



# Instruction Manual

## Auto 4 Single Numbering Machine



# **Rollem Patent Products Ltd**

82 The Common  
Ecclesfield  
Sheffield  
South Yorkshire  
S35 9WN

ENGLAND

Tel: +44 (0) 114 246 8981  
Fax: +44 (0) 114 246 5487

[www.rollem.co.uk](http://www.rollem.co.uk)

## Instruction Information Sheet

**Machine:** Auto 4

**Serial No:** .....

**Instructions Reference:** 91P- 1310

**Issue Number:** 02

## **Operator Competence**

It is assumed throughout these instructions that the operator will be a competent one, having worked with similar machines for at least 2 years previously.

Training can be obtained from qualified Rollem staff upon request, it is recommended that operators attend a brief training session given by the Rollem installation and service engineer upon installation of the machine.

***If in any doubt at all about the setting or operation of this machine – please contact Rollem for assistance.***

## Equipment Safety

### General Safety

If you are unfamiliar with this equipment, read the manual thoroughly before proceeding.

If there is any doubt at any stage, do not proceed but seek clarification.

Before installing, maintaining, cleaning or removing any covers from a machine, switch off and isolate the machine either by disconnecting the plug from the socket, or ensuring that the isolator is switched off and has disconnected all the supply conductors (all lives and neutral).

There is no reason to work inside this equipment before it is correctly isolated.

Besides all procedures listed in this manual, reference must be made to local procedures for safe working practices, particularly the dangers of working with electricity.

Only competent persons trained on the equipment may service, maintain, repair or adjust the machine, or for any other reason remove any covers or part of the machines with a tool (a key is not a tool).

All Rollem manufactured machines are class 1 (to be earthed).

### **WARNING - THIS APPLIANCE MUST BE EARTHED**

Although the machine has circuits at mains voltages and also at lower AC & DC voltages, the electrical safety and insulation of the machine are designed, constructed and are to be maintained at, the higher mains voltage.

- **If the machine is rated 13A:**

The wires in the mains lead are coloured according to the following code:

**Green-and-yellow: Earth**

**Blue: Neutral**

**Brown: Live**

As the colours of the wires in the mains lead may not correspond with the coloured markings identifying the terminals in your plug/isolator unit, proceed as follows:

The wire that is coloured green-and-yellow must be connected to the terminal in the plug that is marked with the letter E or by the earth symbol:



or coloured green, or coloured green-and-yellow.

The wire that is coloured blue must be connected to the terminal that is marked with the letter N or coloured black.

The wire that is coloured brown must be connected to the terminal that is marked with the letter L or coloured red.

If the mains cord requires replacing, only cords supplied by Rollem must be used.

- **If the machine is single phase and rated above 13A:**

The wires in the mains lead are coloured according to the following code:

**Green-and-yellow: Earth**

**Blue: Neutral**

**Brown: Live**

The machine must not be connected to the electricity supply via a 13A (BS 1363) plug and socket; the machine must only be connected to a suitable supply point rated greater than the machine and must only be connected by a suitably qualified person. As the colours of the wires in the mains lead may not correspond with the coloured markings identifying the terminals in the isolator unit, proceed as follows:

The wire that is coloured green-and-yellow must be connected to the terminal, which is marked with the letter E, or by the earth symbol, or coloured green, or coloured green-and-yellow.

The wire that is coloured blue must be connected to the terminal that is marked with the letter N or coloured black.

The wire that is coloured brown must be connected to the terminal that is marked with the letter L or coloured red.

If the mains cord requires replacing, only cords supplied by Rollem must be used.

*It should be remembered that the mains cord can cause a significant trip hazard if not secured safely.*

- **If the machine is rated for 3-phase electricity supply:**

The machine must be connected to a 3-phase electricity supply point, a 13A (BS 1363) plug and socket is not suitable. The machine must only be connected by a suitably qualified person. Note, wire colours for 3-phase supplies may vary; if there is any doubt, do not proceed but seek further clarification.

If the mains cord requires replacing, only cords supplied by Rollem must be used.

If the machine is rated differently from the above, reference must be made to Rollem before proceeding.

All machines must be connected to the mains electrical supply by either a suitable plug and socket (e.g. using a plug to BS4343 / EN60309-2), or by a suitable isolator unit, which can securely disconnect all supply conductors (all lives and neutral).

If left unattended for any time, the machines must be switched off and isolated.

Children must not operate Rollem machines.

Where machines are supplied for “bench use”, the machines must be sited on a work surface, capable of securely supporting them, avoiding positions where the legs or bases of the machines are near an edge and the machines could be inadvertently knocked and fall over; if there is any doubt, the machines must be bolted to a fixed, secure structure.

Attention must be paid to the recommended electrical safety maintenance procedure detailed within this manual.

The machines must not be used outdoors or in any situation where they are likely to be splashed or exposed to excessive damp.

When moving the machines, ensure that suitable facilities, or help, is available to lift or move the machines; particularly into or from awkward locations where overreaching may occur.

Do not block any of the ventilation holes on the equipment, either to the sides or on the top.

Adequate lighting must be provided for the operation of the machine.

Any paper dust should be cleared from the machine on a regular basis *with the machine isolated from the electricity supply.*

## **Safe Working Procedure (Electrical)**

UNDER NO CIRCUMSTANCES MUST SERVICING WORK OF ANY NATURE BE CARRIED OUT WITHIN A LIVE MACHINE. THERE IS ABSOLUTELY NO REASON FOR ANY PERSON TO EITHER TOUCH INSIDE A LIVE MACHINE OR APPROACH THE VICINITY OF LIVE PARTS.

This procedure must be read together with, and does not take the place of, local procedures and Health and Safety Policies.

Before any work commences, people in the vicinity, or likely to approach the machine must be warned that the machine is about to be serviced.

Due regard must be made to site regulations such as permission/permit to work rules.

The electrical supply must be switched off and isolated, either by removing a plug or switching an isolator unit to off and ensuring that the live(s) and neutral are disconnected.

Precautions must be taken to prevent the isolator being turned accidentally back on, either:

- lock it off with a personal padlock.
- instruct a person to prevent the equipment being reconnected.
- if the isolator or plug and socket are in visual sight, attach a notice/sign to the isolation point warning that the connection is not to be remade and keep a visual check to prevent any person approaching the isolation point.

Covers may now be removed.

Before going further, a test must be made to ensure that the machine is isolated from the electrical supply. Particular care must be taken if a switch on an isolator unit disconnects the machine.

If it is necessary to run the machine with a cover removed, suitable precautions must be made to prevent any person approaching the machine and being exposed to danger.

Never leave a machine unattended with covers removed or in an unsafe condition.

Hand held devices for making electrical tests, which rely on the human body to complete a test circuit (such as neon-type screwdrivers) are not to be used; devices with insulated test probes are particularly recommended. Follow this procedure:

- isolate the machine
- check the points to be tested

- reconnect the machine
- take the required readings
- isolate the machine

Every time a machine is serviced, the following minimum checks must be made as a matter of routine:

- Correct wiring of the mains cord into a plug or isolator unit.
- Physical inspection of the mains cord for damage.
- Physical check of the cord grips at both ends of the mains cord.
- Physical inspection of the earth bonding.
- Physical check of cables inside and outside the machine for discolouration/other signs of overheating or damage.
- Any sharp edges in accessible areas.
- The earth bond and insulation tests for any machine connected by a plug and socket, and where practical to machines connected by other means)

## **Routine Electrical Maintenance Procedure**

This procedure covers the minimum tests required to be performed on ROLLEM equipment, to comply with the UK Electricity at Work Regulations 1989. The meaning of words and phrases used in this procedure is to be interpreted according to the definitions within the regulations.

As a minimum, the maintenance procedure should be carried out at least annually, but consideration must be given locally to more frequent maintenance programs if there is a likelihood of the machines becoming dangerous within an annual maintenance period.

Always do the tests in the correct order, if a machine does not pass a test, do not pass onto the next test without rectifying the reason for the failure (a fault indicates danger and the next test may not be safe), if a machine cannot be rectified to pass one of the tests, the machine must not be reconnected and must not be left in a state where it could be used.

### **BEFORE TESTING**

- Check the operating voltage, current and power of the machine and the supply; compare all sources of information (test sheet, serial plate etc.) and correct if necessary.
- Check the environment for hazards: flammable vapours, dusts etc.
- Warn people that tests are about to be carried out, and ensure that precautions are taken to keep a 3m (10') safety area around the machine during the periods when the machine is energised.
- Disconnect any additional equipment from the machine.
- Ensure that the supply for the test equipment is properly earthed.
- Physically isolate the machine from the supply; either by unplugging or by disconnecting and removing the mains cord from its supply point.
- Ensure that the machine on/off switch is in its normal ON operating position.

### **PHYSICAL EXAMINATION**

- Check equipment casing for signs of damage/loose parts that may give rise to a source of danger, e.g. a breakdown of insulation or user access to live parts.
- Check the mains plug (if fitted) for cracks or damage, open it up and check the terminals, fuse and fuse rating; check that the cord grip is effective in preventing the cord being pulled out, pushed in or twisted.
- Check the mains cord for damage to the insulation or other dangerous conditions such as kinking.

***Portable Appliance Test***

Portable Appliance Test to be carried out in accordance with the testing equipments instructions.

### **Safe Working Procedures (Blades and Other Sharp Areas)**

1. When handling any sharp items, for example slitting blades, suitable protection must be worn that will protect the hands and wrists from any risk of injury.
2. When removing or adjusting shaft assemblies, to avoid the risk of damage to the machine and the risk of personal injury, the shaft must be supported and must only be moved with the assistance of a suitably rated, approved and maintained mechanical hoist or equivalent.

### **Operating Temperature**

Rollem machinery should be operated in an ambient temperature in the range of 5-40°C

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## **Introduction**

### **The Rollem Auto 4**

The most accurate way to number, perforate, crease and slit.

The Rollem Auto 4 can number up to 6000 sheets per hour, score perf and slit up to 15,000 sheets per hour. It can platten crease or perf at speeds up to 6000 per hour and perform rotary micro-perforations at a speed of up to 15,000 per hour.

The machine can be used for numbering, perforating, creasing and slitting simultaneously in one pass, or each operation can be carried out separately.

An electric motor drives two units through electrically controlled clutches and brakes, the clutches being energised by the masking of the photo cell from the light source. When the photo-cell is receiving light from the projector all the machine's rotating parts stop and the numbering heads are brought down in contact with the arrested paper.

After the crank operating the numbering heads has completed on revolution a contact, operated by a reed switch and magnet restarts the rotating parts and thus completes the operation of delivery of the paper.

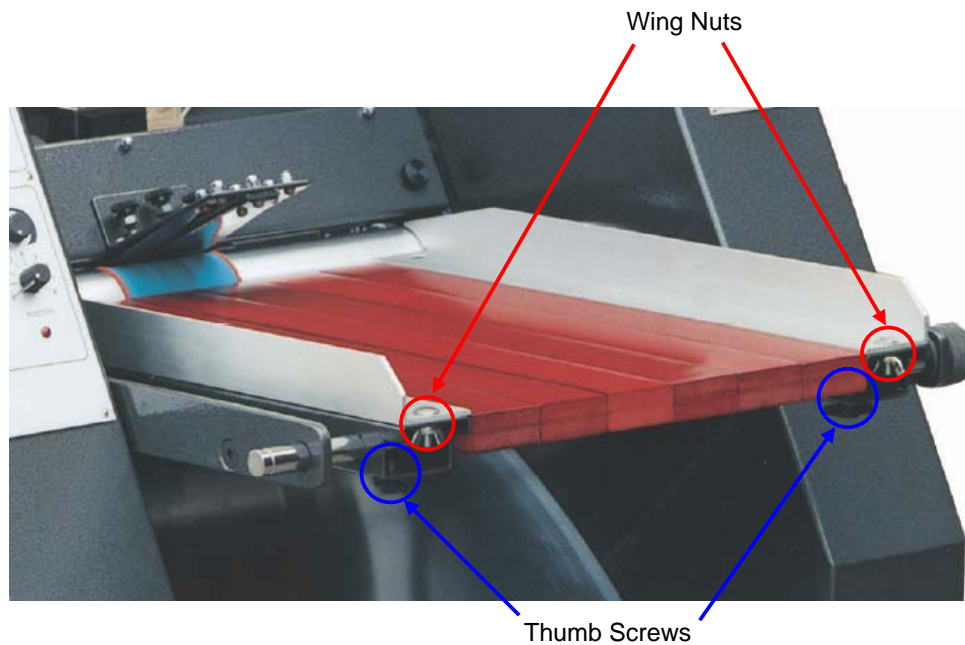
## Technical Specification

<b>Machine Size</b>	<b>18" (450mm)</b>	<b>24" (600mm)</b>
<b>Length (mm)</b>	765	765
<b>Width (mm)</b>	865	1020
<b>Height (mm)</b>	1270	1270
<b>Weight (kg)</b>	200	250
<b>Minimum Sheet Width (mm)</b>	125	125
<b>Maximum Sheet Width (mm)</b>	430	580
<b>Minimum Sheet Length (mm)</b>	125	125
<b>Maximum Sheet Length (mm)</b>	910	910
<b>Minimum Sheet Weight (g/sm)</b>	40	40
<b>Maximum Sheet Weight (g/sm)</b>	700	700
<b>Maximum Pile Height (mm)</b>	25	25
<b>Power Supply (volts)</b>	110/230	110/230
<b>Maximum Speed – A5 (s/hr)</b>	6000	6000
<b>Maximum Numbering Positions down Sheet</b>	40	40
<b>Maximum Numbering Heads</b>	4	4

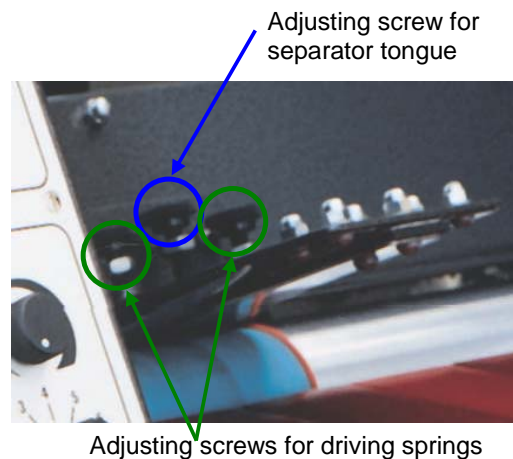
## Setting up the Machine

### Setting of the Feeder Unit

The cutters and lay bars should be set to give the required result so that the paper is centrally disposed on the machine. The two lay bars should be set so that the paper will slide easily between them and locked in place by the two thumb screws underneath the front bar on which they slide. The wooden rails are used for support of the paper between the lay bars.



The centre adjusting screw on the bracket carrying the rubber separating tongue should be adjusted until a piece of paper placed under it will be gently contacted between the rubber tongue and the rubber facer roller. The two screws adjusting the two spring driving strips should be adjusted until the strips lightly contact the rubber covered feed roller.



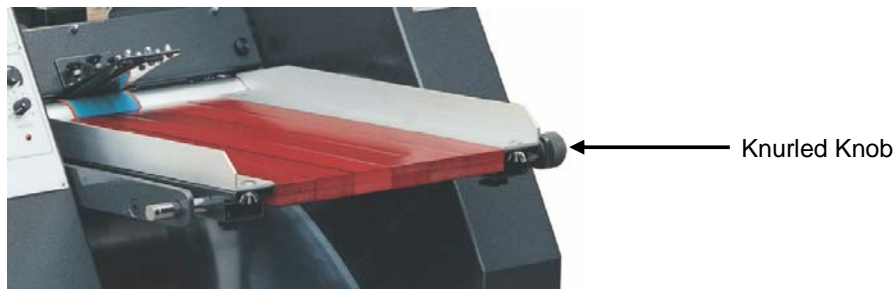
A stack of paper, between 10 –15 mm thick, should be placed between the aluminium lays and fanned out slightly so that the bottom sheet is in contact with the feed roller.

Start the machine and gently push the stack towards the feed roller.

If double feeding results then slightly more pressure should be placed on the rubber tongue by turning the adjustment screw.

If the paper does not feed without gentle pressure from the rear of the paper stack then more pressure should be placed on the two drive springs with their adjusting screws.

It should be quite easy to get the correct combination of pressures to suit all classes of paper or card. Fine adjustment for the position of perforation can be accomplished by turning the knurled knob on the right of the feed table.

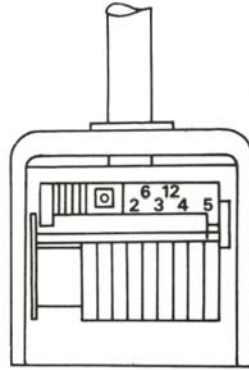


Angular misalignment of the perforations can be corrected by appropriate movement of the lay bars. By loosening the wing nuts, the lay bars can be slid sideways to compensate for the misalignment, and then retightened.

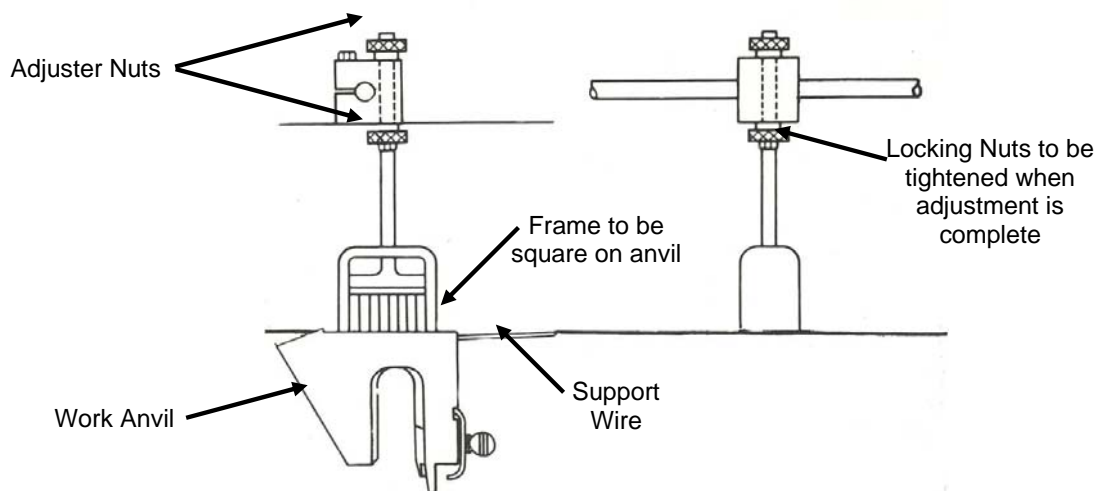
## Setting up procedure for Numbering

Set up as for perforating – leaving the perforating wheels out of position if perforating is not required, but leaving the driving units in engagement with the cutter shafts in the fully engaged position.

On the numbering heads being used set the wheels to the required number and select the 'O' position on the selector assembly.



The numbering heads and work anvils are now placed in the position required as shown below.



The top and bottom transfer wheels should be positioned as near as possible top the centre of the machine and any spare work anvils spaced out to help support the paper.

Also position the support wires in the back of the work anvils.

Great care should be taken to ensure that the vertical movement of the numbering heads is not hindered by any articles close to it. This should include clearance for the selector kicker and ink pad holder, which swing outwards on contact with the paper.

The numbering head adjuster nuts must be positioned so that the numbers just contact the paper when the heads are in the bottom dead centre position. To determine this, manually wind the sheet of paper through the machine by use of the handwheel, until it covers the work anvil. Using the spigot provided turn the capstan wheel through 180 degrees, this will manually lower the numbering head to the bottom dead centre position and onto the sheet.

Wind the adjuster nut outwards from the clamp block and apply hand pressure on the top of the numbering head spindle, until the numbering wheels are firmly in contact with the paper.

Screw the bottom nut upwards whilst still holding the head downwards, until it contacts the underside of the clamp block. The top adjuster nut can now be screwed down and made secure.

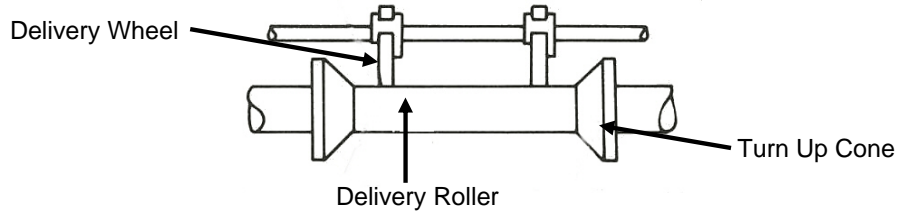
Using this method, the correct impression strength can be achieved immediately.

The locking nut under the bottom adjuster nut can now be tightened.

The photocell and light source is now positioned so that the leading edge of the paper masks the light source when the numbering head is in the required position.

The turn-up cones situated on the delivery roller should now be set in line with the outer edges of the paper and approximately 50mm nearer to the centre of the sheet.

This positioning forms the paper into a shallow trough shape and eliminates the annoying tendency for some sheets to roll over in the delivery tray instead of lying flat.



The top delivery wheels are also effective burr flattening agents when set in line with the perforations.

After removing the keepers from the magnets, the back stops should now be placed on the delivery table to form a box for the processed work to fall into. The magnetism can easily be broken by pulling the back stops directly from the table, thus allowing the positioning to be easily changed.

Please note the base portion of the back stops should be placed to the inside when the sheet will be supported by the bases at the outer edges. This will give full table coverage and also allow a 'finger gap' under the paper for easy lifting of finished work.

The power supply can now be connected to the machine and a trial sheet passed through the machine. Any error in the positioning of the number on the sheet is quite easily rectified by simple adjustment of the 2 dials on the front of the machine – for coarse and fine adjustment.

When all is satisfactory the numbering head selector can be moved from the 'O' to the required position and the machine is then ready for use.

## **Setting up procedure for Perforating, Creasing or Slitting**

*Isolate the machine from the power supply by removing plug from the wall socket.*

In order to position the securing screws for easy insertion of the Allen Key, it will probably be necessary to rotate the machine shafts. This can be done by manually turning the handwheel at the side of the machine.

Using a sheet of paper to be processed, mark out on the leading edge of the paper the positions of the perforations, creases or slits. The feeder should then be set up as described in "Set-up of the Feeder" section on page 4, although at this stage it is not necessary to set the separator tongue and drive springs as these can be done as a final operation.

The feeder bar, which is secured at each end by a thumb screw is removed from the machine and the sheet of paper placed between the lay bars.

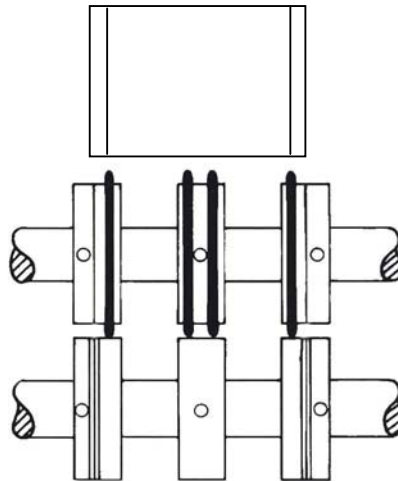
With the engagement lever in the vertical position move the bottom perforating/creasing/slitting units into line with the marked out positions on the sheet.

Any spare bottom units should be spaced out along the cutter shaft to help support the paper. At this stage it is important to ensure that the top units are completely offset from the bottom units, as damage could occur to the perforating blades when the units can are being brought into engagement.

The top units can now be mated one at a time with their corresponding bottom units and the engagement lever brought down to its horizontal working position.

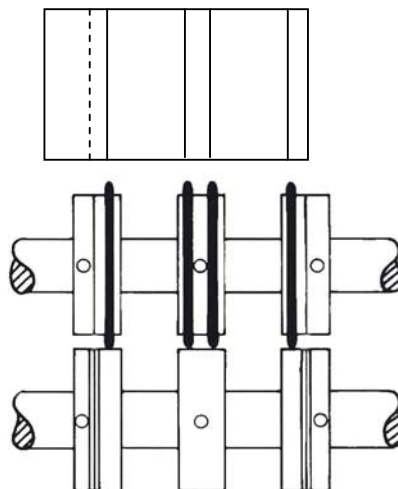
Great care should be taken in this operation to prevent the perforating blades being damaged by not mating exactly with their bottom unit.

Make sure that all the grub screws, which lock all the units onto the shafts are securely tightened and that at least 2 of the control units are in contact with the paper.



Set up showing position of control rings when perforating operation *not* required.

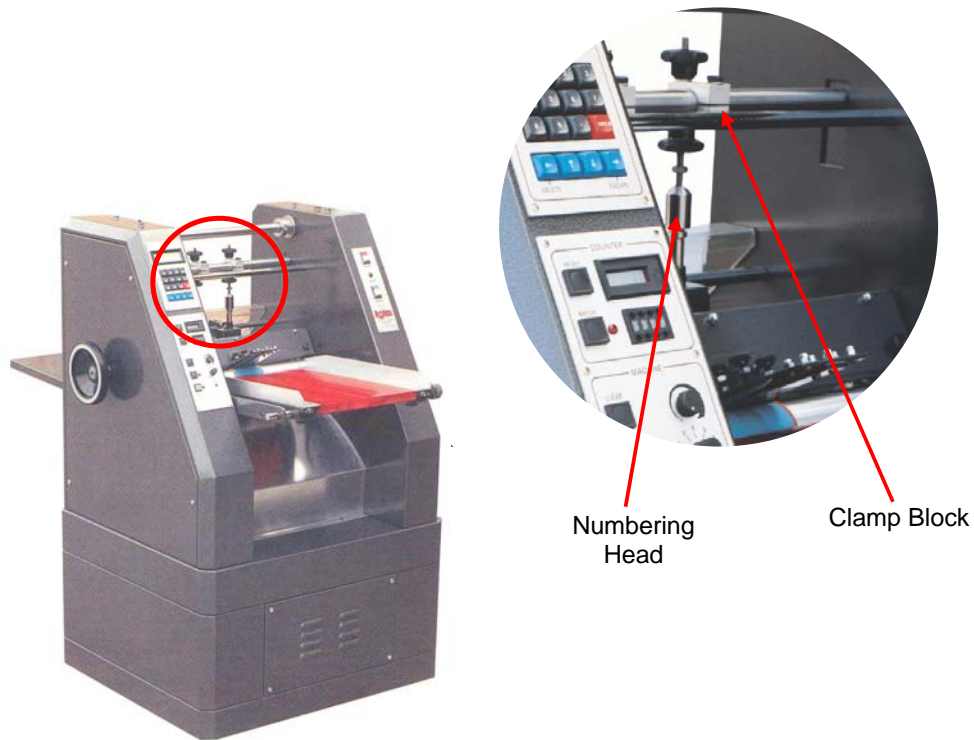
The perforating blades are set to miss the edge of the sheet while the adjacent control rings are in contact with the sheet.



Set up showing position of control units, when 1 line of perforation is required.

The right hand perforating unit is set so that the perforating blade misses the edge of the sheet to act as a control unit.

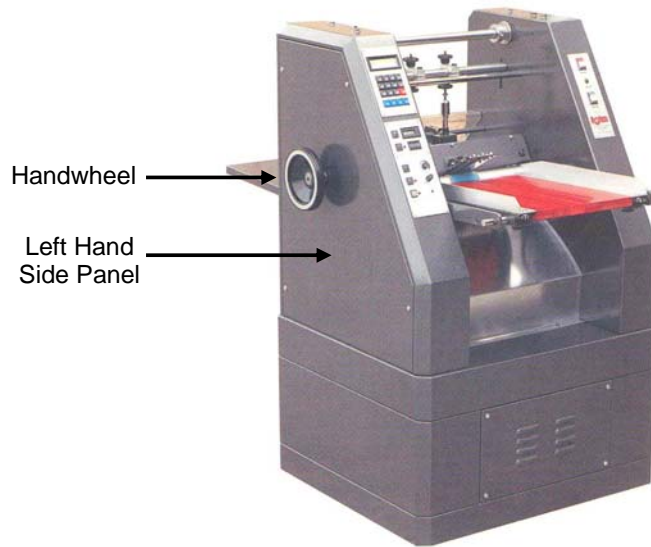
## Fitting New Clamp Blocks



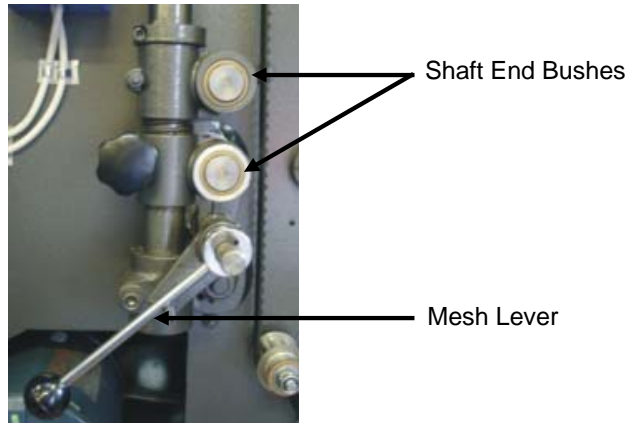
1. Isolate the machine from the power supply by removing the plug from the wall.
2. Remove the engagement lever and handwheel.
3. Remove the right and left hand side panels.
4. Move the numbering head shaft to the bottom dead centre position.
5. Remove the bolt and bevelled spacer washers, which secure the connecting rod to each end of the numbering head shaft.
6. Slacken off the shaft securing bolts located in the slider bearings.
7. Slacken off the socket screws in each of the two safety guards.
8. Remove the socket screw, which secures the flange of the shaft to the left hand slider bearing and withdraw the numbering head shaft sufficiently to allow the clamp blocks to be added. Care should be taken to catch hold of the left hand safety guard as the numbering head shaft is being withdrawn.
9. To re-assemble, reverse the dismantling procedure, making sure that all bolts are securely tightened before running the machine.

## Fitting or Removing Perforating, Slitting and Creasing Units

1. Isolate the machine from the power supply.
2. Remove the cutter guard.
3. Remove the right hand side panel.
4. Remove the handwheel and the left hand side panel.



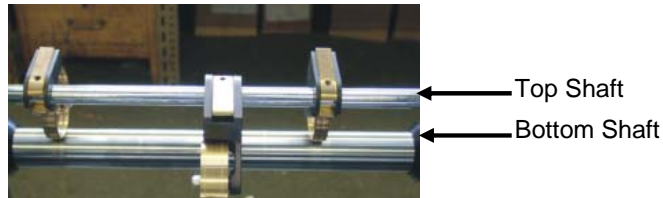
5. Using an Allen Key, remove the spring loaded shaft end bushes.
6. Lift Mesh Lever to upright position.



7. Slacken Allen screw in roller drive gear on right hand side of bottom cutter shaft.
8. Slacken Allen screws in chain sprocket on left hand side of bottom shaft.

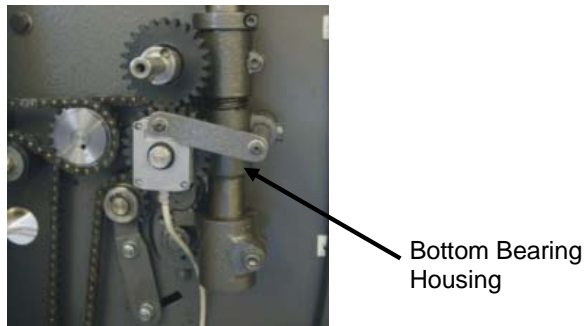
9. Push top shaft to the left, leaving enough space between the side frame to enable top units to be removed or fitted. Move perforating units to the right.
10. Push bottom shaft to the left, leaving enough space between side frame to enable bottom units to be removed or fitted.

Note: The feed roller gear will have to be removed from bottom shaft at this stage and any perforating units moved to the right.

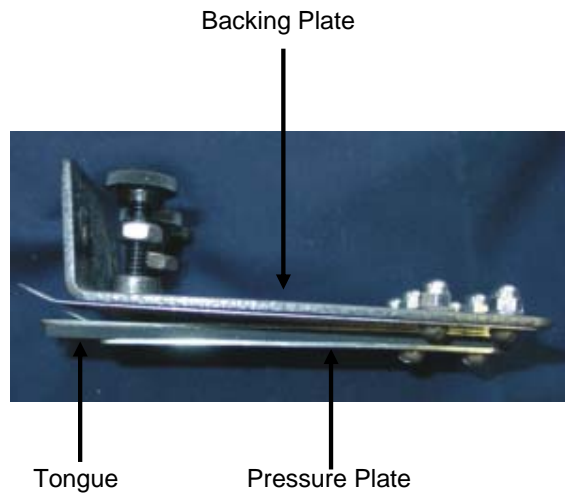


11. Reverse the above operations to reassemble the machine to working condition.

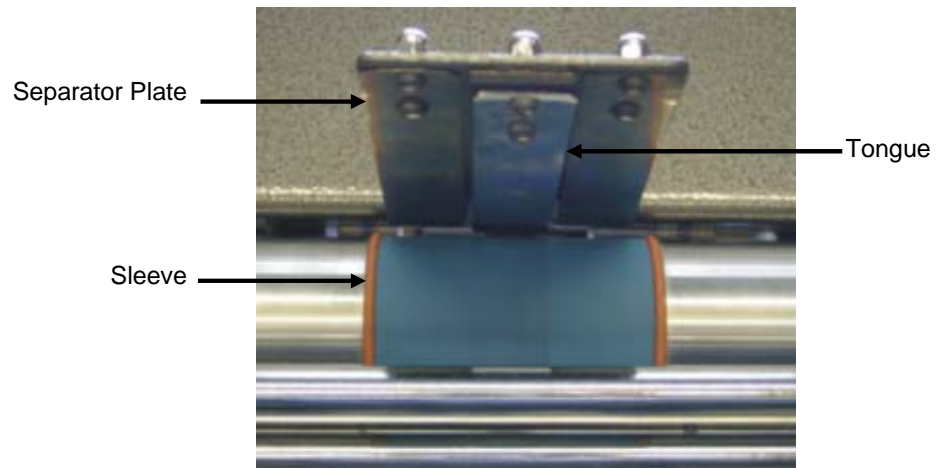
Note: Before tightening up bottom chain sprocket it should be pushed hard up to bottom bearing housing.



## Relative Positions of Separating Tongue and Clamping Plates



The rubber Tongue should be 3mm shorter than the Backing Plate.



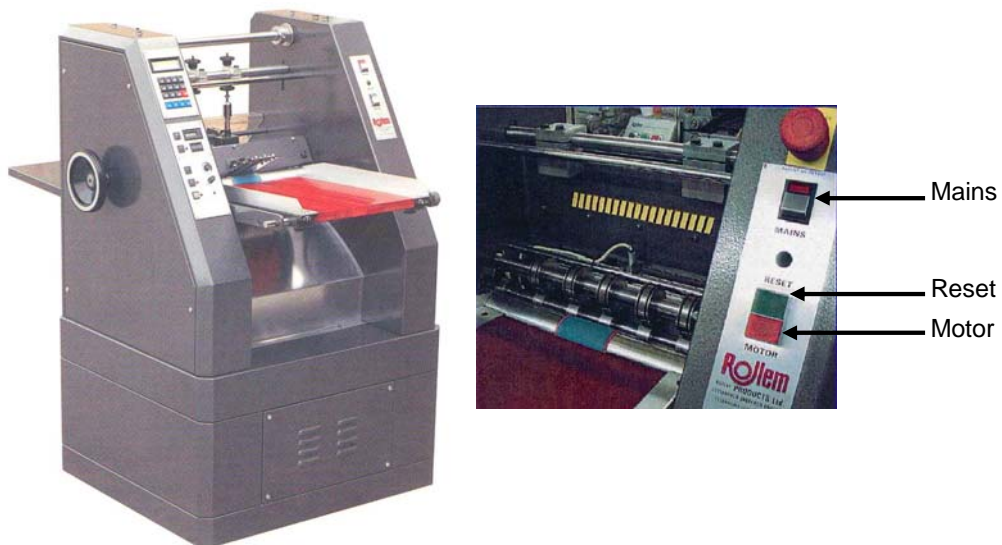
Adjust Separator Plate to make Tongue square to sleeve.

## Operating the Machine

### Starting Sequence

The switching sequence is important.

2. Switch on the top switch marked 'MAINS'.
3. Switch on the middle switch marked 'RESET'.
4. Switch on the bottom switch marked 'MOTOR'

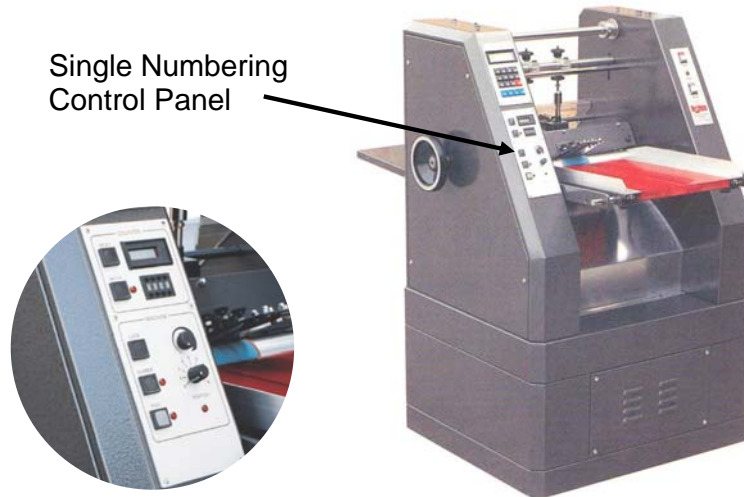


The reason for this sequence is to prevent the machine from giving a numbering stroke before the first sheet is fed into the correct position.

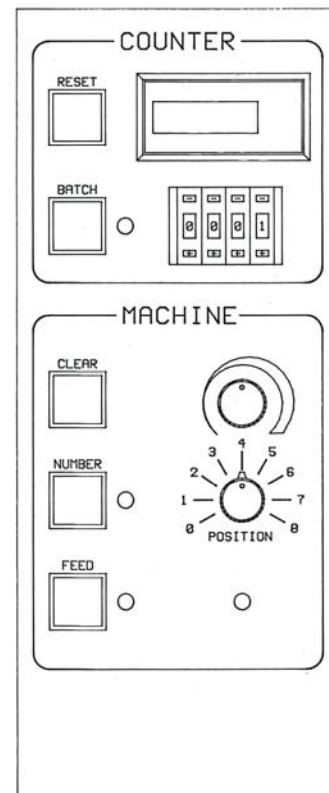
In this sequence the reset switch ensures that the brake is applied to the numbering head assembly until the first sheet is in position.

## Single Numbering Control Panel

The M330 control panel is mounted on the left hand front panel of the Auto 4. The Mains and Motor switches are mounted on the right hand front panel.



The M330 control panel is shown on the right. It is divided into 2 sections, labelled Machine and Counter. The machine controls are used to start and stop the machine and to set the numbering position. The Counter is a pre-settable batch counter that may be used to stop the machine after a specified number of sheets have been processed.



## ***Machine Controls***

These consist of the Feed, Number and Clear pushbuttons, a 9-way Position switch, a fine position control and 3 indicator lamps.

### *Feed Switch*

This is used to start and stop the drive rollers of the machine. When feed is pressed the machine will start running and the lamp will light. Pressing feed again will cause the machine to stop and the lamp will go out.

### *Number Switch*

This is used to disable the numbering head when performing creasing/perforating operations. When the adjacent lamp is lit the numbering head will be operative. Press the switch to disable the numbering head and the lamp will go out.

### *Clear Switch*

When the machine is 'halted' at the end of a job it is possible that there may be some paper remaining in the machine. The clear switch allows any paper in the feed path to be ejected without numbering. Press clear to operate the drive rollers. They will stop again as soon as clear is released.

### *Position Controls*

The 9-way position switch and the fine control located directly above it are used to set the position of the number on the paper. Each step of the switch moves the number approximately 2.5" down the sheet. When a coarse adjustment has been made using the position switch the final position may be obtained using the fine control.

## ***Counter Controls***

The counter controls consist of 2 push buttons (Reset and Batch), a 4 decade (0 – 999) digital push button switch and an indicator lamp. The current count is displayed on an 8 digit counter.

The counter may be used as a totalising counter if the Batch mode is not required.

### ***Reset Switch***

The reset switch has 2 functions. When not in batch mode it resets the counter to zero. When in batch mode it also sets the batch quantity to whatever number is displayed by the digit switches.

### ***Batch Switch***

The batch switch is used to switch the batch counter on and off. A lamp next to the batch switch indicates when the batch counter is in operation (a steady glow) and when a batch has been completed (flashing).

### ***Digit Switches***

The digit switches are used to set the required quantity for a batch run.

## Setting Up

The numbering unit, control wheels, perforating units etc are set as per the Auto 4 operating manual.

Switch on the machine and motor power switches located on the right hand side panel. The motor will be heard running but the machines rotating parts should be stationary.

If the lamp next to the number switch is lit, press number to extinguish it. Similarly, if the lamp next to the batch switch is lit, press batch. No lamps should now be lit.

Press the FEED switch. The lamp next to it will light and the machine will run. The feeder mechanism should now be adjusted as in operator manual. Check that the photocell is positioned so that the light beam is interrupted as paper passes it.

During this procedure the numbering head remains inoperative.

If numbering is required the number position should now be set as follows:

1. Press feed to halt the machine.
2. Press number. The lamp next to the number switch should light. The numbering head is now operative.
3. Set the position switch to 0 and the fine position control fully clockwise.
4. Press feed again to start the machine and feed a single sheet of paper. A number will be stamped close to the leading edge of the sheet.
5. If the number is not far enough down the sheet move the position switch to 1.

Re-feed the sheet and check the new numbering position. Repeat, moving the position switch one step at a time until the number falls just beyond the required position.

6. When the number is too far down the sheet adjust the fine control anti-clockwise, re-feed the sheet and re-check the number position. Repeat, adjusting the fine control up or down as necessary until the correct number position has been obtained.
7. If numbering at the leading edge of a sheet and the correct number position cannot be obtained within the range of adjustment provided, move the photocell assembly so that the light beam is broken earlier, i.e. towards the feeder end of the machine. Then adjust as above.

The machine is now set up for numbering.

## **Operation**

### ***With Numbering***

1. Using the feed switch halt the machine
2. Load the feeder tray with the stationary to be numbered.
3. If a totalising count is required press reset to zero the counter.
4. If the lamp next to the number switch is not lit press number to enable the numbering head.
5. Press feed. The machine should begin running and numbering.
6. When the job s complete press feed to halt the machine.

### ***Without Numbering***

This is the same as operation with numbering, except that before starting the machine the number lamp should be unlit.

### ***With Batch Counter***

Set the machine up for numbering/creasing/perforating as required. Before using the feed switch to start the machine The batch counter must be set as follows:

1. Set the required quantity using the digital switches.
2. Press the batch switch. The lamp next to it will light.
3. Press the reset switch.
4. Start the machine using the feed switch.
5. When the required number of sheets have been processed the batch counter will halt the machine and the lamp by the batch switch will change from a steady glow to flashing.
6. Use the clear switch to eject the final sheet.
7. If you wish to repeat the batch press the reset switch. This will cancel the flashing light, reset the counter and reload the batch quantity as set by the digit switches.
8. The machine is now ready to be restarted. To switch off the batch counter press the batch switch. The batch lamp will go out.

Note: If having set up the batch counter, the quantity is altered on the digit switches, reset must be pressed to load the new value.

## **Interrupting a Job**

If the need arises to interrupt a job part way through, this should be done by disengaging the paper feeder, allowing the feed path to clear and then pressing feed to halt the machine.

Alternatively, press feed and when the machine has stopped remove the paper stack and use clear to clear the feed path.

Note: Of the feed path is not cleared before the machine is restarted a miscount may occur.

## Maintenance Requirements

All the bearings on the Auto 4 are oil impregnated and should not require oil during the life of the machine.

The perforating cutters should be oiled occasionally with a few spots of thin oil; this will increase their life considerably.

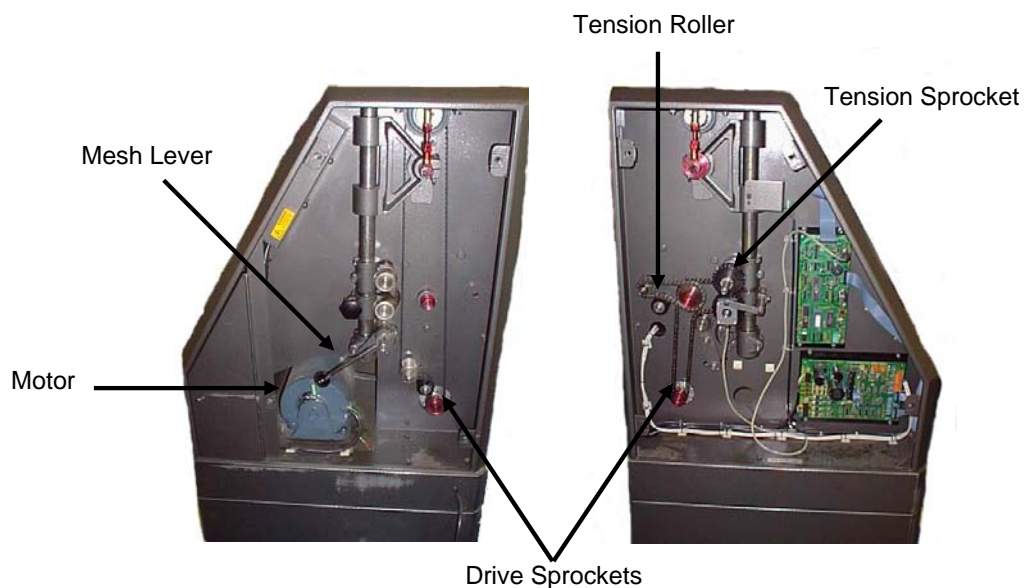
The drive chains should be oiled occasionally and should be adjusted by the tensioning sprockets and rollers should they become slack.

The numbering heads should always be kept as clean as possible. Ink left on them dries hard and sticks to the wheels, causing numbering errors.

A good tip is to stand the heads overnight in numbering head cleaning fluid. There are various types available and the better ones contain lubricant, which oils the wheels at the same time as cleaning and adds life to the numbering heads.

Better still is the use of sonic cleaner.

These products are available from Rollem.



## Recommended Spares

<i>Part</i>	<i>Rollem Partcode</i>
Numbering Head - Backward Reiner	84P-0028
- Forward Reiner	84P-0033
Anvil	54A-0003
Clamp Block	58P-0485
Cleaners	57P-0040
Stripper Blades	57P-0039
Automatic Feed Rubber Tongue	85P-0004
Automatic Feed Drive Springs	58P-0219
Automatic Feed Rubber Sleeve	85P-0040
Top Perforating Unit	57P-0350
Bottom Perforating Unit	57P-0351
Ink Pads - ENM	84P-0018
- Reiner	84P-0017
Burr Flattening Wheels	85P-0014

## Troubleshooting

### 1. No response to switches:

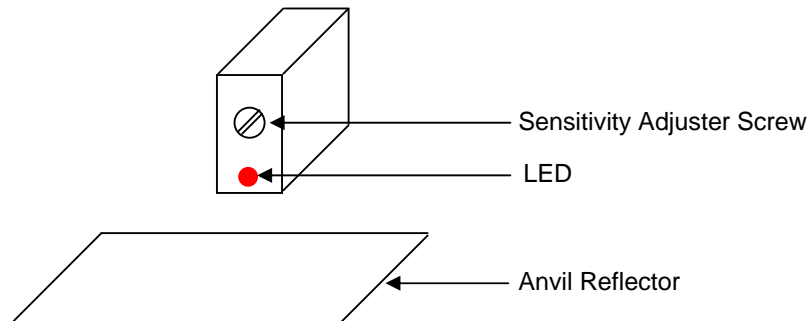
Check:

fuse in wall plug  
fuse (5 Amp) in control box  
mains plug connection in control box  
mains cable for continuity  
mains and motor switch

### 2. Machine rotating but no numbering beam action:

Check the photocell operation as follows:

(a) Is the red LED 'ON' below the sensitivity adjuster screw?



If not, check:

- that the reflector on the anvil is clean
- that the reflector has not been moved
- that the photocell is aligned vertically with the reflector
- that the sensitivity adjustment has not been altered
- that the connection into the PCB is correct (i.e. not loose)

(b) Check that the red LED will turn off (by placing a piece of paper over the anvil reflector)

### 3. Machine rotating but random numbering action occurring:

Random numbering action is almost always the result of loose electrical connections:

- These can occur in the Printed Circuit Board (PCB) itself, which can be easily and quickly replaced from stock if necessary.
- It can also be caused by the circuit board not being pushed home to its connection seating. All current models have a security washer and screw at the right hand side of the housing slot, check that this is tight.
- Check the outlet plugs from the control box for loose connections and also the photocell and light source connections.
- Check that the bulb is in good condition and is giving enough light. If the light is too dim, then the photocell could act intermittently, giving

random action to the numbering beam. Light can be increased as directed above.

- (e) On rare occasions, a heavy voltage drop in the supply caused by intermittent load on nearby equipment (such as power guillotines) could cause the minute darkening of the bulb. This could cause the photocell to react and a brighter setting on the bulb could cure this fault.

**4. Motor running but no machine action at all:**

- (a) This fault could be caused by the circuit board not being pushed home correctly to its terminal seating as discussed in 3(b) on page 56.
- (b) Also the 2 Amp fuse (4 Amp for 110 Volt supply) on the control box face should be checked and replaced if faulty.

**6. Numbering beam continually working – will not stop on a dead central position:**

- (a) Check the reed switch masking plate position. This is adjustable and should be clear of switch and magnet when numbering beam is up at top dead centre. If this is correct then replace reed switch.
- (b) If the fault is not cured after all connections have been checked, replace the circuit board.

**7. Error on number position on sheet:**

- (a) The most common cause of this fault is omitting guide wire on light source bracket. This **must** be set so that the leading edge of each sheet of paper rides smoothly over the light source and does not allow the edge to collide with the light source or bracket.
- (b) The only other cause of error is a malfunction of the clutch/brake unit on the driving side of the machine.
- (c) A common malfunction is caused by the oil on the working faces of the unit. Even a minute amount of oil can give a considerable error but this can be overcome by treating the working faces with Carbon-Tetrachloride or any efficient degreasing fluid such as MEK Dry Cleaning Fluid or similar.

*Please DO NOT use petrol or paraffin. These are oil based liquids and will only make the fault worse.*

**8. Numbering beam will not complete full cycle but remains at bottom position:**

- (a) This fault can be caused by overloading the numbering unit by setting the heads during crash numbering on hard anvils too deeply.
- (b) Continued use of the machine under these conditions can cause

overheating of the numbering unit clutch and possible oiling up of the faces by overheating the oil from the bearings. The remedy is as described in 7(c) above.

- (c) Another cause could be a loose driving belt from the motor to the unit pulley, or a loose pulley. The belt should be replaced if worn, or pulleys tightened on either motor unit.
- (d) Vibration at this bottom position could also create movement on any loose connection. Check as described previously on panel and plugs etc.
- (e) Also check the reset switch and replace if necessary.

**9. Numbering action occurs when motor switch is operated:**

This is definitely a fault with the reset switch.

**10. Machine running but feed roller not revolving:**

This is probably due to an unsecured driving gear on the bottom cutter shaft or an unsecured idler gear between the feed roller gear and the driving gear, or possibly a broken gear in the next of the three gears.

**11. Machine running but feeding intermittently:**

- (a) Intermittent feeding is often caused by the wrong setting of the feed assembly, and can be due to too much load on the central separating tongue or too little load on then driving springs.
- (b) Another common cause is too large a stack of the stock in the feeder.

**12. Double feeding:**

- (a) Double feeding is usually caused by too much load on the driving springs or too little load on the central separating tongue.
- (b) There may be a lack of air between the sheets in the pack which should be slightly 'fanned' and well broken before inserting into the feeder.
- (c) The effect of a blunt guillotine blade 'hooking' down the sheet edges can be very bad for easy separation and is a major cause of double feeding.

**13. Perforation out of alignment with side edges:**

This fault is always caused by wrong adjustment of the feeding lays. Angular setting is provided and should be used correctly. Also, wherever possible, the sheet should be dead central with the separating tongue.