, the pressure foot will automatically go down. Pay attention to start sewing exactly at the beginning of the carpet.
5. The machine stops automatically at the end of this first side, even if the operator is keeping her foot down on the pedal. And the pressure foot will go up automatically. (this is due to the sensors combined with the special program in the electronic motor).
6. Open the folder by pushing the handle to the LEFT.
7. Turn the button 27650 once to the right, to give more thread . This button is situated in front of the operator in the middle of the machine.
8. Pull the carpet by hand further out of the machine, until the threads are tense again.
9. Turn the carpet for about 45°.
10. Turn the button 27650 a second time to give extra thread
11. Turn the carpet for the rest of the corner (+ 45° = total 90°). Pull and push the carpet in the folder, in such a way to obtain a good corner.
12. Close the handle on the folder by pushing it to the left.
13. Turn the flying wheel by hand to make the first stitch.
14. Start sewing till the end of that side, the machine will again stop automatically.
15. Pay attention to push the carpet completely in the folder during sewing.
16. Start again to make the corner as described in point 6.
17. The last corner is made by hand. Sew the ribbon over the start and pull the carpet out of the machine with some extra ribbon (2 to 4 cm).
18. Pull out the stitches till the last stitch is exactly on the corner, or with other words, where the first side was started. And make a knot at the back of the carpet to fix that last stitch (gluing is also possible)
19. Fold the loose part of the ribbon in a corner and glue the folded ribbon onto the carpet. It is also possible to sew this last corner by hand.
20. The three other corners are also often glued are sewed by hand to give to them their final finished look.

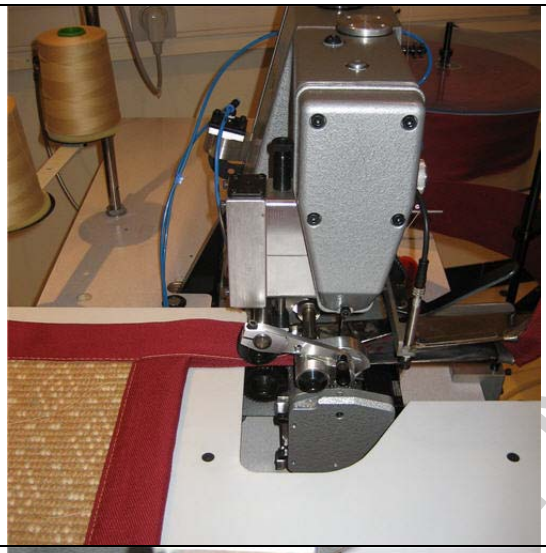
HOW TO MAKE CORNERS WITH TITAN DK 3700C

A) 1 Cut an point at the beginning of the ribbon to make it easier to introduce the ribbon in the folder B) INTRODUCE THE RIBBON IN THE FOLDER BY HAND	
C) INTRODUCE THE CARPET IN THE FOLDER.(make sure that the side of the carpet is touching the back of the folder)	
REMARK : ALWAYS START AT A CORNER..	
D) SEW THE FIRST SIDE OF THE CARPET. THE MACHINE WILL AUTOMATICALLY STOP AT THE END OF THE FIRST SIDE (the electronic eye will give the command to the motor to stop)	

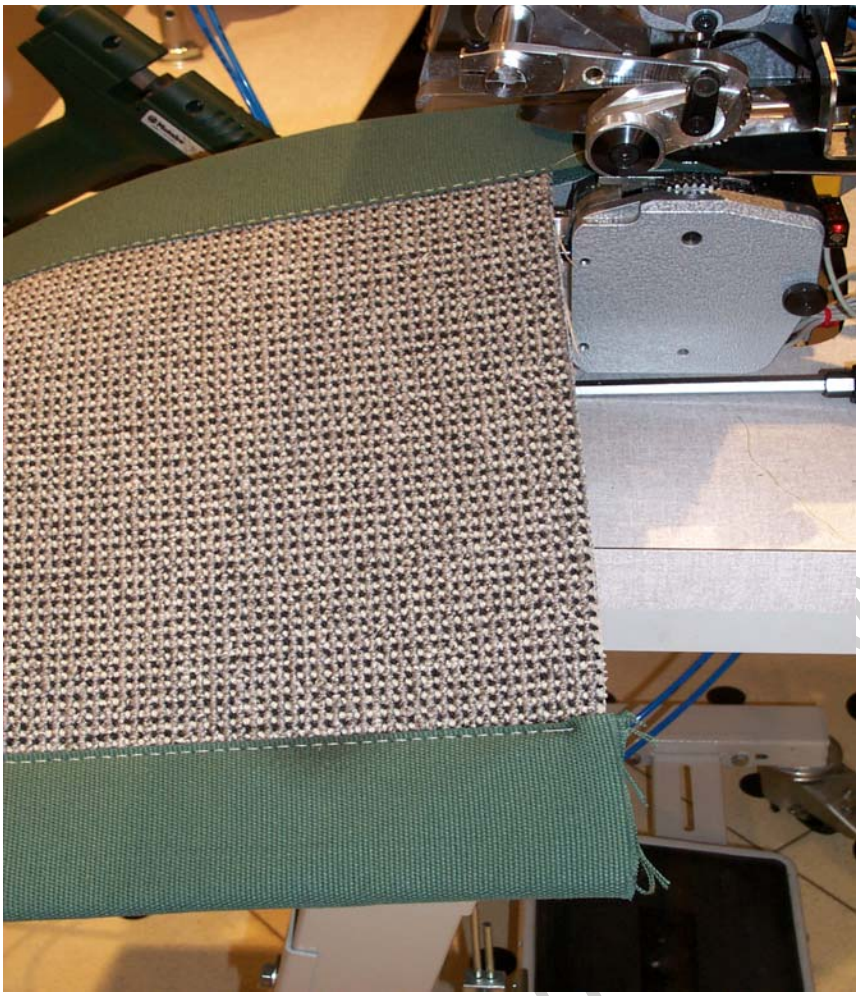
E) TURN THE HANDLE TO THE RIGHT TO OPEN THE FOLDER	
F) TURN THE BUTTON TWICE SITUATED IN THE MIDDLE OF THE MACHINE HEAD to give extra length of thread	
G) PULL THE CARPET BACKWARDS UNTIL THE THREAD IS STRETCHED or UNTIL THE EDGE OF THE CARPET IS PARALLEL TO THE END OF THE FOLDER	

H) TURN THE MAT FOR ABOUT 90° with your left hand. Pull and push the mat to position the carpet and the folded corner well inside the folder.	
I) Pull and push the mat to position the carpet and the folded corner well inside the folder	
J) CLOSE THE FOLDER by turning the handle to the left	

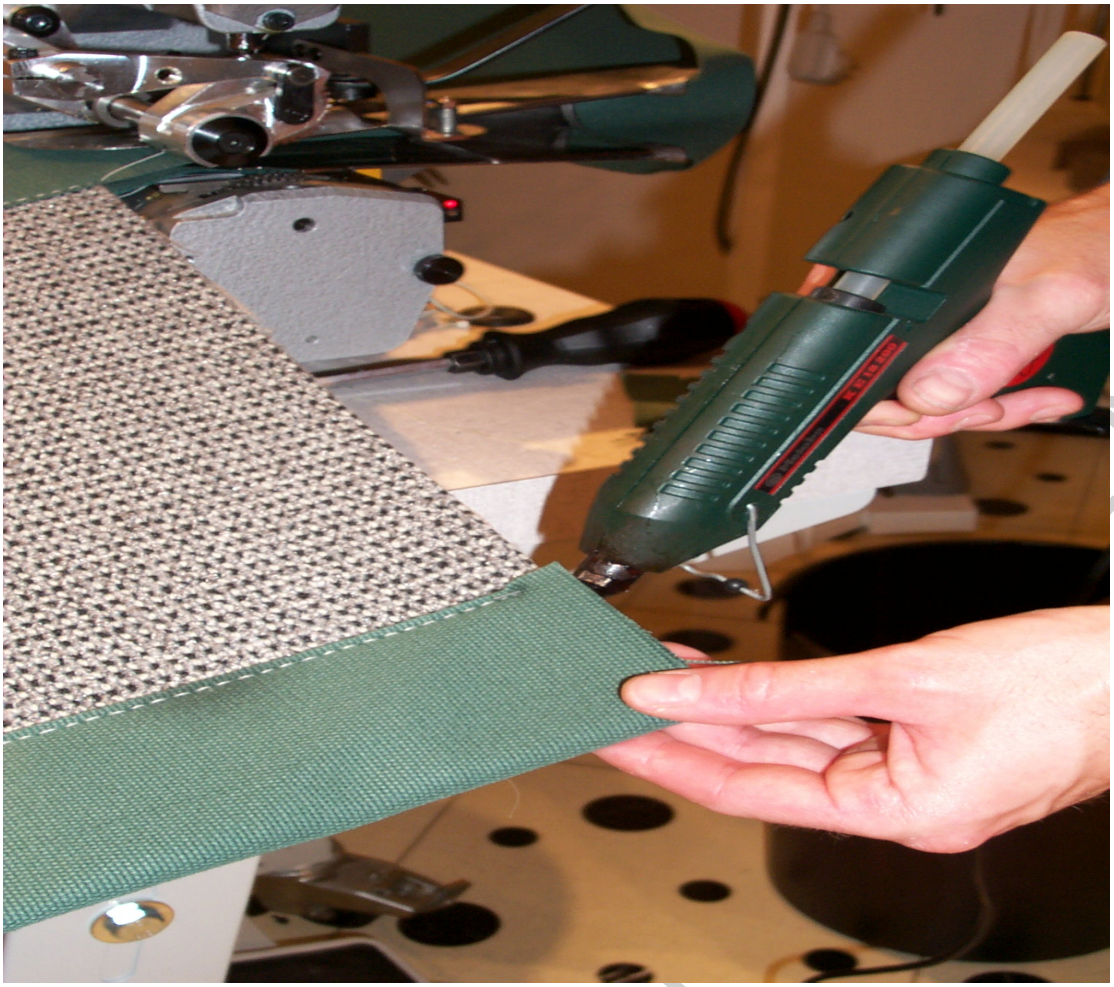
K) MAKE THE FIRST STITCH BY HAND BY TURNING THE FLYING WHEEL	
L) SEW THE SECOND SIDE OF THE CARPETTHE MACHINE WILL AGAIN STOP EXACTLY AT THE END OF THE CARPET DUE TO THE ELECTRONIC EYE.	
M) REPEAT STEP 1 TILL8 FOR THE 2ND AND 3rd CORNERS	
N) ON THE LAST SIDE STOP SEWING EXACTLY AT THE LINE OF THE STITCHING OF THE FIRST SIDE	

O) Open the folder with the handle.Lift the pressure foot by pushing on the pedal. Give more thread by pulling by hand the upper threads. Pull the carpet out of the folder at the back.	
P) Cut the ribbon. Leave about 2 cm extra ribbon	
Q) Turn the carpet and fix the last stich by making a knot.	
R) Follow the instructions at the end of the manual . How to make a last stitch	

CHAPTER 7 : HOW TO SEW THE LAST CORNER ?

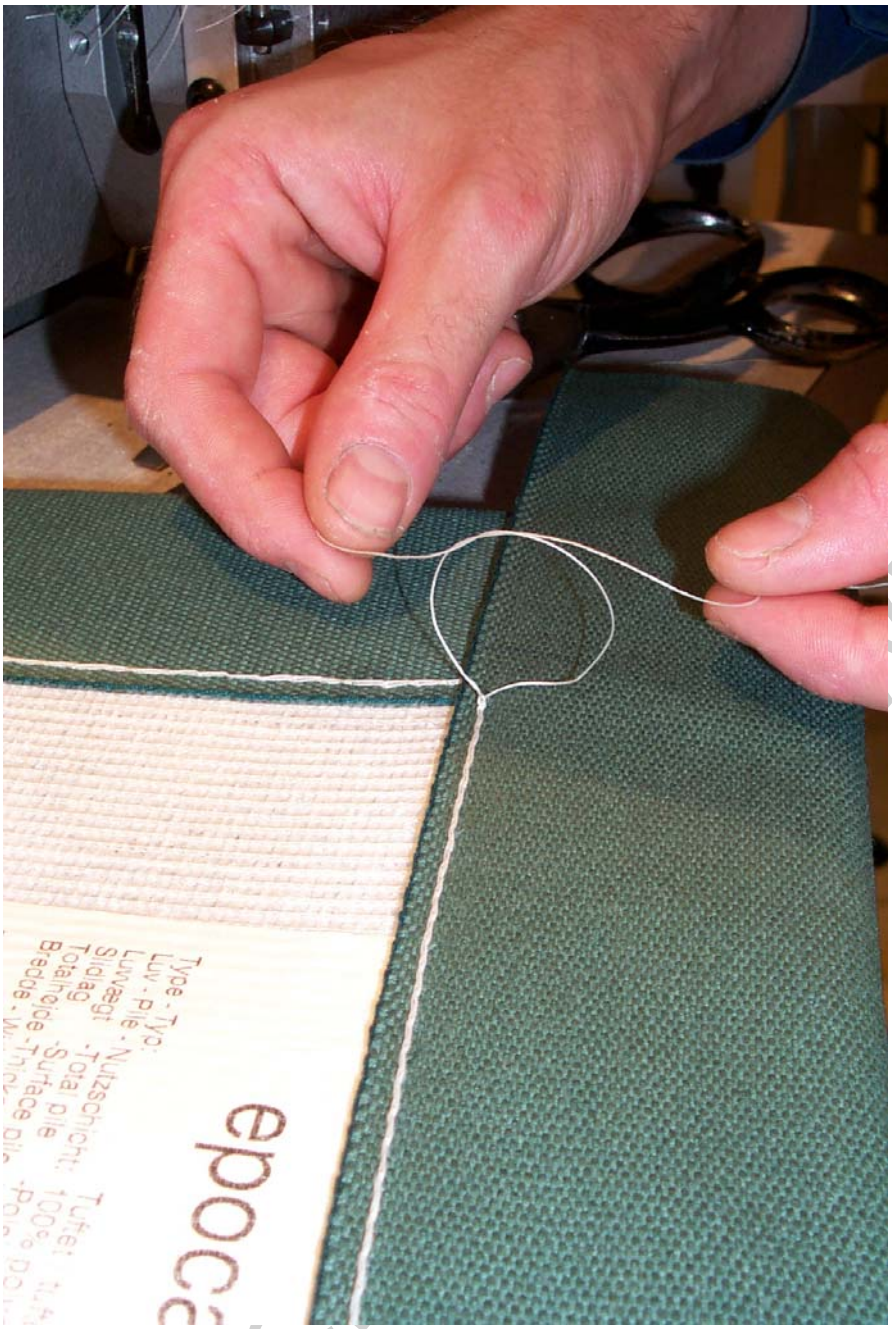


1. THIS IS THE LAST SEWING PROCEDURE BEFORE MAKING THE LAST CORNER.



2. GLUE-ING THE FIRST CORNER, (WHERE YOU STARTED) IN ORDER TO AVOID THAT THE TAPE IS STANDING OPEN

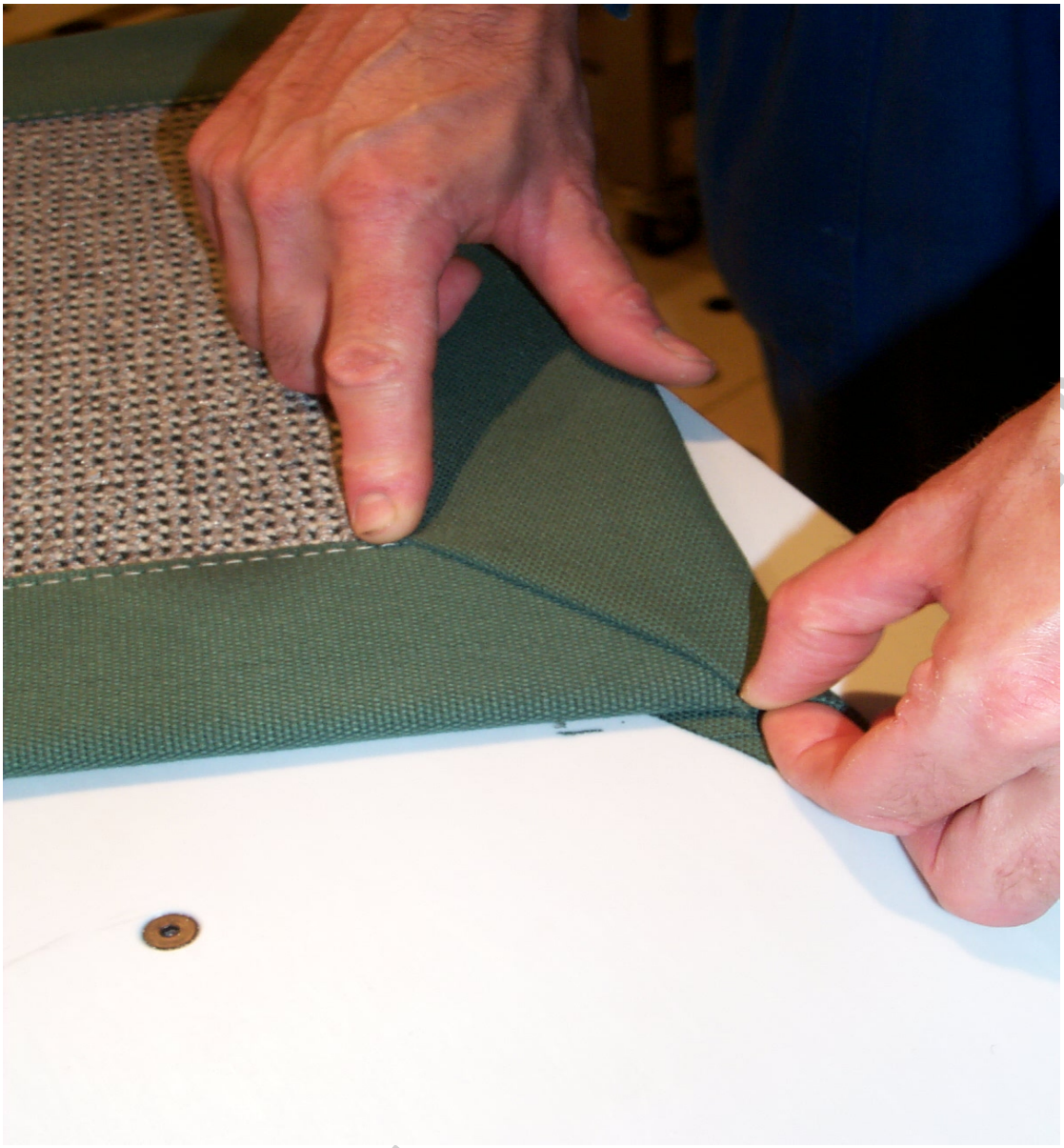
3. YOU START SEWING TO THE LAST CORNER UNTIL THE STITCH ON THE PREVIOUS SIDE. THIS IS THE LAST STITCH
   YOU HAVE TO STOP SEWING NOW AND CUT THE TAPE.



4. YOU CLOSE THE LAST STITCHES WITH A KNOB.

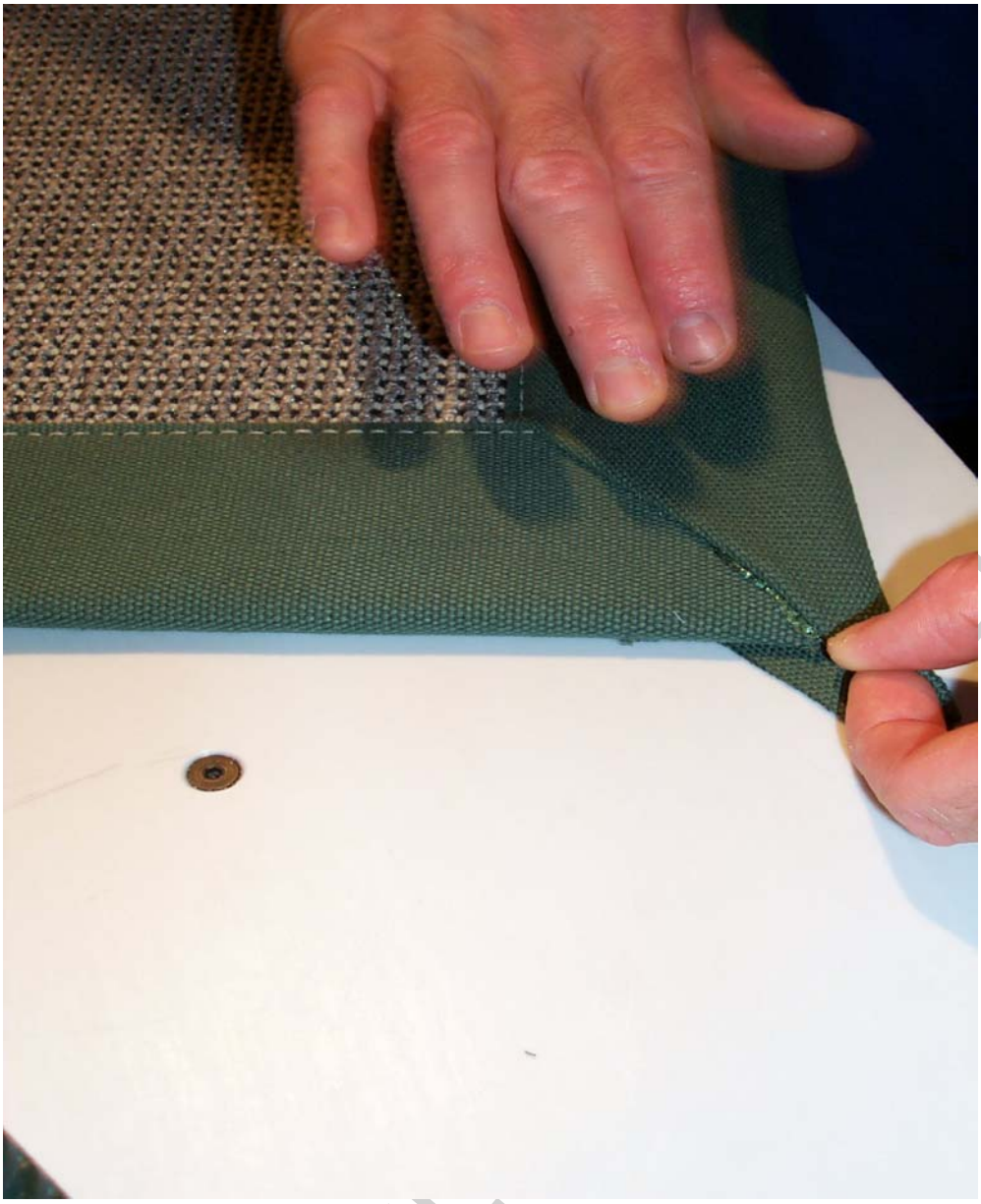
5. CUT THE TAPE INTO THE DIRECTION OF THE CORNER

6. THIS IS THE RESULT



7. YOU MANUALY FOLD THE TAPE IN A CORNER.

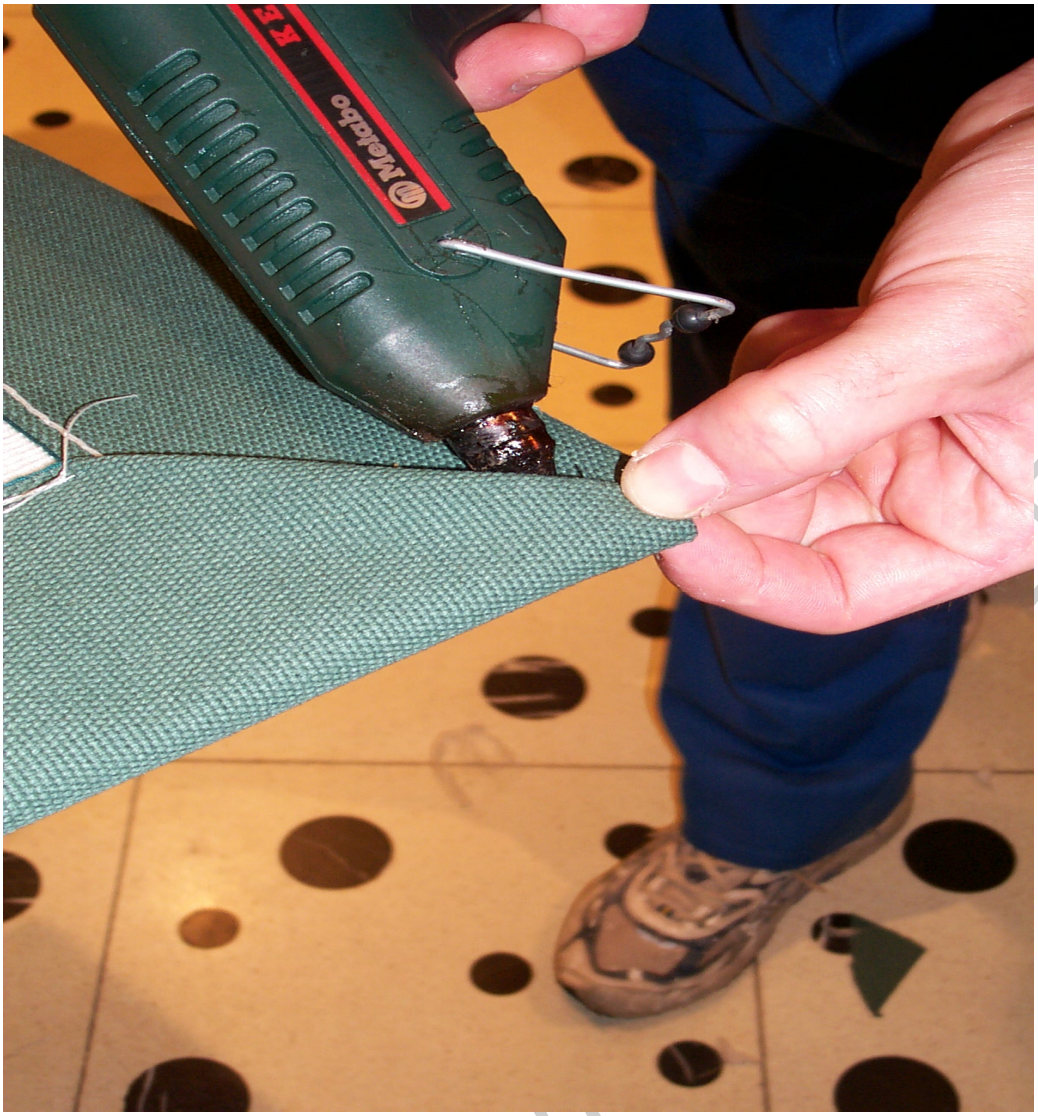
8. YOU GLUE THIS CORNER WITH A HOTGLUE GUN



9. PUT SOME PRESSURE ON THIS CORNER TO MAKE IT FLAT

10. YOU CUT THE REST OF THE TAPE OUTSIDE THE CORNER

11. YOU PUT THE REST OF THE CORNER WITH A PAIR OF TWEEZERS INSIDE THE CORNER.



12. GLUE THIS LAST CORNER WITH A HOTGLUE GUN.