The Rational Labelling & Marking Systems Ltd.

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Model OP60neo Thermal Print & Apply, Operator and Maintenance Manual.

Welcome to Rational Labelling & Marking systems
OP60neo Thermal Print & Apply System

By selecting the OP60neo you have made a significant investment in your business which will enhance your production for many years to come.
The following documentation is designed to compliment and aid the efficient use and maintenance of your Machines.

CAUTION

READ BEFORE OPERATING EQUIPMENT

All operating and maintenance personnel must read this manual and pay attention to all warnings and cautions before operating or servicing the equipment.

Safety Symbols.

You will encounter various symbols on the machine. These are designed with your safety in mind. Pay attention to all symbols and safety advice.

You will encounter this warning sign on all covers that will expose mains electricity once opened. Always isolate mains prior to opening.

General Safety Tips.

1. Prior to starting machinery ensure all personnel are aware and clear of the equipment.
2. Make sure all foreign objects are removed and all safety guards are in place.
3. Make sure the pack arrestor tray as in the up position and that packs can flow through the machine.
4. Make sure the machine is secure in its mounting to the equipment stand
5. Make sure the equipment stand is secured to the grader or primary equipment base.
6. Maintain good housekeeping at all times.

Operating, Service and Maintenance safety.

1. Do not attempt to service the machine until qualified. Only trained personnel should be operating and servicing the machine.
2. Do not conduct maintenance procedures while the machine is in operation. Ideally remove the machine to a maintenance workshop for any servicing procedure.
3. Never open covers with power on.
4. Give capacitors time to discharge before opening covers.
5. Always replace covers before powering up.
6. Always use the proper tools for each task
7. Always use the proper replacement parts.
8. All electrical maintenance should be performed by qualified personnel.
9. PAT all appliances after performing electrical maintenance.

Cleaning of the machine

⚠️ **Before attempting to clean the machine, ensure the power is off and the mains power supply is isolated. The machine is designed to be cleaned with most mild detergents or stainless steel cleaning agents. Avoid ingress to print heads and control sockets.**

⚠️ **If compressed air is used to remove loose material, operators must wear appropriate safety clothing and goggles.**

# Introduction

The OP60neo is the 3rd generation of thermal printer for labelling of egg packs on packing lanes of most common egg graders. The Name is derived from OP (Olympus Printer) 60 (60mm print height) Neo (new). It takes its place as the latest development of the genre, incorporating many of the features in previous models enhanced with new technologies and refinements. The branding image of the machine is familiar while all the components and firmware are new and specific to this machine.

As with all Rational Machines the OP60neo can be integrated with Rational Software and other Rational Machines to form a total operating system. The OP60neo can also be used as a standalone machine, operating with embedded print designs pre-programmed to your requirements.

When the machine forms part of a larger system, each individual machine has a unique identity provided by a USB stick with the IP address for the lane hard coded. When inserted into the USB socket on the machine the IP address will be uploaded. If a machine is moved to a different lane, the USB is removed and the free one on the new lane inserted.

Getting Started
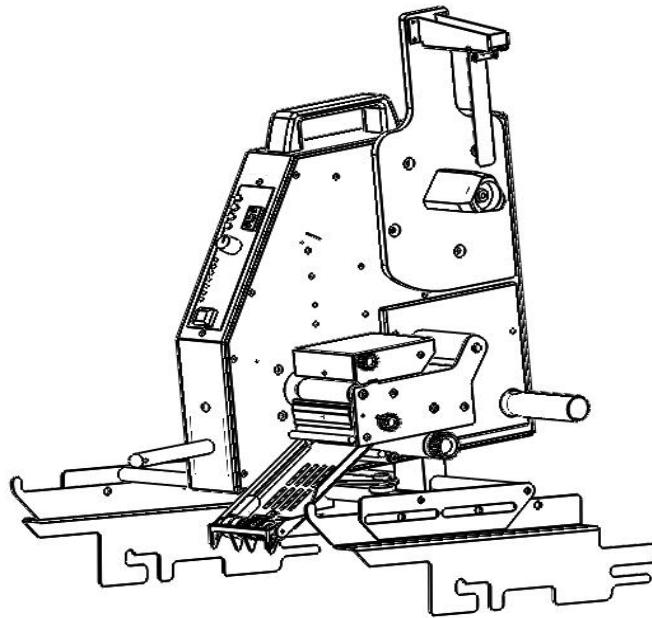
Each grader is fitted with stands or equipment brackets specific to that model. The OP60 is fitted with feet which will clip on to all stands regardless of grader model. The front foot is a hook which is positioned first and the machine is then pushed down until the rear foot engages the stand.

On Moba Equipment brackets a sliding section of the stand enables longitudinal movement of the machine to effect different labelling positions on the pack. Lateral movement is effected by sliding the machine or removing and repositioning.

Page 9 shows the inputs on the rear panel of the machine. Connect the mains switch and IP USB associated with the lane of the grader. The machine will go through its start up procedure and connect to the host software.
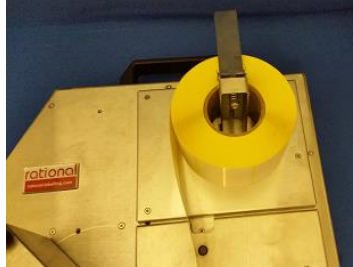
Paper feed roll.

There are two types of feed roll fitted to the machines. The one shown is the standard and there is a large reel kit allowing rolls double normal size to be used. Both have the same principle; however the large reel kit has tension control added.
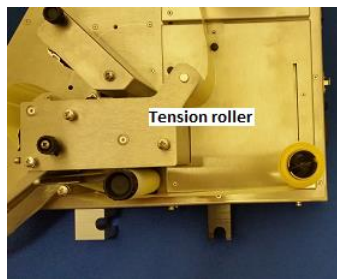
With the paper roll on the roll hub feed the paper through the tension roller and under the print head mechanism

Adjust the paper guide to secure the paper under the print gap sensor as above.
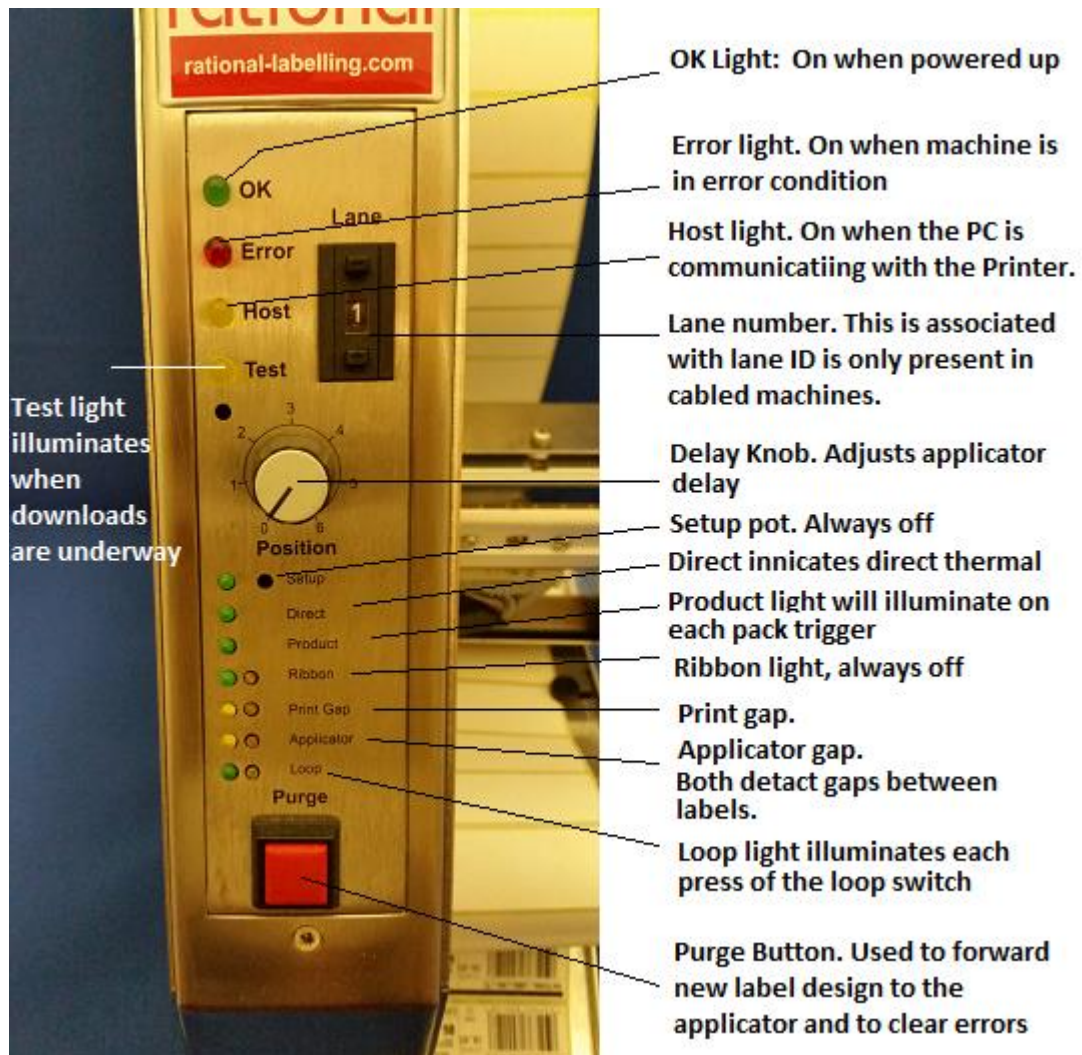
Feed the paper behind the Upper guide pin and down to the end of the applicator arm where you can adjust the second of the paper guides to secure the paper under the applicator gap sensor. The sensor is embedded in the white cover seen on the left.

The paper is then passed around the stripping edge, over the lower guide pin, around the pinch roller, then the tracking pin before making its final journey to the take up spool. The pinch roller can now be closed. The take up spool is operated via a slipping belt, therefore can be wound CCW to take up any slack.

OK Light: On when powered up

Error light. On when machine is in error condition

Host light. On when the PC is communicatiing with the Printer.

Lane number. This is associated with lane ID is only present in cabled machines.

Delay Knob. Adjusts applicator delay

Setup pot. Always off

Direct innicates direct thermal

Product light will illuminate on each pack trigger

Ribbon light, always off

Print gap.

Applicator gap. Both detact gaps between labels.

Loop light illuminates each press of the loop switch

Purge Button. Used to forward new label design to the applicator and to clear errors

Test light illuminates when downloads are underway

Notes on the Front Panel

- **Lane number indicator: Wi-Fi machines will not have this as the lane is identified by USB stick in the rear panel.**
- **Delay Knob: This is only used when machines are on continuous motion conveyors. On Step conveyors the delay must always be set to zero.**
- **Test light: Under the test light is a pot. If the pot is turned CW, the light will come on and stay on. This was for engineering purpose; however it has no positive purpose now. DO NOT OPERATE THIS POT.**
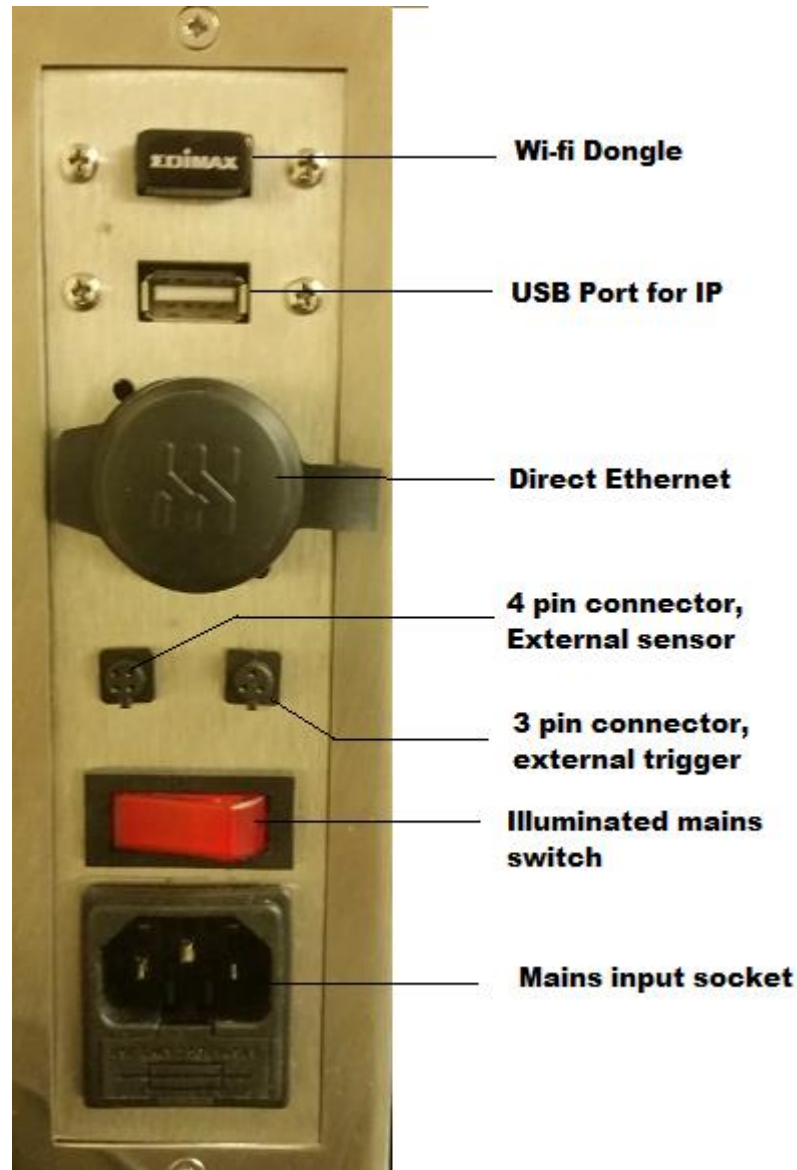
Rear Panel connections and inputs

- **Connect the grader trigger cable, (page10) to the 3 pin external trigger socket.**
- **Connect the external sensor cable, (page10) to the 4 pin external sensor socket.**
- **Connect the mains input lead IEC 90-240v to the mains input socket.**
- **Insert the lane specific USB stick, (page 10) into the free USB socket. (Only if used as a network machine).**
- **When ready to begin, use the mains switch to power on/off.**

External Trigger cable External sensor and cable

Mains lead

USB IP

Trigger Options

| LPT (Low Pressure Trigger) | Opto sensor |

- **LPT. The LPT is designed primarily for continuous motion conveyors and will provide accurate wipe down dispensing of labels under those conditions. The apply position is controlled by the delay knob on the front panel, (page 8).**
- **Opto sensor. This is used on all conveyor types; however, it is particularly useful on step conveyors. The machine can be set to apply the label at the end of a short stroke of the grader packing conveyor and the actual position of the apply is then defined by the longitudinal position of the machine, (page 5) and the position of the sensor on its mounting. There is adjustment on the mounting for front to back and side to side. For adjustments to the sensor refer to sensor adjustment in maintenance.**

Maintenance

Print head cleaning

WARNING

The print head is a delicate piece of precision engineering and electronics.

- **NEVER touch it with a sharp object or anything metallic.**
- **NEVER use undue force to remove or replace it.**
- **Rub gently when using an Alcohol based solvent to clean it.**
  The better you treat it, the better the service it will give you!

The printhead need only be cleaned if a label has become stuck to the under-side, preventing correct printing, or the print quality is poor. (Dots missing from print; print "overflowing" into other areas of the label, grey rather than black print). You may see black residue of carbon on the underside of the head.

The printer should be taken off line and turned off before cleaning. Do not use any solvents other than high purity methyl alcohol (Surgical spirit).

NOTE: Alcohol adversely effects thermal printing paper (it makes it turn blue!) so if you use it, unload the paper from the machine first. And allow it to dry out thoroughly before replacing the paper. On the OP60 the drive rollers are now made from a different material and cleaning them with any solvents other than water and detergent is NOT RECOMMENDED.

Turn the printer off, and lift the print head, as if you were going to change the paper. Pull off any loose pieces of paper. Then using a CLEAN lint free cloth dampened with Methyl Alcohol gently rub off any remaining paper or adhesive on the bottom of the print head. If you are using thermal transfer there may be some build up of transfer ink, this can be removed the same way. There is a thin black line down the entire length of the print head this is part of the head and is normal.

Adjustments:

Print gap sensor and adjustment

1) Make sure that a section of backing paper, with a label on, is in the detector fork.
2) Turn the adjuster CCW for 20 turns.
3) If the lamp is on skip straight to number 5.
4) If the lamp is off turn the pot CW until the light comes on, counting the turns, this is value "A".
5) Take the label off the backing paper, so that only backing paper is in the fork.
6) The light should have gone off again. If not the printer may be faulty, telephone Rational.
7) Turn the adjuster CW counting turns until either:
   You have turned for twenty turns less "A" turns, or until the light comes on again.

8) Turn the adjuster CCW half the number of turns you just counted.
9) Re-check the detector for correct operation.

Applicator gap sensor and adjustment

The following is used to set the gap on normal arms (some old arms may be different, contact Rational):

1) **Make sure that a section of backing paper, with no label on, is in the detector fork.**
2) **Turn the adjuster CCW for 20 turns.**
3) **If the lamp is off skip straight to number 5.**
4) **If the lamp is on turn the pot CW until the light goes off, counting the turns, this is value "A".**
5) **Pull the label stock through, so that a label is in the fork.**
6) **The light should have gone on again. If not the printer may be faulty, telephone Rational.**
7) **Turn the adjuster CW counting turns until either:**
   You have turned for twenty turns less "A" turns.

   or   Until the light goes off again.

8) **Turn the adjuster CCW half the number of turns you just counted.**
9) **Re-check the detector for correct operation.**

   Loop sensor and adjustment: Machines from 2009 have loop switches which require no setting.

This sensor is used to detect the position of the paper loop. Used to provide an indication to the machine that the loop between the printer and the applicator has become tight. Or to reset the error condition if a paper jam has occurred.

1. **Place the label stock over the hole in the front plate and hold it there.**
2. **If the LED is on skip to stage 4.**
3. **Turn the adjuster CCW until the LED comes ON. If after 20 turns it does not, then the sensor is faulty.**
4. **Turn the adjuster slowly CW until the LED goes off.**
5. **Turn the adjuster a further half turn.**
6. **Test the sensor by moving the stock slowly away from and then towards the sensor.**

When the light comes on with the stock from about 1 to 2mm away from the hole the sensor is correctly adjusted.

Opto sensor adjustment. Rational reserve the right to change provider of the opto sensor. Below is the correct use of Wenglor HD12NCT3. Details on the next page

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Adjustment

Foreground Teach-In
- Mount and adjust the Sensor.
- Align the spot to the OBJECT.
- Press and hold the Teach-In key until the LED blinks (approx. 1 second), and then release.
  ⇨ Switching distance is set to directly behind the surface of the object.
- Test the switching function.

1×
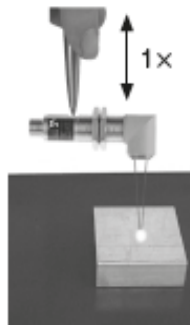
Background Teach-In
- Mount and adjust the Sensor.
- Align the spot to the BACK-GROUND, or to empty space.
- Press and hold the Teach-In key until the LED blinks (approx. 1 second), and then release.
  ⇨ Switching distance is set to directly in front of the background, or to Sn max. in the event of Teach-In to empty space (see "Teach-In to Empty Space").
- Test the switching function.

1×
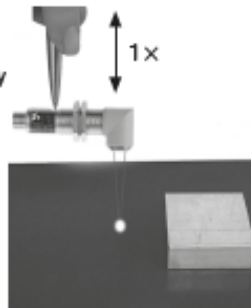
Teach-In to Empty Space
In this case it is advisable to perform Teach-In at a distance of somewhat more than nominal sensing distance (120 mm). An object, such as a sheet of paper, is positioned approximately 130 mm in front of the Sensor to this end, and the teach key is activated. The Sensor adjusts itself to a sensing distance of approximately 125 mm (Background-Teach-In).

Selecting a Teach-In Mode
- Press and hold the Teach-In key for at least 10 seconds, until the LED switches from rapid to slow blinking

Blinking	Normally closed/ Normally open	TEACH Mode
1×	NO	Background Teach-In
2×		Foreground Teach-In*
3×	NC	Background Teach-In
4×		Foreground Teach-In

*preset configuration

- Press the key briefly to advance to the next Teach-In mode.
- After the key has not been activated for 15 seconds, the Sensor returns automatically to the normal display mode.
- Repeat Teach-In process corresponding to setup instructions.

Interlock
If the external Teach input is permanently switched to +Ub,

External Teach-In
The Sensor is equipped with an additional input for External Teach-In (pin 2). If a positive voltage pulse is applied to this input, sensing distance is adjusted automatically.

Additional Functions for activation via the interface: On-/Off-Delay
Either pull-in or release delay can be activated at the Sensor via the interface. Delay time can be adjusted. The A232 adapter box is required in order to be able to connect the Sensor to Demo software available at: www.wenglor.com

Diagram Contamination Warning

Proper Disposal

wenglor sensoric GmbH does not accept the return of unusable or irreparable products. Respectively valid national waste disposal regulations apply to product disposal.

For normal use; set to mode 3 or 4

Printer Diagnostic

Printer does nothing

The power light is OFF

- Turn the printer On!
- Check fuses

The Error light is on

- If a paper jam is being reported on the computer then check that there are labels in the machine and that they are correctly installed. Particularly make sure that the paper goes through the printer gap detector under the loop pin on the OP60, and that the printer mechanism is closed.
- Has the lane ID been correctly assigned? Is the correct number set on the front of the OP60?
- Have you set the applicator speed to 0?
- Otherwise, or if the comms lamp does not flash every few seconds, check cable and software diagnostics.

Problems with printing

When printing the paper does not move, but motor runs.

- Check that the print roller is turning, if not contact Rational.
- Check that the head is locked down on the OP60, gripping the paper.
- Ensure that the pinch roller is clean. If you need to clean the roller refer to the maintenance section of the appropriate chapter for that printer.
- Make sure that the paper can move freely. When the head is up. (ensure no labels are stuck to the print head or roller, and that the labels can be pulled of the label reel).
- If the roller is running backwards, check the cable and software diagnostics.

When printing the paper moves but the label is blank.

- Confirm that you are using thermal paper stock.
- Check that there is not a label stuck to the print head. If there is, remove it and then clean the print head. Refer to the appropriate maintenance section.
- If the print head has been removed check that it has been replaced correctly.
- Check that the head locking pin is fully engaged. On some early versions of the OP60 the locking washer can move which allows the locking pin to come loose, if you experience this contact Rational.
- Check a valid label is being sent from the computer, and then check the cable diagnostics.

Label is printed in the wrong place

In the wrong position in the direction of paper feed

- Check that the stock is passing through the print gap sensor correctly.
- Ensure the paper guide is holding the stock in the gap sensor correctly.
- Check that paper is free running with the head up.
- Check that the pinch roller is clean.

If you are using the printer as one of a pair, and you want to use a different size label to that defined in the label design then you can place the printer into set-up mode and allow the printer to measure the label length for itself. Note that it only does this on power up, so you will have to turn the printer off and then on again.

In the wrong position across the label.

- It is possible that small errors in the cutting of the label stock margins will cause this problem. In this case slackening the paper guide slightly may remove the problem.

- Check that the paper (and ribbon if one is being used) is tracking through the mechanism correctly.

- Check that the label design is correct.

Problems with Applying labels

Application is not consistent

- Make sure that there are no labels stuck under the printer which might cause the paper to jam,

during an application cycle.

- Check that the pinch roller is fully engaged.

- Ensure that the applicator arm is returning to its rest position after each apply cycle.

- Arm height and applicator speed also significantly affect applicator accuracy, for more information on these go to appendix A "getting the most out of your system".

Two or more labels are being applied each time

Check the operation closely. You will probably see that the applicator is running until the label stock goes tight over the loop detector. It then stops, two labels are printed, and the machine is ready to start the

next cycle. If this is the case then the applicator gap sensitivity needs setting. Follow the instructions appropriate to your printer to reset this. If you cannot reset the sensor contact Rational.

Labels are being printed but not applied

• Check that the pinch roller is fully engaged.

• Make sure that there are no labels stuck under the printer which might cause the paper to jam, during an application cycle.

• For an OP60, check that the drive roller is turning. If it is not then the 2mm Allen locking screw may have come loose. In this case the drive roller has usually moved in towards the centre plate of the machine (it is normally about 4mm away from the plate). The screw locates into a dimple in the motor drive shaft.

    1. Remove the side plate.

    2. Remove the deck

    3. Remove drive band from the drive roller

    4. Remove the drive roller from the shaft

    5. Align grub screw with dimple and replace the roller

    6. Locate the grub screw above the dimple

    7. Tighten it up, using Locktight 242 or similar.

    8. Re-assemble the unit in reverse order.

The waste stock is not being wound up correctly

    1. Check the rewind belt by removing the bottom cover over the rewind spool. If the belt is too loose it will not operate the spool. Replace

    2. Check the grub screw retaining the drive roller to the shaft. There may be two grub screws, one locking the other in place. If loose the roller will not be turned by the motor.

part number	PART DESCRIPTION
R00114	MOTHERBOARD EXCHANGE
E00001A	MOTHERBOARD NEW
E00002A	FRONT PANEL
E00003A	POWER SUPPLY UNIT
E00004L	SENSOR APPLICATOR AND PRODUCT LEFT
E00004R	SENSOR APPLICATOR AND PRODUCT RIGHT
E00007	SENSOR OP60 PRODUCT
E00009B	SENSOR OP60 PRINT GAP
E00010a	SENSOR OP60 LOOP ARM
E000011	MAINS INLET LOOM
E00012B	STEPPER MOTOR & LEAD BLACK
E00013	CABLE, DATA (COMPUTER LINK CABLE)
E00014	CABLE PRINT HEAD OP60
E00015	PRINT HEAD CABLE OP50
E00016	LEAD, FRONT PANEL
E00018	LINK MAINS
E00019	LINK, LONG EARTH
E00020	LINK EARTH SHORT
E00021	CABLE, APP ARM EARTH LINK
E00022	CONNECTOR MAINS SOCKET
E00023	SWITCH MAINS
E00024	FUSE, 3.15a
E00025	PRINT HEAD 6 DOT ROHM
E00025 X 5	PRINT HEADS 6 DOT 5 OFF
E00026	PRINT HEAD 8 DOT ROHM
E00026 X 5	PRINT HEADS 8 DOT 5 OFF
E00031	KNOB DELAY OP60
E00100	BREAKOUT BOX WITH MAINS
E00101	EEPROM
E00103	WASHER M3 SHAKE PROOF
E00104	SCREW M3 X 6 PAN HEAD
E00105	SCREW M3 X 6 S/S POZI CSK
E00106	NUT M3 SELF LOCKING
E00107	SPACER M3
E00108	CHIP IO1810 (MOTHERBOARD)
E00109	VRAM CHIP 1810 ON MOTHERBOARD
E00110	CHIP 297 (MOTHERBOARD)

E00111	CHIP 298 (MOTHERBOARD)
E00112	CHIP 64180 (MOTHERBOARD)
E00115	SWITCH PURGE OP60
E00116	CHIP HD64
E00119	CHIP 62256
E00120	CHIP 7002 ON MOTHERBOARD
E00122	CHIP 691
E00123	CHIP Z84 ZILOG..
EC00043	LOOP SWITCH
EC00012L	LOOP SWITCH BRACKET L
EC00013R	LOOP SWITCH BRACKET R
EC00039	LOOP SWITCH ACTUATOR
EC00050	LOOP SWITCH KIT
M40001	CHASSIS PLATE (VARIES WITH SERIAL NUMBER)
M40002	PLATE OUTRIGGER
M40003	PILLAR OUTRIGGER
M40004	ROLLER PINCH OP60
M40005	ROLLER PINCH OP80
M40009	DECK PAPER
M40010	SENSOR LOOP BRACKET
M40012	ROLL HUB
M40013a	ROLL HUB CLAMP
M40015	APPLICATOR ARM L R
M40016	APPLICATOR ARM STOP PLATE L/R
M40017	REAR BEARING BLOCK (REPLACED BY 40053 FROM BATCH 4)
M40019	LOWER COVER
M40020	COVER PRINT HEAD
M40021	COVER PRINT HEAD RIGHT
M40024	AXLE PRINT HEAD
M40025	ROLLER, APPLICATOR BLACK PLASTIC WITH GROOVE
M40026	AXLE, APPLICATOR ARM
M40027	OVERCENTRE CAM BEARING BLOCK
M40028	PIN FEED ROLL PIVOT
M40029	ROLLER PRINT OP60
M40030	ROLLER DRIVE TAKEUP
M40031	TAKEUP SPOOL
M40033	ROLLER END JOURNAL (NOT USED FROM BATCH 5)
M40034	PAPER PATH ADJUSTER PLASTIC SIDES
M40036	PIN, HEAD CATCH
M40037	FOOT, FRONT

M40038	FOOT REAR
M40039	PIN, XLR 5 PIN
M40039a	PIN, XLR 4 PIN
M40040	PRINT HEAD CARRIER
M40041	SENSOR COVER BLACK OVER WHITE PTFE
M40043	PIN GUIDE UPPER
M40044	SIDE COVER
M40045	PCB BRAKET/HEATSINK
M40046	CASE (BEFORE 2701 HAVE DIFFERENT FEET POSITION)
M40047	FRONT PANEL METALWORK ONLY
M40048	CONTROL PANEL REAR
M40049	POWER SUPPLY COVER
M40052	BRACKET REAR BEARING
M40054.	PRODUCT TRIGGER LPT
M40055	AXLE, APPLICATOR ROLLER
M40056L	APPLICATOR SIDE ARM LEFT
M40056R	APPLICATOR SIDE ARM RIGHT
M40057	PIN GUIDE LOWER
M40059	PLATE MOUNTING PSU
M40072	AXLE BLOCK PINCH ROLLER
M40073	AXLE PINCH ROLLER BLOCK MOUNTING
M40074	AXLE PINCH ROLLER
M40075	BRACKET, STABILISER (2101 ONWARDS)
M40077L	INTERNAL FRAME LEFT
M40077R	INTERNAL FRAME RIGHT
M40083	PLATE COVER UPPER (LARGE REEL)
M40084	PLATE, COVER, LOWER
M40087	REWIND BEARING HOUSING - CURRENT..
M40088	SENSOR COVER PTFE LEFT/
M40089.	PIN TRACKING OP60
M40090	ROLL HUB CLAMP COMPLETE
M40141	SENSOR COVER PTFE RIGHT
M40200	AXLE PRINT HEAD SPACER
M40299	KIT, APPLICATOR ROLLER AXLE COMPLETE
M40300	KIT LPT TRIGGER ARM ASSEMBLY
M40301	LEFT STABILIZER BRACKET
M40301R	STABILISER BRACKET RIGHT
M40500	OP60 OPTO SENSOR TRIGGER KIT
M40501	OP60 EXTERNAL OPTO SENSOR COMPLETE
MSP0001	POWER SUPPLY COVER STANDOFF
MSP0002	BEARING, OUTRIGGER

MSP0003	HANDLE
MSP0004.	KNOB PINCH ROLLER
MSP0005A	KNOB, APPLICATOR ARM AJUSTER
MSP0006	KNOB, HEAD CATCH
MSP0007	SPRING PRINT HEAD
MSP0008.	SPRING, HEAD CATCH
MSP0009	SPRING FEED ROLL CLAMP
MSP0011	BUSH, APPLICATOR ARM
MSP0012	TAKEUP SPOOL BUSH
MSP0015	KNOB STABILISER FOOT
MSP0016	PRINT OPTO STANDOFF
MSP0017	COVER SPACE PRINT HEAD
MSP0018A	SPRING PINCH ROLLER
MSP0021	SPRING, APPLICATOR ARM
MSP0022	WENGLOR SENSOR BODY ONLY
R00001	SCREW M2.5 X 6 S/S POZI CSK
R00002	SCREW M2.5 X 12 S/S POZI CSK
R00003	SCREW M3 X 5 TAPTITE POZI PAN
R00004	SCREW M3 X 6 TAPTITE CSK
R00005	SCREW M3 X 6 S/S POZI CSK
R00006	SCREW M3 X 12 SEMS
R00007	SCREW M3 X 6 SEMS
R00008	SCREW M3 X 6 S/S/ POZI PAN
R00009	SCREW M3 X 10 S/S POZI PAN
R00010	SCREW M3 X 16 CAP HEAD
R00011	NUT M3 NYLOC
R00012	WASHER M3 PLAIN S/S
R00013	WASHER M3 SPRING S/S
R00014	WASHER M3 NYLON
R00015	WASHER M3 BERYLLIUM
R00016	SCREW M4 X 12 SEMS
R00017	SCREW M4 X 10 S/S POZI PAN
R00018	SCREW M4 X 12 S/S CSK POZI
R00019	SCREW M4 X 16 BZP POZI PAN
R00020	SCREW M4 X 25 S/S POZI PAN
R00021	NUT M4 NYLOC
R00022	NUT M4 PLAIN
R00023	WASHER M4 PLAIN S/S
R00024	WASHER M4 SPRING S/S
R00025	WASHER M4 PLAIN BZP
R00026	WASHER M4 NYLON

R00027	WASHER M4 PRESS ON
R00028	SCREW M4 X 6 S/S GRUB
R00029	SCREW M5 X 12 S/S POZI PAN
R00030	WASHER M5 PLAIN S/S
R00031	WASHER M5 SPRING S/S
R00032	SCREW M6 X 12 SEMS
R00033	WASHER M6 PLAIN BZP
R00033A	WASHER M6 PLATED 8 OFF IN KIT
R00034	SCREW 6 X 1/2" PLASTITE
R00035	CIRCLIP 6MM EXTERNAL
R00036	CIRCLIP 12MM EXTERNAL
R00037	CIRCLIP 2.3MM E TYPE
R00038	PIN, DOWEL 3MMX12MM
R00039	TERMINAL SPADE 1/4
R00040	WASHER 1/4 X 1 MUD GUARD
R00041	LINE TERMINATOR 4 PIN PLG
R00042	BREAKOUT BOX
R00042A	OMNIA BREAKOUT BOX (ali)
R00043	CONNECTOR 15 PIN D PLUG
R00045	PLUG 5 PIN
R00048	APPLICATOR ARM ADJUSTMENT SCREW
R00050	COMMS CHIP
R00052	SCREW M5 X 10 S/S POZI PAN
R00054.	541 CHIP
R00055	POWER FILTER OP60
R00056.	POWER LEAD
R00056..	Y-LEAD (IEC -IEC) 1.6M
R00061	CABLE PRINTER NEUTRIK TO PHOENIX 2M
R00062	CABLE PRINTER NEUTIK TO JI-ROSE 3M
R00063	CABLE PRINTER PHOENIX TO HI-ROSE 4M
R00064	CABLE PRINTER HI-ROSE TO HI-ROSE EXTENSION 5M
R00065	CABLE PRINTER PHOENIX TO 4 PIN NEUTRIK 1.65M
R00067	CABLE PRINTER NEUTRIK TO NEUTRIK
R00067A	PHOENIX TO HIROSE CABLE 450mm
R00067B	PHOENIX TO XLR CABLE
R00068A	STAND FOR MOBA 5000/6000
R00068B	STAND FOR MOBA 2000/3000
R00068C	STAND FOR DIAMOND
R00068D	STAND FOR STAALKAT SELECTA
R00068E	STAND FOR OMNIA - BOX CLOSER
R00068F	STAND FOR OMNIA - STANDARD

R00070	WASHER M5 PLAIN STAINLESS
R00071	WASHER M10 BLACK
R00072A	WASHER TEAR DROP
R00073	COVER PRINTER SINGLE
R00077	POTENTIOMETER ADJUSTABLE SENSOR
R00078	LINK SHORTING JUMPER
R00090	CHIP MAX 91 CPE
R000BL	NYLON BUNG LARGE
R000BM	NYLON BUNG MEDIUM
R000BS	NYLON BUNG SMALL
R00101	SENSOR LOOP STANDOFF
R00103	BELT GREEN TAKEUP
R00104.	LINE DRIVER USB
R00105	LINE DRIVER POWER SUPPLY UK
R00107	LINE DRIVER POWER SUPPLY, EURO
R00108.	DELAY POT OP60
R00114	MOTHERBOARD EXCHANGE
R00116	CLINCH NUT M2.5
R00117	CLINCH NUT M3
R00119	CHIP 393 FRONT PANEL OP60
R00120	CONNECTOR STOCKO 5 PIN
R00122	FOOT STABILISER
R00124	CABLE FRONT PANEL RIBBON
R00127	WASHER M5 SPRING STAINLESS
R00128	WASHER M10 PLASTIC
R00129	SCREW 4 X 1/4"
R00130	CONNECTOR 4 PIN NEUTRIC PLUG
R00131	ROLL HUB MOUNTING PLATE OP50
R00161	CABLE, BREAKOUT BOX
R00162	SWITCH LANE CHANGE HEX
R00163	SWITCH LANE CHANGE ASSEMBLY
R00164	SWITCH, TEST FRONT PANEL
R00166	CONNECTOR N' 5 PIN NEUTRIK SOCKET
R00167	APPLICATOR ARM LOCKING PLATE
R40500F	FRAME
R40501F	SLIDE HANDLE
R40502F	ROLLER, FOAM WITH MANDREL
R40504F	ROLLER SHAFT
R40505F	FRAME SPRING
R40506F	SPRING POST
R40507F	SPRING SPACER

R40508F	FIXED STOP
R40509F	SPRING SLIDE HANDLE
R40510F	FRAME SUPPORT FASTENER LONG
R40511F	FRAME SUPPORT FASTENER SHORT
R40512F	SCREW M2.5 X 16 S/S POZI CSK
R40513F	SCREW M4 X 6 S/S GRUB
R40514F	SCREW M3 X 6 SEMS
R40515F	KIT, FRONT AND TOP APPLY ROLLER
R40550E	TOP PLAT LEFT
R40551E	TOP PLATE RIGHT
R40552E	LOWER COVER LEFT
R40553E	LOWER COVER RIGHT
R40554E	REWIND SLIDE ACTUATOR
R40561E	COVER PLATE SPACER
R40562E	SCREW M2.5 X 4 S/S POZI CSK
R40562L	BACKPLATE LONG
R40563 L	SCREW M3 X 6 S/S POZI CSK
R40564E	SCREW M3 X 10 S/S POZI CSK
R40565E	SCREW M3 X 16 S/S POZI PAN
R40566E	NUT M3 STAINLESS STEEL FULL
R40567E	LARGE REEL CONVERSION KIT
R40569	KIT OP80 CONVERSION
R40600A	ARM FRONT APPLY
R40601A	SHAFT FRONT APPLY
R40602A	BUSH
R40603A	BEARING
R40605A	WASHER M10 BLACK PLAIN
R40606A	WASHER M6 PLATED PLAIN
R40607A	SCREW M3 X 6 S/S POZI PAN
R40608A	SCREWM3 X 10 S/S POZI PAN
R40609A	SCREW M3 X 12 NYLON CHEESEHEAD
R40610A	SCREW M5 X 20 S/S POZI PAN
R40611A	CIRCLIP 6MM EXTERNAL
R40612A	KIT, FRONT APPLY ARM
R40650L	LEG LONG
R40651L	LEG SHORT
R40653L	BACKPLATE SHORT
R40658L	PIVOT SHAFT
R40659L	PIVOT SHAFT SPACER
R40660L	SCREW M3 X 6 S/S POZI PAN
R40661L	SCREW M3 X 6 S/S POZI CSK

R40700S	MOUNTING PLATE
R40702S	EXTENDED REEL PLATE
R40703S	LOOP TRAY
R40704S	LOOP TRAY SPACERS
R40705S	WEB PLATE
R40706S	FOOT LOCK
R40707S	LOOP GUID POST
R40708S	SCREW M3 X 12 S/S POZI CSK
R40709S	SCREW M4 X 20 S/S POZI CSK
R40710S	NUT M4 NYLOC
R40711S	NUT M4 FULL
R40712S	SCREW M3 X 10 S/S POZI PAN
R40713S	SCREW M3 X 12 S/S POZI PAN
R40800	KIT, APPLICATOR ARM OP60