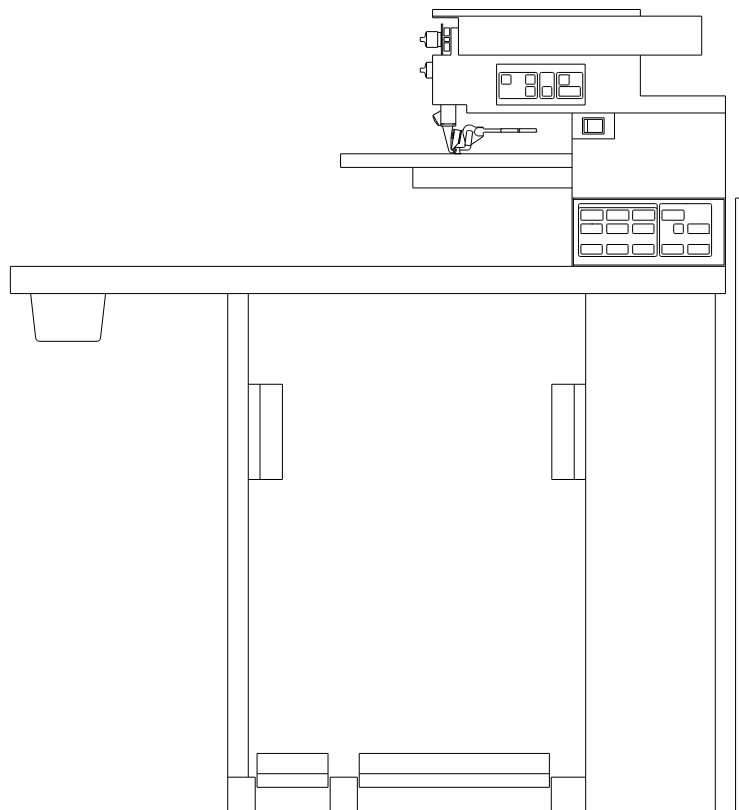


COMPUTERIZED THERMOCEMENTING AND FOLDING MACHINE

COM42FM

INSTRUCTION MANUAL



Model

COM42FM

Serial No.

Manufactured in

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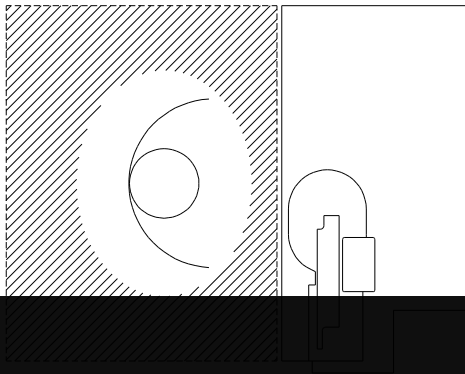
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1. DESCRIPTION OF THE MACHINE



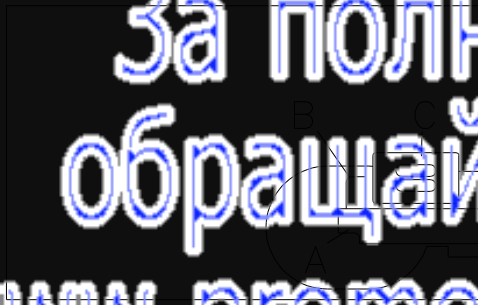
The Computerized Folding Machine COM42FM manufactured by COMELZ, outlined in picture 1, is used to fold and cement at the same time the edge of leather components and of other materials of similar nature.

The operator guides the component piece against a guide and under a creaser foot that holds the material and spreads the cement.

Twin hammers fold, press and feed the component.

Picture A

2. PROTECTIONS USED FOR SAFETY PURPOSES, picture 2



Picture B

Caution! Cover C gets hot during operations and must be opened very cautiously.

Caution! The operator must guide the work piece very near the F 112 creaser foot that spreads the cement and has an operational temperature of 20-40 degrees.

Caution! The machine must never be used without its covers.

C) Maintenance

The machine does not require specific preventive maintenance servicing.

Caution! Maintenance servicing for its own nature, can be necessary when the machine does not work correctly. For this reason, as a rule during maintenance operations it is extremely hazardous to rely on the correct functioning of safety devices, even when they appear to be perfectly working. See chapter 10.1.

3. TECHNICAL SPECIFICATION

- **Folding width**
adjustable from 3 through 7 mm
- **Rotation speed**
adjustable from 0 through 2500 rpm
- **Feed pitch**
adjustable from 0,5 through 5,5 mm
- **Overall dimensions**

height	1160 mm
width	1090 mm
depth	550 mm
- **Mass**
net weight 120 kg

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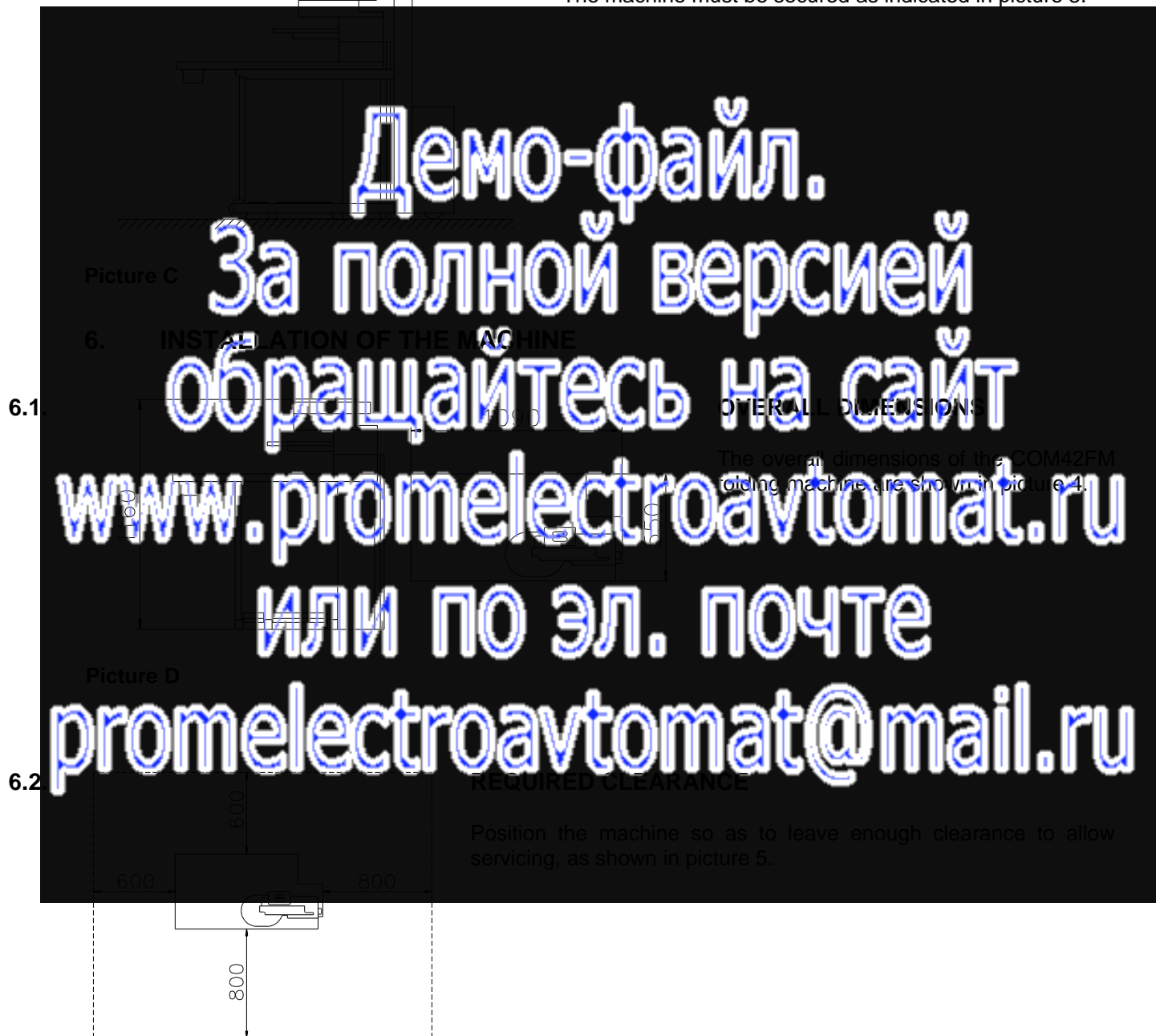
4. CONTEMPLATED AND NOT CONTEMPLATED USE OF THE MACHINE

The COM42FM machine was designed to fold and cement the edge of leather pieces and other materials with similar features. It is commonly used to manufacture shoes, leather-ware and leather garments. Unconventional use can procure serious injuries to the operator and damage the machine.

5. HANDLING AND TRANSPORTATION

The lifting and transportation of the machine must be performed by skilled personnel with adequate equipment to deal with its dimensions and weight.

The machine must be secured as indicated in picture 3.



6.3. ENVIRONMENT

- Do not place the machine in rooms with explosion or fire hazard.
- Shelter the machine from bad weather.

7. PREPARATION OF THE MACHINE FOR THE INSTALLATION

7.1. CLEANING AND INSPECTION

- Make sure that the various components of the machine were not damaged during transportation and handling.
- Accurately clean the machine from dust and smearing substances, if any.
- Make sure the machine lays flat on the floor. Level the machine through the FA17 foot picture 6, if necessary.

7.2. ELECTRICAL CONNECTION

- Make sure the voltage and frequency values of the machine, indicated on a label inside the FA24 cover, picture 6, match those of the mains and then connect the machine through its cable.
- The voltage of the machine is fixed and cannot be changed.
- Important!** The machine is single phase.
- maximum electrical consumption = 900 W
 - medium electrical consumption = 400 W
 - allowed tension = +/- 10% of the rated voltage

7.3. OIL FILLING

- Remove the FB18 cover, picture 6.
- Fill the oil stamp of the machine through the FC9 plug up to the mark on the FC27 oil window, picture 6. The oil level must not exceed the red line.
- Use SAE 10 viscosity lubricating oil.

8. INSTALLATION OF THE MACHINE CONTROL MEMBERS AND THEIR FUNCTIONS

8.1.FB8 - OVERALL CUT-OUT, picture 6.

It is located inside the FA24 cover; position its lever upward to supply power to the whole electric system.

8.2.FB20 - MAIN SWITCH, picture 6.

Press the ON button to turn on both the heating and the whole electric system.

8.3.FA11 - START PEDAL, picture 6.

It controls the start of the machine and adjusts its rotation speed.

8.4.FA8 - CEMENT TOGGLE SWITCH, picture 6.

It opens and closes cement flow.

Picture F

8.5. FA8/A - CREASER FOOT LIFTING TOGGLE SWITCH, picture 6.

It controls the lifting of the FP12 creaser foot, picture 13.

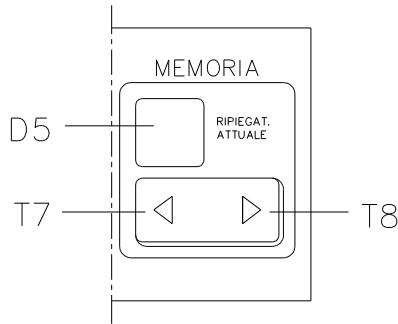
8.6. FA10 - KNIFE ACTIVATION AND PITCH REDUCTION PEDAL, picture 6.

- Press it with the toe to activate feed pitch reduction.
- Press it with the heel to activate the FL18 snipping knife, picture 13.



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8.7. TOUCH-PAD - MEMORY, picture 7.



The machine can store in memory the parameters for 48 types of folding.

When the machine is turned on, the D5 display shows a number that indicates the selected folding style.

T7 and T8 - To select the recorded folding style.

D5 - It shows the selected folding style.

Memorized parameters

For each of the 48 folding styles the machine stores in memory the data input received from the touch-pad, from the following sections:

- Photocells
- Work Feed
- Feed Rate
- Cement

8.8. TOUCH-PAD - FEED, picture 7

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T6 - To select among three different starting modes for each component piece.

D4 - It shows the selected mode.

- Normal

The operator starts folding by pressing the FA11 pedal, picture 6.

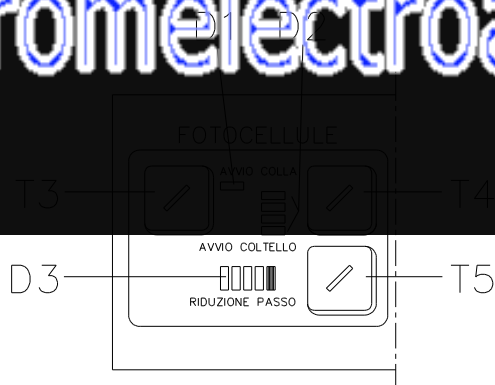
- Automatic

The machine automatically starts when the work-piece is inserted and works at the pre-set rotation speeds. (See chapter Work Feed).

- Continuous

The machine is always rotating and the operator must insert component pieces one after the other.

8.9. TOUCH-PAD - PHOTOCELLS



Picture H

8.9.1. Cement flow start

T3 - To select between Automatic and Manual

D1 - It shows the selected mode.

- Automatic

D1 is on.

The cement flow automatically starts when a component piece is inserted.

- Manual

D1 is off.

Open and close the cement flow through the FA8 toggle switch, picture 6.

8.9.2. Knife activation

T4 - To select the activation mode along inside corners. Press repeatedly to select.

D2 - They indicate the selected mode.

- All D2 lights are off. The automatic activation of the knife is excluded.

Picture I

The operator controls the activation of the knife by pressing the FA10 pedal, picture 6, with the heel.

One of the D2 lights is on. The knife automatically snips the edge of the component piece while folding an inside corner.

When the lowest light is selected, the knife snips the edge of the work-piece also while folding ample corners, whereas the selection of segments on top activates the knife only in correspondingly tighter corners. As a general rule, select low D2 lights when processing rigid materials and top D2 lights when processing soft materials.

It is better to adjust the machine with all lights off while processing materials that do not require the use of the snipping knife.

The operator can override the computer and activate the knife at any time by pressing the FA10 pedal, picture 6, with the heel.

8.9.3. Feed pitch reduction

T5 - To select the activation mode along outside corners. Press repeatedly to select.

D3 - They indicate the selected mode.

All D3 lights are off. The automatic reduction of the feed pitch is excluded.

The operator controls the feed pitch reduction by pressing the FA10 pedal, picture 6, with the toe.

- One of the D3 lights is on. The machine automatically reduces the feed pitch while folding an outside corner.

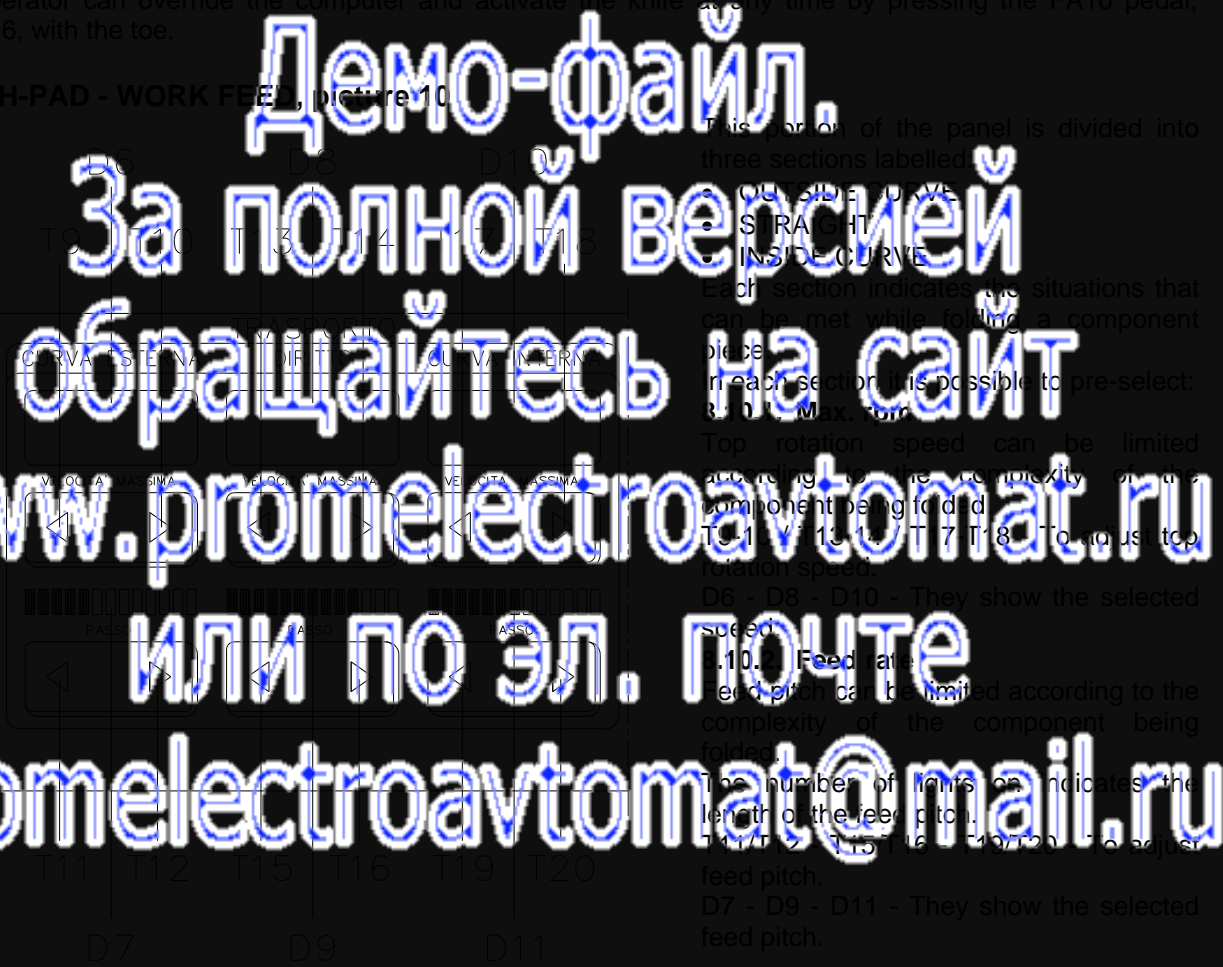
When the rightmost light is selected, the machine reduces the feed pitch also while folding ample corners, whereas the selection of segments to the left reduces the feed pitch only in correspondingly tighter corners.

As a general rule, select D3 lights on the right when processing rigid materials and D3 lights on the left when processing soft materials.

It is better to adjust the machine with all lights off while processing materials that do not require the reduction of the feed pitch.

The operator can override the computer and activate the knife at any time by pressing the FA10 pedal, picture 6, with the toe.

8.10. TOUCH-PAD - WORK FEED, picture 10



This portion of the panel is divided into three sections labelled:

- OUTSIDE CURVE
- STRAIGHT
- INSIDE CURVE

Each section indicates the situations that can be met while folding a component piece.

In each section it is possible to pre-select: 3-10 - Max. 7000.

Top rotation speed can be limited according to the complexity of the component being folded.

T4 - T6 - T7 - T8 - To adjust top rotation speed.

D6 - D8 - D10 - They show the selected speed.

10. Feed rate

Feed pitch can be limited according to the complexity of the component being folded.

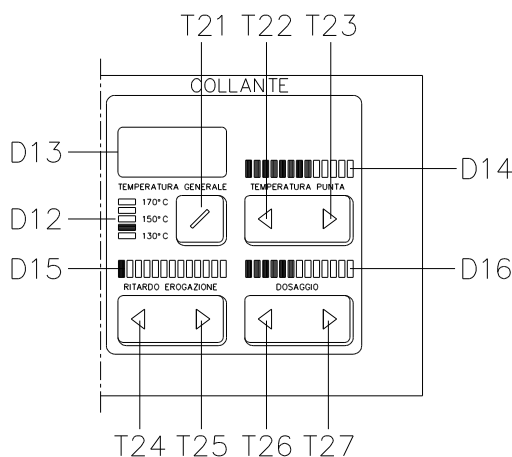
The number of lights on indicates the length of the feed pitch.

T11/T2 - T15 - T6 - T10/T20 - To adjust feed pitch.

D7 - D9 - D11 - They show the selected feed pitch.

Picture 9

8.11.



Standard operating conditions (indication) are:

- OUTSIDE CURVE: 3 - 4 lights on.
- STRAIGHT: 7 - 10 lights on.
- INSIDE CURVE: 5 - 8 lights on.

The two combined adjustments (MAX. RPM and FEED RATE) make operations easy, as the machine automatically changes its feed speed in response to the shape of the work-piece.

TOUCH-PAD - CEMENT, picture 11.

8.11.1. Pot temperature

T21 - To select the cement pot temperature. Press repeatedly to select.

Standard temperature is 140 degrees C.
 D12 - It shows the pre-set temperature.
 D13- It shows the actual pot temperature.

8.11.2. Creaser foot temperature

T22-T23 - To adjust the temperature of the cement spreading foot FP12.
 D14 - They show the pre-set temperature.

Standard adjustment is obtained with 4 - 6 lights on.

8.11.3. Flow rate

T26-T27 - To adjust the quantity of spread cement.

D16 - They show the pre-set quantity.

Standard adjustment is obtained with 4 - 6 lights on.

8.11.4. Delay

T24-T25 - To delay, when required, the start of cement application, so as to leave a dry bit at the start.

D15 - It shows the pre-set delay.

Just the first light on indicates no delay.

Each further light on indicates one further turn without cement application.

8.12. MECHANICAL ADJUSTMENTS, picture 12

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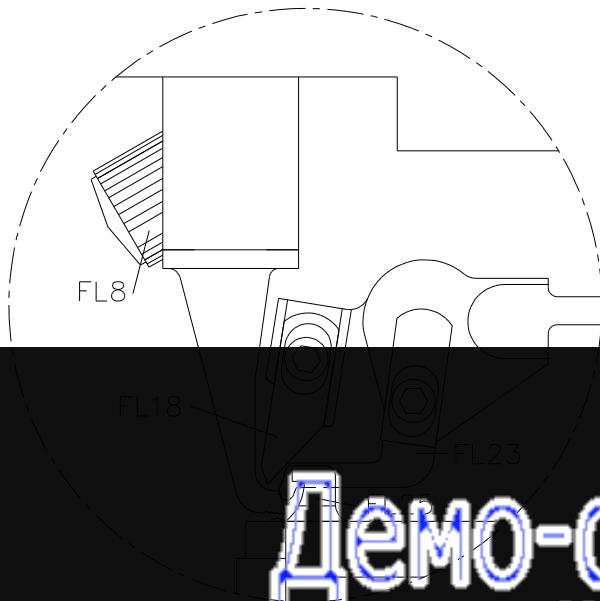
Picture 12.

8.12.1. Manual lifting of the FF12 creaser foot
 FM30 lever, picture 12.

FA8/A toggle switch, picture 6.

8.12.2. Manual lifting of the FL23 guide

FL26 lever, picture 12.



8.12.3. Folding width, picture 13.

- Adjust the width of the folding by lifting or lowering the FL23 guide.
- Turn the FL8 knob to adjust the gap formed by the FL23 guide and the FL25 cutting block. Leave a clearance approximately twice as wide as the thickness of the material being processed.

8.12.4. Snip length

- Adjust the length of the snips by rising or lowering the position of the FL18 knife.

8.12.5. Adjustment of the FP12 creaser foot, picture 12.

To make any adjustment it is necessary to move the creaser foot to its working position, as follows:

- Turn the machine on by pressing the FB20 switch; the creaser foot will move down to its working position.
- Switch off the machine by pressing the FB20 switch before the creaser foot moves back to its idle position.

Vertical adjustment

Through the FM6/A knob, move the creaser foot to approximately 0.5 mm from the FH21 work release arm when this is at its uppermost position. When the creaser foot is

too low, the material being processed is not fed smoothly. When the creaser foot is too high, the material being processed is not properly fed and comes out of the guide.

Horizontal position

Through the FM6/B knob, align the creaser foot to the right corner of the FH21 work release arm.

8.12.6. Adjustment of the FH11 lip turner, picture 12.

- Turn the FL15 pulley, by hand, to move the FH11 lip turner all the way up.
- Turn the FH15 knob to obtain a gap of approximately 1 mm between the FH11 lip turner and the FP12 creaser foot.

8.13. REINFORCING TAPE

Place the reinforcing tape roll on the FP02 bars so that the tape unrolls in the lower part. Insert the tape in the eyelets of the FB14 guide, then into the FH10 groove and through the specific slot in the FP12 creaser foot tip.

USE OF THE MACHINE

The machine must be operated by persons trained for its use.

- Turn the FB8 over and out out to C position, picture 6.
- Turn on the machine by means of the FB20 switch, picture 6. Wait about 20 minutes to allow the cement to melt.
- Insert the component piece under the FP12 creaser foot, picture 13, so that it goes all the way inside the gap between the FL23 guide and the FL25 cutting block, picture 13.
- Start operations by pressing the FA11 pedal, picture 6. (The machine will start automatically in case the AUTOMATIC FEED was pre-set).

While processing a work-piece the operator must guide it without pushing or holding it, so that the edge constantly touches the back of the slot between the FL23 guide and the FL25 cutting block.

Caution! The operator must guide the work-piece with his or her fingers very near the FP12 creaser foot, picture 12, that spreads the cement at 120 - 140 degrees C.

During operations the operator can lift the creaser foot to fold over a seam by pressing the FA8/A toggle switch, picture 6, or by pressing the FM30 lever, picture 12.

- Fully release the FA11 pedal when folding is completed.
- Check the cement level in the FM40 pot now and then, and add cement before the pot is completely empty.

Minimum level should not be lower than 2 cm.

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10. MAINTENANCE OF THE MACHINE

The machine does not require preventive maintenance.

Caution! Always turn off the machine when carrying out maintenance.

10.1. REPLACEMENT OF THE FL18 KNIFE, picture 13

- Remove the worn knife.
- Clean the knife housing.
- Fit the new knife.
- Turn on the machine.
- Press pedal FA10, picture 6, with the heel.
- Turn the FD15 pulley by hand, picture 6, to lower the knife.

Important! Do not press the FA11 pedal, picture 6, otherwise the machine starts.

- Unlock the screw that locks the FL23 cutting block and adjust its position so that it touches the knife.

10.2. CLEANING

Clean external mechanisms once a day, with compressed air if possible.

10.3. LUBRICATION

- **Daily.** Lubricate the main part of the machine through the FC32 oiler.
Overall lubricate the machine with special grease for mechanical members.
Pages FG and FH of the spare parts book.
- **Weekly.** Check oil level in the sump through the FC22 window, picture 6.
- **Yearly.** Replace the oil in the sump. Empty it through the FC36 cap.

10.4. TESTING SAFETY DEVICES

Check the efficiency of safety devices once a week.

- When the machine is off, inspect snips A, B, C, picture 2, for possible damage.

11. PRODUCT FLAWS AND THEIR CAUSE

Follow the instructions given in the previous pages to adjust the machine.

- Cement comes out on the fold.

Too much cement.

FP12 creaser foot too much to the left.

FP12 creaser foot too hot.

- The folded edge rips.

Too little cement.

FP12 creaser foot too low.

- Uneven cement distribution.

FP12 creaser foot too cold.

- The work piece is not fed correctly.

FP12 creaser foot too low.

The work-piece is loose.

FP12 creaser foot is too high.

- The snips of the knife are too long or too short.

The FL18 knife is too low or too high.

- The component piece is stretched after processing.

Too much pressure from the FG7 hammer.

FL23 guide too near to the FL25 cutting block.

- Double folding.

FL23 guide too far from the FL25 cutting block.

- Outside corners unevenly pleated.

Feed pitch is too long.

Hammer and anvil assembly (page FG) too far from the FP12 creaser foot.

- Torn folded edge.

FH1 lip turner too near to the FP12 creaser foot.

- Reinforcing tape not in the throat of the fold.

FH1 lip turner too far from the FP12 creaser foot.

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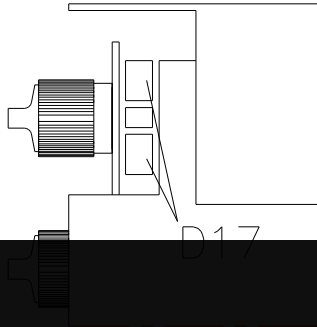
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12. ERROR CODES

D17 - The following numbers appear on the display in case of malfunctioning of the machine.



Picture N

- 03/30 Missing 12 v power supply to the KK10 PC board.
Turn off the machine and disconnect the connector of the FA11 pedal, the connectors of the KM10 and KM11 toggle switches.
Turn on the machine again.
If the error code persists replace the KK10 PC board.
In case the error code does not show re-connect the various components one by one, turning the machine on each time, until the code reappears; replace then the part that caused the malfunctioning.
- 06/60 Faulty KK10 PC board.
- 09/90 ADC converter saturated (probably the FR2 fan is jammed)
- 11/11 Faulty KK30 PC board. Interruption in the connection of the FK23 knife step motor.
- 12/21 Interruption in the connection of the FK23 step motor.
- 13/11 Short-circuit in the connector of the FK27 step motor.
- 14/41 Faulty KK30 PC board. Control of the FF25 feed step motor.
- 15/51 Interruption in the connection of the FF25 step motor.
- 16/61 Short-circuit in the connection of the FF25 step motor.
- 17/71 Faulty KK30 PC board. Control of the FM25 Flo. Lifting step motor.
- 18/81 Interruption in the connection of the FM52 step motor.
- 19/91 Short-circuit in the connection of the FM52 step motor.
- 23/32 Faulty KK22 PC board.
- 24/42 Faulty KK22 PC board.
- 25/12 Faulty KK22 PC board.
- 27/12 Short-circuit in the KS18 thermistor.
- 28/82 Interruption in the connection of the KS18 thermistor.
- 33 Interruption in the heating element N. 1.
- 34/43 Short circuit in the heating element N. 1.
- 35/53 Interruption in the heating element N. 2.
- 36/63 Short circuit in the heating element N. 2.
- 37/73 Interruption in the heating element N. 3.
- 38/83 Short circuit in the heating element N. 3.
- 44 Interruption in the KR4 heating element.
- 45/54 Short circuit in the KR4 heating element.
- 55 Faulty KK22 PC board. Control of the FP23 cement step motor.
- 56/65 Interruption in the connection of the FP23 step motor.
- 57/75 Short-circuit in the connection of the FP23 step motor.
- 66 Fault in the KM93 light receiver.
- 77 Short-circuit in the FC17 feed motor.
- 78/87 FC17 feed motor does not turn.
Motor jammed. Machine sized.
- 79/97 FC17 feed motor under stress.
- 89/98 Interruption in the connection of the FR2 fan.
- 99 FR2 fan jammed or short-circuited.

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13. WEAR AND SPARE PARTS

- FC04 lamp.
- FG07 hammer.
- FH01 lip turner.
- FL18 knife.
- FL23 guide.
- FL25 cutting block.
- FM35 filter.
- KR10 cement container heating element.
- KR4 creaser foot heating element.
- KS18 thermistor
- FP10 spring.
- FP12 creaser foot.

14. DISMANTLING THE COM42FM FOLDING MACHINE

A few essential rules must be followed to protect the environment when it is necessary to dispose of the machine.

- All components made of plastic or other non-metallic materials must be disassembled and disposed of separately.
- Electric components (switches, transformers, motors and triacs) must be re-used, if possible.
- Metallic parts of the machine must be disassembled and grouped according to the type of material. They must then be demolished and melted separately.

15. SOUND LEVEL OF THE COM42FM FOLDING MACHINE

Under standard working conditions, the sound level is:

Leq	at operator's place under working conditions	59 dB(A)
Lpc	at operator's place under working conditions	41.50 dB(C)
Leq	at operator's place under idle conditions	30 dB(A)
Lpc	at operator's place under idle conditions	130 dB(C)

Material features

Various leather components

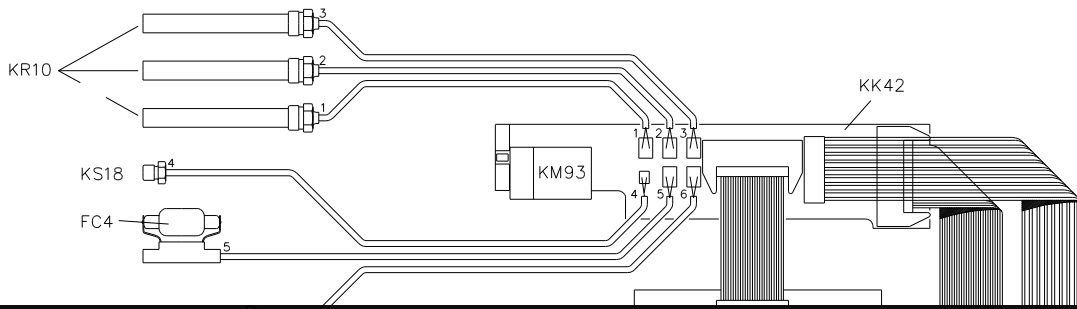
Thickness (before folding) 0.6 mm

Thickness (after folding) 1.2 mm

Overall length (average of various components) 250 mm

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