ADLER

Operating Instructions
Instructions for mechanics

804-1, -3; 804-2, -4

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Foreword

This instruction manual is intended to help the user to become familiar with the machine and take advantage of its application possibilities in accordance with the recommendations.

The instruction manual contains important information on how to operate the machine securely, properly and economically. Observation of the instructions eliminates danger, reduces costs for repair and down-times, and increases the reliability and life of the machine.

The instruction manual is intended to complement existing national accident prevention and environment protection regulations.

The instruction manual must always be available at the machine/sewing unit.

The instruction manual must be read and applied by any person that is authorized to work on the machine/sewing unit. This means:

- Operation, including equipping, troubleshooting during the work cycle, removing of fabric waste,
- Service (maintenance, inspection, repair and/or
- Transport.

The user also has to assure that only authorized personnel work on the machine.

The user is obliged to check the machine at least once per shift for apparent damages and to immediatly report any changes (including the performance in service), which impair the safety.

The user company must ensure that the machine is only operated in perfect working order.

Never remove or disable any safety devices.

If safety devices need to be removed for equipping, repairing or maintaining, the safety devices must be remounted directly after completion of the maintenance and repair work.

Unauthorized modification of the machine rules out liability of the manufacturer for damage resulting from this.

Observe all safety and danger recommendations on the machine/unit! The yellow-and-black striped surfaces designate permanend danger areas, eg danger of squashing, cutting, shearing or collision.

Besides the recommendations in this instruction manual also observe the general safety and accident prevention regulations!

General safety instructions

The non-observance of the following safety instructions can cause bodily injuries or damages to the machine.

1. The machine must only be commissioned in full knowledge of the instruction book and operated by persons with appropriate training.

2. Before putting into service also read the safety rules and instructions of the motor supplier.

3. The machine must be used only for the purpose intended. Use of the machine without the safety devices is not permitted. Observe all the relevant safety regulations.

4. When gauge parts are exchanged (e.g. needle, presser foot, needle plate, feed dog and bobbin) when threading, when the workplace is left, and during service work, the machine must be disconnected from the mains by switching off the master switch or disconnecting the mains plug.

5. Daily servicing work must be carried out only by appropriately trained persons.

6. Repairs, conversion and special maintenance work must only be carried out by technicians or persons with appropriate training.

7. For service or repair work on pneumatic systems, disconnect the machine from the compressed air supply system (max. 7-10 bar). Before disconnecting, reduce the pressure of the maintenance unit.
   Exceptions to this are only adjustments and functions checks made by appropriately trained technicians.

8. Work on the electrical equipment must be carried out only by electricians or appropriately trained persons.

9. Work on parts and systems under electric current is not permitted, except as specified in regulations DIN VDE 0105.

10. Conversion or changes to the machine must be authorized by us and made only in adherence to all safety regulations.

11. For repairs, only replacement parts approved by us must be used.

12. Commissioning of the sewing head is prohibited until such time as the entire sewing unit is found to comply with EC directives.

It is absolutely necessary to respect
the safety instructions marked by these signs.

Danger of bodily injuries !

Please note also the general safety instructions.

Adler class 804-1 and 804-2
Instructions for operators

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4. Functional and operating elements of the control panel

4.1 Function selector switch (fig. 11)

4.1.1 Folding control

Sequence:

- Interruption of the automatic cycle after folding
- Checking of folded pocket:
  Pocket perfectly folded: Continue with "Start free"
  Pocket not properly folded: Operate "Repetition", remove the material, and feed again

4.1.2 Manual removal

- if, the work piece cannot be stacked anymore on account of its size,
- Consequences :
  Stacker out of function
  "Start free" is automatically switched off
  Operate "Start free" for moving-in the ZE

4.2 Keys (fig. 11)

4.2.1 Start free

- is the condition for the automatic cycle
- if at least 1 disturbance indicator (red LED) lights, the "Start free" is blocked

4.2.2 Stop

- Switches off "Start free"
- Interrupts the automatic cycle (not when folding)
- When sewing: the machine stops in 1st position

4.2.3 Repetition

- if the cycle is interrupted in the step 11 (after folding):
  The clamped material is released
- When sewing after "Stop" operation:
  Cutting when turning from the 1st in the 2nd position
  Iniating of the repair cycle
- in case of the repair cycle in the basic position of the clamping table:
  The clamped material is released

4.2.4 Repair cycle

- after threading, press key as long as the point of thread breakage is reached

4.2.5 Step

- When the service switch is in the position 2 and 3:
  Gradual switching of the automatic cycle
- When the service switch is in the 4th position and the clamping table is sewing out:
  Lifting and lowering of the sewing machine

4.3 LED indicators (fig. 11)

Designation	Flashing of the indicator
Mains connected	if main switch is operated
Start free	if "Start free" is operated
Disturbance	- if at least one of the 7 red luminous diodes in the rectangular window flashes - if the main switch is operated while the motor protective switch is off
Light barrier is not free	if the workpiece is not ejected
Hook	only in 804-1, if, during the sewing operation, the tiltable hook box is not in the basic position. Control by switch
Wrong needle position	if, when "non-sewing", the thread take up lever is not in its upmost position. Scanning by the two yellow magnets at the synchronizer
Repair cycle	if, after thread breakage, the repair cycle is stored
Bobbin change	at counter state 000
Thread breakage	after thread breakage
Cam	- if, with the machine being switched on, the control cam is not in 0 position in this case: Turn off main switch and, by means of the crank, turn the control cam in the basic position (note direction of rotation) - if the guide roll has not snapped the scanning is done by the switch - if the inductive switch is out of position - if the plug connection at the lever is interrupted
Start free and disturbance	are flashing if: - one phase has failed - the motor rotates in wrong direction - control by a phase rotation relay
All red luminous diodes	are flashing during the cycle in case of: - wrong position of the pocket shape switch - wrong position of the selector switch "single seam - double seam"
Service	if the service switch is in the position 2, 3 or 4
Bundle removal	when the switch is operated
Manual removal	when the switch is operated
Folding control	when the switch is operated

4.4 Counter

4.4.1 Preselector counter for bobbin change (fig. A/11)

- Determine the number of pieces that can be sewn with one bobbin
- Operate the white key for unlocking the counter and set the number of pieces by the black button
- The preselector counter counts back
  When the counter shows 000, "Bobbin change" flashes and "Start free" is switched off
- After the bobbin change:
  operate the white key (the number set is displayed again)
  and operate "Start free"

4.4.2 Service hour counter (fig. 11)

- if the machine is not fed again within 1 minute after the last cycle, the counter stops
- cannot be set back

4.4.3 Piece counter (fig. 11)

- shows the number of pieces sewn
- cannot be set back

5. Operating elements in the switch box (figs. 12,13)

5.1 Service switch (fig. a8/12)

Position 1
- for automatic cycle

Position 2:
- for gradual switching of the automatic cycle by the "step" key (e.g. for checking the folding process)
- puts the ZE out of function
- Cycle:
  1. Place the fabrics into the folding station (otherwise the folding equipment will be damaged)
  2. Operate "Start free"
  3. Operate "Step" key up to the cycle end
  4. Remove the workpiece: middle slide moves in front

Position 3
- for gradual switching of the automatic cycle <u>without sewing</u> with the "step-key (e.g. for checking the alu-band coating)
- puts the ZE out of function
- Cycle: see position 2

Position 4
- for adjusting
  the thread cutter, the sewing head and the Quick speed:
- Cycle:
  1. Swing out the clamping table (see Instructions for Mechanics 8.10)
  2. Main switch ON
  3. Operate "step" key: sewing head down
     (when operating again: sewing head up)
  4. Operate "Start free": machine operates at top speed
  5. Operate "Stop": machine stops in 1st position
  6. Operate "Repetition": cutting when moving in the 2nd position

5.2 Pocket type selector switch (fig. a6/12)
- the pocket type is indicated on the outer frame
- the 1st figure of the four-digit number indicates the position (1-4) of the selector switch

5.3 Selector switch "single or double seam" (fig. a5/12)
- set according to the set of forms

5.4 Connector "467 FA - 396 FA" (fig. a9/12)
- connect according to the sewing head type

5.5 Connector, thread monitor, "with-without" (fig. a11/12)
- the automatic cycle will be performed also without thread if the connector is connected with pin "without"
  The thread monitor is then out of function.

5.6 Luminous diodes of the input plates (fig. 13)
- for checking the function of microswitches
- When operating, the respective LED's will flash (see function plan)

5.7 Stacker selector switch (fig. a51/12)
For further information see Instructions for Mechanics 9.7 and 10.4.
The following description applies only to the stacker of ZE4.

Position (stacker system)	1	2	3
Workpiece length in mm (from pocket upper edge to fabric bottom edge)	600 (min)	320-600	50-320
Work type	Trousers	White goods	Short parts
Stacker must include:			
Ejecting bracket	x	x	x
Inside bracket	x	x	x
Outside bracketbow	x	x	x
Clamping table bracket		x	x
Advancer			x

6. Switching on and feeding the automatic machine

6.1 Switching on and off the automatic machine

For switching-on:
- Open the stop valve
- Switch on the main switch
- Operate "Start free"

For switching-off:
- Switch off the main switch
- Shut the stop valve

6.2 Feeding of the ZE with material

- Place the pocket cut in front against the stop and align it laterally
- Lift pocket holder for clamping
- Align the fabric
  In case of plain material:
  Align according to the marks on the table top
  For pattern-true sewing in case of striped and checked materials:
  Lower the pocket holder by operating the key "Lower" and adjust the fabric according to the pattern of the pocket
- Lower the fabric clamp for clamping
- Operate "Start free" for proceeding

7. Repair cycle

7.1 General information

- The thread monitor includes:
  disk slotted and infrared light barrier
- The thread monitor can be put out of function by the connector in the switch box
- Thread breakage short before the seam end will be indicated only when starting the next cycle

7.2 Initiating the repair cycle

- Breakage of upper thread
- The slotted disk is not turned
- The machine stops with delay
- The thread cutter cuts lower thread
- Sewing head up
- Clamping table moves in 0 position
  the frames remain below

7.3 Further operation of the repair cycle

- Threading
- Operate "Start free" or "Repetition" or "Unlock"
  In case of Start free: sewing start at seam beginning
  In case of Repetition: ejection of the workpiece
  In case of "Unlock" : moving to the thread breaking point
  For continuing, operate "Start free"
- Automatic clearance of the displays "Disturbance" and "Repair cycle"

8. Operating the sewing machine

8.1 Threading plan

8.1.1 804-1 (fig. 14)

Pass the needle thread
- through the reel stand,
- to thread guide D from right through the upper hole,
- from left through the middle hole of the thread guide D,

- from right through the lower hole in the thread guide D,
- counterclockwise around the needle pre-tension C,
- back through the lower hole of the thread guide D,
- to the right along the guide pin,
- between the two bows T,
- clockwise 1/2 time around the thread monitor roller O,
- backwards between the bows T,
- counterclockwise in the needle thread main tension B,
- clockwise in the thread guide E,
- behind the tension spring R,
- below the hook,
- through the thread guide Q,
- from right through the lower hole in the thread take up lever G,
- from above through the thread guide Q,
- behind the pulling bow M,
- between the disks of the thread brake N,
- in front of the bow of the thread puller M,
- through the thread eyelet at the needle bar V,
- from left through the eye of the needle and pull-off 8 cm

8.1.2 804-2 (fig. 15)

Pass the needle thread
- through the reel stand,
- from above through the thread guide bush A of the thread monitor,
- around the guide pin B, around the pre-tension C,
- clockwise 1/2 time around the thread monitor roller D,
- over the thread guide pin E,
- through the thread guide F, to the needle thread main tension G,
- clockwise 1 1/2 times around the needle thread main tension G,
- behind the thread tension spring H,
- below the thread guide I,
- behind the thread guide K,
- through the adjustable thread guide F,
- from right through the thread take-up lever eye L,
- behind the thread guide K,
- through the thread eyelet on the needle bar bush M,
- behind the bow of the thread brake N,
- through the thread eyelet at the needle O,
- from left through the eye of the needle and pull-off about 8 cm

8.2 Winding the lower thread (fig. 3,16)

Pass the lower thread
- through the reel stand,
- from rear through the left hole to the thread guide g,
- from front through the middle hole of the thread guide g,
- from rear through the right hole of the thread guide g,
- between the disks of the adjustable winder pre-tension G,
- counterclockwise around the 2nd pre-tension F (only 804-1),
- wind it counterclockwise several times around the bobbin ,
- place the excessive thread end clockwise in front of the spring, and, for cutting, pull it in the knife m (for clamping, the thread end will be pulled into the spring f),
- press bobbin winder lever h,
- the winding takes place while sewing and it is interrupted by the bobbin winder lever when the bobbin is fully wound,
- when winding with modified tension or when changing the thread thickness the preselector counter must be reset.

8.3 Bobbin change

8.3.1 Bobbin change in 804-1 (fig. 17)

- Swing the hook box in front by operating the key,
- Lift the flap and remove the bobbin raised by a spring,
- Insert the full bobbin in the bobbin case,
  When pulling-off the thread, the bobbin should turn counterclockwise,
- Pull the thread through the slot and underneath the spring, shut the flap and pull off a thread end of about 5 cm.

8.3.2 Bobbin change in 804-2 (fig. 18)

- Swing the flap sideways and remove the bobbin case with the bobbin,
- Insert the full bobbin in the case and pull the thread through the slot, underneath the spring and through the guide.
  When pulling-off the thread, the bobbin should turn oppositely to the thread pulling direction.
- Insert the bobbin in the bobbin case, shut the flap and pull off a thread end of about 5 cm.

8.4 Upper and lower thread tension

8.4.1 Upper thread tension

For lifting, operate the button,

- Adjust according to the seam pattern
  (after having set the lower thread tension as low as possible)
- The adjustment of the pre-tension influences also the thread tension

8.4.2 Lower thread tension

- 804-1: adjust as low as possible by screw f/19 at the bobbin case
- 804-2: adjust as low as possible by screw n/18 at the bobbin case
  (The bobbin case, hanging at free thread, should descend slowly)
  The after-run of the bobbin can be regulated by the screw.
  This adjustment will also influence the thread tension.
- For checking, pull the thread horizontally out of the stitch hole.

8.5 Changing the needle

- Needle system
  804-1: 134 CR, Singer MR
  804-2: 134
- When changing the needle, the upper arm must be lifted and the machine must be switched off.
  Align the needle groove with respect to the hook, insert the needle up to the stop and fasten by screw.

Safety instructions

The nonobservance of the following safety instructions can result in bodily injuries of the operator and in damages to the machine.

Mounting

- The mains voltage must comply with the service voltage specified on the motor type plate.
- The drive of the machine must turn in the prescribed direction.

Operation

- Use the machine only for the purpose for which it has been intended.
- Do not remove the coverings and the protective devices.
- Only the accordingly qualified persons should be allowed to start and operate the machine.
- Do not introduce the hand into the area of mobile elements while the main switch is turned on.
- Turn off the main switch for

  - threading
  - changing the sewing elements (needle, bobbin, foot, throat plate, feed dog, etc.)
  - when leaving the working place.

Maintenance

- The maintenance work should be carried out exclusively by the authorized persons.
- For carrying out the maintenance work, particularly on the electrical equipment, the mains plug must be pulled out.

  No work on live parts and equipment is permitted, except the deviations permissible according to DIN 57105 or VDE 0105.

Adler class 804-1 and 804-2
Instructions for Mechanics

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1. Completion

1.1 Components supplied
- Basic automatic machine with control cam
- Clamping table with folding equipment
- Workpiece support
- Switch box
- Feeding equipment with pocket clamp
- Control panel
- Small parts in the accessories

1.2 Installing the basic automatic machine (fig. 20)
- Place the plates with rubber disks under the feet
- Adjust the height by means of the feet
  (the foot should be flush with the upper counter nut)
- Mount the workpiece support
- Place water level on the workpiece support and set the basic automatic machine accordingly
- For correcting, modify the height of the feet

1.3 Mounting the clamping table with folding equipment
- Place the clamping table on the supporting plate
- By means of bolts connect the clamping table with the lever
- Connect the coupling bar with the clamping table

1.4 Mounting the switch box
- The nuts and the washers are included in the accessories

1.5 Connecting plugs and hoses
Note specifications

1.6 Mounting the reel stand

1.7 Mounting the feeding equipment (ZE)
- In case of model after 1/83: uncouple with the lever and push the table in 0 position to the rear (fig. A/21)
- In case of model up to 12/82: readjust the released friction clutch (see 9.4) and push the table in 0 position
- Preadjusting the height:
  Place the rubber disks below the setting feet
  By means of the setting feet adjust the feeding equipment (ZE) so that the ZE strut with the distance bushes stands immediately below the plate of the stand
- By means of 2 fit screws connect the ZE with the basic automatic machine (Thus centering the ZE)

1.8 Height of the feeding equipment (ZE)
- The value specified on the lateral strut shows the correct distance between the stand and the ZE strut (fig. 22)
  This determines the ZE height
  Modifiy the height of the setting feet accordingly
- Mount the control panel
- Connect all plugs and hoses

1.9 Connecting electric and pneumatic lines of the machine
- Note the specifications on the type plate

1.10 Checking the direction of rotation
- In case of wrong direction of rotation "Start free" and "Disturbance" will be blinking
- Invert the phases accordingly

1.11 Checking the table height and table clamp position of the ZE
See 9.2.1

1.12 Mount the remaining parts

1.13 Make test cycle
with material

2. Sewing machine 804-1

2.1 Hook, needle bar height

2.1.1 Loop stroke
- Check first whether the clutch engages
- Set loop stroke of 2 mm by gauge
- Do not tighten the screw of the block 981 15 000 2 excessively, because this would cause damage to the needle bar (fig. b/23)
- For correcting, loosen the clamping ring (fig. S/24) and turn the driving shaft with respect to the hollow shaft (The hook is fixed on the hook shaft - 1st screw in the direction of rotation on the flat surface), (fig. 25)
- For better clamping, set clamping ring flush with the hollow shaft and pay attention to the lateral play of about 0.5 mm in the claw clutch (fig. 26)
- If the loop stroke changes,
  check the timing of the bobbin case lifter,
  check the position of the hook protection and of the needle guide

2.1.2 Needle bar height
- In the loop stroke position the hook point should stand against the middle of the groove
- For correcting, loosen 2 screws (fig. Y/27)
- If the needle bar height changes
  check the position of the hook protection and of the needle guide
- If the height is not correct: The hook point can be damaged
  The thread can be clamped between the needle and the hook guard and the thread can break
  Skipped stitches can produce thread breakage

2.1.3 Distance between the hook and the needle

- The hook point should in no case touch the needle
- Put the hook protection out of function
- For correcting, displace the hook box after loosening the 3 screws (fig. m/28) and set for the distance of 0.1 mm between the needle and the hook point
- Ensure the play of 0.5 mm in the claw clutch (fig. 26)
- Check the distance when changing the needle thickness in the ranges of 120-140 and 80-110

2.1.4 Hook protection (fig. a/29)

- This guard avoids the contact between the hook point and the needle
- In the loop stroke position the needle point, without being deflected, should touch the hook guard (Deflection only below the loop stroke position)
- Set the hook protection accordingly by means of the screw (fig. A/28)
  Control: When pressing against the needle, the latter should not touch the hook point
- Check the hook protection position when correcting the needle bar height, the loop stroke and in case of needle thickness change above 0.2 mm

2.1.5 Needle guide (Fig. n/30)

- This guide avoids the deflection of the needle away from the hook point (Otherwise there would be skipped stitches in the inside seam of the pocket bottom edge)
- The distance in the lower reversal position of the needle bar amounts to 0.05 mm
- For correcting, modify the position of the needle guide
- Check the position of the needle guide when correcting the needle bar height and in case of a needle thickness modification above 0.2 mm

2.1.6 Needle thickness change

- Check following adjustments

a) in case of modification of the needle thickness above 0.2 mm
   hook guard
   needle guide

b) when changing between the needle thickness ranges of 80-110 and 120-140 check furthermore: the distance between the hook and the needle

2.1.7 Throat plate with respect to the needle

- The throat plate together with the hook guard should avoid the contact between the needle and the hook
- Lateral distance on the right hand side between the needle and the stitch hole: about 0.3 mm
- For correcting, modify the position of the throat plate

2.2 Needle bar rocker, throat plate

2.2.1 General information

- Releasing the zigzag function by alu bands on control cam
- For a complete oscillating movement of the throat plate and of the needle bar, the needle bar is moved up and down 2 times
  This ratio change for 1:2 is obtained by an additional toothed wheel transmission
- Never tighten fully the screw (fig. A/31) on the oil sump.
  Owing to the compressed spring the stop pin would then impede the rotation of the coulisse for the zigzag function.
- For the following functions:
  swing out the clamping table, move service switch in position 4 (see Operating Instructions 5.1)
  remove oil sump cover

2.2.2 0 point

- In this position the lever (fig. N/33) is pulled by the spring against the moved-in cylinder
- When sewing without zigzag the needle bar should not move to and fro
- For correcting, loosen the lever and turn the coulisse (fig. R/31)
- For controlling:
  Introduce the tommy spanner in the screw (fig. 31) and turn the handwheel. The adjustment is correct if the spanner does not move.

2.2.3 Lever position (fig. 33)

- Should be vertical when the tacking stitch is disconnected
- For correcting, loosen the screw and turn the lever on the shaft (fig. h/j/33)
- In case of wrong adjustment
  the oscillation movement of the needle and of the throat plate will not be synchronous.

2.2.4 Needle bar (x-y position)

- The needle should stitch in the centre of the 2 mm hole of the gauge 804 40 027 0 (fig. 34)
- For correcting in the direction of the x-axis:
  1. Release the setting block (ensure horizontal position) (fig. e/35)
  2. Loosen the screw (ensure that it is flush) (fig. A/36)
  3. Loosen the thread take-up lever crank and the bearing with screws, fig. m/n/37 (the position screw should be situated on the flat surface of the crank pin and it should not be used for clamping).
  4. Displace the top feed drive, if required
  5. Displace the needle bar rocker in axial direction
- For correcting in the direction of the y-axis:
  Loosen the screw and turn the shaft, (fig. A/36)
  (When loosening the screw, fig. B/31, the throat plate also will be reset synchronously with respect to the needle bar)

2.2.5 Throat plate

- Align in y-direction against the middle of the needle
  Align in x-direction so that on the right hand side the distance to the needle amounts to about 0.3 mm
  For correcting, adjust the throat plate accordingly
- In the height the distance of 0.5 mm between the stitch hole and the workpiece support should be adjusted by the eccentric after loosening the screw, fig. 38.

2.2.6 Zigzag movement

- The ascending and descending movement of the needle bar should be synchronous with the oscillating movement.
  This is ensured if the needle is not deflected when it stitches in the material. Make a test with paper.
- For correcting, loosen the screws and turn the toothed wheel on the hook driving shaft (fig. C/31)
  (Following the adjustment, shift the toothed wheel again to the left against the pump).
- For controlling:
  Move the needle to its upper position and, for the tacking stitch, operate the lever by hand. The adjustment is correct if at this moment the needle bar and the throat plate do not perform a zigzag motion.
- If the adjustment is wrong
  the needle may break.

2.2.7 Zigzag width

- On the paper it may amount up to 4.5 mm
  In the fabric this will result in a zigzag width of about 3 mm, depending on the fabric, on the thread and on the thread tension
- For correcting, turn the stop screw (fig. P/32)
- For controlling:
  Operate the zigzag mechanism by hand and stitch on the paper by turning the handwheel.

2.3 Presser foot

2.3.1 General information

- Holds down the material only during the loop formation
- In case of several material plies, as for instance for bartacking, the stroke position can be modified.

2.3.2 Presser foot stroke

- The correct stroke for almost all fabric types is ensured in the position C (corresponding to a stroke of about 4 mm)
  position A - minimum stroke
  position F - maximum stroke
- For adjusting:
  Press-in the button and turn the handwheel until it catches.
  Continue turning until letter C appears in the window, (fig. J/32)

2.3.3 Presser foot movement
- The presser foot should rise only after the loop stroke
- After loosening the 2 slit screws and 1 screw at the line mark of the scale ring, (fig. A/37), turn the eccentric on the shaft accordingly
- In case of wrong timing skipped stitches may occur.

2.3.4 Presser foot height
- In the lowest position, corresponding to the minimum fabric thickness (not in the bartack), make the adjustment by turning the button (fig. A/2)
- A wrong foot height may cause seam ruffling, skipped stitches and material displacements.

2.3.5 Stroke position adjustment
- For avoiding fabric ply displacements, mainly in the tacking area
- Regulate by the rotary knob according to the fabric thickness in the tacking area (fig. S/2)
- The timing is done by the alu-bands (see 7.2)

2.4 Bobbin case lifter

2.4.1 General information
- The bobbin case is lifted by the lifter finger at the moment of the thread passage
- The possibility of lowering the thread tension level permits to reduce the thread stress and the seam ruffling,
- A wrong adjustment will cause formation of eyelets on the seam underside and thread breakage.

2.4.2 Lifting moment
- Pre-adjustment:
  The lifter finger should reach its front turning point, when, after picking up the loop, the hook point stands in the "3 o'clock" position
- For correcting, loosen 2 screws and turn the shaft, (fig. C/51 and W/39)
- Final position
  During the manual sewing observe the thread passage and correct the timing accordingly.

2.4.3 Lifter finger way
- It should be sufficient to ensure that the thread passage between the bobbin case and the lifter finger is not hindered.
- By a special spanner set the eccentricity for 3 mm, fig. 40 (The nut is flush with the outer edge of the shaft)
- Pay attention to a slight play between the lifter finger and the carrier of the bobbin case holder.

2.4.4 Lifting way

- This should correspond to the thread thickness
- Correct by means of the lifter finger, fig. 2/40
- Lifting way insufficient: no bobbin case lifter function
- Lifting way excessive: much noise,
  the bobbin case is thrown against the other side of the nose, jumps back and clamps the thread

2.5 Thread tension spring

- Basic adjustment of the spring way:
  The thread tension spring should be released when the needle eye penetrates in the material
- Final adjustment of the spring way:
  Adjust according to the seam pattern
- For correcting:
  Loosen the screw and turn the bolt (fig. a,b/41a)
- Adjust the spring tension according to the seam pattern
  For correcting
  loosen the screw and turn the bolt (fig. a,b/41b)

2.6 Oil lubrication

2.6.1 General information

- In the sewing head the 5 feeding wicks should not touch the back feeding wick
- In order to avoid that the oil returns from the sump to the hook box when the machine does not operate, there is a hose above the hook driving shaft
- The sewing head lubrication cannot be regulated
- A plastic cap on the hook avoids that the vacuum pump sucks dust and fluff in the hook box
- The oil projection screw ensures sufficient lubrication also with low oil level
- The oil coming out of the brass should only partly drop in the hole.
  Bend the tube accordingly (fig. D/42)

2.6.2 Function of the sewing head lubrication (fig. 42)

- The hook shaft conveys the oil flowing from the oil collector via spiral grooves from the sump to the cavity (the nonreturn valve avoids the backflow of oil when the machine is out of operation)
- Further oil flow:
  1. One part of the oil lubricates via the 5 wicks the mechanical parts in the sewing head
     One wick returns the excessive oil from the sewing head to the hook box
  2. The major part of the oil returns directly to the hook box

2.6.3 Function of the hook lubrification (fig. 43)
- The oil returning from the sewing head fills the hook box up to the level of the overflow pipe. The suction pump returns the excessive oil to the oil sump
- The hollow hook shaft conveys the oil via the spiral grooves of the stationary shaft to the hook cavity. From there the oil passes via a perforation into the lower cavity
- One part of the oil is returned via an oil pipe to the hook race, but the major part of the oil returns again into the hook box.

2.6.4 Visual control
Check the oil level at the oil sight glass while the machine is out of operation (B/42)
- Check the oil supply to the sewing head at the sight glass while the machine is in operation (fig. A/42)

2.6.5 Regulating the hook lubrication
- The regulating screw serves to set the vertical oil pipe (max. quantity) nearer to the rotary axis (lower oil quantity) (fig. A/43)
  The regulation of the oil from the maximum to the minimum quantity is ensured by 3/4 of revolution of the regulating screw
- For pre-adjusting, loosen the screw and turn in until the oil pipe moves.
  Turn the screw still about 1/4 of a revolution
- Let the sewing machine operate for about 1 minute and then, by means of paper, check whether enough oil is projected at the hook
- Correct according to the test result.
  Turn clockwise: less oil
  Turn counter-clockwise: more oil
  If the screw is tightened excessively, the oil tube will be damaged.

2.6.6 Oil change
- 1st oil change after about 1000 hours of service
- Loosen the draining screw and drain the oil
- Clean the oil sump and the breather tube
- Turn in the draining screw with new gasket
- Fill in fresh oil

2.6.7 Top up the oil (fig. C/42)
- before the oil level sight glass shows "leer" (empty)
- Fill with "Spinesso 10" oil of ESSO up to the mark "voll" (full)

2.7 Safety clutch (fig. A/32)

2.7.1 General information
- This clutch should act when the hook blocks
- If the hook jams:
  Engage the clutch and block by a pin of about 5 mm
  Turn the handwheel until the hook operates freely

2.7.2 Adjusting the torque

- This is adjusted in our factory by screws by using a torque spanner
- For pre-adjusting, disengage the clutch, tighten the screws fully and loosen then by a 1/4 revolution, (fig. B/32)

2.8 Toothed belt - V-belt

2.8.1 Toothed belt

- Guidance
  The two setting screws serve to avoid that the toothed belt jumps out of the pulley when lifting the sewing head
- With the sewing head being lowered, set the distance with respect to the toothed belt for 0.5 mm by the setting screw
- Adjust the tension by the tension roller

2.8.2 V-belt

- Guides
  These serve to avoid that the belt jumps out of its pulley when the sewing head is being lifted
  Adjust the guides accordingly
- Tension
  For adjusting, loosen the supporting screw and swing the motor while the sewing head is lowered
  Following this adjustment check the stitch length.

2.9 Upper arm positions

2.9.1 General information

- For checking the adjustments: swing-out the clamping table and operate the step button while the service switch is in position 4 (see Operating Instructions 5.1)
- The springs avoid that the sewing head descends when the machine is switched off.
- When lifting the arm, the vent valve is active.

2.9.2 Upper position

- This is determined by the piston rod way when the "lower" position is correct
- The switch b18 is operated

2.9.3 Half-down position

- Equilibrium of forces by:
  Counter-air for large cylinder and admission of the small cylinder
- Releasing by b18 Free, determination of position by stop (fig. A/44)
- Adjust the distance of about 10 mm between the needle and the inner frame by the stop.
- For checking, swing-in the clamping table and move the machine in the step 7 by operating the step switch (service switch in pos. 2)
- For avoiding the "bending" of the arm, the b18 must be free in due time. Adjust the tripping cam accordingly (fig. B/44)

2.9.4 Quite down position (figs. C/44 and 45)
- Adjust by using the gauge 804 40 028 0 and by turning the piston rod
- Pay attention to the operation of the switch b19.

2.9.5 End position damping
- In order to reduce the wear of the cylinder and of the mechanical parts the speed is lowered towards the stroke end.
- When adjusting do not tighten the throttle screws excessively, since otherwise the piston rod will not reach the end position.

3. Sewing machine 804-2

3.1 Hook
- Set the loop stroke for 2 mm by using the gauge.
- Set the needle as close as possible, but avoid the contact.

3.2 Needle bar, throat plate

3.2.1 Needle bar height
In the loop stroke position the hook point stands against the middle of the groove.

3.2.2 Throat plate
- Adjust with respect to the middle of the needle

3.2.1 **Presser foot movement** (fig. B/46)

- The presser foot should be lifted only after the loop stroke.
- Remove the plastic cap and turn the stroke eccentric on the arm shaft accordingly.
- Wrong adjustment can cause skipped stitches.

3.3.2 **Sewing foot height or lower stroke position**

Rule:
The sewing foot should slightly touch the material when the foot has reached its lowest position

Correction:
Loosen the wing screw D/81 and turn the wheel A/81 accordingly.
(The total setting range of 5 mm can only be used, if the wheel B/81 for the "upper stroke position" is in position 10).

3.3.3 **Upper stroke position**

Explanation:
The sewing foot can be moved in the upper stroke position when sewing sections with a higher material level - e.g. in tack areas. But the machine must include an additional equipment for this purpose.

Rule:
The sewing foot should slightly touch the "thicker" material sections, when the sewing foot is in the lowest position.

Correction:
Turn the wheel B/81 accordingly
(The highest stroke position is effective when the wheel is in position 10)

3.3.4 Stroke position limitation

- The presser foot (in the lowest position with maximum stroke) should have a space of 0,5 mm to the stitchhole
- Set the presser foot bar accordingly.

3.4 Bobbin case lifter

3.4.1 General information

- The bobbin case is lifted by the lifter finger at the moment of the thread passage.
- The possibility of lowering the thread tension level permits to reduce the thread stress and the seam ruffling.
- A wrong adjustment will cause formation of eyelets on the seam underside and thread breakage.

3.4.2 Lifting moment

- Pre-adjustment:
  The lifter finger should reach its front turning point when the needle bar stands 1 mm behind the topmost position.
  Adjust by means of the eccentric (fig. A/47).
- Final adjustment:
  During the manual sewing watch the thread passage and rectify the eccentric position accordingly.

3.4.3 Lifting way (fig. 47/48)

- This should correspond to the thread thickness
- Correct by means of the lifter finger
- Lifting way insufficient: no bobbin case lifter function
- Lifting way excessive: much noise,
  thread passage at the lifter finger is hindered,
  the middle part is thrown against the other side of the nose, jumps back and clamps the thread.

3.4.4 Finger depth

- Adjust it as slight as possible, so as not to hinder the thread passage in the finger area.

3.4.5 Finger height

- Can be adjusted by the eccentric (fig. B/47) so as to compensate the manufacturing tolerances.

3.5 Lubrication

3.5.1 Function (fig. 49)

Oil supply to the sewing head
The hook driving shaft G supplies the oil from the sump to the sewing head via the spiral grooves and via the pipe R.
The nonreturn valve H in this pipe should avoid the return of oil when the machine is stopped. The sight glass A above the pipe permits to control the oil supply. A part of the oil supplied to the sewing head is used for lubricating the mechanical parts in the sewing head. The other part of the oil flows through the pipe K to the replenishing piece F. From here the oil passes through the wicks for lubricating the arm shaft bearing and the foot lifting mechanism.

Oil return from the sewing head
The oil thrown off in the sewing head is collected in the lower part of the sewing head. There is the suction pipe L with the metal filter. The pump M on the hook driving shaft sucks the oil through this pipe and returns it.

Oil supply to the hook
The pump M sucks not only the oil from the sewing head but also the oil from the sump. This oil passes through the pipe N with the rubber ring into the pump. The rubber ring avoids that the pipe end lies directly on the ground of the oil sump. Otherwise dirt particles might be sucked and they would obstruct the duct to the hook.
The pump M supplies the sucked oil via a pressure pipe O to a duct. From there the oil passes via an oil projection disc to the hook. The oil that is not required for the lubrication of the hook passes before through the hole P of the pressure pipe.

3.5.2 Control of the oil level and of the oil supply

- Control the oil level at the oil sight glass E/49 with the machine being stopped.
  Replenish when the oil level reaches the middle of the sight glass A/49 (see 3.5.6).
- Control the oil supply to the sewing head at the sight glass A/49 with the sewing machine being in operation.

3.5.3 Regulating the lubrication of the sewing head

Rule:
The set oil quantity can be considerably greater that the really required oil quantity.
(The pump sucks the oil from the lowest point of the head and returns it to the sump).

Preadjustment:
Tighten the regulating screw B/49 completely and loosen it then by a 1/2 revolution.

Control:
- Let the sewing machine run on the spot for approx. 2 minutes
  Proceed as follows:
  Swivel out the clamping table
  Turn on the main switch
  Operate the step-key: sewing head lowers
  Operate key "Start free": sewing machine runs
  After 2 minutes: operate key "Stop"
- Hold a piece of paper between pressure bar and the casting wall
- Let the sewing machine run in intervals with the keys "Start" and "Stop"
  The adjustment is correct, if enough oil is thrown onto the paper.

Correction:
Turn the regulating screw B/49 accordingly.
Turn the screw counter-clockwide for more oil
Turn the screw clockwise for less oil.

3.5.4 Regulating the hook lubrication

Explanation:
The hook can only be lubricated when the oil projektion disk is located in the cavity area of the hook.

Rule:
The hook should be lubricated perfectly with the lowest possible quantity of oil.
(The oil consumption will then be accordingly lower).

Preadjustment:
Tighten the regulating screw C/49 completely and loosen it then by 1/8 revolution.

Correction:
Turn the regulating screw C/49 accordingly.
Turn the screw counter-clockwise for more oil.
Turn the screw clockwise for less oil.

3.5.5 Oil change

Change the oil after the first 1000 service hours or after the first 6 months:
- Turn out the screw D/81 for draining the oil.
- Remove the oil sump cover.
- Clean the oil sump and check whether the aerating pipe is free.
- Fit the draining screw and the oil sump cover (use new gaskets).
- Fill in ESSO SP-NK 10 oil.

3.5.6 Oil replenishing

- Proceed to the oil replenishing when, with the machine stopped, the oil level has dropped down to the middle of the sight glass.
- Fill in ESSO SP-NK 10 oil through the filling sleeve up to the upper brim of the oil sight glass E/49.
  It is also possible to use other oil brands with the following features:

  Viscosity at 40° C : 10 mm^2/s
  Point of inflammation: 150° C

3.6 Toothed belt - V-belt

See 2.8.

3.7 Upper arm position

See 2.9.

4. Thread cutter 804-1

4.1 Functions

- In the 1st position:
  The engaged thread cutter magnet returns the thread pulling knife fully.
- The machine is operated at the cutting speed.
- The "red position" ist left:
  Thread cutter magnet Off, thread tension magnet On, thread puller On.
- The thread pulling knife is moved mechanically to the counter-knife.
  The upper and the lower thread are caught, thread puller Off, cutting while the thread take-up lever is in its upper position and clamping the lower thread.
- In the 2nd position:
  The drive stops, thread tension magnet Off.

4.2 General information

- The length of the upper thread can be regulated by the thread puller.
- After a skipped stitch the upper thread is not cut.
- For adjusting the thread cutter, swing out the clamping table and move the service switch in the position 4 (see Operating Instructions 5.1).

4.3 Lateral alignment of the thread pulling knife
- with respect to the bobbin case nose and the free cut in the bobbin case
- The thread pulling knife should pass along the nose at a safe distance
- For correcting, loosen the screws (fig. A/50)

4.4 Height of the thread pulling knife
- Set the knife at the bobbin as closely as possible, but without contact, (thus the thread will be safely caught).
- Correct at the support by the 2 setting rings (fig. A/51)

4.5 Control cam position (fig. 39)
- determines the moment when the thread pulling knife moves in position
- When the thread take-up lever is in its upper postion, the hole of the control cam should lie on the connection line between the shaft and the roller
- For correcting, loosen 3 screws (fig. S/39)
- If the control cam position is wrong, the needle thread loop will not be caught.

4.6 Counter-knife position with respect to the thread pulling knife (fig. 50)
- Set the counter-knife on the support as far as possible to the rear
- Press the counter-knife support to the rear against the cast iron wall and align laterally so that the cutting contact begins when the knife is half overlapped. With the increasing overlapping the pressure will grow (If the thread pulling knife cannot be moved by hand sufficiently: modify the stroke position by turning the armature)
- Correct by displacing the support or the counter-knife

4.7 Swinging range of the thread pulling knife
- When the armature is moved out, the back of the thread pulling knife should be flush with the cutting edge of the counter-knife (fig. 52)
  (The position of the thread pulling knife moved out results then from the lowest point of the control cam)
- Correct by turning the armature (fig. B/51)
- In case of wrong adjustment
  the knife cannot be returned sufficiently.

4.8 Roller lever (fig. 39)
- When sewing, the rotating control cam should not touch the roller lever
- With the thread take-up lever being at its topmost point and with the armature being moved out, set the distance between the roller lever and the control cam for 0.1 mm
- For adjusting, hold a thickness gauge (or a strip of paper) between the roller lever and the control cam

4.9 Lower thread clamp (fig. C/50)
- Ensuring that the lower thread does not get into the hook race, that at the sewing start the lower thread is better caught by the upper thread and that it is pulled up.
- After loosening the screws set the spring parallel and so that it slightly presses against the thread pulling knife
- For controlling, cut the thread manually by the thread cutter and pull the lower thread out of the clamp

- For correcting, displace the clamp
- In case of wrong adjustment:
  there will be sewing start problems
  there will be long lower thread ends at the sewing start
  the hook can be jammed

4.10 1st position (fig. 53)
- In this position and when the needle is descending, the lower edge of the eye of the needle should be flush with the hook cover ring
  This corresponds to the lowest position of the control cam
- Set the red magnet at the synchronizer on the arrow mark
- Check the position by the stop button
  (see Instructions for Operators 5.1.)
- In case of deviations, turn the red magnet accordingly

4.11 2nd position (fig. 53)
- This corresponds to the topmost position of the thread take-up lever
  (control cam at topmost point)
- Set the 1st yellow magnet in the operating direction on the arrow mark
- Check the position by the stop button and repetition button (see Instructions for Operators 5.1)
- In case of deviations turn the yellow magnet accordingly
- Set the 2nd yellow magnet against the 1st magnet

4.12 Thread puller
- Connect: when leaving the red position
- Disconnect: short before cutting, when the thread pulling knife presses against the switch
- Adjust the pre-advancing way by the clamp according to the desired thread length
  Adjust the clamp
- Operate the switch
  The tread pulling knife should press against the switch about 10 mm before the beginning of the cutting edge overlapping

4.13 Thread tension lift (fig. 54)
- When lifting the tension the plate is pulled towards the upper arm
- When lifting the tension:
  Distance between plate and upper arm 0.1 mm
- For correcting, displace the bar (fig. V/54)

5. Thread cutter 804-2

5.1 Functions

In the 1st position - about 4 mm behind the lower needle position:
- The thread cutter magnet is switched on and presses the driving segment against the control cam.
- Release of the thread tension
- Rotation of the machine at the cutting speed

When the driving segment of the magnet is pulled into the recess of the control cam:
The thread pulling knife is moved into the loop of the upper thread. The upper thread and the lower thread drop behind the thread pulling hook of the knife.

When the driving segment is pressed out of the control cam recess:
The upper and lower thread are pulled against the counter knife and they are cut when the thread take up lever is in its upper position.

Short behind the upper position of the thread take-up lever:
- The motor stops
- The magnet for the thread tension release is switched off
- The magnet for the thread cutter is switched off.

5.2 General information

- It is not possible to swing the thread pulling knife sufficiently to the rear, if the cutting speed is too high. In this case the bobbin thread is cut generally too short.
- The length of the upper thread is influenced by the pretension.
- After a skipped stitch the upper thread is not cut.
- Exchange blunt knives in pairs.

5.3 Preparing the sewing machine for the adjustments

- Swivel out the clamping table
- Turn on main switch
- Operate Stop-key: sewing head lowers.

5.4 Position of the base plate

Explanation:
The height of the base plate A/59 determines the distance of the thread pulling knife in relation to the hook.

Adjustment:
- Remove the hook
- Loosen the nut a/59
- Loosen the hexagon screw d/59
- Slip the gauge 396 35 105 0 onto the shaft (fig. 67a)
- Press the base plate A/59 upwards against the gauge
- Tighten the nut a/59 and the hexagon screw d/59.

5.5 Control cam position (fig. 58)

Explanation:
This position determines the moment of moving the thread pulling knife in and out.

Rule:
The driving segment should touch the control cam in the last third of the small surface when the driving segment is pressed against the control cam while the thread take-up lever is in its upper position.

Correction:
After loosening the screw, turn the control cam on the shaft

5.6 Distance between the driving segment and the control cam (fig. 63)

Rule:
The distance should amount to 0.2 mm when the driving segment is fully returned.

Correction:
Loosen the screw a/63 and turn the rod of the magnet accordingly.

Note:
- If the play is excessive, the thread pulling knife cannot travel far enough to the rear and cannot seize the threads.
- When proceeding to this adjustment check simultaneously the function of the spring A/63 in the driving segment and the easy operation of the driving segment.

5.7 Lateral position of the thread pulling knife (fig. 61)

Rule:
The point of the thread pulling knife should stand against the middle of the needle.
(so that the thread pulling knife enters the loop of the upper thread in its middle.)

Correction:
Loosen the 2 screws b/59 and d/59 and shift the base plate B/86 sideways.

5.8 Position of the thread pulling knife in relation to the counter knife carrier (fig. 62)

Rule:
The distance between the pulling hook of the thread pulling knife and the carrier of the counter knife should amount to about 0.3 mm when the driving segment is fully returned.

Correction:
Loosen the two screws and modify the position of the thread pulling knife accordingly.

5.12 First position

Explanation:
The thread cutter will be activated in this position when the signal "seam end" is produced.

Rule:
In this position the needle bar must have ascended 4 mm from its lower dead point.

Control:
- Operate key "Start free": sewing machine runs.
- Operate key "Stop": machine stops in the first position.

Correction:
Alter the position of the red magnet on the position maker (fig. 53) accordingly.

5.13 Second position

Explanation:
The cutting process is terminated in this position

Rule:
In this position, short behind the upper position of the thread take-up lever, the overlapping of the knife blades should amount to about 0.5 mm (fig. 64)
(At this degree of overlapping the driving segment does not still touch the topmost point of the control cam).

Control:
- Operate key "Start free": sewing machine runs.
- Operate key "Stop": machine stops in the first position.
- Operate key "Repitition": machine runs to the second position.

Correction:
- Alter the position of the 1st yellow magnet - seen in direction of rotation - on the position maker (fig. 53).
  Then set the 2nd yellow magnet against the 1st one.

5.9 Position of the counter knife carrier in relation to the thread pulling knife (fig. 62)

Rule:
The lateral Y distance between the counter knife carrier and the pulling hook of the thread pulling knife should be as short as possible.
Furthermore, the lug A of the counter knife carrier should stand under the pulling hook. The lug A may be flush with the pulling hook or it can project slightly.

Correction:
Loosen the two screws b/62 and modify the position of the counter knife carrier accordingly.

Note:
In case of a wrong adjustment the needle thread can remain hanging on the pulling hook. This can lead to the thread breakage or to the formation of eyelets.

5.10 Position of the counter knife in relation to the thread pulling knife (fig. 61)

Explanation:
The position of the counter knife determines the knife overlapping and the moment of cutting.

Rule:
When the thread take-up lever is in its upper position the blades should stand short before their overlapping.
(so that the thread is cut after the upper position of the thread take-up lever).

Correction:
Loosen the screws and modify the position of the counter knife accordingly.

5.11 Pressure of the counter knife against the thread pulling knife

Rule:
The knives should cut perfectly with the lowest pressure possible.

Control:
- Place the thread behind the pulling hook of the returned thread pulling knife.
- Move the thread pulling knife towards the counter knife.

Correction:
Turn the screw a/62 accordingly.

6. Quick motor and control

6.1 Adjusting the clutch play

- Remove the fan hood
- Introduce the U-key bow in the holes of the fan,
- Turn the fan to the right until the belt pulley can just still be turned,
- Turn the fan with the U-key 120° to the left (the distance between the cap nuts should amount to 0.5 mm)
- Remove the U-key bow and replace the fan hood.

6.2 Adjusting the Quick motor speed

6.2.1 General information:

- Make adjustment when exchanging the Quick control and the motor,
- For the adjustment it is necessary to have:
  1 tachometer
  1 Adler check box (fig. 65)
- Consequences of wrong speed:
  Heavy wear,
  Lower performance
  Inexact positioning
  Incorrect operation of the thread cutter
- The speed indications in the brackets apply to measurements done by Deumo tachometer.
  In case of other tachometers the value must be determinded by the diameter ratio handwheel - checking wheel
- The potentiometers r1 for slow sewing start and r2 for slow sewing should not be adjusted in the Adler control box.

6.2.2 Swinging out the form kit

6.2.3 Set the switches on the check box in proper position (fig. 65)

- Off: switch above, On: switch below,
- "Drive free" Off,
- "Magnet yellow and red" Off
- "Drive off" Off,
- "Balancing resistor" Off
- "Position red" On,
- "Speed limitation" on 11.

6.2.4 Connecting check box to the control box

- Loosen the plug M and connect the 10-pole plug of the check box with the control box,
- Loosen the 4-pole plug and connect it with the check box,
- Connect the 4-pole plug of the check box with the control box,
- The 3- and 7-pole plugs remain connected with the control box.

6.2.5 Switching on the automatic sewing machine
- Turn on the main switch a1,
- Move the service switch in position 4,
- Operate the step switch for lowering the sewing machine,
- Wait for 5 minutes - the electronic system must reach the operation temperature.

6.2.6 Adjust P2 and pre-adjust P3 (fig. 66)
- Remove the cover,
- Turn P2 to the left up to the stop,
- Set P3 to the right up to stop,
- Move the service switch in the Quick box in the "service" position (fig. A/67).

6.2.7 Pre-adjust P4 (fig. 66)
- "Drive free" On and Off,
- Set with P4 90rpm on the handwheel
  804-1: (360)
  804-2: (303)

6.2.8 Set P3 for the maximum speed (fig. 66)
- "Drive free" On,
- "Balancing resistor" On,
- Set with P3 1350 rpm on the motor shaft.

6.2.9 Set P4 for the run-in speed (fig. 66)
- "Drive free" Off,
- "Balancing resistor" Off,
- Set with P4 120 rpm at the handwheel
  804-1 (480)
  804-2 (404)
- "Magnet yellow and red" On - Motor positions on red
- "Position yellow" On - Motor positions on yellow.

6.2.10 Set P1 for the cutting speed (fig. 66)
- "Magnet yellow" Off,
- "Drive free" On and Off,
- "Magnet red" Off,
- Set by P 1 on the handwheel
  804-1: 150 rpm (600)
  804-2: 160 rpm (540)
  "Magnet red and yellow" On - the motor positions on yellow

6.2.11 Set P2 for max. speed (fig. 66)
- "Drive free" on
- set with P2 at the handwheel
  804-1: 3500 RPM (14.000)
  804-2: 3750 RPM (12.660)
- "Drive free" off - motor is positioning on yellow

6.2.12 Moving the automatic machine in the starting position
- Switch off the automatic machine
- Remove the checking box
- Move the service switch in the Quick box in "service" position
- Fasten the cover by screws
- Establish plug connections
- Swing-in the form kit
- Move service swith in position 1

7. Control cam

7.1 Adusting the stitch length

- It ist regulated by the Simplabelt disk by modifying the control cam speed
- Adjust by the turning handle according to the value specified in the table
- A new zero-positioning of the scale is necessary after tensioning or changing the V-belt
  In this case:
  Turn the handle to the left until the V-belt stands on the minimum diameter of the Simplabelt disk
  Loosen the screw and turn the entire scale until the indicator stands on 1 (fig. S/7).

7.2 Alu-band coating (fig. 68/69)

7.2.1 General information

- The inductive switches are tripped by the alu-bands on the races of the control cam
- The reaction time of the signals corresponds to a distance of about 25 mm (depending on the control cam speed)
- The reaction way grows in the course of the service. Check the tripping point "Seam end"
- When modifying the stitch lengths by more than +/- 10 % it may be necessary to rectify the tripping points
- After a repeated supply of form kits check the tripping points and rectify, if necessary

7.2.2 Tripping points (fig. 68/69)

Race	804-2 No.	804-1 No.	Designation	Remarks
b25	1	1	Starting position	- Alu-band length 70 mm "death travel" of about 35 mm in the control cam - In case of major deviations the position of the folding equipment with respect to ZE ist not correct
b24	2	2	Seam beginning	- Alu-band length 40 mm - Signal too early: Sewing foot collides with inner frame Starting problems by short stitches - Signal too late: Bartack too short or not complete
b25		7	"left corner" (lift inner frame)	- Alu-band length 60 mm Distance to the initial and of the zigzag-band annouts to 40 mm - Signal to erly (prior to zigzag): machine stops and the red LED's are blinking - Signal too late: needle and presser foot collide with inner frame
b26		6/11	zigzag On zigzag Off	- Fault consequences: Short or long stitches in the outer or inner seam No zigzag in the bartack area (only short stitches) - In the r/h bartack the zigzag ist disconnected by the seam end
b36		3/5/10 4/9/12	Stroke position resetting On Stroke position resetting Off	- Fault consequences: Skipped stitches, thread breakage, material displacement, no thread cutting (point 12)
b27	13	13	Seam end	- Alu-band length 50 mm - Signal too early: No complete bartack - Signal too late: Sewing machine collides with inner frame
b35			No zigzag function	- Coating on the entire race

7.2.3 Coating

- With the machine being switched off, move the machine by the crank in the specified tripping points and mark these on the control cam. When coating, remember that the tripping way amounts to about 25 mm
- Rough checking of the tripping points:
  Main switch On, service switch in the switch box in position 3 and operate the machine by the step switch
  (the sewing head remains in upper position)
- Precise checking of the tripping points:
  a) During the automatic process
  b) According to seam pattern
- Correct according to deviation

7.3 Removing the control cam

- Swing back the inductive switch
- Remove the scanning roller
- Separate the plug connection K
- Release the coupling bar
- Swing away the lever after having turned out the bolt
- Loosen the fastening sleeve and remove the control cam
- For fitting, proceed in inverse order.

7.4 Eccentric rings of the control cam (fig. 71)

7.4.1 General information

- For compensating the manufacturing tolerances (The hole is not in the centre of the groove)
- The setting values of the rings are specified in the table (fig. 70)
  Example: 6/-12
  6: Position of inner ring with respect to outer ring
  12: Position of outer ring with respect to control cam
- The setting values must be determined only in case of re-supply of the form kit
- In case of wrong adjustment the seam distances and the edge distances are not correct

7.4.2 Eccentricity

- This is determined by the position of the inner ring with respect to the outer ring
  Point mark on 24: eccentricity = 0
  Point mark on 12: eccentricity = 0,2 (max)

7.4.3 Position of the eccentricity

- This is determined by the position of the outer ring with respect to the control cam
- Set the ring with respect to the line mark on the control cam

7.4.4 Determination of the setting values

- This is only required in case of re-supply of the form kit
- Determine the optimum result by trials

8. Camping table

8.1 Outer frame (fig. A/72)

8.1.1 General information

- Includes side slide, front slide, corner slides
- Clamps the material during the transportation
- During the folding (step 3-7) the air is admitted to the cylinder from 2 sides
- Includes the No. of the form kit
- Never loosen the screws marked with red colour
- When resetting the fabric thickness, the position with respect to the inner frame changes.

8.1.2 Sponge rubber coating

- On the workpiece support for safe clamping of the material during the transportation
- Clean the surface to be coated by a cleaning agent and, by means of glue, apply a 1 mm thick sponge rubber

8.1.3 Switch operation

- b1 for outer frame on inner frame
  When operating too early, the pocket will not be folded, because the slides above the middle slide will advance
  The switch must be safely operated in the last moment
- b7 for outer frame below
  When operating too early, the outer slides will return already before reaching the lower position
  Then the folded material cannot be kept between the middle slide and the mask and the slides will pull it out again
  The switch should be operated when the distance from the outer frame to the workpiece support amounts to 5 mm
- b6 for outer frame above
  This is required for advancing the ZE

8.1.4 Throttles

- The outgoing air is throttled for regulating the speed of the ascending and descending outer frame
- Excessive throttling will reduce the machine performance

8.2 Inner frame (fig. B/72)

8.2.1 General information

- Clamps the material during the transportation
- Includes the no. of the form kit
- Never loosen the screws marked with red color

8.2.2 Position of the outer seam with respect to the inner seam in case of a double seam

- Outer seam:
  Adjust by the stop (fig. H/72)
- Inner seam:
  Modify the cylinder position (fig. G/72)

8.2.3 Height of the opened inner frame

- For moving-in the ZE clamp there must be enough space between the middle slide and the inner frame
- Distance from the front edge to the workpiece support about 50 mm
- Adjust by turning the piston rod (fig. A/74)

8.2.4 Replacing the Delrin

- The Delrin should clamp the material as far as possible in the direction of the needle
- Cut roughly Delrin and flint paper and paste together
- Paste Delrin on a previously cleaned surface of the inner frame (not on rubber)
- By means of a short needle mark the seam line on the Delrin
  Delrin will break if the needle penetrates too deep
- Trim the Delrin about 0.7 mm from the mark inwards and grind with emery
  Be particularly careful in the bartack area
- Check the distance from the needle to the Delrin and retouch the Delrin, if required
  Excessive distances can cause skipped stitches
  In case of contact there will be a danger of thread breakage

8.2.5 Lifting in case of a double seam

- Function sequence released by the signal "left corner"
  1. Lifting the inner frame
  2. Inner frame on "inner seam"
  3. Inner frame down
- For the further operation of the machine, the switch b5 "inner frame slide at the rear" must be operated
- The lifting value is determined by the stop operated by the cylinder,
  If the lifting height is not sufficient, the material will be pulled inwardly (fig. B/74)
- When lifting, pay attention to the play between the inner-frame-stops, and the inner frame (fig. I/72).
- The lifting should be done short before the zigzag seam begins (see alu-band coating 7.2)

8.3 Middle slide

8.3.1 General information

- It determines the pocket contour
- In order to ensure equal edge distances also with different fabric thicknesses, there are 4 different middle slide sizes per form
- When working without material, the middle slide will be easily scratched
- By using the instant vent valve the middle slide moves backwards faster
- Is operated together with the front inner-frame-stop
- For changing, loosen the 4 screws on the holder
- Will be scratched if, when replacing the Delrin, the flint paper is pasted beyond the upper edge of the pocket

8.3.2 Depth of the middle slide
- This determines the edge distance at the pocket bottom edge
- Set the eccentric for the value specified in the table (fig. K/72 and 70)
- This value must be determined when form kits are re-supplied

8.3.3 Lateral position
- Determines the edge distances of the side seams
- Set the eccentric on the coupling bar for the value specified in the table (fig. B/73 and 70)
- This value must be determined when form kits are re-supplied
- With this adjustment the position of the folding equipment also is modified

8.3.4 Height of the opened middle slide
- For moving-in the ZE pocket clamp there should be enough space between the inner frame and the middle slide
- The front edge of the middle slide should be located in the middle between the inner frame and the workpiece support
  Adjust by the stop screw

8.3.5 Switches
- Ensure that it is operated for the following positions:
  Middle slide in front position, in rear position, and above

8.4 Mask (fig. 75)
- The fabric part and the folded pocket are clamped between the mask and the middle slide
- If the fabric coating is damaged, apply new thin material
- Replace damaged sandpaper
  The pasted coating should be flush with the upper edge of the pocket (in order to avoid scratches on the middle slide)

8.5 Side slide (fig. D/72)

8.5.1 General information
- The side slide folds the pocket around the middle slide (fig. 1)
- The side slide is mechanically connected with the corner tuckers
- In the position "side slide in front" the piston rod is fully moved-in
  In the position "side slide back" the piston rod is fully moved out
- Do not modify the position of the clamping block on the shaft (fig. B/9)

8.5.2 Side slide in front position
- The lateral distance with respect to the middle slide should correspond to the medium material thickness
- With the service switch being in the postion 2, switch the machine over to the step 3 (outer frame on inner frame) by operating the step button
- Advance the side slide by hand and modify the traction rod length accordingly (fig. L/72)
- Check the function of the "corner tucker"
- If the side slide is not adjusted properly, the fold will be too sharp or to slack

8.5.3 Side slide in rear position
- This position is given after adjusting "side slide in front"
- Pay attention to the switch operation

8.6 Corner tucker (fig. 76)

8.6.1 General information
- Without this slide the folded fabric would project laterally at the pocket opening
- The corner tucker is operated mechanically together with the side slides
- The corner tucker folds the fabric around the 30° edge of the side slide
- Will operate properly only if the positioning depth of the pocket upper edge is correct
- Same elements are used for cl. 804-1 and 804-2

8.6.2 Position of point of rotation (fig. A,B/76)
- Pay attention to the different side slide ways
- Point A for double seam
- Point B for single seam

8.6.3 Overlapping (fig. C/76)
- with respect to the side slide depends on the material
- In step 3 check with material
- For correcting, loosen 2 screws and set the slide accordingly.

8.6.4 Height - distance with respect to the side slide
- Should be as close as possible to the side slide, depending on the material
- For correcting, modify the height of the slide

8.6.5 Starting position
- In moved-in position pay attention to the lateral play with respect to the middle slide
- For correcting, modify the position of point of rotation by turning the threaded bolt (fig. D/76)

8.6.6 Position of the "folding edge" of the side slide
- The material should be folded at an angle of 30°up to 1 mm from the outer edge of the pocket
- For correcting, shift the Z-ledge of the side slide accordingly
- In case of wrong position:
  The corner will not be pushed in sufficiently or the folded material will project at the side

8.7 Front and corner slides (fig. F/72)

8.7.1 General information
- Corner slides are available only for the 4000-pocket-form
- The sequence for the operation of the side slides depends on the pocket form

8.7.2 Alignment
- parallel and lateral with respect to the middle slide
- Adjust the guides accordingly

8.7.3 Spring pressure
- In front position, the slides should be slightly pressed against the middle slide
- Adjust the spring pressure accordingly

8.8 Fabric thickness adjustment (fig. M/72)
- for perfect folding of pockets of different fabric thicknesses
- Adjust by the rotary knob according to the material thickness
- In case of wrong adjustment the fold will be sharp-edged or slack This would result in different edge distances

8.9 Possible reasons for different seam and edge distances

8.9.1 Folding device
- Fabric thickness adjustment in wrong position
- Middle slide scratched
- Wrong middle slide position
- Delrin of the inner frame deflects the needle
- Insufficient lifting height at "inner frame slide on inner seam"
- Prematur operation of the switch b7 for the "lower position of outer frame
- Wrong position of side, front and corner slides
- Damaged slide sheets
- Damaged sandpaper coating of the mask

8.9.2 Sewing machine
- Excessive stitch length
- Presser foot too deep
- In 804-1: Presser foot too deep when resetting the stroke position in the bartacking area

8.9.3 Control cam
- Eccentric rings: eccentricity and their position not correct
- Incorrect alu-band coating for the stroke position adjustment

8.9.4 Material
- Size of the material cuts insufficient or excessive
- The pockets are not "sharpened out" at the opening
- The hemming of the pocket is not rectangular with respect to the longitudinal axis
- The pocket is not positioned properly

8.10 Swinging out the clamping table

- Turn out main switch, shut stop valve
- Pull out guide-roller
- Pull off coupling bar
- Swing back inductive switch
- Swing out clamping table
  The folding kit and a ball element should still rest slightly against the supporting plate

8.11 Form change

8.11.1 General information

- Use the control cam only together with the associated folding kit
- Compare the No. of te form kit parts
- Never loosen the screws marked with red colour

8.11.2 Parts to be changed (see 8.10 and 7.3)

- Outer frame
- Inner frame
- Middle slide
- Mask
- Control cam
- ZE pocket holder

8.11.3 Adjustments

- The values are indicated in the table (fig. 70)
- Adjust middle slide position by the eccentric
- Adjust the lateral position of the folding equipment by the coupling bar
- Adjust the stitch length by the rotary knob
- Adjust the eccentric rings on the control cam

8.11.4 Switch positions in the switch box

- Form switch
- single seam - double seam switch

8.12 Light barrier

- If the workpiece is not ejected, the light barrier will remain interrupted and the ZE cannot move-in
- Changing the lamp
  1. Remove the light barrier after loosening the screws
  2. Remove the cover after loosening the screws
  3. Change the lamp
  4. Replace the cover and fasten the light barrier
  5. Align the light barrier with respect to the reflector

9. Feeding equipment ZE4 with stacker

9.1 Table

9.1.1 Table height

- The front edge of the table, moved-in, should slightly touch the mask and the workpiece support, and the distance between the rear edge and the workpiece support should amount to about 15 mm
- The adjustment will be correct if the distance between the stand and the lateral strut, specified on the ZE, is correct
  For measuring, place long ledge on the stand (fig. 22)
  For correcting, modify the setting foot height
- If the table height is correct, the adjustment of the pocket clamp will also be correct

9.1.2 Traction rod

- By extending or shortening the rod the seam distance at the pocket upper edge will be modified (fig. A/77)
- In the starting position of the ZE, the rod should be in the extended position
- Correct by means of the stop (fig. B/77)
- With the ZE being moved-in, the distance to the clutch should amount to about 8 mm
  Correct by means of the stop.

9.2 Pocket clamp

9.2.1 Distance to the inner frame and middle slide

- Check first the distance between the workpiece support and the middle slide (about 25 mm) and the distance from the workpiece support to the inner frame (about 50 mm) (fig. 79)
- When the ZE is moved-in, the minimum distance to the front edge of the middle slide should amount to about 5 mm and the clamp should be parallel to the inner frame when the ZE is fully moved-in
- Adjust the height and the clamp inclination by the eccentric resp. by turning the clamp accordingly (fig. A/80)
- In case of wrong adjustment:
  the material will be displaced
  the clamp will collide with the folding station
  the pocket clamps will break

9.2.2 Lateral alignment

Set against the middle of the inner frame

9.2.3 Position of the lowered pocket clamp with respect to the table top (only 804-2)

- The pocket clamp will be lowered only in case of "pattern true" sewing of checked and striped material
- By means of the stop screw set the pocket clamp so deep that the front part can still be easily moved underneath the charged pocket clamp (fig. B/80)
- Do not modify the pocket clamp inclination (a non-parallel distance with respect to the table must be accepted)

9.2.4 Stop (fig. A/82)

- For fine-precise adjustment of the seam distance with respect to the upper edge of the pocket (rough adjustment by extending or shortening the traction rod)
- For adjusting, modify the stop position accordingly.

9.2.5 Valve (fig. C/77)

- Operated: the stop is moved-in
  Free: the stop is moved-out
- The valve should become free when the ZE has moved forward for 1 - 2 cm
- For correcting, reset the valve

9.2.6 Correction if the pattern does not match

- Lateral displacement
  When descending, the pocket clamp should move vertically towards the table top
  Control by means of the square
  For correcting, loosen the nuts and modify the clamp position accordingly (fig. C/80)
- Vertical displacement
  Adjust by means of the screw (fig. A/81)

9.3 Fabric clamp (fig. B/82)

- The material should be clamped uniformly
  For controlling, pull the fabric by hand
- For correcting, adjust the clamping arms accordingly

9.3.1 Braking motor with drive gear

When the braking effect has become to weak, due to wear, the clearance between the flange and the brake disk should be re-adjusted to 0,2 mm.
Adjustment:

- Remove fan-wheel cover
- slacken set screws and adjust the clearance between the flange and brake disk to 0,2 mm.

9.4 Friction clutch (fig. A/78)

- Serves to avoid injuries
  and to ensure soft stopping in end position
- For correcting, loosen the clamping piece and turn the nut by the pin wrench.

9.5 Switches

ZE moved-in (b 53)

- Operation 2 mm prior to stopping in end position
- Displace the trip cam accordingly
- In case of premature operation the material will be displaced ZE in starting position (b 50)
- The tripping moment is not of importance

"Close fabric clamp" (b 55)
- In case of premature operation the material may be displaced and the ZE may stop in front position
- The tripping point should be 3-5 mm in front of the table top
- For correcting, bend the switch aduating lever accordingly "Folding start" (switch in the middle b 52)
- Releases the folding process when the ZE moves back
- When the ZE advances, the monitoring function of the light barrier is switched off

9.6 Throttles

- For regulating the speed of the following functions:
- Front part clamp up
- Pocket clamp (closes and blows)
- Pocket clamp (lowers)
- Pocket clamp (lifts)

9.7 Stacker

9.7.1 General information (fig. 83)

- Designation of parts
  1. ZE table
  2. Stacker sheet
  3. Workpiece support
  4. Sewing material
  5. Ejector bracket
  6. Outer bracket
  7. Inner bracket
  8. Clamping table bracket (only for stacker system 2 and 3)
  9. Advancer (only for stacker system 3)

- The figures in the rectangular fields of the function pictures indicate the step
- After resetting the selector switch
  1. the stacker 3 can be operated also in system 2 and 1
  2. the stacker 2 can be operated also in system 1
- The bundle removal is described in the in the Instructions for Operators 3.2.3
- The speed of the brackets can be regulated by the throttles

9.7.2 Stacker system 1 (fig. 84)

- For parts where the distance from the pocket opening to the bottom of the fabric amounts to at least 680 mm (trousers)
- Selector switch position: 1
- The function is shown by a series of pictures

9.7.3 Stacker system 2 (fig. 85)

- For parts where the distance from the pocket opening to the fabric botton ranges between 320 and 680 mm (shirts)
- Selector switch position: 2
- The function is shown by a series of pictures
- Note when regulating the speed:
  1. The outer bracket must be closed again in the step 0 when the clamping table bracket opens (otherwise the material will be displaced)
     Adjust the outer bracket-throttles accordingly
  2. The clamping table bracket must be in the starting position when the inner bracket opens (otherwise the two bows will collide)
     Regulate the clamping table bracket throttles accordingly

9.7.4 Stacker system 3

- For parts where the distance from the pocket opening to the fabric bottom edge is shorter than 320 mm (short parts)
- Selector switch position: 3
- Functions like the stacker system 2, with the exception of the advancer-function
- Regulating the bracket speed: see system 2
- Advancer
  1. Push out the material only as far as it is seized by the bracket Adjust the stroke length by the block accordingly
  2. Regulate the speed by throttles
  3. Releasing of the "advancer in front" by "outer frame above"

10. Feeding equipment ZE5 with stacker

10.1 General information

- The ZE5 renders possible to feed and to stack fabric parts where the distance from the pocket opening to the upper edge of the fabric amounts up to 740 mm
  The ZE4 is limited to 450 mm

10.2 Modifications compared to ZE4

- Longer table top
- Inductive switch for "Ejector bracket rear" and "Folding start"
- Stacker carriage
- Pocket stop control by solenoid valve
- Stacker function
- Additional clamp on the clamping table
- Other gear ratio

10.3 Adjustments identical with ZE4

- Table (9.1)
- Table height (9.1.1)
- Traction rod (9.1.2)
- Wear band (9.1.3)
- Pocket clamp (9.2)
- Distance to the inner frame and to the middle slide (9.2.1)
- Lateral alignment (9.2.2)
- Position of the lowered pocket clamp with respect to the table top (9.2.3)
- Stop (9.2.4)
- Correction if the pattern does not match (9.2.6)
- Fabric clamp (9.3)
- Friction clutch (9.4)
- Switches (9.5)
- Throttles (9.6)

10.4 Stacker

10.4.1 General information (fig. 83)

- Designation of parts
  1 ZE table
  2 Stacker carriage
  3 Workpiece support
  4 Sewing material
  5 Ejector bracket
  6 Outer bracket
  7 Inner bracket
  8 Clamping table bracket
  9 Advancer
  10 Fabric blower
  11 Clamp blower
  12 Outer frame blower
  13 Bracket-blower
- The bundle removal is described in the Instructions for Operators 3.2.3
- The speed of the brackets and of the stacker carriage can be regulated by the throttles

10.4.2 Stacker system 1 (fig. 86)

- For parts where the distance from the pocket opening to the fabric bottom edge amounts to at least 680 mm
  Examples of application:
  a) Trousers
  b) Frocks
  c) Overall upper pocket
- Selector switch position: 1
- With this system the clamping table bracket and the advancer are out of function
- The function is shown by the series of pictures

10.4.3 Stacker system 2 (fig. 87)

- For parts where the distance from the pocket opening to the fabric bottom edge ranges between 440 and 680 mm
  Examples of application
  a) Shirts
  b) Jacket upper pocket
  c) Frock lower pocket
  d) Overal lower pocket
- Selector switch position: 2
- With this system the advancer is out of function
- The function is shown by a series of pictures
- Note when regulating the speed:
  1. The outer bracket must be closed again in the step 0 when the clamping table bracket opens (otherwise the material will be displaced)
     Regulate the outer bracket-throttles accordingly
  2. The clamping table bracket must be in the starting position when the
     inner bracket opens (otherwise the two brackets will collide)
     Adjust the clamping table bracket-throttles accordingly

10.4.4 Stacker system 3

- For parts where the distance from the pocket opening to the fabric bottom edge shorter than 440 mm
  Examples of application:
  Jacket lower pocket
- Selector switch position: 3
  Functions like the stacker system 2, with the exception of the advancer

  Adjustment of the bracket speed: see system 2
- Advancer
  1. Do not push out the material more than is required for being seized by the bracket
  Adjust the stroke length by the block accordingly
  2. Regulate the speed by the throttles
  3. Releasing the "advancer in front" by " outer frame above"

10.4.5 Front position

- In this position the ejector bracket throws the sewing material over the stacker plate
- The sewing material should be stacked symmetrically (both fabric ends should located approximately in the same height)
- For adjusting, modify "front position" position after loosening the tommy screw and shifting the cylinder position (the longer is the part from the pocket opening to the fabric bottom edge, the longer should be the displacement of the "front position" to the rear. After determination of the corred position, the position may be read at the scale and noted, if required)
- Ensure the switch operation
- When modifying the "front position" the rear position also will be modified

10.4.6 Rear position

- When opening, the inner bracket should not collide with the clamping table bracket
- When modifying the "front position" check the "rear position"
- For correcting, loosen the tommy screw and modify the "rear position".(The piston rod is moved-in only up to the stop)
- Ensure the switch operation
- The carriage wheel should not move against the ZE spar

10.4.7 Fabric blower (fig. 83)

- If required, can be used with the stacker system 1 and 2
- It should blow the fabric end off the ZE table before the ZE is charged again
- Set the intensity and the direction of the air stream accordingly
- The function is released by a mechanically operated valve short after the stitching begins

10.4.8 Clamp blower (fig. 83)

- If required, can be used with the stacker system 3
- It should blow the material, pushed by the advancer over the edge of the workpiece support edge, in the opened clamping table bracket
- Set the intensity and the direction of the air stream accordingly

10.4.9 Outer frame blower (fig. 83)
- If required, it can be used with the stacker system 2 and 3
- The fabric end of the newly charged part, hanging down over the front edge of the ZE table, should not be seized by the clamping table bracket when it is being closed
- Set the intensity and the direction of the air stream accordingly
- It is operated at the seam end

10.4.10 Bracket blower (fig. 83)
- Can be used with all the 3 stacker systems
- It should blow the fabric in the opened inner bracket:
  a) when, after sewing, the fabric end is no longer between the stacker plate and the inner bracket (system 1)
  b) when particularly long parts cannot fall between the opened inner bracket (system 2)

11. Pneumatic unit

11.1 Compressed air filter (fig. 88)
- The filter separates water and impurities
- The draining is done automatically via a swimmer valve
- Clean the filter element by benzine or petrol each three months
- A dirty filter element can reduce the pressure

11.2 Pressure reducing valve (fig. 89)
- It serves to reduce the compressed air, supplied by the compressor, to 6 bar,
- The valve operates perfectly only if the line pressure is at least 1 bar higher
- If the line pressure is above 10 bar, it is necessary to install a further valve,
- Set the pressure by the rotary knob and secure by the setting spindle.

11.3 Mist oiler (fig. 90)
- Set by the Allen screw for 2 drops per working cycle,
- The nozzle should be in position A,
- Clean by benzine or petrol,
- Check the oil level weekly,
- For replenishing, stop the compressed air supply, ventilate the system and turn out the screw,
- Use "Hydraulic oil Estic 68" of ESSO

11.4 Pneumatic hose pipes
- For pulling out, press-in the bush until the clamping is eliminated
- For connecting, introduce the hose in the screw joint up to the stop

12. Maintenance plan

12.1 Daily

By means of the compressed air remove the fluff accumulations on the following parts several times daily

- Upper thread guides and tension
- Thread tension spring
- Hook and thread cutter
- Light barrier
- Folding equipment

12.2 Weekly (40 service hours)

- Sewing head: check oil level and oil circulation
- Check oil level in the hook box (only 804-1)
- Clamping table rollers: clean the running surfaces and oil the balls
- Mist oiler: check the function and the oil level
- Clean the arm head by compressed air (in 804-1 pay attention to the wicks)
- Quick motor: clean the covering of the fan wheel

12.3 Monthly (160 service hours)

- V-belt: check tension and wear
- Check hook lubrication
- Mask: check the fabric coating on the underside
- Outer frame: check the rubber coating

12.4 Each 3 months (500 service hours)

- Toothed belt: check tension and wear
- Pneumatic filter: clean the filter element
- Check the tightness of the pneumatic system
- Check oil lubrication in the arm head
- Control cam: clean cam races and lubricate with flowing grease
  check alu-bands
- Lubricate the roller of the control cam
- Readjust ZE motor clutch

12.5 Yearly (2000 service hours)

- Quick motor: check clutch play

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Instruction, complete

804-1; -2; -3; -4

GB

Übersicht

Instructions for operating
Instructions for service
Supplementary instructions

MZ-Electro plans
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804 -P2de-01

Pneumatic circuit plans
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804 -P2de-01

Function plan
804 -F4e -01

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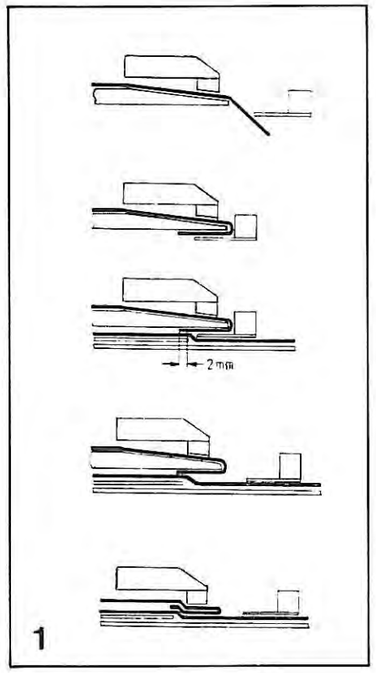

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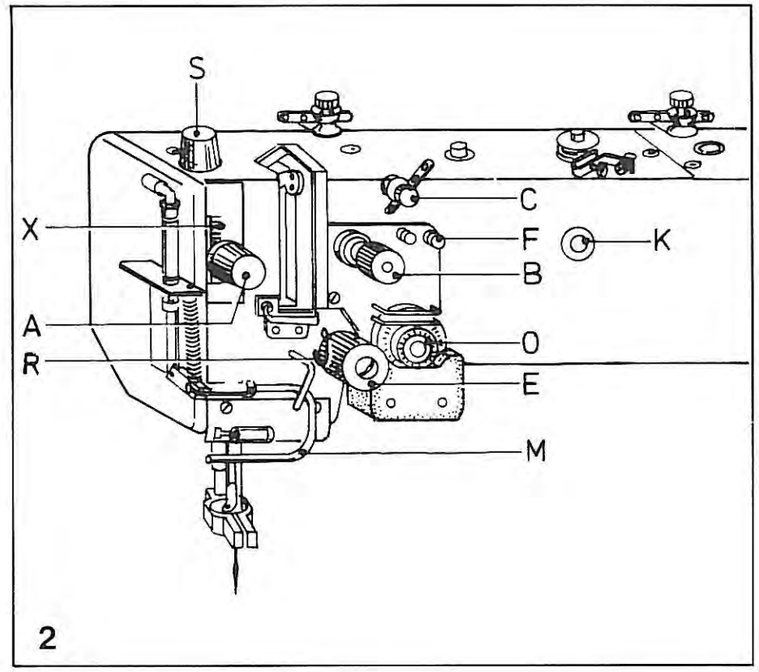

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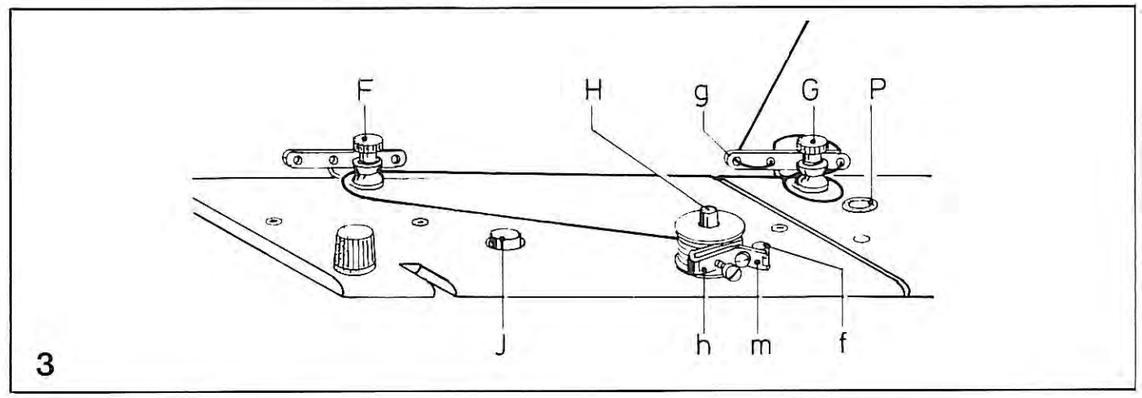

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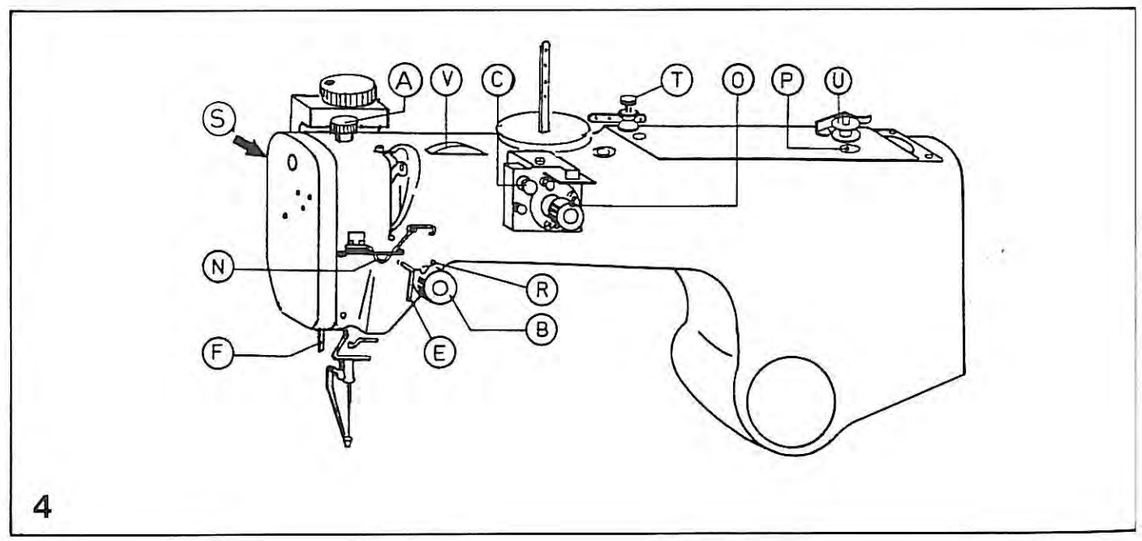

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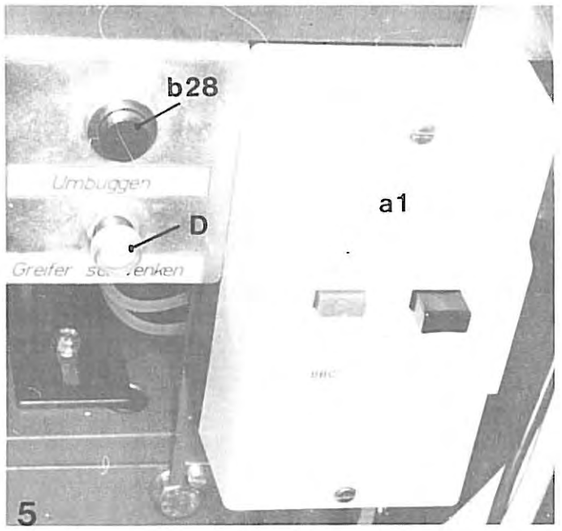
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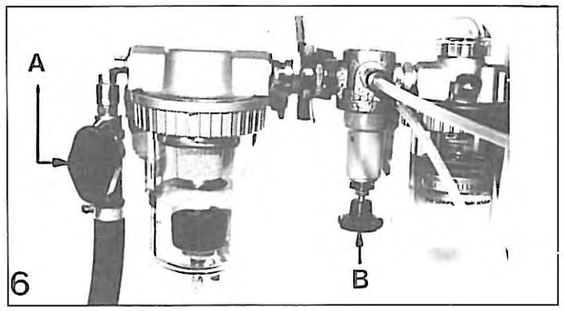
a1
5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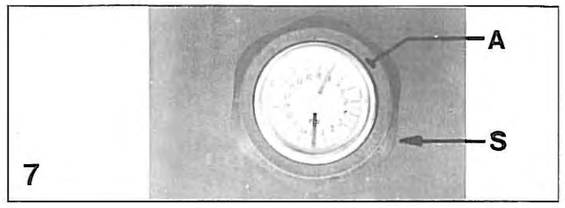
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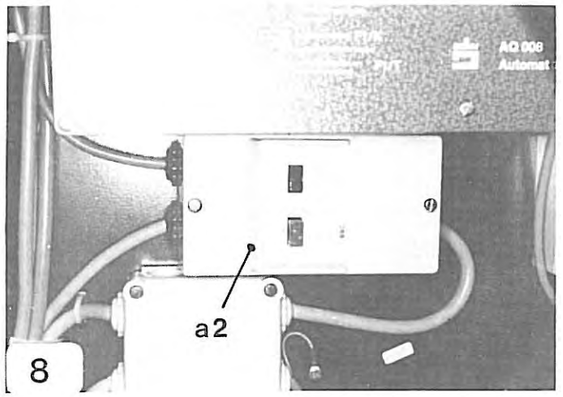
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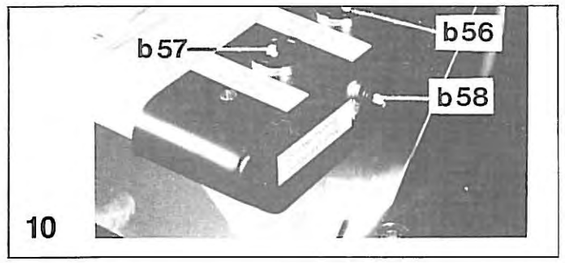
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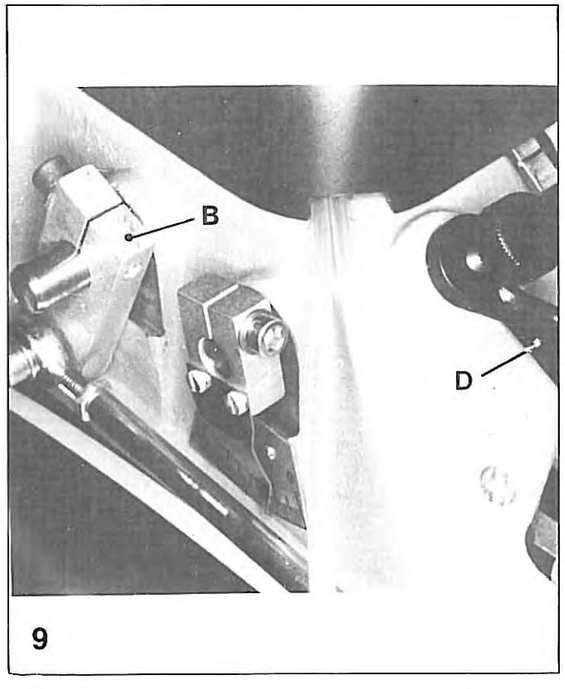
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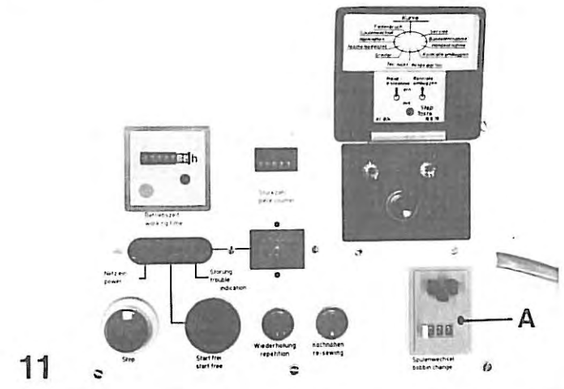
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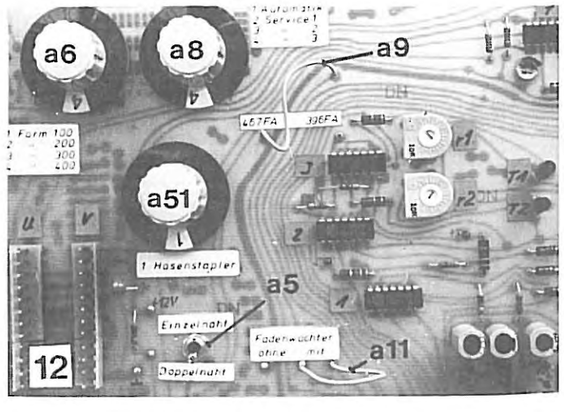
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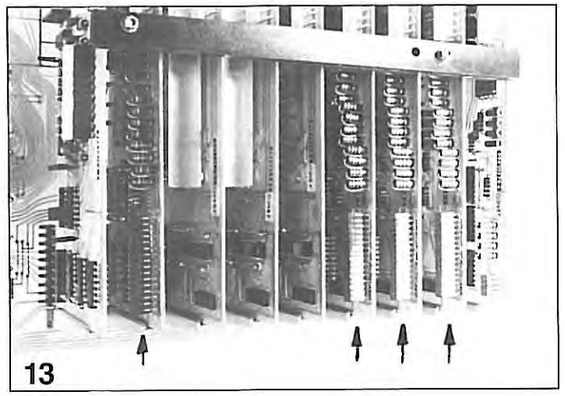
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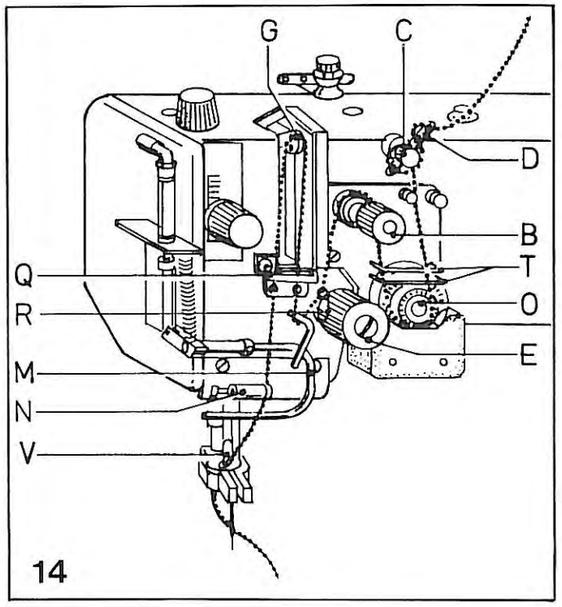

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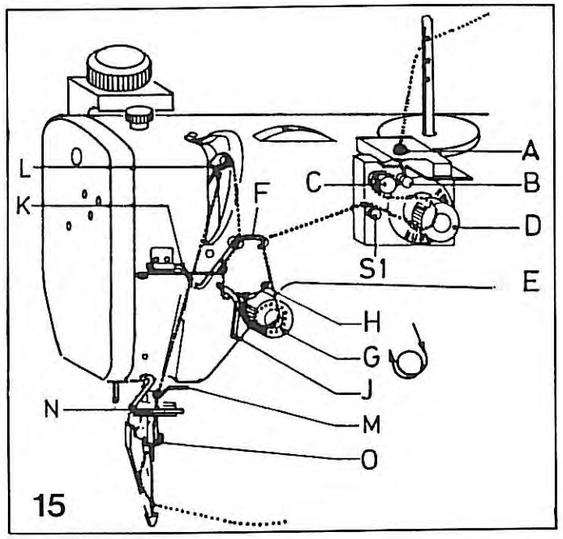

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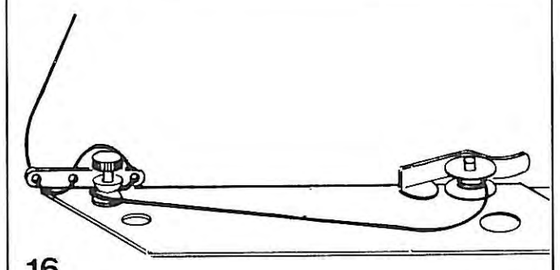
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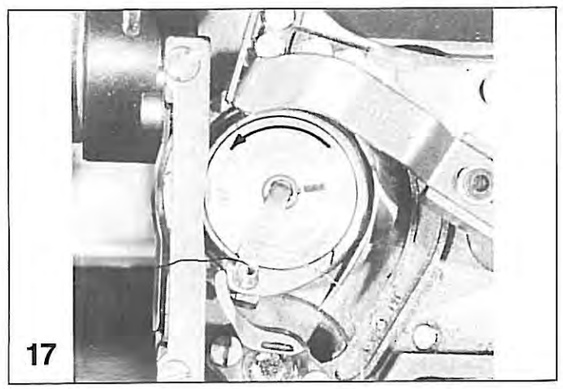
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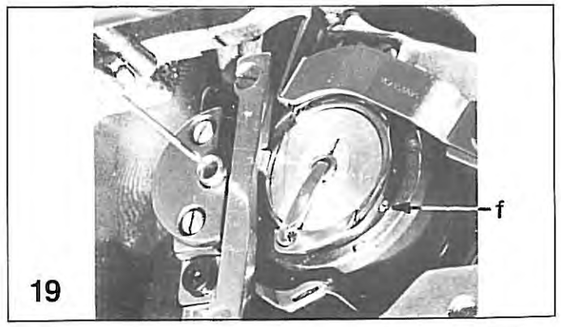

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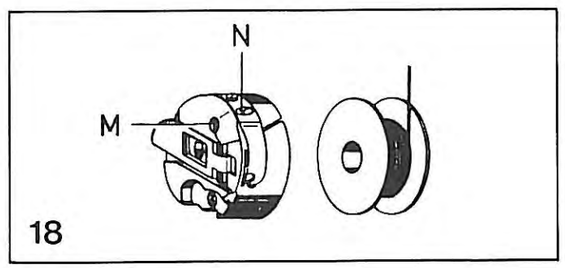

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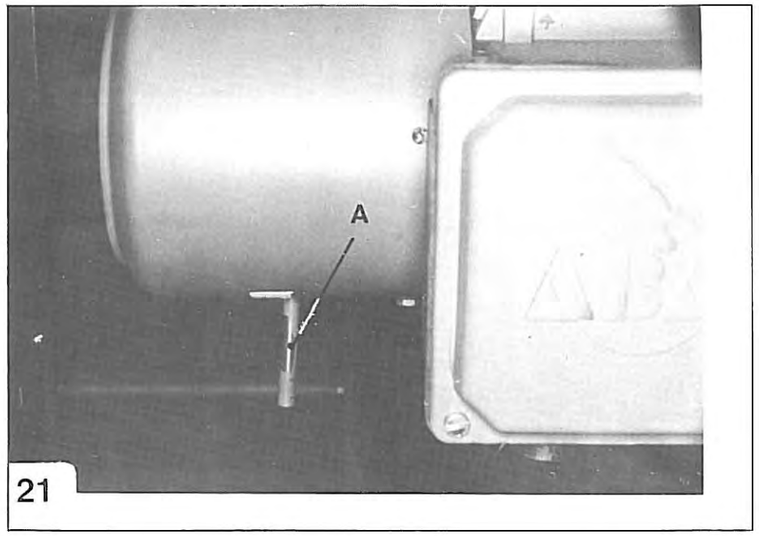
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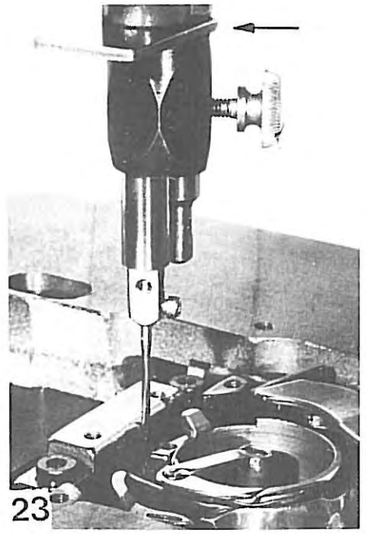
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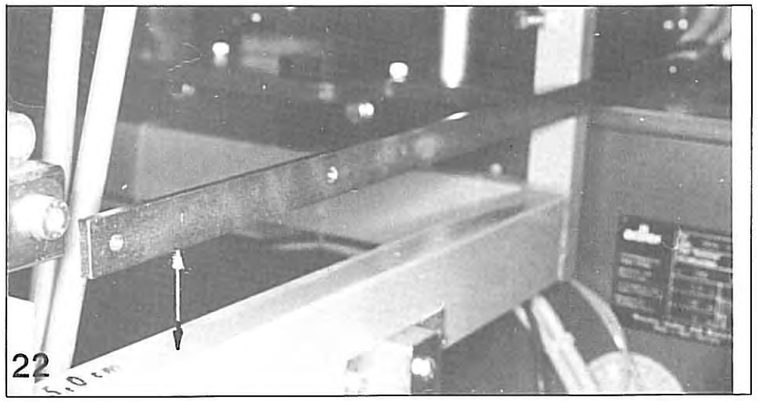
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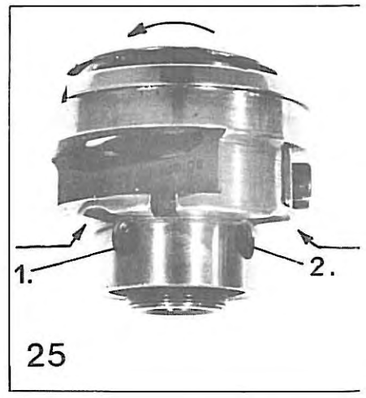
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2.
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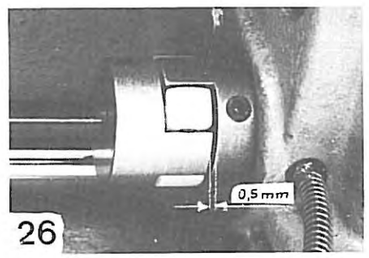
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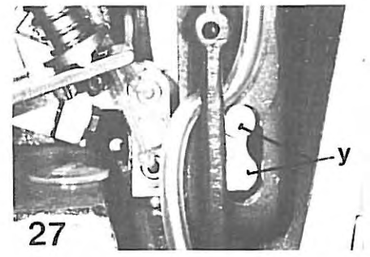
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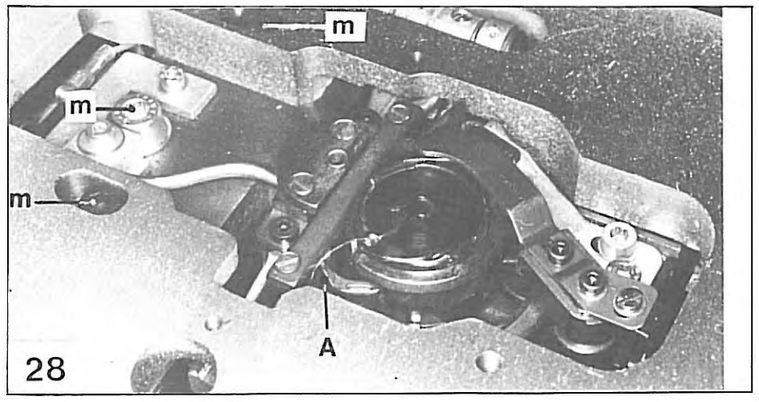
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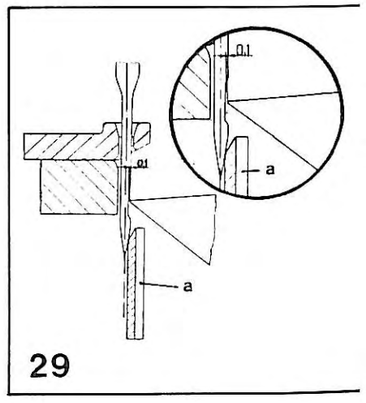
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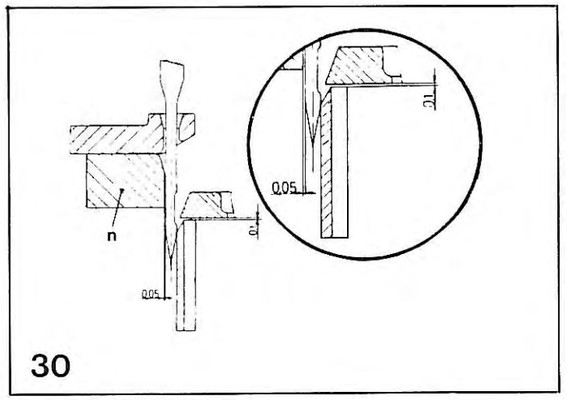

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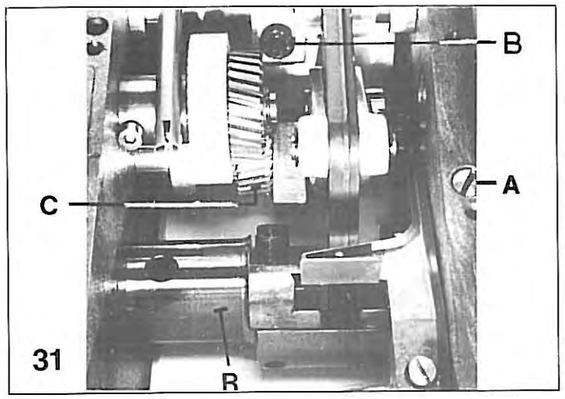

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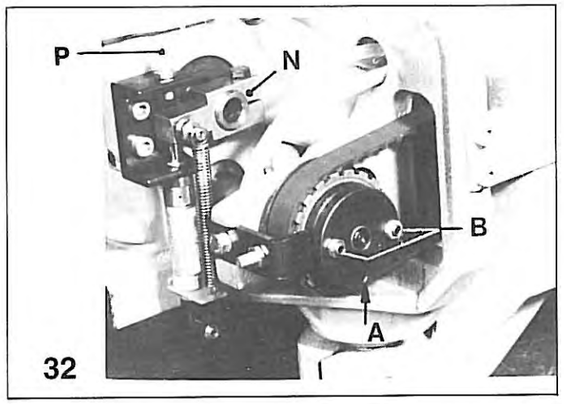

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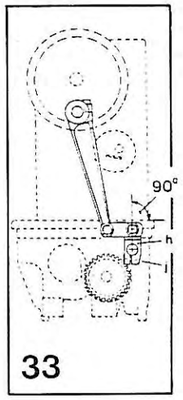

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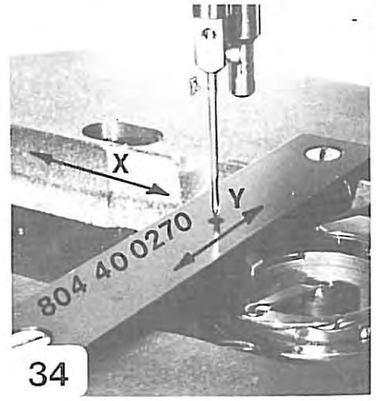

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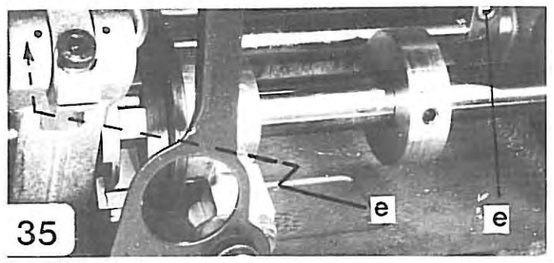

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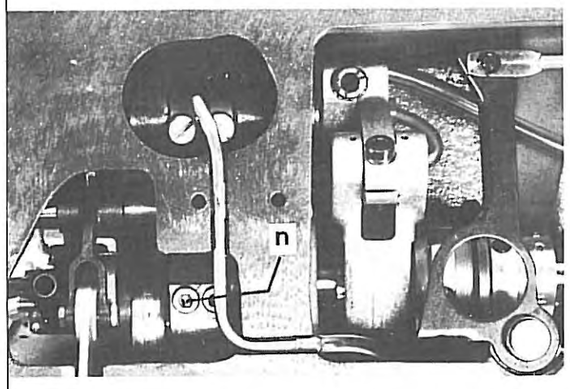

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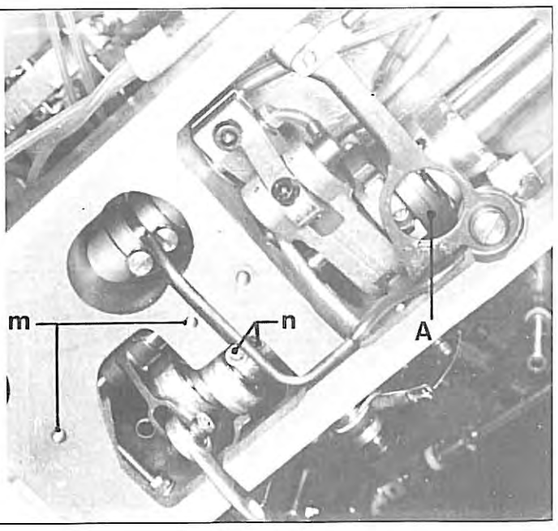

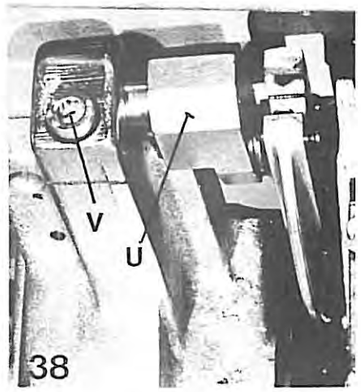

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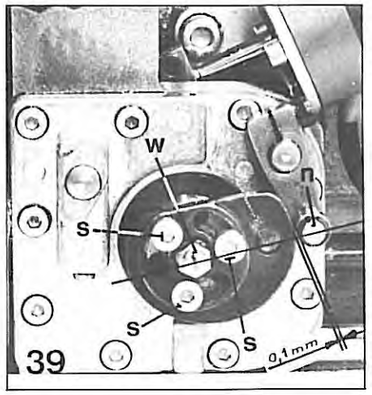

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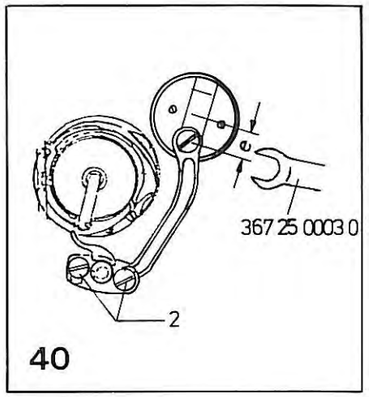

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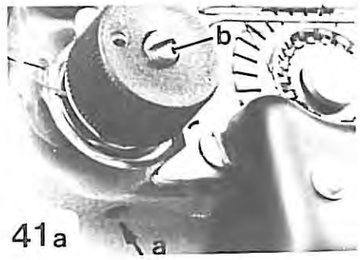

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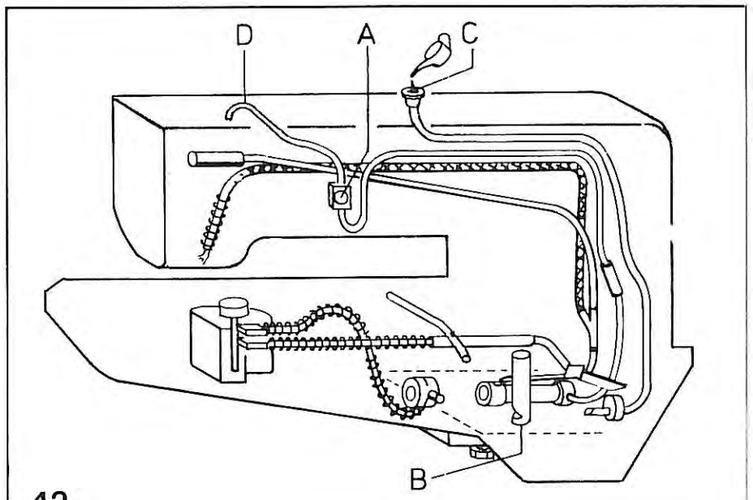

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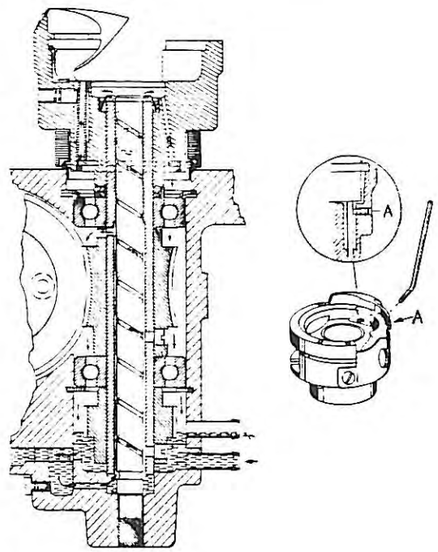

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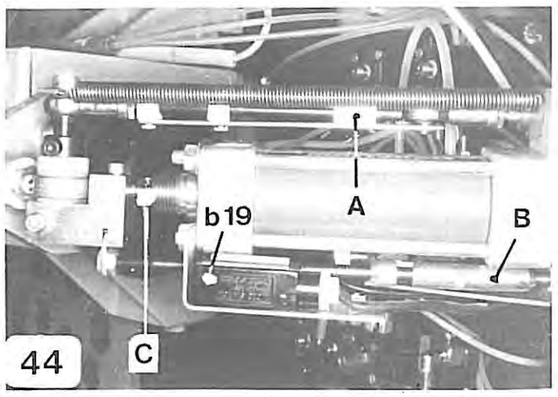

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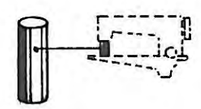
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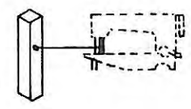

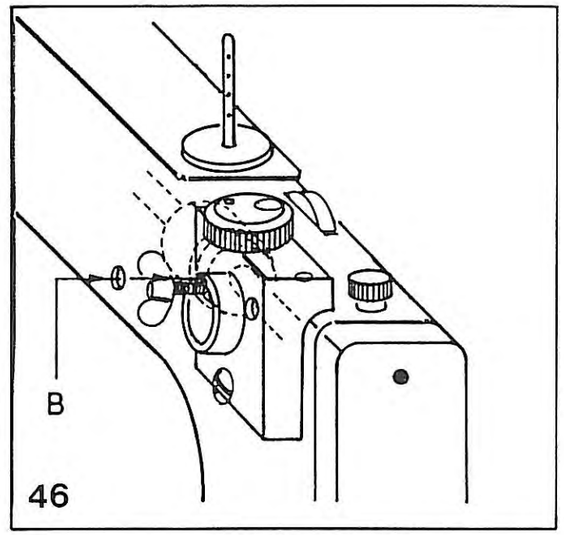

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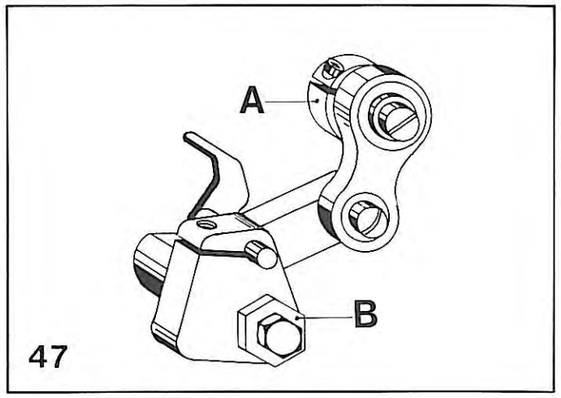

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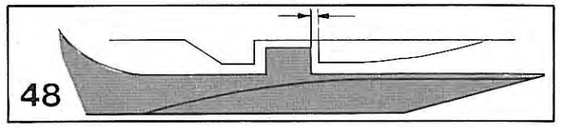

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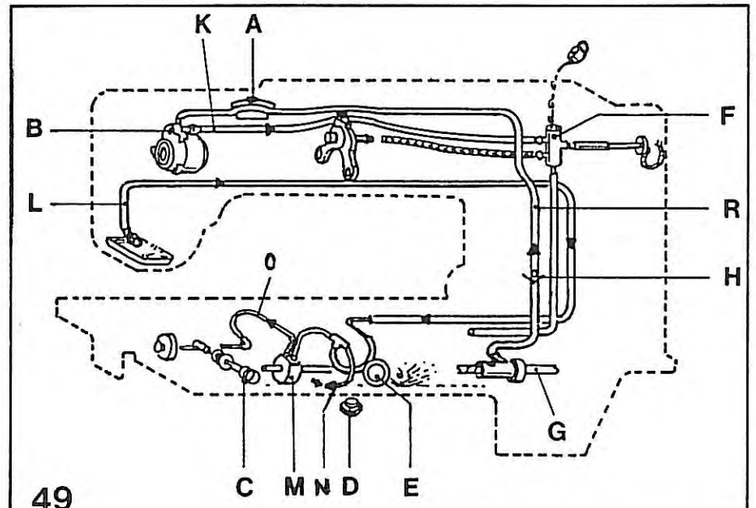

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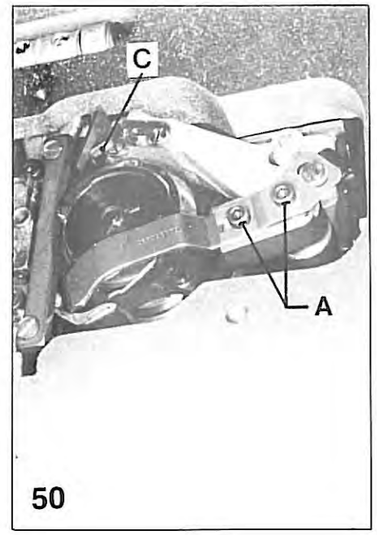

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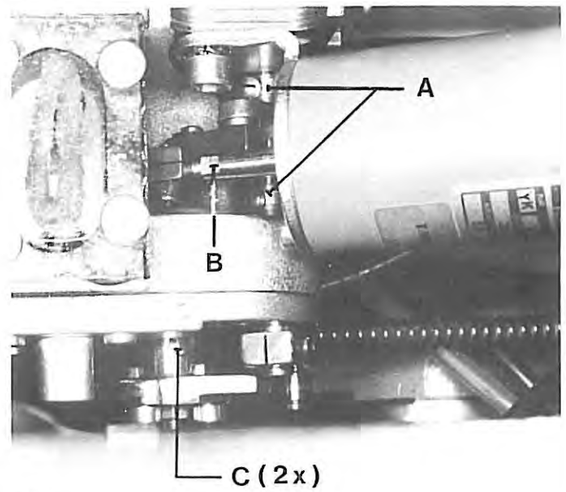

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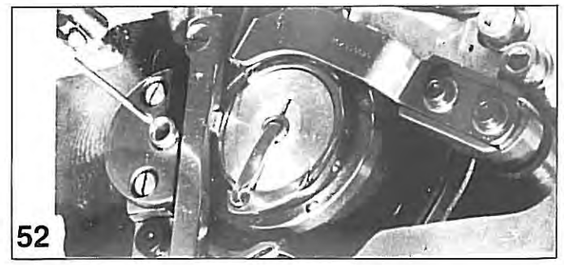

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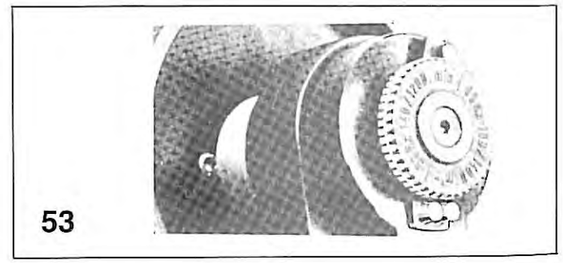

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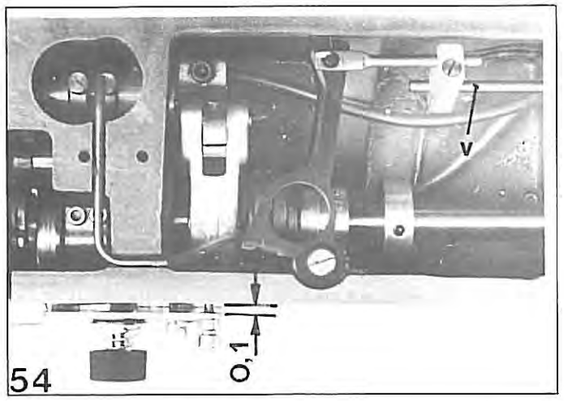

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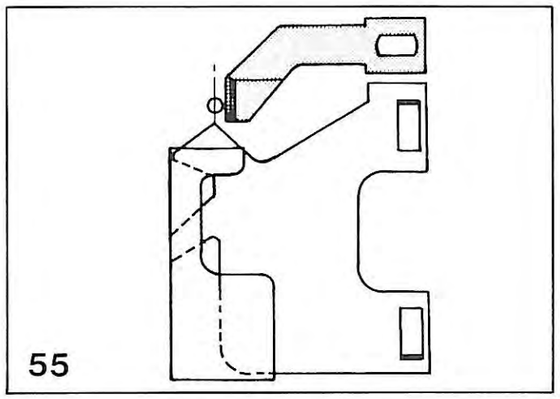
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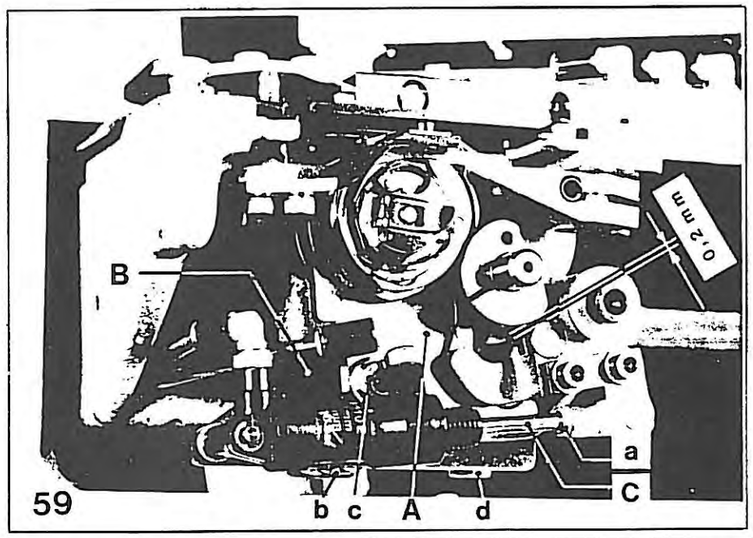

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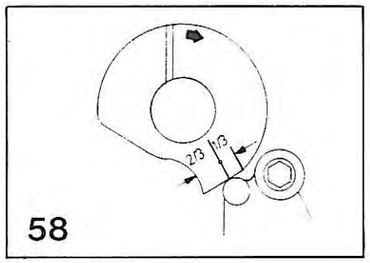

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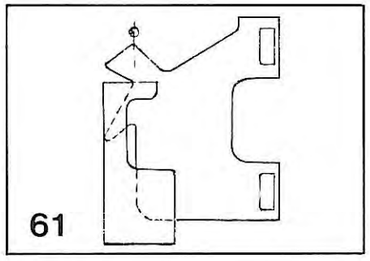
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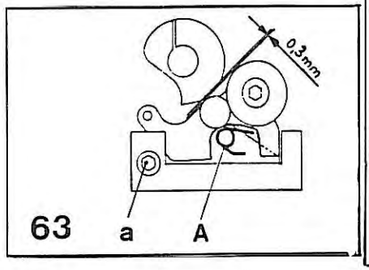

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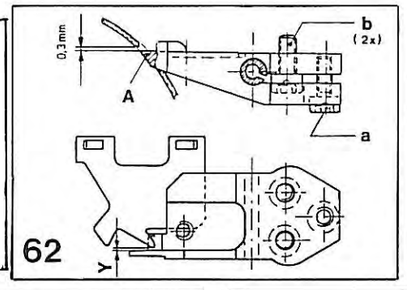

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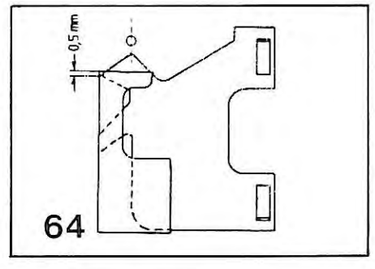

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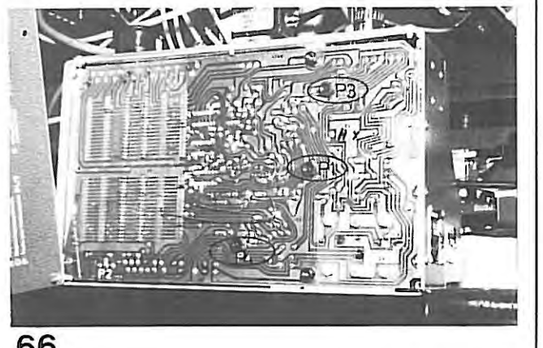

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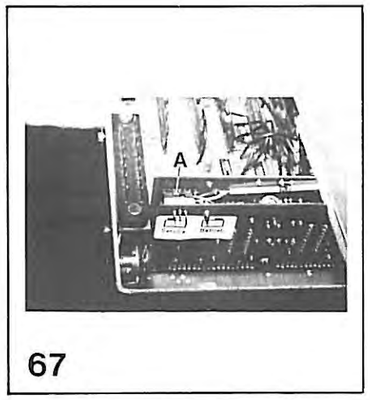

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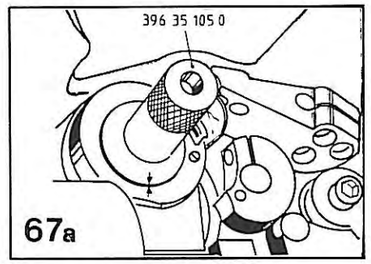

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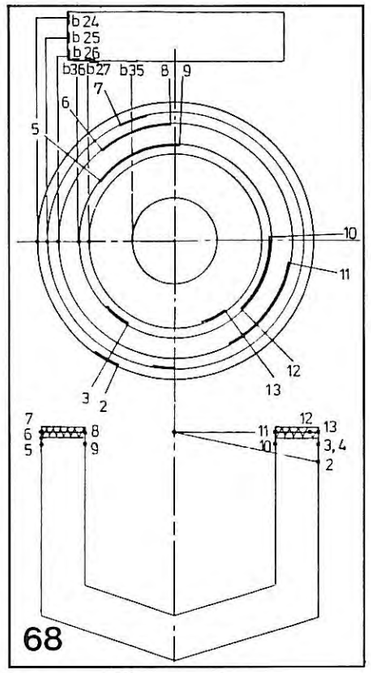

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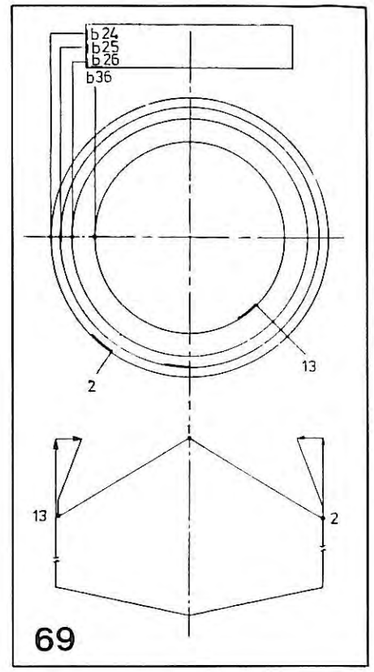

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Einstellwerte für Kl 804-A Nr 6726

Form	Kurve	Schwert	Kurvengelenk	Stichlänge
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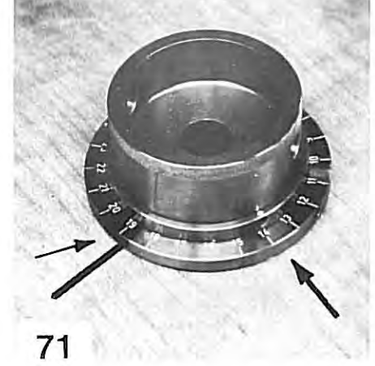
4503-1	-45·3	1	+5	10,5

70



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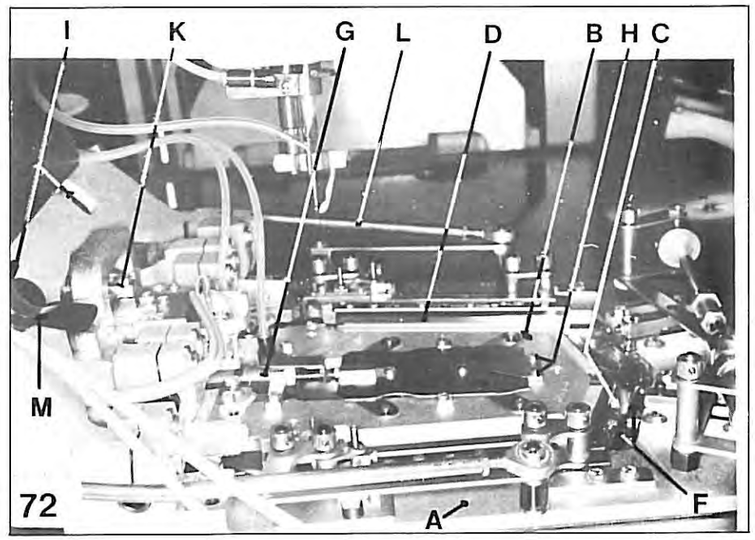

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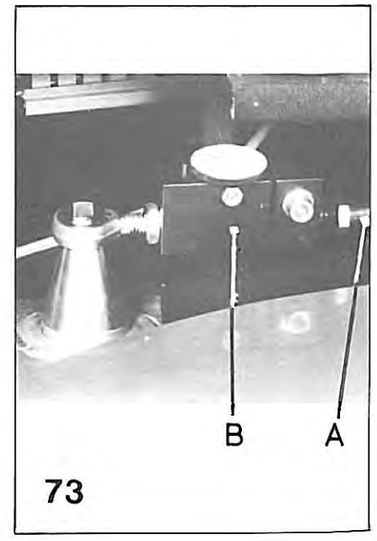

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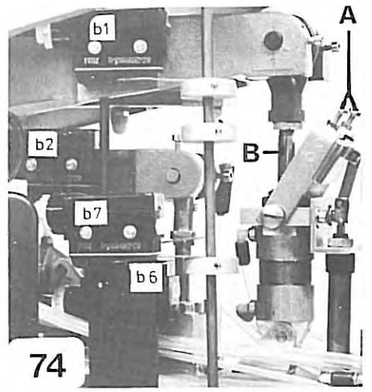

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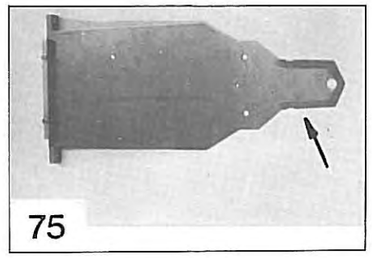
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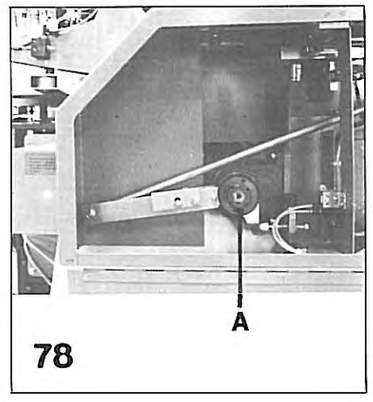

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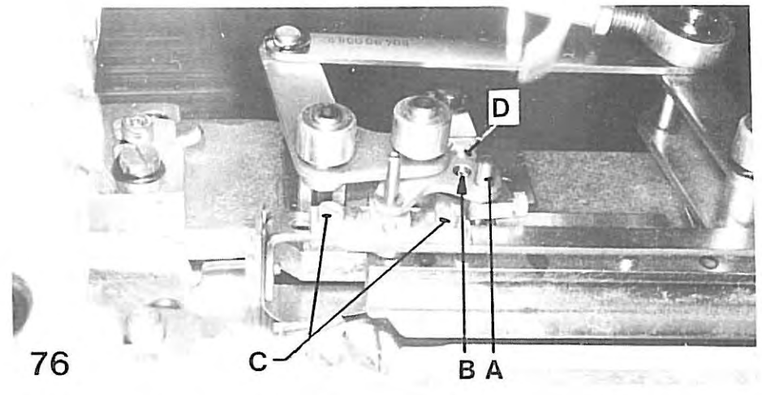

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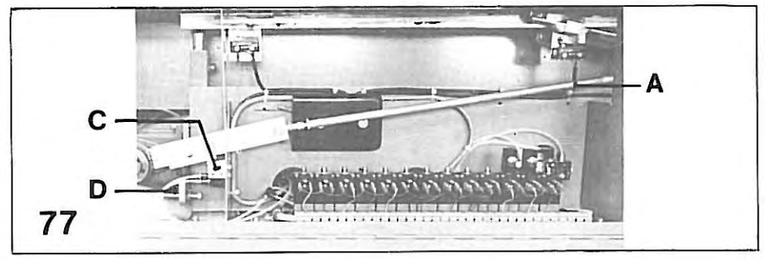

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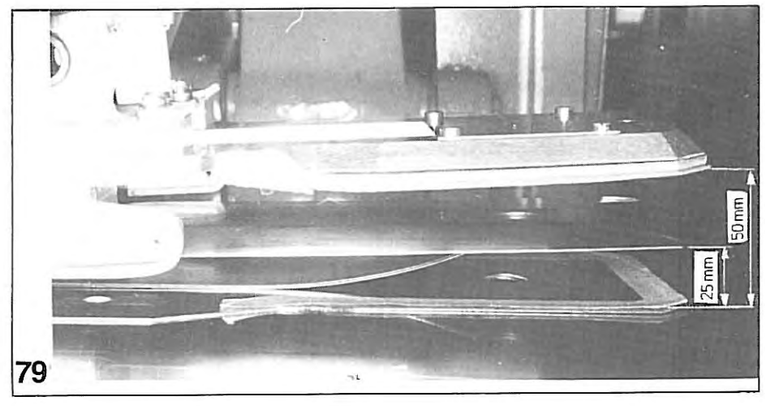

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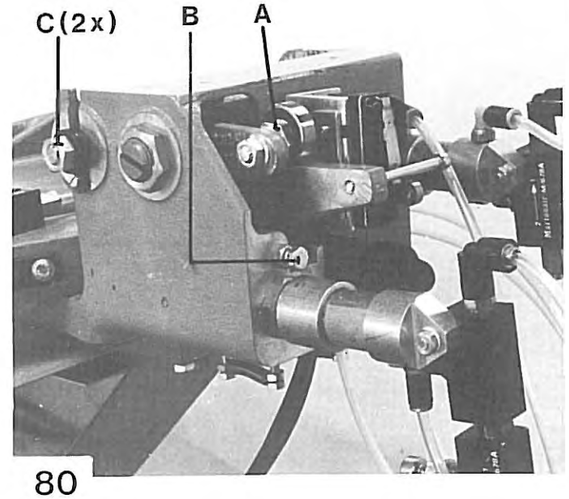

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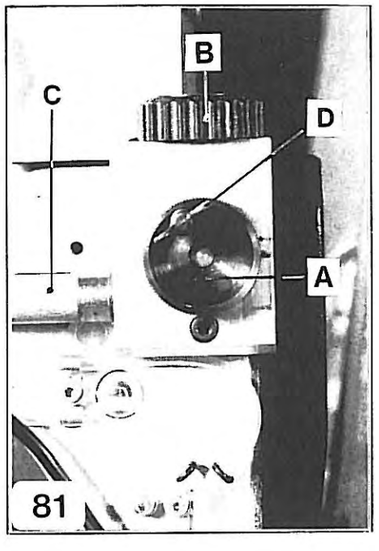

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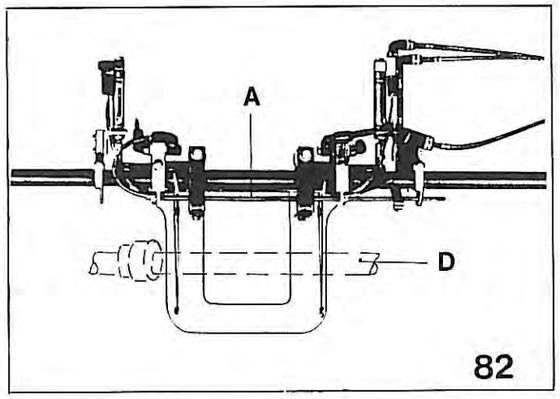
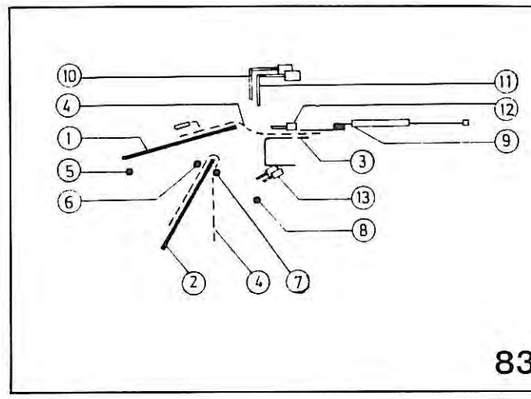

A
D

82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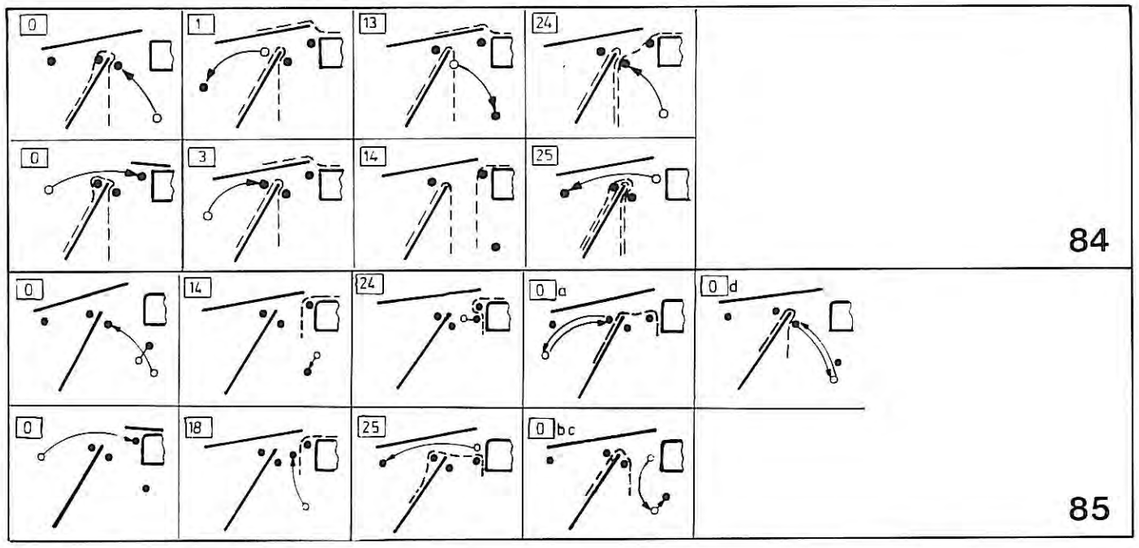
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14
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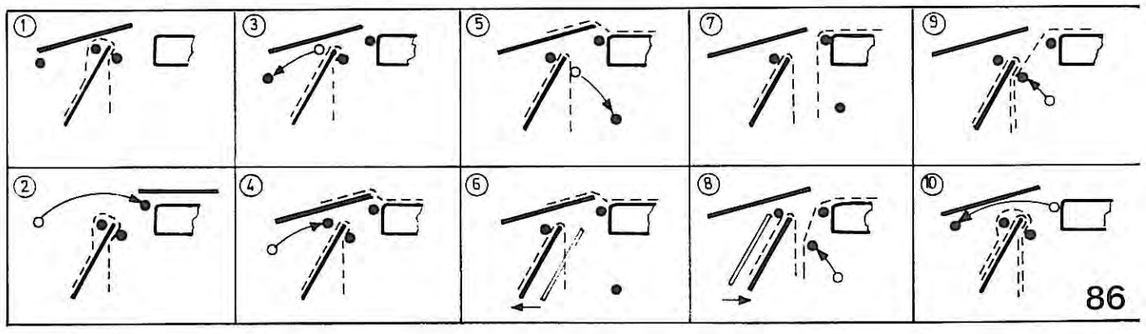
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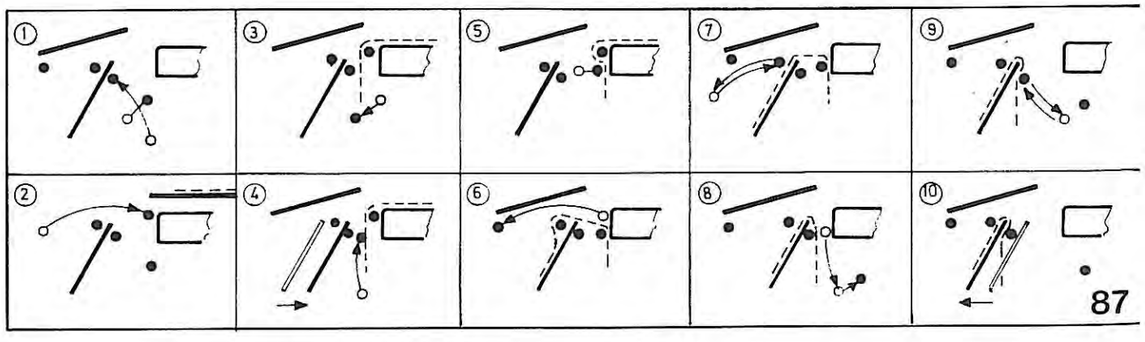
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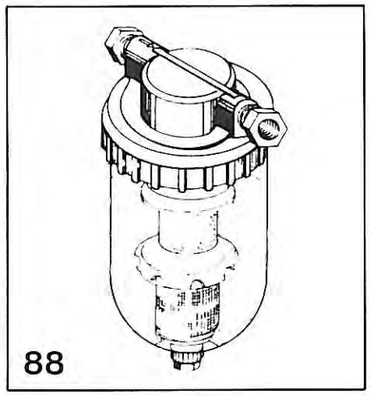

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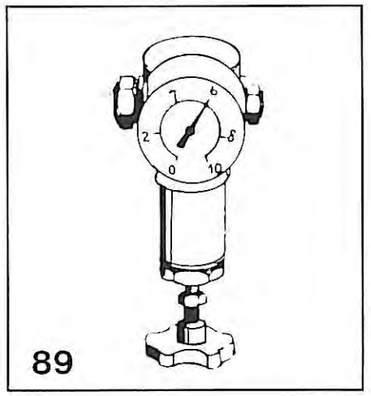

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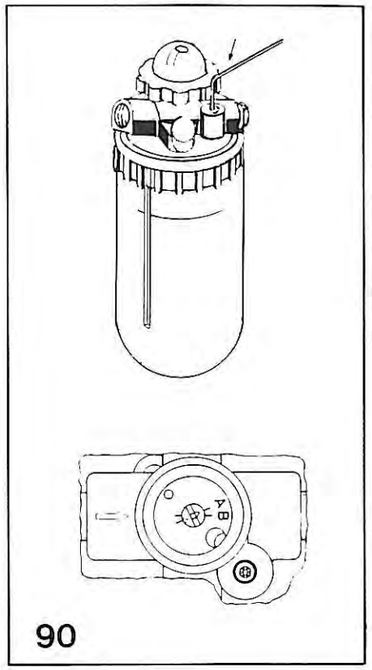

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ADLER

Zusatzanleitung
Supplementary instructions
Instructions supplementaires
Instrucciones adicional
Supplemento istruzioni

804-ZE

Kochs Adler Aktiengesellschaft
Postfach 103, D-4800 Bielefeld 1, Telefon (05 21) 5 56-02, Telex 932 759 adlr d

Supplementary Instructions
for cl. 804-1 and 804-2

Alignment of the feeding device to the basic-unit

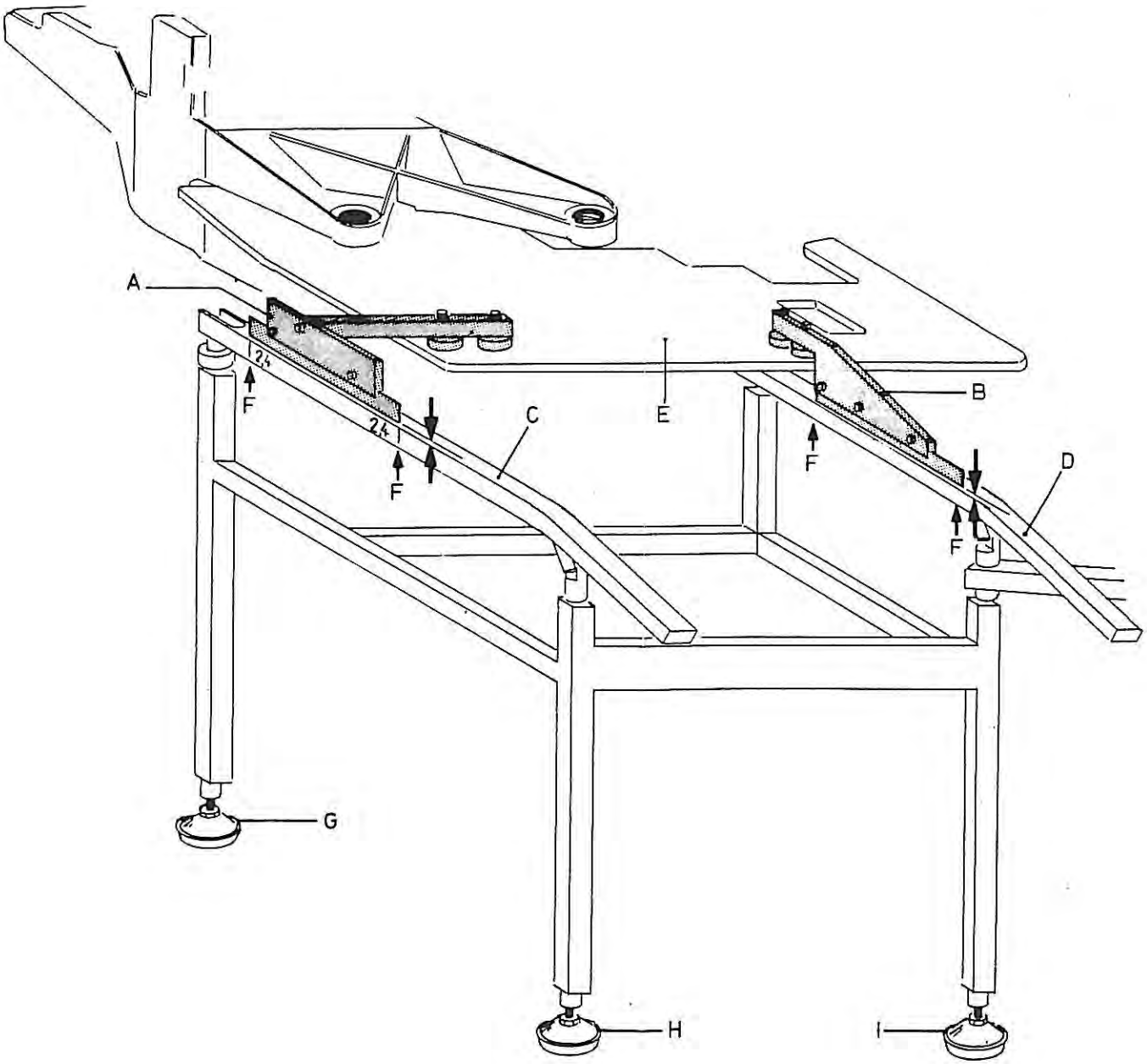
- The height of the feeding device can only be set correctly by the gauges A and B

- Both rails C and D must have a certain distance to the gauges A and B positioned on the intermediate plate E
  (The correct distance in mm is shown on the rail, e.g. 2.4 in the figure)

- For checking:
  1. Lay the gauge on the intermediate-plate, position the gauge above the rails and align the gauge to the marks F
  2. Check the correct distance between gauge and rails by a feeler gauge

- *For correcting*
  Change the height of the feet G, H, I after loosening the screws (The feeding device can only be set higher, when also the feet G is loosened)

- If the feeding device height is wrong, the position of following parts is incorrect:
  1. Pocket clamp (to center slider and inner frame)
  2. Table plate (to material support)


A
B
C
D
E
F
F
F
F
G
H
I
2"
2"