0029

3100

PROVISIONAL

OPERATOR INSTRUCTIONS
MANUEL D' INSTRUCTIONS
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MANUAL DE INSTRUCCIONES

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3100
SERIES

De La Rue Systems

EXH. X0001

DE LA RUE SYSTEMS
3110 CURRENCY FITNESS SORTER
OPERATORS MANUAL

Ref: 3110/GEN/. REV 2 JUNE 1985

EXH. X0002

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EXH. X0004

1. DESCRIPTION

The De La Rue 3110 Currency Fitness Sorters are designed to automatically sort, count and batch paper currency. Besides selecting consistently high quality currency, the 3110 can extract currency fit enough to be re-issued by tellers.

Currency fed through the 3110 is subjected to tests for suspected counterfeit, folded or missing corners, tape, holes and condition (or degree of limpness), as determined by the sort parameter settings. These settings can be adjusted to meet the needs of your particular operation.

In addition, the De La Rue 3110 has the ability to batch currency in both the fit and unfit pockets, and verify the quantity of notes in each bundle of bills sorted.

A Specifications

Currency size: Minimum 55 x 110mm
Maximum 85 x 170mm

Power Requirements See Plate on Machine for working requirements.

Displays 5-digit LED for fit and unfit pockets
3-digit LED for control panel.

Speed Up to 540 notes per minute maximum. Machine throughput will vary as determined by currency quality.

Feed Capacity 300 notes maximum.

Batching The machine will sort and count currency in batch quantities from 10 to 150 for both the fit and unfit stacker pockets.

Size 700mm x 330mm x 450mm

Weight 31 Kg (approximate, depending on specification)

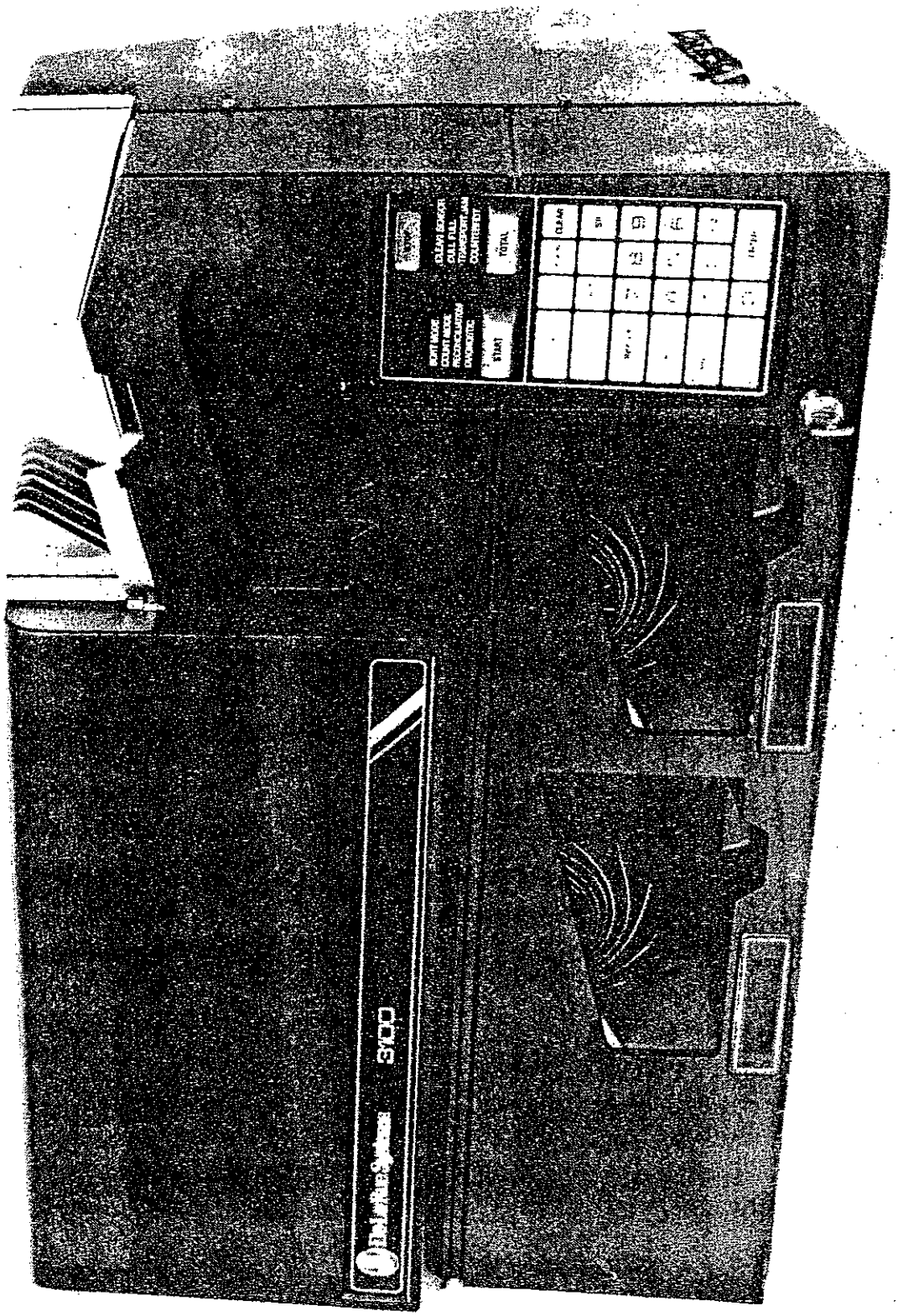


Figure 1

EXH. X0006

B Controls and Indicators See Figure 2

Machine controls and indicators are grouped on the Control Panel. In addition, each stacker has its own display to show the number of notes in each, plus various messages. The power ON/OFF switch is located on the lower right-hand side panel of the machine.

A brief explanation of each control or indicator is described below. Detailed operation is discussed later.

(1) Upper Control Panel

The upper control panel has the control keys which are used most often by the operator, the panel display, and the advice and warning indicators.

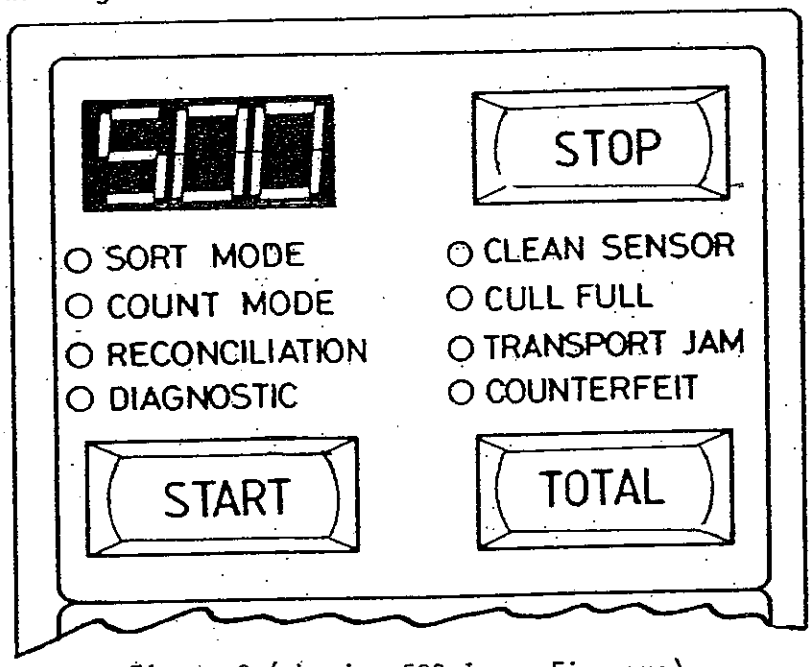


Figure 2 (showing 500 Issue Firmware)

START KEY

- starts the sort/count process
- purges the machine of notes after it is turned on or has jammed
- disables other controls

STOP KEY

- when depressed, all machine sorting stops
- allows other controls to function
- cancels the illegal bin emptying alarm when the Supervisors key is turned

TOTAL KEY

- In the RECONCILE mode, when TOTAL is pressed, the Total number of Cull Events is displayed in the upper, three digit display, and the FIT and UNFIT five digit displays show the total quantity of notes accumulated in complete batches since the machine was turned on or last cleared.

NOTE: These totals are displayed until the TOTAL button is pressed a second time.

Then the stacker display returns to the actual quantity of notes in the stacker.

PANEL DISPLAY

- shows the number of Cull events
- provides information during a jam or keyboard operation
- shows the quantity of notes remaining in the input hopper during RECONCILE

ADVICE LIGHTS

4 lights on the Left Hand Side of the Control Panel when lit indicate machine functions i.e.

Sort Mode:)
Count Mode:) according to which mode is selected

Reconcile: Illuminate to confirm Reconcile mode is in use

Diagnostic: Illuminates when the Diagnostic mode is entered
(see Appendix "A", Page A/1)

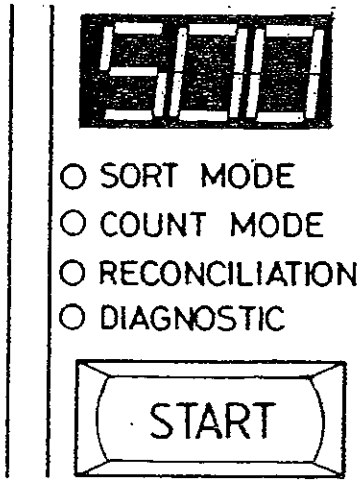


Figure 3

WARNING LIGHTS

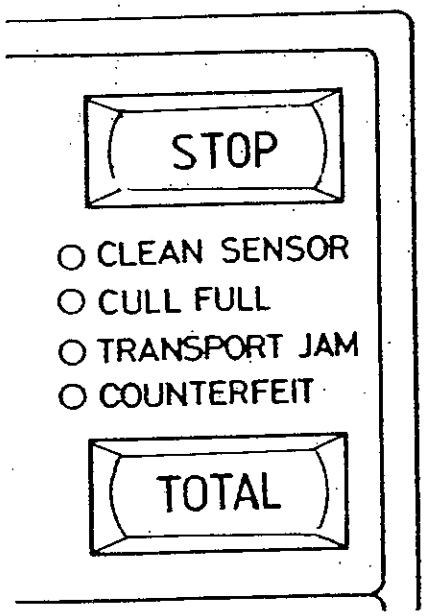
4 lights on the Right Hand Side of the Display give warning of problem.

Clean Sensor: The Light flashes when a specific sensor requires cleaning.

Cull Full: Indicates 20 cull events have occurred without the cull pocket being cleared (i.e. doubles, border-line notes, etc).

Transport Jam: The Light flashes when a note has failed to arrive at a check point on time, indicating possible jam within feed path. Also when the Holes and Tears detector emitter is not clipped down or needs cleaning. See Appendix A, pages A/2, A/3 special messages.

Counterfeit: Lights when CDA is turned ON.



The indicators are supported by a code in the panel display. See Appendix A pages A/2, A/3.

Figure 4

(2) Lower Control Panel

The RECONCILE, CULL, DENOM, CLEAR, SORT/COUNT, STACK QUANTITY, C.D.A., SP are for operator use.

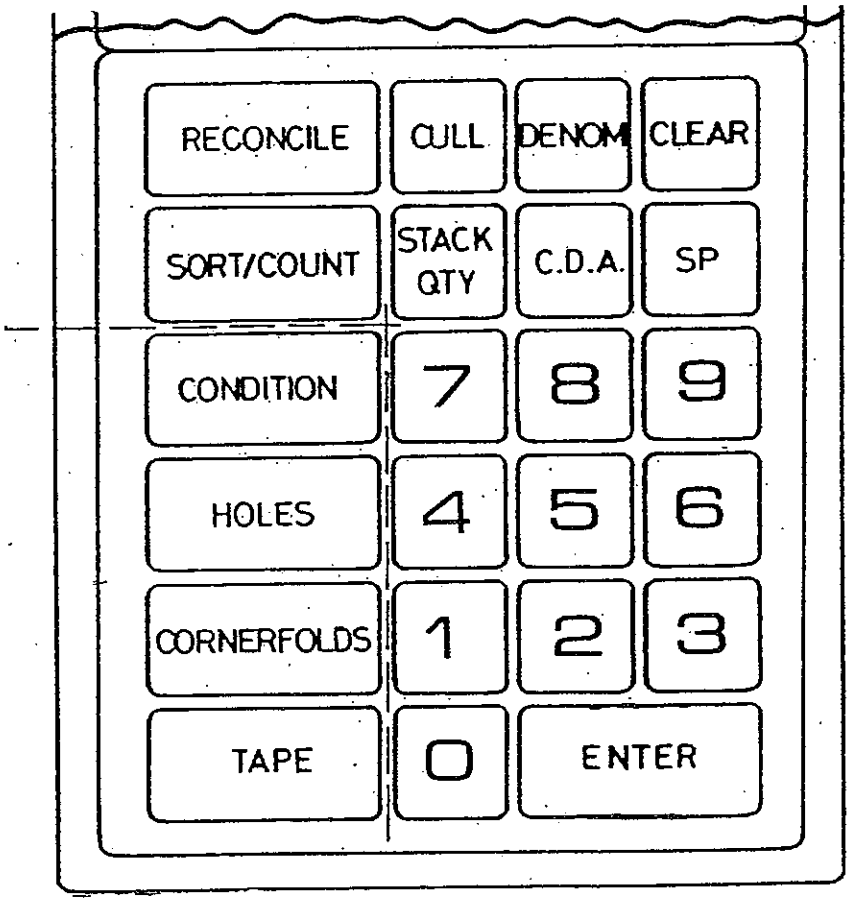


Figure 5

RECONCILE	when pressed, activates or cancels the reconcile mode (see section 4.H)
SORT/COUNT	When pressed changes mode from sort to count and vice versa
CULL	The only time the cull pad is 'enabled' or activated is during the 'RECONCILE' mode. To maintain accurate Totals, the cull at the end of a batch must be entered manually using cull pad and the numeric pads.

STACK QUANTITY	Used to change or check batch settings (see section 4.M.3 Batch Quantity Selection).
DENOM	Used to check or change the Denomination to be processed (see section 4.L.4)
CDA	Switches Counterfeit Detection Aid off and on. (The COUNTERFEIT indicator lights up when activated) (see also, Section 4.L.7).
CLEAR	Used to clear various settings in conjunction with other pads
SP	Used to activate the Single Shot facility (see 4.C).
0-9 PADS	Used to enter numeric data
ENTER	Has TWO functions

1. Pressing ENTER enters or confirms any numbers which have been entered via the KEYBOARD NUMERIC PADS

2. In RECONCILE, ENTER is used at the end of each input batch (see section 4.H).

The lower control panel (see Figure 5) has the touch pads used to set the sort parameters. These are primarily intended for the use of supervisors.

CONDITION) HOLES) CORNERS) TAPE)	Used to change the level of the Sorting parameters (see Section 4.M.2) The "Power Up" settings are shown in Appendix B/1.

(3) FIT and UNFIT Displays

These are located beneath their appropriate Stackers. They normally display the number of notes in each Stacker.

When the TOTAL key is pressed, the displays show the total number of notes in COMPLETE BATCHES since the machine was turned on or last cleared.

At other times, the displays show various messages - e.g., CLEAR TOTAL at the end of the operation.

See also the Diagnostic Messages in Appendix A, page A/2.

2. MACHINE PREPARATION AND SET-UP

A Preparation

(1) Ensure that the machine power switch is turned OFF.

(2) Check that the electricity supply voltage is correct for the machine. See the Machine plate for details.

(3) Connect the power cable into machine socket located on the side panel. Plug other end into a properly grounded power supply of the specified voltage.

(4) Turn the machine POWER switch ON.

(a) The two stackers briefly display 88888 then return to 0.

(b) The Control panel display shows the firmware identity.

(c) The Transport Jam indicator is lit.

This is the 'NORMAL TURN ON CONDITION'.

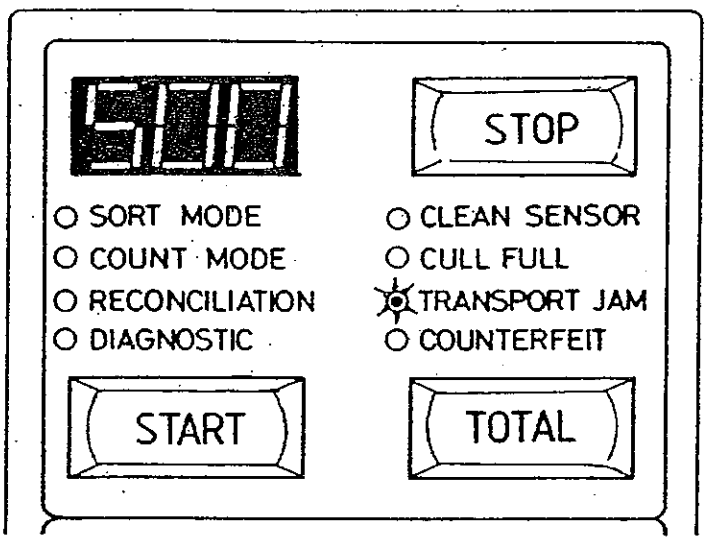


Fig. 6

(5) Press START to purge the feed path. This will briefly activate the transport.

Note: The settings to which the machine has been configured and which will apply on Power Up appear in Appendix B/1.

If it is required to alter these settings, this can be done from the Key Board. See Section 4.M.

(6) Set denomination (see section 4.M).

Press DENOM. The figure displayed shows the 'POWER UP' value. If this is the Denomination required, press ENTER. If not, enter the Denomination required (see Appendix B/1 for values programmed in)

If a different note length is required, see DENOMINATION, (Section 4.L.4).

3. CURRENCY FEED CONSIDERATIONS

Since it is expected that the 3110 Fitness Sorter will be used for sorting poor condition currency, a knowledge of currency preparation and placement is helpful. A number of provisions for jam clearing is also provided (see Appendix 4.J, Jam Clearing).

A Currency Preparation and Placement

When placing currency packs on the input hopper to be sorted:

(1) Visually examine currency packs to be sorted and replace any notes which appear to be of exceptionally poor quality with reasonably acceptable ones.

This will cut down considerably on jam clearing time.

(2) Arrange the pack, taking particular care to straighten any crumpled, torn, or folded leading edges. Place the best edge of the pack toward the input area. Fan the leading edges (see illustration). Form wedge with bottom note closer to the input area.

(3) Place pack of currency carefully against the hopper back plan. DO NOT throw currency onto feed hopper, since jamming may result.

NOTE: DO NOT HOLD CURRENCY OR APPLY PRESSURE TO PACK WHILE IT IS BEING SORTED.

See Fig 7, overleaf.

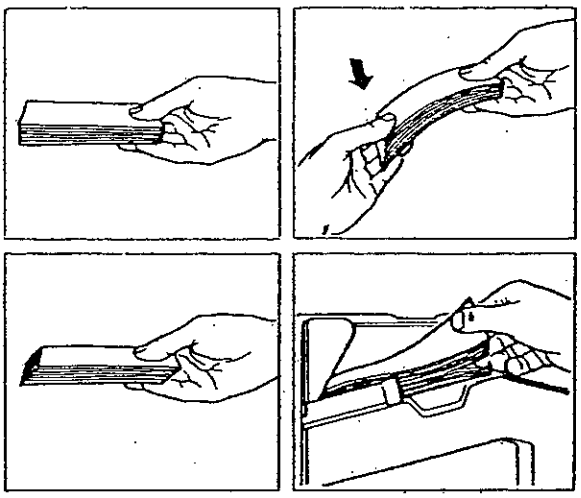


Fig. 7

B Feeding Other Documents

The De La Rue 3110 is designed to sort and count paper currency only. It is not intended to sort anything other than paper currency. Do not attempt to sort currency stapled together or containing staples, as this will almost certainly damage the machine.

C FEEDER THICKNESS (INEXPERIENCED OPERATORS - DO NOT EXPERIMENT)

Factory set. See also Appendix A, page A/1.

4. OPERATION

Once the machine is running, the indicator of the mode being used flashes. ALL pads, other than STOP key, are disabled. When STOP is pressed, the mode indicator remains permanently on and other keys are "enabled" (i.e. become functional).

A Sorting Currency

(1) Follow the machine preparation and set-up instructions (see section 2). If necessary, press SORT/COUNT pad to eliminate SORT mode indicator.

NOTE: Each time the SORT/COUNT pad is pressed the machine switches between COUNT and SORT MODE, and the appropriate indicator lights. Any change from sort to count or vice versa CLEARS the stacker counts.

(2) Place, any pack of currency (100 or 200 notes) onto the feed input hopper.

(3) Press START key. The machine will run and sort 'FIT' currency into the left pocket, 'UNFIT' into the right pocket.

(4) The machine stops when the 'STOP' button is pushed and automatically stops when

- the input hopper is empty
- either stacker pocket has reached its batch quantity
- when 20 cull events have occurred
- when a suspect counterfeit is detected

(5) The machine automatically restarts when:

- additional currency is placed in the input hopper
- the complete batch is removed from the pocket
- the cull pocket is emptied (other than when a suspect counterfeit note is detected, in this case START must be depressed after emptying the cull pocket).

(6) Notes in the cull pocket can be re-run to see if they are accepted. Those routed again to cull pocket should be set aside for further manual inspection.

(7) If the machine stops and notes are removed from a stacker before the batch quantity is reached, the beeper activates and the stacker display flashes. The machine will lock up, requiring that you:

Replace the notes in the stacker and press STOP key to stop the beeper.

NOTE: To remove incompleted batches at End of Sort, see section 4.F.

B Culls

(1) The cull pocket receives notes which are:

- doubles (two or more notes fed simultaneously)
- CDA suspects
- over-runs (notes already in feed path destined for a full stacker
- notes outside prescribed size tolerances.
- if specially programmed, certain other categories.

(2) With the exception of suspect counterfeits (see Section 4.G), the culled notes can be re-run. If the same notes are culled a second time, they should be processed by hand as 'unsuitable for machine sorting'.

When in Reconcile mode, to maintain accurate totals, you may manually enter the number of culled notes - see Section 4.H.

The cull pocket normally accepts only 20 events, at which time the machine stops feeding until pocket is cleared.

C Single Shot Facility

(1) In normal circumstances, when a stacker pocket is full (batch satisfied), the remaining notes in transit destined for the full stacker are passed to the cull pocket. Alternatively the machine can be set to single feed notes just prior to the full batch quantity being reached.

To activate this facility, press STOP pad, press SP pad. The machine will display

in the stacker pocket displays and the word

in the keyboard display. Press a numeric key to represent the number of notes remaining to complete the batch. Press ENTER. The displays will revert to their previous state. Press START to commence feeding.

D Totals/Clearing

Accumulated totals for all the pockets can be displayed when the machine is STOPPED. Only completed batches contribute towards the FIT and UNFIT totals; partial batches do not (i.e. those notes sitting in the stacker pocket which are not completed batches are NOT part of the displayed total).

Similarly, completed batches must be removed to increment the batch

(1) Displaying Totals

Completed batches must be removed to increment the total counter.

(a) Press STOP pad, if this has not already been done.

(b) PRESS 'TOTAL.

With the 500 series the totals are displayed permanently until the Total button is depressed a second time on earlier series machines these totals are displayed for three seconds only; then the displays return to the actual quantity of notes in each stacker pocket.

(2) To Clear All Totals

(a) Press STOP pad.

(b) Press and hold CLEAR pad; then press and release TOTAL pad. Machine displays  in the pocket displays.

(c) Press 0; machine displays  in keyboard display. Press ENTER and the machine re-sets.

To clear individual pocket totals, follow (a) and (b) above then:

Press 1, then ENTER to clear Fit totals OR
Press 2, then ENTER to clear Unfit totals OR
Press 3, then ENTER to clear Cull totals

NOTE: Clearing all the total simultaneously also clears the display quantities of any notes remaining in the pockets. Clearing totals individually does not clear these incomplete batch quantities.

E Count Mode

The machine may also be used to count, verify and batch currency without sorting. The machine will put agreed quantities of currency into the FIT and UNFIT pockets. In this mode the batch quantity for both stackers will always be that of the FIT pocket, even if the UNFIT pocket is set to a different quantity. (See section 4.M.3 for changing batch quantities).

Notes are counted and fed alternately into the output pockets (i.e. when one stacker is full the notes are fed to the other stacker). If both stackers are full, the machine stops. Removing notes from either stacker will allow feeding to recommence into first stacker emptied.

To select COUNT mode:

(1) Follow the machine preparation and set-up instructions as in Section 1. If necessary press SORT/COUNT pad and illuminate the COUNT mode indicator.
(2) Press SORT/COUNT pad once to change the mode to count.
(3) Set required batch (FIT pocket only).
(4) Place a pack of currency onto the input hopper.
(5) The machine stops when the input hopper is empty or when both stackers are full.

(6) Empty the stacker pockets or place additional currency on the input hopper to commence counting.

F End of Sort/Count Process

(1) Press STOP pad, if required.

(2) Remove any unprocessed notes from the cull pocket and input hopper. Not having been processed, these notes may not be part of the required totals.

(3) Remove any complete batches from the output stackers.

(4) Manually record, if required, incomplete batch totals.

(5) Clear and record totals as per Section 4.D.2.

G CDA. COUNTERFEIT DETECTION AID

CDA is switched on and off by pressing the CDA pad.

When SUSPECT NOTES are detected:

(1) The CDA light 'Flashes'

(2) The machine emits a warning 'Beep'

(3) The display shows 

(4) The machine stops

Procedure:

(a) Remove ALL the notes from the Cull pocket to stop the visual and audible warnings.

(b) Examine all the notes in the Cull pocket - a double could have been detected after the suspect.

(c) Recommence operation by pressing START pad.

H Reconcile

The RECONCILE mode is used to balance individual batch quantities (or verify their count). The machine automatically assumes an input quantity of 100, although this setting can be changed to suit (see Section H.4).

The Reconcile mode may be used during both sorting and counting operations.

(1) To select RECONCILE:

(a) Press RECONCILE Pad. The RECONCILE indicator illuminates and the panel display shows the pre-set quantity for about three seconds then re-sets to zero (0).

(b) Place batch to be processed on the input hopper and press START key. The panel display shows the input quantity again.

(c) As the machine feeds, the panel display counts down from its setting (e.g. 100, 99, 98 etc) and feeds each note to its appropriate stacker pocket.

(d) Other than stopping when the stacker batches are satisfied, the machine will run until either the input hopper empties or the count on the panel display reaches zero (0).

(e) If no notes remain in the input or cull pockets and the panel display shows zero (0), the batch is correct. Re-set the machine by pressing ENTER. The panel display re-sets to the input quantity and the machine will re-start automatically when the next input batch is placed in the input hopper.

(f) Batches greater than the reject quantity are indicated by notes remaining in the input hopper and/or cull pocket with the panel display at zero (0). Remove the extra notes, and re-set by pressing ENTER. Proceed with the next batch.

(g) Batches less than the input quantity are indicated by an empty input hopper with the panel display showing a number greater than zero (0). Unless the missing quantity of notes is in the cull pocket, the batch is short. Re-set by pressing ENTER.

(h) If required, the machine will keep a correct record of culled notes if the following procedure is used at the end of each input batch (if the cull quantity is correct, this is done automatically when ENTER is pressed and the machine re-set). Should the quantity be correct, press the CULL pad, the ** number of notes culled and/or remaining in the input hopper**

EXAMPLES OF RECONCILE MODES

Example A Hopper Empty - Panel Display Shows 0

No culls: The batch is considered balanced (or verified correct). Press ENTER to start next batch.

Culls Present: The batch is over in count. Press CULL AND THE NUMBER OF NOTES in the cull pocket using the numeric pads; then press ENTER. Place culls in a special box for 'overs' and record the details in your own documentation.

The machine is now ready for the next batch.

Example B Hopper Empty - Panel Display Shows a Number

No culls: The batch contains less than the expected quantity. Note the number short on the batch and retain it. Press CULL and 0 pads; then press ENTER to continue.

Culls Present

(1) If a number of culls EQUALS the number shown in the display, the batch is balanced (or verified correct). Try to re-run the culls. If there are still culls which will not sort, place them in a special box for unmanageable notes, and press ENTER. Record the details.

(2) If the number of culls EXCEEDS the number shown in the display, the batch is 'over' in count. Re-run the culls or press CULL, the number of notes in the cull pocket, then ENTER. Place the culls in the overs box and record.

The machine is now ready for the next batch.

Example C Hopper NOT Empty - Panel Display Shows 0

No Culls The batch is over in count.

(1) Remove notes from input hopper

(2) Press CULL

(3) Key-in the number of notes removed from the input hopper using the NUMERIC PADS.

(4) Then press ENTER.

(5) Place the excess notes in the 'overs' box, and record.

Recommended physical procedure(s) Boxes etc for culls (overs) etc

Culls Present The batch is over in count

(1) Remove notes from input and cull pockets

(2) Press CULL

(3) Key-in the number of notes removed from the cull pocket and in the input hopper.

(4) Then press ENTER.

(5) Place the excess notes in the 'overs' box and record.

The machine is now ready for the next strap.

(2) To Clear Incorrect Cull

If after pressing ENTER it is obvious that an incorrect cull entry has been made, correct this by pressing and holding CLEAR; then press CULL and ENTER to restore the status to before the error was made.

(3) To Cancel Reconcile Mode

Simply press the RECONCILE pad again to turn off, or cancel, the Reconcile mode. RECONCILE indicator turns off.

(4) Changing Reconcile Quantity

To check or change the setting:

(1) Press STOP pad, if not already done.

(2) Press STACK QTY, then number 9. The panel display shows the current setting.

(3) To accept the existing setting press ENTER.

(4) To change the setting, select the new quantity (from 10 to 999) using the numeric keypad.

(5) Press ENTER.

J JAM CLEARING

When a jam occurs, the jam indicator lights and all sorting stops. The panel display will indicate where the jam occurred (see Appendix A-1 special messages). Jams in either the feed area or optical sensor can be cleared or moved into the belts manually.

(1) Clearing Jams

(a) Open the cover.

(b) To gain access to the feed area push the red lever towards the right, releasing the feed carriage. Raise the feed carriage upward and clear any jams.

(c) To close, firmly push down on the feed carriage (see Appendix A, page A/1). The RED latch will click into position.

If the feed carriage is NOT locked properly, the machine will display 'NOT SAFE' - See Appendix A.1, page A/3.

(d) To gain access to the optical sensor area, push the thumblatch upwards firmly to release the sensor block from its latch. Clear all jammed currency.

(e) To close, firmly push down on the cam until the lever snaps into position.

(f) Jams beyond the optical sensor area are cleared by winding them through. For those which cannot be wound through, rotate the handwheel slowly while gently pulling the note from the belts.

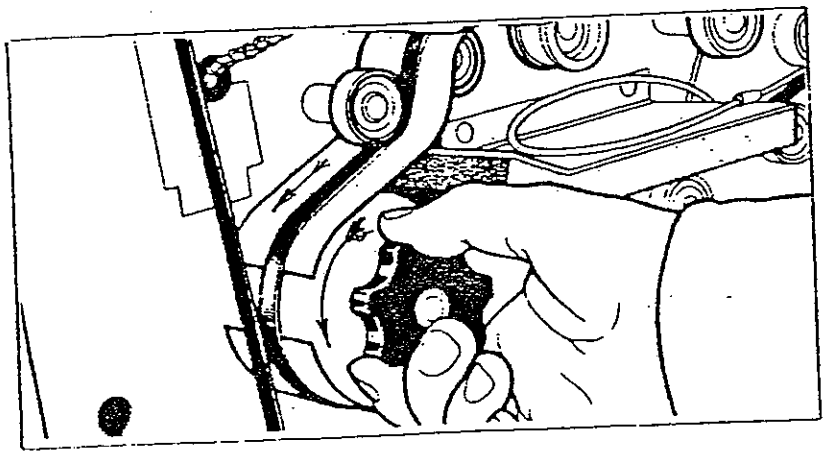


Fig. 8
MANUALLY WINDING NOTES THROUGH THE MACHINE

NOTE: Sudden or excessive pulling on jammed notes should be avoided. This is likely to dislodge the belts. See diagram inside the front cover of the machine for correct order of belt replacement.

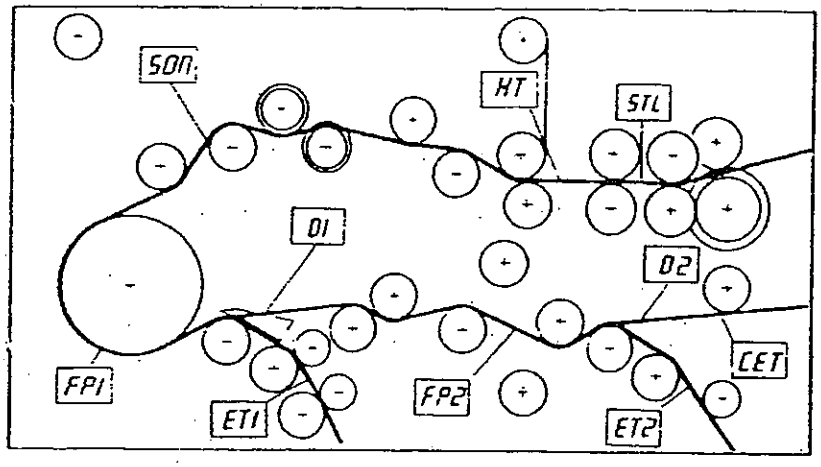


Fig. 9
SPECIAL MESSAGE CHARACTERS IN DISPLAY LCD SHOWING WHERE THE JAM HAS OCCURRED

K RE-PROCESSING - RECONCILE 'OFF' AFTER CLEARING THE JAM

(1) Press START pad.

If any notes are left in the stackers, the machine will NOT run and the display shows: CLEAR ALL.

(2) Remove all currency from the fit and unfit stacker pockets and combine them with the currency previously removed from the hopper. Rearrange the pack, taking particular care to straighten any crumpled, torn, or folded leading edges. Place best edge of note toward the input area.

L RE-PROCESSING - RECONCILE 'ON' AFTER CLEARING THE JAM

(1). Press START to purge the machine and to show the total quantity of notes needed to verify the bundle.

(2) It is not necessary to empty the stacker pockets, BUT the CULL pocket must be emptied.

(3) Rearrange the pack, taking particular care to straighten any crumpled, torn, or folded leading edges. Place best edge of note toward the input area.

(4) Press START Pad again to complete verification.

M PROCEDURE FOR ALTERATION OF THE 'POWER UP' SETTING

(1) The following items can be altered after Power up to meet specific requirements :-

(a) Sorting Parameters, Condition, Holes, Corners, Tape.

(b) Batch Quantity Selector.

(c) Denomination Parameter.

(i) Std. Machine.
(ii) If Optical Length Detector fitted.

(d) Length Tolerance with Optical Length Detector if fitted.

(e) C.D.A. if fitted.

(2) Each of the following parameters can be set via the control panel from positions 1 through 9 (0 for OFF) before starting the sort.

Condition, Holes, Corner, Tape.

The procedure is as follows:

(a) Press STOP key.

(b) Insert Supervisor's Key and turn clockwise to activate.

(c) Pressing any sort pad will display its current setting.

To accept the current setting, simply continue by pressing the next pad.

CONDITION	1-Crisp to 9-Limp; press 0 for OFF
HOLES	1-Small to 9-Large; press 0 for OFF
CORNERS	1-Small to 9-Large; press 0 for OFF

Normal Operation

TAPE Press once, then enter 0 for OFF or 1 for ON

If another setting has been selected DO NOT FORGET to press ENTER before proceeding to the next parameter.

(d) Turn the Supervisor's Key counterclockwise to lock the settings and remove the key.

NOTE:- The Settings will revert to the original values when the machine is switched OFF then switched ON again. (See Appendix B/1).

(3) BATCH QUANTITY SELECTION

When the POWER is turned ON, stacker batches are automatically set at 100. However, these settings can be altered or inspected using the following routine:

(a) Press STOP, if this has not already been done.

(b) Press STACK QTY.

(c) Press '1' to access the fit stacker

or

Press '2' for the unfit stacker.

(d) The panel display will show the current batch setting for the Stacker selected.

(e) To accept this setting, Press ENTER once.

(f) To alter the setting:

Key in the New Batch Quantity using the numeric pads (which must be between 10 and 150).

Press ENTER.

The new setting flashes in the appropriate Stacker Display for approximately 2 seconds, then it clears.

(4) (a) Denomination Entry (standard machines)

The DENOM key enables the machine to be set-up appropriately for the length of the denomination to be operated on. On power-up the machine is set for one particular denomination. To alter the setting, the following routine is used:

(i) Press DENOM, machine displays 'Note Size' and the pre-set denomination.

(ii) To accept this setting, press ENTER.

(iii) To change setting, key in the nominal length of the notes to be processed (in millimetres) followed by ENTER.

(b) NOTE: on the 500 version.

If the length entered in mm. co-incides with a denomination programmed in the firmware, subsequent pressing of DENOM will display the Denom not the entered length.

(5) Length tolerance (with optional length detector)

In conjunction with the optional length detector, the 3110 allows the user to adjust the tolerances beyond which notes will be rejected as being too long or too short.

To inspect the settings adopt the following procedure:

(a) Press and hold CLEAR.

(b) Press DENOM. The pocket displays will now show the message 'short note' and the panel display the short note tolerance.

(c) Press ENTER. The pocket displays will now show the message 'long note' and the panel display the long note tolerance. Key ENTER to accept the settings, or...

(d) To change the settings, follow steps 1 to 2 or 1 to 3 above until the required message (i.e. 'short note' or 'long note') is displayed. Key in the new tolerance value followed by ENTER.

Note: When setting for 'Short note', the minus sign ceases to illuminate when the setting is changed. The machine, however, treats any entry as a negative value. This can be seen by entering a new value and then performing steps 1 to 2 above.

When in use, the machine will normally send notes to the cull pocket that are too short (i.e. less than nominal length for the denomination less tolerance for short notes) or too long (i.e. greater than nominal length for the denomination plus tolerance for long notes). This destination can be altered if required.

Please note:- The smallest difference of the effective "nominal" note length which the machine will operate on is 4 mm between denominations. This still applies even if the short and long tolerances are set to 0.

Problems can arise from 'size tolerances' during the manufacture of the notes. This comes from 'false rejects' or 'false acceptance' when working with small length differences.

(6) LENGTH DETECTOR DISABLING

To avoid the need for immediate service calls in the unlikely event of a length detector malfunction, a routine is available to switch off the detector.

This should be used if the following conditions are apparent:

- Repeated 'Clean Sensor Len' messages. Cleaning sensor has no effect.

- Excessive cull rate of good notes. Reason for cull (visible with supervisor key) 'ts' or 'tl'.

it is possible to continue running the machine (but with reduced accuracy) by using the doubles-detect rollers to measure the note length instead of the optical sensors. To change this:

(a) Turn supervisor's key to ON position.

(b) Press CLEAR and hold it while pressing ENTER.

The Diagnostic mode lamp should now be on. The fit and unfit displays should show '=== ==='.

(c) Press DENOM.

The fit, unfit and panel displays should now show 'Len-sense Opt' indicating that the machine is using the optical sensors to determine length.

(d) Press 0.

The panel display should now change to 'rol' indicating that the double detect rollers will be used instead.

(e) Press ENTER.

(f) Turn supervisor's key 'off'.

(g) Press DENOM, the length of the denomination in mm, followed by ENTER.

(7) Counterfeit Detection Aids (C.D.A.)

Depressing the C.D.A. key activates the Counterfeit Detection Aid and illuminates the Counterfeit lamp on the display. Depressing the C.D.A. key a second time turns the C.D.A. detector off.

(a) U.V. Counterfeit Detection Aid.

One Counterfeit Detection Aid is based upon an expected Ultra-Violet dull response from a banknote. A suspected forgery which reflects Ultra-Violet light will be routed to the cull pocket and the machine will stop automatically. The word 'DUD' will appear in the panel display. Remove the suspected counterfeit and place to one side. Re-feed other culled notes and press 'START' key.

On power-up, the machine is set to consider as suspected counterfeits notes exhibiting a U.V. bright response over at least 25% of their length.

This may be viewed or changed by the operator by the following procedure:

(i) Depress and hold 'Clear' key.

(ii) Depress C.D.A. key - the pocket displays show 'C.D.A. level' and the panel display shows the number 25.

(iii) To accept this setting, press 'ENTER' or key in new value (1 to 99) followed by 'ENTER'.

(b) Other Detection Aids

If your machine is equipped with other detectors your DLR distributor will inform you of the correct operating procedure.

5. CUSTOMER MAINTENANCE

WARNING: Turn the power switch to OFF and disconnect the power cord from note sorter before cleaning. To prevent electrical shock DO NOT REMOVE THE BACK COVERS. There are no user-serviceable parts inside. Refer servicing to a qualified technician.

A Cleaning

General cleaning maintenance of the De La Rue 3110 Sorter is very simple and yet very important. To maintain accuracy and maximum reliability, proper cleaning is required. Since it is expected that this machine will be used frequently to sort poor condition currency, daily cleaning of paper dust is advisable.

Cleaning is accomplished by brushing and vacuuming note dust from the feed transport path, feed area, and rollers.

If it is necessary to Power Off, take the totals and counts and then switch off.

DO NOT USE AIR PRESSURE to blow dirt from the machine. This can blow onto lamps and impair performance.

If the clean sensor indicator is lit, the sensor's location is indicated in the panel display. Brush and vacuum out any dust present.

If fitted the length detector sensors should be cleaned periodically as a matter of course or when indicated by the machine itself.

The sensors are positioned two above and two below the belt to the right of the foam mounting of the microphone.

We recommend the use of a freon cleaning solvent for the purpose of cleaning sensors. MS180 spray solvent from Iller Steferan with a Cobra Spray Brush is suitable and available from your De La Rue distributor.

B Exterior Cleaning

1. Turn power switch OFF and unplug power cord from machine.

2. Clean all exterior areas with a slightly damp, clean, lint-free towel as often as necessary. Do NOT use abrasive cleaners, or chemical type cleaners which can damage paint or plexiglass. Make sure cleaning towel is only slightly dampened (preventing excessive fluid from dripping inside).

APPENDIX A

FEEDER THICKNESS (INEXPERIENCED OPERATORS - DO NOT EXPERIMENT)

The feeder thickness gap is adjustable, although it should not be attempted by an untrained or inexperienced machine operator. A high proportion of notes going to the cull pocket (especially doubles) can indicate too wide a gap; whereas, frequent jams, torn notes, or slow feeding can indicate too narrow a gap.

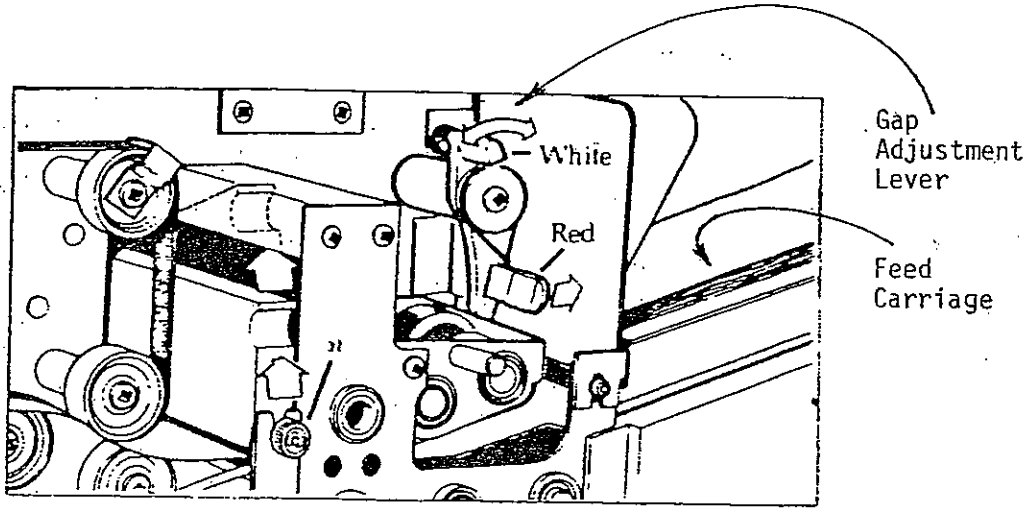
To adjust:

(1) Press STOP button and raise the front cover.

(2) The White Plastic Lever is used to adjust the gap (see diagram below).

(3) Move lever one step at a time clockwise to narrow the gap or counterclockwise to open the gap.

(4) Feed notes to check the effect before trying another position.



(5) Refer to Section 4.J.(1)(c) regarding use of the RED latch which locks the feed carriage.

(6) Refer to Section 4.J.(1)(d) regarding use of the 'thumblatch', which has to be used in Jam Clearing.

SPECIAL MESSAGES

This section lists various messages sometimes encountered during operation along with a Diagnostic Routine for your use. The Diagnostic Routine is functional when the machine is working normally and is designed to indicate the reasons for the following:

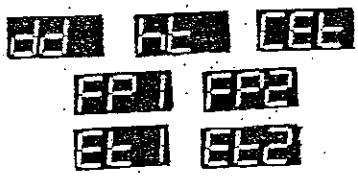
- Cull Events
- Transport Jams or Stoppages
- Any other reason for stoppage

This routine will help you diagnose certain minor faults - e.g., too many doubles can be equated with feeder adjustment problems.

To activate the Diagnostic Mode, you must turn the Supervisor's key ON and feed currency.

'huh' is the most common message you will encounter and it means that your entry is unknown or not recognised. After a few seconds the display will clear allowing you to re-enter correctly.

1 Transport Errors (See Section J.(1) for Figure showing location of jam.

ERROR INDICATOR (on Panel Display)	ACTION
	Frequent occurrences of these messages will require the attention of a qualified Service Representative. Call your local De La Rue Distributor and inform them of the error condition.

2. Note Errors

If the Supervisor's key is turned ON these messages will show you why various notes were classified unfit or culls, or, can alert you to a circuit malfunction should they occur frequently on what you consider to be fit notes.

ERROR INDICATOR (on Panel Display)	REASON
	Jam Recovery - the m/c has recovered from a jam.
	Counterfeit suspect - examine the top 4 or 5 notes in the Cull stacker.

Two notes sticking together. This can be caused by a feeder thickness misadjustment, especially if it occurs frequently.

The note was TOO LONG

The note was TOO SHORT

Stream Feed indicates that the notes were feeding too close together - again this can be a feeder thickness misadjustment, especially if it is frequent.

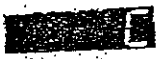
Stacker Over Run (see Single Shot Section 4.3)

Machine is not running. Check whether the Front cover is closed or there has been a note jam

indicates that the Feed Carriage is not latched properly.

3. UNFIT STACKER

If the Supervisors Key is turned ON, these messages or codes show why a specific note was classified as UNFIT. The code letter can appear in different combinations since any note could have several defects. These letters are shown on the UNFIT stacker display.

CODE		REASON
	Audio	Note's crispness less than minimum setting
	Holes	Apparent hole larger than set minimum
	Tape	The note has shiny tape on it
	Cornerfold	The cornerfold is larger than the maximum set
	Hole	Hole present at FAR side of note
	Hole	Hole present on NEAR side of note
	Corner Tear	Larger than maximum set

The coded messages remain on the display until a new note is sent to the Unfit Stacker or the Key is turned OFF.

APPENDIX B

THE 'POWER UP' SETTINGS FOR THIS MACHINE ARE AS FOLLOWS:-

CONFIGURATION I/D

DENOMINATION
SIZE

DENOMINATION ON POWER UP
BATCH OR POCKET QUANTITIES

FIT
UNFIT
CULL
RECONCILE

SORTING DETECTOR DETAILS

CONDITION
HOLES
CORNER FOLDS
TAPE SENSING

MACHINE CONDITIONS ON 'POWER UP'

RECONCILE
SORT OR COUNT
C.D.A. FITTED
ON OR OFF

OPTICAL NOTE LENGTH DETECTOR FITTED
SHORT NOTES ROUTED TO
TOLERANCES ON STANDARD - and + mm.

SINGLE SHOT FACILITY
'TAPED' NOTES ROUTED TO