user guide

MACH 6
Coin Sorter and Counter
W/ Basic Control & RS232 Interface
Dear Customer,

Thank you for purchasing the Model 6950 Coin Sorter / Counter from De La Rue. This product is yet another step to fulfilling our mission:

To enable the secure and cost effective availability of cash when and where people need it.

This innovative product incorporates the very latest technology for you to process coins faster and more accurately than ever before. It contains De La Rue designed and patented components which make this product unique.

Additional benefits of the Model 6950 are:

- Compact size
- 3000 coins per minute
- Quiet operation
- Tabletop or stand-alone operation
- Battery backup
- Sorts up to 8 different denominations
- Large capacity tilting inspection pan
- Selectable bagstops
- Auto-ranging power supply for world-wide voltages
- Lockout security to protect operating information
- High speed printer
- Remote display
- Three levels of memory

With over 100 years’ experience in the design, development and manufacture of world class coin processors, De La Rue supplies more products world-wide than any other manufacturer. Quality is paramount in our manufacturing process and we are proud to hold certificates for European quality directives for both safety and electromagnetic standards. In addition to this, manufacturing sites have been awarded ISO9001 quality certificates.

To ensure maximum life from your Sorter, we recommend that it is regularly serviced. To assist you, we provide worldwide service and support through our network of branch offices and authorized distributors. Please contact them for the location of your nearest service office.

We wish you many years of carefree use.

De La Rue
Cash Systems Inc.
FCC Interference Statement

Warning

This equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual may cause interference to radio and television reception. It has been tested and found to comply with the limits for a Class A or Class B computing device pursuant to Subpart J of Part 15 of FCC Rules which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference with radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by taking one or more of the following measures:

➤ Reorient the receiving (radio/TV) antenna
➤ Move the sorter to the right or left with respect to the receiver
➤ Move the sorter away from the receiver
➤ Plug the sorter into a different outlet so that the sorter and receiver are on different branch circuits.

Warning: Only equipment certified to comply with the Class A or Class B limits may be attached to this currency counter. Operation with noncertified equipment is likely to cause radio and TV reception interference.

Peripherals should be interfaced using only shielded cables to maintain FCC Class A or Class B certification and to reduce the possibility of interference with radio and television reception.

Reference material

If this equipment does cause reception interference, the user should contact an authorized sales or service representative for suggestions. Two booklets, the CIB Interference Handbook and the CIB Telephone Interference Booklet are provided by the Compliance and Information Bureau of the Federal Communications Commission. To obtain copies, call the Bureau at (202) 418-1100 or on the Internet at http://www.fcc.gov/cib.

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Model 6950
Coin Sorter / Counter
W / Basic Control
& RS232 Interface

**CAUTION**

SAFE OPERATION OF THIS PRODUCT IS DEPENDENT UPON PROPER INSTALLATION WITH COMPATIBLE EQUIPMENT AND BY AN AUTHORIZED SALES OR SERVICE REPRESENTATIVE. INCOMPLETE OR INCORRECT INSTALLATION MAY RESULT IN DAMAGE TO THE EQUIPMENT OR PERSONAL INJURY. ACCIDENTS AND COUNTING INACCURACIES CAN BE AVOIDED IF THE OPERATOR IS COMPLETELY FAMILIAR WITH THIS PRODUCT AND ITS OPERATION. ONLY COINS / TOKENS WITHIN THE RANGES DESCRIBED IN THE SPECIFICATIONS SECTION OF THIS GUIDE SHOULD BE PROCESSED. ANY / ALL OTHER OBJECTS SHOULD BE REMOVED FROM THE COIN MIX BEFORE PROCESSING. NEVER ALLOW TOOLS, FINGERS, HAIR OR LOOSE CLOTHING NEAR MOVING PARTS. NO ATTEMPT SHOULD BE MADE TO DISASSEMBLE THIS PRODUCT. IF SERVICE IS REQUIRED, CONTACT YOUR AUTHORIZED SERVICE REPRESENTATIVE.

**THIS IS NOT A SELF-SERVICE PRODUCT.**

OPERATION OF THIS PRODUCT SHOULD BE PERFORMED ONLY BY PROPERLY TRAINED PERSONS.

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REV 01 ALL RIGHTS RESERVED in USA
Declaration of conformity

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Telephone: (920) 262 - 3300
Fax: (920) 261 - 1783

Details of product
Coin Sorter / Counter

Model types
6950000 – 6950999 (230V)

This product conforms to the essential requirements of:
Directive 89 / 336 / EEC Electromagnetic compatibility
Directive 73 / 23 / EEC Low voltage electrical equipment (safety)

and conformity has been demonstrated by meeting the applicable requirements of the following standards:

EN 60 950 Safety of Information Technology Equipment including Electrical Business Equipment
EN 55014 Limits & Methods of Measurement of Radio Interference of Information Technology Equipment
EN 50082–1 Electromagnetic Compatibility Generic Immunity
IEC 801–2 Electrostatic Discharge Requirements
IEC 801–3 Radiated Electromagnetic Field Requirements
IED 801–4 Electrical Fast Transient/Burst Requirements
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The Mach 6 Coin Sorter and Counter is designed for ease of operation. Coins are sorted and counted at a rate of up to 3,000 dimes per minute (depending on the coin mix). The denomination and quantity totals are registered within the Control Module, and are selected for display at the Control Panel located on the front of the Module.

1. **Inspection Pan**
   Allows inspection of coin mix so that unwanted objects may be removed before coins enter the Sorting Area.

2. **Power Switch** (Rear of Sorter)
   Turns Main Power to Sorter on and off.

3. **Display**
   Visual communications link between the Sorter and the Operator.

4. **Control Assembly**
   Communications link between the Sorter and the Operator. All Sorter operation is done here.

5. **Keylock**
   Allows access to programming mode.

**FIGURE #1**
SORTER DESCRIPTION
Introduction

model identification

<table>
<thead>
<tr>
<th>MODEL</th>
<th>APPLICATION</th>
<th>STATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>6950002</td>
<td>USA</td>
<td>8</td>
</tr>
<tr>
<td>6950022</td>
<td>USA</td>
<td>8</td>
</tr>
<tr>
<td>6950028</td>
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<tr>
<td>6950112</td>
<td>UK</td>
<td>8</td>
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<td>6950127</td>
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<td>6950204</td>
<td>RUSSIA</td>
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<td>6950511</td>
<td>U.K. (SAINSBURY)</td>
<td>8</td>
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<td>6950519</td>
<td>NEW ZEALAND</td>
<td>6</td>
</tr>
<tr>
<td>6950551</td>
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</tr>
<tr>
<td>6950553</td>
<td>MALAYSIA</td>
<td>6</td>
</tr>
<tr>
<td>6950802</td>
<td>EURO</td>
<td>8</td>
</tr>
</tbody>
</table>

Note: ALL MODELS REQUIRING CE (EUROPEAN COMMUNITY) ARE PROPERLY CONFIGURED.
**specifications**

**Introduction**

**Size:**  
Height 11.340” (28.8 cm)  
Width 16.730” (42.5 cm)  
Depth 21.730” (55.2 cm)  
Weight 47.180 lbs (21.4 kg)  

*Note:* Weight is approximate and does not include Coin Drawers / Bag Attachments.

**Sorting Speed:**  
Up to 3000 Coins per Minute  
(depending on coin mix)

**Operating Temperature Range:**  
+40 to +100 Degrees Fahrenheit  
+5 to +38 Degrees Centigrade

**Voltage:**  
90–264 VAC 50 / 60 Cycle

**Coin Diameter Capability (Typical):**  
.590” (15mm) to 1.28” (32.4mm)

**Sorting Differential:**  
.5mm (.020”) minimum

**Inspection Pan Capacity:**  
Approximately 4500 coins (.705” / 18mm diameter)

**Coin Drawer Capacity:**  
Approximately 900 coins (.705” / 18mm diameter)

---

**CAUTION**

THIS EQUIPMENT MUST BE GROUNDED FOR PROPER OPERATION. USE OF EXTENSION CORDS OR 3–2 ADAPTERS IS NOT RECOMMENDED. IF A 3–2 ADAPTER IS USED, THE GROUNDING WIRE OR TANG MUST BE CONNECTED TO THE BUILDING GROUND. FOR OPTIMUM SAFETY, THE POWER CORD SHOULD BE DISCONNECTED FROM THE POWER SOURCE BEFORE CLEANING OR SERVICING. THE SOCKET OR OUTLET SHOULD BE INSTALLED NEAR THE EQUIPMENT AND BE EASILY ACCESSIBLE.
Introduction

There are seven (7) options available. Each option is packaged separately, complete with Installation Instructions.

1. SORTER STAND — Secures Sorter and Bag Ring / Spout in proper configuration for bagging coin.

2. COIN DRAWERS — Receive sorted coins.

3. BAG CHUTE / SPOUT / RING —
   For bagging large coin quantities. Chute replaces Coin Drawer. The Spout / Ring attach to Sorter Stand.

4. MAGNET — Attaches to Inspection Pan to prevent unwanted metallic objects from entering the Sorting Area.

5. REMOTE BATCH DISPLAY — Allows the customer to observe the total as coins are sorted / counted.

   Note: The Control must be "told" that a Remote Batch Display is connected. The procedure is discussed in the Programming Section later in this Guide.

6. PRINTER — Provides a permanent record (audit trail) of all transactions.

   Note: The Control must be "told" that a Printer is connected. The procedure is discussed in the Programming Section later in this Guide.

7. SECURITY STAND — Similar to Item #1 (above), but encloses Coin Bags for security.
UNPACK (See FIGURE #2)

The internal packaging is designed not only for protection during shipment but to allow an easy means of removal from the shipping container.

FIGURE #2
PACKAGING

THE SORTER WEIGHS 47.18 POUNDS (21.4 KG). USE PROPER LIFTING TECHNIQUES OR USE A HELPER WHEN REMOVING THE SORTER FROM THE SHIPPING CARTON.
Installation

Introduction

CHECK FOR SHIPPING DAMAGE
The Sorter and all options were thoroughly tested after they were manufactured and carefully packaged when they left the factory.

ANY DAMAGE THAT MAY HAVE BEEN DONE IN SHIPMENT SHOULD BE REPORTED TO THE CARRIER IMMEDIATELY, AND THE SHIPPING CARTON(S) AND PACKAGING RETAINED FOR INSPECTION, IF NECESSARY.

CHECK FOR MISSING PARTS
Compare the items received against the original order. Notify your Authorized Sales / Service Representative of any discrepancies.

SECURE THE SORTER (IF DESIRED)
The Sorter will sit on a countertop or tabletop. It may be attached for security. A drilling guide is shown in FIGURE #3.

Note: The distance from the front edge of the countertop to the Sorter to be determined at installation. Allow sufficient clearance at the rear and right side of the Sorter to allow the Inspection Pan room to move freely throughout its travel range. Screw length should be 3/4” (maximum) plus the thickness of the countertop.

If bagging coin is desired, the Sorter must be attached to its own stand as shown in FIGURE #4.

Note: A Security Stand, utilizing a sliding drawer configuration to protect the coins is also available. Contact your Authorized Sales Representative for additional information.
INSTALL THE OPTION(S) (IF ORDERED)
Install each option in accordance with the Installation Instructions provided with each kit. Cable connections are shown in FIGURE #5.

Note: The Printer must be connected to port #4 and the Remote Batch Display must be connected to port #3.

Note: The Control must be "told" that a Printer or Remote Display is connected. The setup procedure is discussed in the Programming section later in this Guide.

FIGURE #5
OPTION CABLE CONNECTIONS

| UNIT COUNTS | .01 | 200 | 2.00 |
|             | .05 | 260 | 13.00 |
|             | .10 | 360 | 36.00 |
|             | .25 | 1100| 275.00|
|             | .50 | 76 | 38.00 |
|             | 1.00| 50 | 50.00 |
| TOTAL COIN  |     |   | 414.00|
| TOTAL       |     |   | 414.00|
INSTALL COIN BAGS / COIN DRAWERS

Unpack the Coin Drawers (if ordered) and slide them into position. All Coin Drawers are identical in size and shape. If you are bagging coin, replace the Coin Drawers at those locations with the Chute / Spout configuration. To install a Coin Bag, lift the appropriate Ring and slip the Bag over the Spout. Slide the Ring down over the Bag to secure it in position with the slot in the Ring facing forward.

Note: Depending on the length and condition of the Coin Bag, folding the top over to provide a double fabric thickness may increase the holding capability of the ring.

Rest the Coin Bag on the Stand Shelf to support the weight of the coin.

FIGURE #6
COIN BAG INSTALLATION

<table>
<thead>
<tr>
<th>RECOMMENDED COIN DRAWER CAPACITIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>10¢ – 1000 Units $100.00</td>
</tr>
<tr>
<td>1¢ – 750 Units $7.50</td>
</tr>
<tr>
<td>5¢ – 500 Units $25.00</td>
</tr>
<tr>
<td>25¢ – 400 Units $100.00</td>
</tr>
<tr>
<td>1.00 – 300 Units $300.00</td>
</tr>
<tr>
<td>50¢ – 250 Units $125.00</td>
</tr>
</tbody>
</table>
THE POWER CORD / SWITCH

Check the Power Cord supplied with the Sorter to ensure compatibility with local requirements. If a different plug connection is required, obtain the correct Power Cord assembly locally.

Be sure the Power Switch (See FIGURE #7) is in the “OFF” position, and then connect the Sorter end of the Power Cord as shown in FIGURE #8, and the opposite end to a properly grounded AC outlet of the appropriate voltage.
THE INSPECTION PAN / SHIELD

Lifting the corner as shown in FIGURE #9 allows the Pan to swing to the right and tilt upward, transferring the coins to the Sorting Disc. The second (next) batch of coins may then be placed in the Pan and inspected while the first batch is sorting. Returning the Pan to its “rest” position quiets the sorting operation considerably. If a Magnet is used, move the Inspection Pan to the right before lifting so the Magnet clears the Rear Housing / Printer. To remove the Pan for access to the sorting area, first close the Pan ("rest" position) then lift the rear of the Pan up slightly and (if a Printer is used) to the rear to remove, so that the Shield will not contact the Printer Bracket. Notches in the Inspection Pan allow addition of the Shield (if desired) to prevent spillage when processing large batches.

Note: Allow sufficient clearance at the rear and sides of the Sorter to allow the Inspection Pan free movement throughout its travel range.

FIGURE #9
INSPECTION PAN
The Sorter has eight (8) Sorting Stations. They are numbered as shown in FIGURE #10. In some applications, not every Sorting Station would be used. The Coin Drawers for these Stations may be secured in position, if desired, by a single screw inserted in the bottom of the Drawer through the Baseplate.

A small label intended to remind the operator to examine the coin mix and remove objects that could cause damage is included with the Sorter. Usage is optional. A suggested location is shown in FIGURE #10.
The Keyswitch, located to the left of the Control, provides access to the programming mode.

1. Enter the programming mode by turning the Keyswitch to the vertical position and holding the Batch Key down at power-up.

2. Exit the programming mode by turning the Keyswitch to the horizontal position.

Complete programming instructions are discussed later in this Guide.
FUNCTION KEYS

MOTOR ON / OFF
Alternate function key that controls the Sorting Motor. Toggles between ON and OFF.

BATCH
Displays the current Batch Total. Repeated key depressions will display the Batch Total for each denomination.

GRAND
Displays the current Grand Total. Repeated key depressions will display the Grand Total for each denomination.

ACCEPT
Accepts the value shown on the top line of the Display into the next level (it is cleared out of the present level). If it is a Grand Accept, the total is not cleared.

Note: When the accept key is pressed, a message may appear on the Display to alert the operator to an error condition. Refer to “Operator Messages” later in this Guide for a listing and explanation.

BAG COUNT
Displays the partial Bag Counts.

BAG STOP
Displays current bagstop setting by denomination.
CLEAR

Clears the value shown on the Display. The exception to this rule is the “GRAND–CLEAR–ACCEPT” sequence, in which case the GRAND is cleared after the ACCEPT Key is pressed. If a Printer is connected, the output is sent to the Printer. If a Serial Port is configured for data output, it will be sent to that Port.

**Note:** The Sorter incorporates a power-up reset (clear) feature to clear all totals stored in batch and grand memory, as well as all bag count totals.

To ensure the Control is clear (Display at ".00"), hold the CLEAR Key on the Control down, and while holding, move the main Power Switch at the rear of the Sorter to on. The Control will cycle through a “self-check” sequence and then display:

**ALL TOTALS CLEAR**

For two (2) seconds, then return to display batch total.
**TIME / DATE**

The Sorter contains a calendar and clock for operator convenience and for controlling program functions.

Complete instructions for setting the clock are contained in the programming section later in this Guide.

**FEE PERCENT**

The Sorter has the capability of assessing a predetermined fee for coin processing.

This fee is programmable and may be from .01% - 9.99%.

Complete instructions for setting the fee percent option are contained in the programming section later in this Guide.

**FIXED FEE**

The Sorter has the capability of assessing a fixed fee for coin processing.

This fee is programmable and may be from .01 - 19.99.

Complete instructions for setting the fixed fee option are contained in the programming section later in this Guide.
displaying quantities and / or totals

1. Display Batch Total
   Cycle the BATCH Key until the Display shows the following:

   .00
   BATCH TOTAL

   **Note**: Batch totals must be displayed before the accept key is pressed for that particular batch total.

2. Display Grand Total
   Cycle the GRAND Key until the Display shows the following:

   .00
   GRAND TOTAL

3. Display Batch, or Grand Individual Coin Totals
   Cycle the BATCH, or GRAND Key to display the appropriate coin. Example: A batch total of .25.

4. Display Individual Bag Count
   Cycle the BAG COUNT Key to select the appropriate coin (.25 Bag Count shown in Unit Mode). The Display can be shown in units or dollar value. Refer to the Programming section later in this guide for additional information.

5. Display Bagstop
   Cycle the BAGSTOP Key to locate the appropriate coin. The bagstop setting can be displayed in unit or dollar value. Refer to the Programming section later in this guide for additional information.
Note: Each time a Batch, or Grand total is accepted an audit trail will print if the printer option is utilized.

1. Batch ACCEPT

With the Display in the BATCH TOTAL mode, press the ACCEPT Key once. The BATCH TOTAL is cleared, and the Control remains in the BATCH mode. The BATCH TOTAL is added to the GRAND TOTAL.

2. Grand ACCEPT (All Grand Totals remain)

With the Display in the GRAND TOTAL mode, press the ACCEPT Key once. The GRAND TOTAL remains on the Display. To clear the Display, refer to "Clearing Quantities and / or Totals" on the following pages. The GRAND TOTAL can be accepted only if the BATCH TOTAL is zero.

Note: The Printer must be allowed to finish the print cycle before attempting to accept a coin total or an operator message will appear. Refer to "Operator Messages" later in this Guide for additional information.

Note: If a batch or grand total is accepted and the Printer is off-line (sel light “off”), the tape will not advance far enough for proper tear-off. Turn the Printer Power Switch off, wait a few seconds, then on again. Press the "sel" key and continue operation.
clearing quantities and / or totals

Note: Always double-check your need to clear. Quantities cannot be recalled!

The CLEAR function is used to remove information from memory.

1. Clear Batch Total
   a. Press the BATCH Key (displays batch total).
   b. Press the CLEAR Key once (the Display MUST be allowed to flash for two seconds).
   c. Press the CLEAR Key again (the Display resets to zero, resets all batch totals).

   Note: If a batch total is cleared rather than accepted, the dollar amounts are not transferred to the grand total.

2. Clear Grand Total (without Audit Trail Printout)
   a. Press the GRAND Key (displays grand total).
   b. Press the CLEAR Key once (the Display MUST be allowed to flash for two seconds).
   c. Press the CLEAR Key again (the Display resets to zero, resets all grand totals).
clearing quantities and / or totals

3. Clear Grand Total (with Audit Trail Printout)
   a. Press the GRAND Key (displays grand total).

   124.86
   GRAND TOTAL

   b. Press the CLEAR Key once (the Display MUST be allowed to flash for two seconds). The Display must read “GRAND TOTAL”.
   c. Press the ACCEPT Key (the Display resets to zero, resets all grand totals and printer prints an audit trail).

4. Clear All Partial Bag Counts
   a. Cycle the BAG COUNT Key until the Display shows the following:

   631.72
   BAG COUNT TOTAL

   b. Press the CLEAR Key once (the Display MUST be allowed to flash for two seconds).
   c. Press the CLEAR Key again (all partial bag counts clear).

5. Clear Individual Bag Counts
   a. Cycle the BAG COUNT Key until the Cursor shows the coin to be cleared.

   b. Press the CLEAR Key once (the Display MUST be allowed to flash for two seconds).
   c. Press the CLEAR Key again (the individual total clears).
1. Place the coins for the first batch in the Inspection Pan and remove any unwanted objects.

2. Press the MOTOR ON / OFF Key on the Control to start the Sorting Motor.

3. Lift and tilt the Inspection Pan to transfer the coins into the Sorting Area.

4. When the sorting is complete, press the MOTOR ON / OFF Key on the Control to stop the Sorting Motor. (The Sorting Motor stops automatically approximately seven (7) seconds after the last coin has been processed if left unattended.)

   **Note:** The Sorter can be programmed to run continuously if desired. Refer to the programming section later in this guide to activate this feature.

5. The total batch amount for the coins sorted will appear on the Display. Press the ACCEPT Key on the Control to transfer the batch total to the Grand Total. An audit trail (printout) will print the Batch information if a Printer is properly connected.

   **Note:** If the batch total does not print properly, or does not space (advance) the tape properly after printing, the printer may not be properly initialized. Refer to the Programming section later in this guide to initialize the Control.

6. Repeat Steps #1 through #5 for the second and all subsequent batches.

7. When all Batch Totals have been processed, press the GRAND-ACCEPT Keys to display and print the Grand Total of all coins processed.

   **Note:** If it is desired to print and clear the grand total information, press grand, then press clear, then press accept.
Operation

The Sorter will stop when any of the coin denominations being sorted reaches a predetermined bagstop amount.

A. The Display will indicate which Sorting Station has reached a bagstop, and the number of coins (if any) over the bagstop quantity.

B. Empty the Coin Drawer or exchange the Coin Bag. Place the overage (if any) in the new drawer or bag.

C. Press the MOTOR ON / OFF Key.

1. If a second (or more) bagstop was reached, the Display will advance to the next coin at bagstop. The Display will show that coin’s denomination, and the number of coins (if any) over the bagstop quantity.

2. When there are no more stations at bagstop, the Display will return to show the Batch Total, and the Sorting Motor will start.

Note: If the bagstop selection is to be changed, press the Clear Key, change the selection (see section following), then press the Motor On / Off Key to continue operation.
BAGSTOP QUANTITY SELECTION

Note: Bagstop quantities may be set (reset) at any time the Sorter is at rest (no counting / sorting). If quantities are changed during coin processing, it is important that the number of coins currently in the coin bag must be less than the new bagstop quantity. Check (and clear if necessary) the bag count quantity of the selected coin before selecting the new bagstop setting, then proceed as follows:

These bagstop settings may be observed and selected (changed) as desired using the following procedure:

A. Cycle the BAG STOP Key to the desired station. The Bagstop quantity previously selected for that station will be displayed.

B. Cycle the BAG COUNT Key to observe each of the three preprogrammed bagstops for that station.

C. Press the ACCEPT Key to enter the new bagstop quantity into memory.
CHANGING THE BAGSTOP QUANTITY

Three Bagstop quantities are operator selectable for each coin station. Each Station’s coin value (unit count if non-valued coin) and three selectable bagstop amounts are programmed at the time of manufacture. The values can be altered for your particular application. Refer to the Programming section later in this guide for this procedure. Totals and memory are retained by a service-replaceable, non-rechargeable lithium battery in the event of a power loss.

The Control permanent memory contains the following coin values and three pre-selected bagstop settings per Sorting Station.

The coin values and bagstop amounts shown in the chart below may be altered for your specific application. Refer to the Programming section later in this Guide for this procedure. These new coin values are held in memory which is retained by the battery during power outages.

<table>
<thead>
<tr>
<th>Station No. (Showing Coin Value)</th>
<th>Quantity &quot;A&quot;</th>
<th>Quantity &quot;B&quot;</th>
<th>Quantity &quot;C&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Station #1</td>
<td>10,000</td>
<td>5,000</td>
<td>1,000</td>
</tr>
<tr>
<td>Station #2</td>
<td>5,000</td>
<td>2,500</td>
<td>500</td>
</tr>
<tr>
<td>Station #3</td>
<td>4,000</td>
<td>2,000</td>
<td>400</td>
</tr>
<tr>
<td>Station #4</td>
<td>4,000</td>
<td>2,000</td>
<td>400</td>
</tr>
<tr>
<td>Station #5</td>
<td>1,000</td>
<td>500</td>
<td>100</td>
</tr>
<tr>
<td>Station #6</td>
<td>2,000</td>
<td>1,000</td>
<td>200</td>
</tr>
<tr>
<td>Station #7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Station #8</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

CHART “A”
PREPROGRAMMED QUANTITIES
The following chart may be filled-in to show the values specifically programmed for your application. This will aid in proper selection of bagstop quantities and will be helpful in the event re-programming becomes necessary.

<table>
<thead>
<tr>
<th>Station No. (Showing Coin Value)</th>
<th>Quantity “A”</th>
<th>Quantity “B”</th>
<th>Quantity “C”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Station #1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Station #2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Station #3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Station #4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Station #5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Station #6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Station #7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Station #8</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
INTRODUCTION
This feature allows the Control to alert the operator to an error condition. A Motor Run Symbol (located in the upper left corner of the Display), will appear while the Sorter Motor is running.

Should the Sorter stop for any reason, observe the Display. If the reason was a Sorter error, one of the following error messages will be displayed. If the reason was an operator error (lifting the Front Cover, removing a Coin Drawer, etc.), the Motor will stop and the Display will show:

Locate and eliminate the problem and continue operation.

11 messages are available:

1. RAM ERROR
   A problem has occurred in the electronics of the Sorter. Stop operation. Press the CLEAR Key to clear the Display. If the problem persists, disconnect Sorter from power and contact your Authorized Service Representative for assistance.

2. KEY SEQUENCE
   Keys where not pressed in an acceptable sequence. Press the "CLEAR" Key to clear the Display and use the proper key sequence.
3. CLEAN SENSOR
An object has blocked a Coin Sensor. Disconnect the Sorter from power, locate and clean the dirty Sensor, reconnect the Sorter to power and resume operation.

Note: When the Clean Sensor Error has been corrected, the coin quantity for that station should be re-run to verify its accuracy.

Note: Proper cleaning procedures are discussed later in this Guide.

4. LOW BATTERY
The Battery in the Control has become too low to sustain totals in the event of a power loss. Contact your Authorized Service Representative for replacement.

5. COIN BACK-UP
Coins have backed up in a Coin Drawer or Bag. Straighten the Coin Bag and / or shake the Coin Chute slightly to eliminate the coin jam. Change the Bag or empty the Drawer and resume operation.

6. TOTAL NOT ZERO
This message will be displayed if the totals are not accepted in order. Clear the BATCH total before clearing a GRAND total.
7. RUN NO ACCEPT
Sorter cannot accept totals while coins are being sorted / counted. Wait for sorting to stop before accepting total.

8. PRINTER BUSY
Totals cannot be accepted while Printer is operating. Wait for printing to stop before accepting total.

9. OVERFLOW
The GRAND total has come within $10,000 of the maximum total possible. Complete the present batch, accept the total, clear and accept the Grand Total. If the total is not cleared, it will soon “roll over” and no longer show valid totals.

10. COMMUNICATIONS ERROR
An error has occurred at the port shown on the Display. Check all physical connections between Sorter and Peripherals. If all connections are proper, check the port parameters and resume operations. If the problem persists, contact your Authorized Service Representative for assistance.

11. INTERLOCK
The Upper Front Cover is open or a Coin Drawer is not in position. Close the Cover, or place a Coin Drawer or Coin Chute in each sorting location and resume operation.
The Sorter is set when manufactured to the following default parameters. Each of the parameters may be changed to fit your specific application. Refer to the following section for these instructions. To enter the Programming Mode: 1) turn Keyswitch to vertical, 2) hold Batch Key down at power-up.

Press the “MOTOR ON / OFF” Key to cycle through the programming mode, following the instructions to change the default settings. Once completed, press “BATCH” Key and then turn the Keyswitch to horizontal.

DEFAULT SETTINGS

Note: The settings described here are standard defaults. Settings for specific countries or applications may be different, and are selectable by the operator. If the display shows a RAM–ROM condition, the Sorter will revert to these standard values.

1. SET TIME AND DATE
   Default = Day / Month / Year

2. DISPLAY DECIMAL POINT / COMMA
   (CHOICE AND LOCATION)
   Default = Decimal point in position .00

3. SET FEE PERCENT
   Maximum is 9.99%

4. SET FIXED FEE
   Maximum is 19.99

5. BATCH PRINT LENGTH / NUMBER OF COPIES
   Default = Long printout with 1 copy

6. GRAND PRINT LENGTH / NUMBER OF COPIES
   Default = Long printout with 1 copy

7. RS232 COMMUNICATION PORT PARAMETERS
   Port #1 Default = 9600 Baud / No Parity / 7 Data Bits / 1 / DTE / No Handshaking / No ACK NAK
   Port #2 Default = Same as Port #1
   Port #3 Default = Same as Port #1
   Port #4 Default = Same as Port #1

Note: If display = yes is initialized, the information will be sent to Port #4. Connect the Remote Batch Display to this port.

Note: If print = yes is initialized, the information will be sent to Port #3. Connect the Remote Printer to this port.

IF AN ERROR IS MADE DURING PROGRAMMING, AND THE DISPLAY APPEARS TO BE “LOCKED-UP” PREVENTING ADDITIONAL ENTRIES, SWITCH THE MAIN POWER SWITCH TO “OFF” TO COMPLETELY EXIT THE PROGRAMMING MODE.

SWITCH THE POWER BACK ON, RE–ENTER THE PROGRAMMING MODE AND CONTINUE OPERATION.
8. PRINT ORDER (VALUE / SIZE)  
   Default = Value

9. BAGSTOPS (Enable / Disabled)  
   Default = Enable

10. RUN / AUTO-STOP  
    Default = Stop after 7 seconds

11. BAGSTOP DISPLAY (units or dollars)  
    Default = Dollars

12. COIN VALUES  
    as shown in FIGURE #14

13. CURRENCY VALUES  
    as shown in FIGURE #14

---

Programmed to specific values / quantities if specified. If none are specified the values / quantities will be as shown in the following chart:

<table>
<thead>
<tr>
<th>COIN VALUE</th>
<th>SELECTION #1</th>
<th>SELECTION #2</th>
<th>SELECTION #3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>UNITS</td>
<td>DOLLAR VALUE</td>
<td>UNITS</td>
</tr>
<tr>
<td>$.10</td>
<td>10000</td>
<td>1000.00</td>
<td>5000</td>
</tr>
<tr>
<td>$.01</td>
<td>5000</td>
<td>50.00</td>
<td>2500</td>
</tr>
<tr>
<td>$.05</td>
<td>4000</td>
<td>200.00</td>
<td>2000</td>
</tr>
<tr>
<td>$.25</td>
<td>4000</td>
<td>1000.00</td>
<td>2000</td>
</tr>
<tr>
<td>$1.00</td>
<td>2000</td>
<td>2000.00</td>
<td>500</td>
</tr>
<tr>
<td>$.50</td>
<td>2000</td>
<td>1000.00</td>
<td>1000</td>
</tr>
<tr>
<td>DISABLED</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>DISABLED</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
</tbody>
</table>

FIGURE #14
COIN VALUE / BAGSTOP DEFAULT SETTINGS
INITIALIZING THE CONTROL FOR PRINTER OPERATION

The Sorter must be "told" that a Printer is connected, so that the proper communication link can be established.

**Note:** The Sorter must be in programming mode. To enter the programming mode, perform the steps below.

A. Connect the Printer to port #4 at the rear of the Sorter.

B. Turn Keyswitch to vertical position, hold Batch Key on Control down, and switch the Sorter Power Switch to ON.

C. Cycle MOTOR ON / OFF Key until Display shows:

D. Press the Batch Key ("Y") to insure Control Communications to the Printer.

E. Turn the Sorter Keyswitch to horizontal position and back to the vertical position.

F. Switch Printer Power Switch ON.

G. Press "SEL" Key on Printer to place Printer on-line (green light "ON" on "SEL" Key).

**Note:** If a Batch or Grand total is accepted and the printer has not been initialized, the Printer Tape may not advance far enough for proper tear-off. Initialize the Printer (steps a–h above). switch the Printer Power Switch off, wait a few seconds, then switch the Printer on again.
INITIALIZING THE CONTROL FOR REMOTE DISPLAY OPERATION

The Sorter must be "told" that a Remote Display is connected, so that the proper communication link can be established.

**Note:** The Sorter must be in programming mode. To enter the programming mode, perform the steps below.

A. Connect Remote Display to Port #3 at rear of Sorter.
B. Turn Keyswitch to vertical position, hold Batch Key on Control down, and switch the Sorter Power Switch to ON.
C. Press MOTOR ON / OFF Key twice. Display will show:

<table>
<thead>
<tr>
<th>DISPLAY?</th>
<th>PRESS</th>
</tr>
</thead>
<tbody>
<tr>
<td>BATCH = Y, GRAND = N</td>
<td></td>
</tr>
</tbody>
</table>

The current selection will flash.

D. Press the Batch Key ("Y") to insure Control Communications to the Remote Display.
E. Turn the Sorter Keyswitch to horizontal ( - ) position and back to the vertical ( l ) position.
PROGRAMMING KEY
SEQUENCES
The following pages explain in detail all the steps necessary to properly program the features of the Sorter.

1. SET TIME / DATE
   A. Turn Keyswitch to vertical position, hold Batch Key on Control down, and switch the Sorter Power Switch to ON.
   B. Cycle the MOTOR ON / OFF Key until the Display shows:
   C. Press the GRAND Key.
   D. The Display will show (example):
   E. Press the BAGSTOP Key to highlight the digit to be changed.
   F. Cycle the BAG COUNT Key to until the desired number is shown.
   G. Repeat steps E and F for all digits.
   H. Press the ACCEPT Key to accept the changes and return to the Programming Mode.
   I. Press the MOTOR ON / OFF Key to return to the programming mode.

   or

   Turn the Keyswitch to the horizontal position to exit the programming mode.

   Note: 1) 24 hour time is displayed / printed in hours / minutes
          2) date is displayed as day (dd), month (mm), year (yy).
2. DECIMAL POINT / COMMA SELECTION AND DISPLAY LOCATION

A. Turn Keyswitch to vertical position, hold Batch Key on Control down, and switch the Sorter Power Switch to ON.

B. Cycle MOTOR ON / OFF Key until Display shows:

C. To select Decimal Point / Comma

1. Press BAG STOP Key. Display will show:

Repeated depressions of the BAG STOP Key will select between the Displays. When the Display you require is shown, either:

Press the BAG COUNT Key to select the Decimal Point / Comma position (See “D” below).

OR

Press the MOTOR ON / OFF Key to select the next parameter.

OR

Turn the Keyswitch to horizontal, then back to vertical to exit the programming mode.

D. To select Decimal Point / Comma position:
1. Press BAG COUNT Key. Display will show one of the following:

- .00
  POINT LOCATION
  OR
- 0
  NO DECIMAL POINT
  OR
- 0.
  POINT LOCATION
  OR
- .0
  POINT LOCATION
  OR
- .000
  POINT LOCATION

E. When the Display shows the location you require, exit using one of the following:

- Press the MOTOR ON / OFF Key to select the next parameter.
  OR
- Turn the Keyswitch to horizontal, then back to vertical to exit the programming mode.
3. SET FEE PERCENT

A. Turn Keyswitch to vertical position, hold Batch Key on Control down, and switch the Sorter Power Switch to ON.

B. Cycle the MOTOR ON / OFF Key until the Display shows:

C. Press the BATCH Key.

D. The Display will show (example):

E. Press the GRAND Key. The digit (0) will flash.

F. Cycle the BAG COUNT Key to increment ( increase ) the number.

G. Cycle the BAG STOP Key to decrement ( decrease ) the number.

**Note:** The maximum % that can be entered is 999 = 9.99%.

H. Repeat steps F and G for each additional digit.

I. When all required changes are complete press the ACCEPT Key to enter the fee percent into memory.

J. Press the MOTOR ON / OFF Key to return to the programming mode.

or

Turn the Keyswitch to the horizontal position to exit the programming mode.

**Note:** $100 = 1\%$
4. SET FIXED FEE

A. Turn Keyswitch to vertical position, hold Batch Key on Control down, and switch the Sorter Power Switch to ON.

B. Cycle the MOTOR ON / OFF Key until the Display shows:

C. Press the GRAND Key.

D. The Display will show (example) and the digit (0) will flash:

E. Cycle the GRAND Key to select the digit to be changed.

F. Cycle the BAG COUNT Key to increment (increase) the value.

G. Cycle the BAG STOP Key to decrement (decrease) the value.

Note: The maximum value that can be entered is 1999 = 19.99.

H. Repeat steps E through G for each additional digit.

I. When all required changes are complete press the ACCEPT Key to enter the fee percent into memory.

J. Press the MOTOR ON / OFF Key to return to the programming mode.

or

Turn the Keyswitch to the horizontal position to exit the programming mode.
5. BATCH PRINT LENGTH / NUMBER OF COPIES

A. Turn Keyswitch to vertical position, hold Batch Key on Control down, and switch the Sorter Power Switch to ON.

B. Cycle MOTOR ON / OFF Key until Display shows:

C. To select length of Printout:

1. Press BAG STOP Key. Display will show:

Repeated depressions of the BAG STOP Key will select between the Displays. When the Display you require is shown, either:

Press the BAG COUNT Key to select the number of printout copies (See “D” below).

OR

Press the MOTOR ON / OFF Key to select the next parameter.

OR

Turn the Keyswitch to horizontal, then back to vertical to exit the programming mode.

D. To select number of printout copies;

1. Repeatedly press the BAG COUNT Key. The Display increments from 0 to 4 copies.
E. Exit using one of the following:

1. Press the MOTOR ON / OFF Key to select the next parameter.

2. OR
   Turn the Keyswitch to horizontal, then back to vertical to exit the programming mode.

Examples of long and short Batch printouts are shown in FIGURE #15.

<table>
<thead>
<tr>
<th>Batch Accept</th>
<th>Batch Accept</th>
</tr>
</thead>
<tbody>
<tr>
<td>TIME 09:15</td>
<td>09/21/02</td>
</tr>
<tr>
<td>Batch</td>
<td>1503-01</td>
</tr>
<tr>
<td>Sub</td>
<td>111</td>
</tr>
<tr>
<td>Grand</td>
<td>09/21/02</td>
</tr>
<tr>
<td>.01</td>
<td>200</td>
</tr>
<tr>
<td>.05</td>
<td>260</td>
</tr>
<tr>
<td>.10</td>
<td>360</td>
</tr>
<tr>
<td>.25</td>
<td>1100</td>
</tr>
<tr>
<td>.50</td>
<td>76</td>
</tr>
<tr>
<td>1.00</td>
<td>50</td>
</tr>
<tr>
<td>Total Coin</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
</tr>
</tbody>
</table>

---

**Long**

**Short**

FIGURE #15

Batch Printouts
6. GRAND PRINT LENGTH / NUMBER OF COPIES

A. Turn Keyswitch to vertical position, hold Batch Key on Control down, and switch the Sorter Power Switch to ON.

B. Cycle MOTOR ON / OFF Key until Display shows:

C. To select length of Printout, Press the BAG STOP Key. The Display will show:

   Cycling the BAG STOP Key will select between the Displays. When the Display you require is shown, either:

   Press the BAG COUNT Key to select the number of printout copies (See "D" below).
   OR
   Press MOTOR ON / OFF Key to select next parameter.
   OR
   Turn the Keyswitch to horizontal, then back to vertical to exit the programming mode.

D. To select number of printout copies, repeatedly press the BAG COUNT Key. The Display increments from 0 to 4 copies.

E. Exit using one of the following:

   Press MOTOR ON / OFF Key to select next parameter.
   OR
   Turn the Keyswitch to horizontal, then back to vertical to exit the programming mode.

Examples of long and short Grand printouts are shown in FIGURE #16.
### GRAND ACCEPT

**Time**: 15:09 09/21/02  
**Grand**: 09/21/02  

**Partial Bag Totals**

<table>
<thead>
<tr>
<th>Denomination</th>
<th>Quantity</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>.01</td>
<td>1536</td>
<td>15.36</td>
</tr>
<tr>
<td>.05</td>
<td>1416</td>
<td>70.80</td>
</tr>
<tr>
<td>.10</td>
<td>2280</td>
<td>228.00</td>
</tr>
<tr>
<td>.25</td>
<td>2537</td>
<td>634.25</td>
</tr>
<tr>
<td>.50</td>
<td>522</td>
<td>261.00</td>
</tr>
<tr>
<td>1.00</td>
<td>18</td>
<td>18.00</td>
</tr>
</tbody>
</table>

**Total**: 1227.41

**$ of Bags**

<table>
<thead>
<tr>
<th>Denomination</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>.10</td>
<td>1</td>
</tr>
<tr>
<td>.01</td>
<td>1</td>
</tr>
<tr>
<td>.05</td>
<td>2</td>
</tr>
<tr>
<td>.25</td>
<td>5</td>
</tr>
<tr>
<td>1.00</td>
<td>2</td>
</tr>
<tr>
<td>.50</td>
<td>1</td>
</tr>
</tbody>
</table>

**Grand Totals**

<table>
<thead>
<tr>
<th>Denomination</th>
<th>Quantity</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>.01</td>
<td>4000</td>
<td>40.00</td>
</tr>
<tr>
<td>.05</td>
<td>5200</td>
<td>260.00</td>
</tr>
<tr>
<td>.10</td>
<td>7200</td>
<td>720.00</td>
</tr>
<tr>
<td>.25</td>
<td>22002</td>
<td>5500.50</td>
</tr>
<tr>
<td>.50</td>
<td>1520</td>
<td>760.00</td>
</tr>
<tr>
<td>1.00</td>
<td>1000</td>
<td>1000.00</td>
</tr>
</tbody>
</table>

**Total Coin**: 8280.50

**Total**: 8280.50

**PC Cnt**: 40922  
**Sort Cnt**: 9  
**Media**:  
1.00: 10.00  
5.00: 30.00  
10.00: 10.00  
**Total Currr.**: 81.00

**ID Totals**

<table>
<thead>
<tr>
<th>ID #</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>328.50</td>
</tr>
<tr>
<td>02</td>
<td>162.75</td>
</tr>
<tr>
<td>03</td>
<td>148.30</td>
</tr>
<tr>
<td>04</td>
<td>189.60</td>
</tr>
<tr>
<td>05</td>
<td>239.25</td>
</tr>
</tbody>
</table>

---

**FIGURE #16**  
**GRAND PRINTOUTS**

---

**SHORT**
## 7. RS232 Communication Port Parameters

### Interface Chart

<table>
<thead>
<tr>
<th>Model</th>
<th>Display</th>
<th>Interface Cable</th>
<th>Baud Rate</th>
<th>Data Bits</th>
<th>Parity</th>
<th>RTS / CTS</th>
<th>Port(s)</th>
<th>Display Selection</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>M5 / M7 OUTPUT FORMAT</td>
<td>7</td>
<td>- - - - - - -</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1 - 2 - 3 - 4 -</td>
<td>OPTION 4</td>
<td>OLD PRINTER OUTPUT FORMAT</td>
</tr>
<tr>
<td>0036886</td>
<td>6</td>
<td>- - -</td>
<td>15.2K</td>
<td>8</td>
<td>NONE</td>
<td>-</td>
<td>3</td>
<td>- -</td>
<td>-</td>
</tr>
<tr>
<td>0036888</td>
<td>1</td>
<td>0033131</td>
<td>9600</td>
<td>8</td>
<td>NONE</td>
<td>RTS</td>
<td>1 - 2 - 3 - 4 -</td>
<td>- -</td>
<td>PORT 4</td>
</tr>
<tr>
<td>M540 / 3650 CTZN PNTR</td>
<td>A</td>
<td>0035561</td>
<td>9600</td>
<td>8</td>
<td>NONE</td>
<td>RTS</td>
<td>1 - 2 - 3 - 4 -</td>
<td>OPTION 3</td>
<td>PORT 4</td>
</tr>
<tr>
<td>DEPROS</td>
<td>- - -</td>
<td>- - -</td>
<td>1200</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>ENHANCED</td>
<td>ALL SET W/ PC-CASH</td>
</tr>
</tbody>
</table>

### 7.0 Select Baud Rate

A. Turn Keyswitch to vertical position, hold Batch Key on Control down, and switch the Sorter Power Switch to ON.

B. Cycle MOTOR ON / OFF Key until Display shows:

C. Press BAG STOP Key. The Display will show:

D. Cycle the BAG COUNT Key until the Display shows the port you wish to change.

**Example: Port #1**

PORT 1; 9600, N, 7, 1 DTE
E. Cycle the BAG STOP Key until the Display shows the following:

F. Cycle the BAG COUNT Key until the Display shows the desired baud rate.

[Note: BAUD RATES AVAILABLE: 300 / 1200 / 2400 / 9600 / 19,200]

G. Cycle the Bag Count Key to display the Baud Rate you require.

H. Exit using one of the following:

- Press BAG STOP Key to select the next communications parameter

  OR

- Press MOTOR ON / OFF Key to select the next programming parameter

  OR

- Turn the Keyswitch to horizontal, then back to vertical to exit the programming mode.

EXAMPLE:

<table>
<thead>
<tr>
<th>9600</th>
</tr>
</thead>
<tbody>
<tr>
<td>PORT 1 BAUD RATE</td>
</tr>
</tbody>
</table>

BE SURE DISPLAY SHOWS CORRECT PORT NUMBER
(TO CHANGE, SEE ITEM “D”)

THE BAUD RATE THAT YOU SELECT WILL APPLY ONLY TO THE PORT YOU HAVE SELECTED IN ITEM “D” ABOVE.
7.1 SELECT PARITY

A. Turn Keyswitch to vertical position, hold Batch Key on Control down, and switch the Sorter Power Switch to ON.

B. Cycle MOTOR ON / OFF Key until Display shows:

C. Press BAG STOP Key. The Display will show the following:

D. Cycle the BAG COUNT Key until the Display shows the port you wish to change.

E. Cycle the BAG STOP Key until the Display shows:

F. Cycle the BAG COUNT Key to display the parity you require (none, even, or odd).

EXAMPLE: PORT #1

PORT 1; 9600, N, 7, 1
DTE

EXAMPLE:

NONE

PORT 1 PARITY

BE SURE DISPLAY SHOWS CORRECT PORT NUMBER (TO CHANGE, SEE ITEM “D”)
7.2 SELECT DATA BITS

A. Turn Keyswitch to vertical position, hold Batch Key on Control down, and switch the Sorter Power Switch to ON.

B. Cycle MOTOR ON / OFF Key until Display shows:

C. Press BAG STOP Key. The Display will show the following:

D. Cycle the BAG COUNT Key until the Display shows the port you wish to change.

G. Exit using one of the following:

Press BAG STOP Key to select the next communications parameter

OR

Press MOTOR ON / OFF Key to select the next programming parameter

OR

Turn the Keyswitch to horizontal, then back to vertical to exit the programming mode.
E. Cycle the BAG STOP Key until the Display shows:

F. Cycle the BAG COUNT Key to display the data bits you require (7 or 8).

G. Exit using one of the following:

Press BAG STOP Key to select the next communications parameter

OR

Press MOTOR ON / OFF Key to select the next programming parameter

OR

Turn the Keyswitch to horizontal, then back to vertical to exit the programming mode.

EXAMPLE:

SELECT DATA BITS
USE BG COUNT KEY

7

PORT 1 DATA BITS
BE SURE DISPLAY SHOWS CORRECT PORT NUMBER
(TO CHANGE, SEE ITEM "D" ABOVE)
7.3 SELECT FORMATS

A. Turn Keyswitch to vertical position, hold Batch Key on Control down, and switch the Sorter Power Switch (see FIGURE #7) to ON.

B. Cycle MOTOR ON / OFF Key until Display shows:

C. Press BAG STOP Key. The Display will show:

D. Cycle the BAG COUNT Key until the Display shows the port you wish to change.

E. Cycle the BAG STOP Key until the Display shows:

EXAMPLE: PORT #1

PORT 1; 9600, N, 7, 1
DTE

THE FORMAT THAT YOU SELECT WILL APPLY ONLY TO THE PORT YOU HAVE SELECTED IN ITEM “D”.

SELECT FORMAT,
USE BG COUNT KEY
F. Cycle the BAG COUNT Key to select one of the following five formats:

**Note:** Be sure that Display shows correct port #

<table>
<thead>
<tr>
<th>DISPLAY</th>
<th>FORMAT</th>
<th>WHERE USED</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Prn</td>
<td>Sends Printer Format</td>
</tr>
<tr>
<td>* 2</td>
<td>Cur 1</td>
<td>2620</td>
</tr>
<tr>
<td>* 3</td>
<td>Cur 2</td>
<td>2650, 2800</td>
</tr>
<tr>
<td>* 4</td>
<td>Cur 3</td>
<td>8643, 8625, 8672</td>
</tr>
<tr>
<td>5</td>
<td>Enhanced</td>
<td>Bar Code Reader/Computer Control</td>
</tr>
<tr>
<td>6</td>
<td>Display</td>
<td>Remote Display</td>
</tr>
<tr>
<td>* 7</td>
<td>Opt 4</td>
<td>Mach 5/7 Printer Format</td>
</tr>
<tr>
<td>* 8</td>
<td>Opt 1</td>
<td>Not Used</td>
</tr>
<tr>
<td>* 9</td>
<td>Opt 2</td>
<td>2620 3D</td>
</tr>
<tr>
<td>* A</td>
<td>Opt 3</td>
<td>Printer Citizen HD</td>
</tr>
<tr>
<td>* B</td>
<td>Opt 5</td>
<td>Not Used</td>
</tr>
<tr>
<td>* C</td>
<td>Opt 6</td>
<td>Jet Scan</td>
</tr>
</tbody>
</table>

* NOT USED WITH BASIC CONTROL

**EXAMPLES**

PORT 3; 9600, N, 8, 6
DTE  
SEND REMOTE DISPLAY FORMAT TO PORT #3

PORT 4; 9600, N, 8, 1
DTE  
SEND PRINTER FORMAT TO PORT #4
1. Printer Format

A typical print format is shown in FIGURE #17. It contains a header, fixed and variable fields.

```
<table>
<thead>
<tr>
<th>TIME</th>
<th>BATCH</th>
<th>SUB</th>
<th>GRAND</th>
</tr>
</thead>
<tbody>
<tr>
<td>09:15</td>
<td>09/21/02</td>
<td>09/21/02</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>0.01</th>
<th>0.05</th>
<th>0.10</th>
<th>0.25</th>
<th>0.50</th>
<th>1.00</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>200</td>
<td>260</td>
<td>360</td>
<td>1100</td>
<td>76</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>2.00</td>
<td>13.00</td>
<td>36.00</td>
<td>275.00</td>
<td>38.00</td>
<td>50.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL COIN</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>414.00</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>414.00</td>
</tr>
</tbody>
</table>
```

FIGURE #17
PRINT FORMAT

2. Currency Counter Format

Sets the Port output format for compatibility with Currency Counters.

3. Enhanced Mode Format

Allows external (remote) commands to control all Sorter functions.
7.4 SELECT ACK / NAK ENABLE

A. Turn Keyswitch to vertical position, hold Batch Key on Control down, and switch the Sorter Power Switch to ON.

B. Cycle MOTOR ON / OFF Key until Display shows:

C. Press BAG STOP Key. The Display will show:

D. Cycle the BAG COUNT Key until the Display shows the port you wish to change.

E. Cycle the BAG STOP Key until the Display shows the following:

F. Cycle the BAG COUNT Key to enable or disable ACK / NAK.

**CAUTION**

THE ACK / NAK THAT YOU SELECT WILL APPLY ONLY TO THE PORT YOU HAVE SELECTED IN ITEM "D".

Example: PORT #1

EXAMPLE:

PORT 1; 9600, N, 7, 1
DTE

ENABLE ACK / NAK ?
USE BG COUNT KEY

EXAMPLE:

DISABLED
PORT 1 ACK / NAK

BE SURE DISPLAY SHOWS CORRECT PORT NUMBER (TO CHANGE, SEE ITEM "D" ABOVE)
50

Programming

dtr / dsr

G. Exit using one of the following:
   Press BAG STOP Key to select the next communications parameter
   OR
   Press MOTOR ON / OFF Key to select the next programming parameter
   OR
   Turn the Keyswitch to horizontal, then back to vertical to exit the programming mode.

7.5 SELECT DTR / DSR ENABLE
(NOT AVAILABLE ON PORT #3 or PORT #4)

A. Turn Keyswitch to vertical position, hold Batch Key on Control down, and switch the Sorter Power Switch to ON.

B. Cycle MOTOR ON / OFF Key until Display shows:

C. Press BAG STOP Key. The Display will show:

D. Cycle the BAG COUNT Key until the Display shows the port you wish to change.

PROGRAM PORTS
USE BAG STOP KEY

SELECT PORT NO.,
USE BG COUNT KEY

EXAMPLE: PORT #1

PORT 1; 9600, N, 7, 1
DTE

CAUTION

THE DTR / DCR THAT YOU SELECT WILL APPLY ONLY TO THE PORT YOU HAVE SELECTED IN ITEM "D".
E. Cycle the BAG STOP Key until the Display shows:

F. Cycle the BAG COUNT Key to enable or disable DTR / DSR.

G. Exit using one of the following:

- Press BAG STOP Key to select the next communications parameter
- OR
- Press MOTOR ON / OFF Key to select the next programming parameter
- OR
- Turn the Keyswitch to horizontal, then back to vertical to exit the programming mode.

7.6 SELECT RTS / CTS ENABLE

A. Turn Keyswitch to vertical position, hold Batch Key on Control down, and switch the Sorter Power Switch to ON.

B. Cycle MOTOR ON / OFF Key until Display shows:

- ENABLE DTR / DSR
- USE BG COUNT KEY

EXAMPLE:

- ENABLED
- PORT 1 DTR / DSR

BE SURE DISPLAY SHOWS CORRECT PORT NUMBER
(TO CHANGE, SEE ITEM “D”)
C. Press BAG STOP Key. The Display will show:

D. Cycle the BAG COUNT Key until the Display shows the port you wish to change.

E. Cycle the BAG STOP Key until the Display shows:

F. Cycle the BAG COUNT Key to enable or disable RTS / CTS.

G. Exit using one of the following:

- Press BAG STOP Key to select the next communications parameter
  OR
- Press MOTOR ON / OFF Key to select the next programming parameter
  OR
- Turn the Keyswitch to horizontal, then back to vertical to exit the programming mode.
8. **SELECT PRINT ORDER BY VALUE / SIZE.**

   A. Turn Keyswitch to vertical position, hold Batch Key on Control down, and switch the Sorter Power Switch to ON.

   B. Cycle MOTOR ON / OFF Key until Display shows:

   C. Cycle BAG STOP Key to select either of the following choices:

   D. When the Display shows your choice, exit by pressing the MOTOR ON / OFF Key for the next programming selection or turning the Keyswitch to horizontal, then back to vertical to exit the programming mode.

9. **SELECT IF BAG STOPS ARE ACTIVE OR DISABLED.**

   A. Turn Keyswitch to vertical position, hold Batch Key on Control down, and switch the Sorter Power Switch to ON.

   B. Cycle MOTOR ON / OFF Key until Display shows:

   C. Cycle BAG STOP Key to select either of the following choices:

   D. When the Display shows your choice, exit by pressing the MOTOR ON / OFF Key for the next programming selection or turning the Keyswitch to horizontal, then back to vertical to exit the programming mode.
10. SELECT RUN CONTINUOUSLY OR 7-SECOND AUTO STOP.
   A. Turn Keyswitch to vertical position, hold Batch Key on Control down, and switch the Sorter Power Switch to ON.
   B. Cycle MOTOR ON / OFF Key until Display shows:
   C. Cycle BAG STOP Key to select either of the following choices:
   D. When the Display shows your choice, exit by pressing the MOTOR ON / OFF Key for the next programming selection or turning the Keyswitch to horizontal, then back to vertical to exit the programming mode.

11. SELECT UNIT OR DOLLAR DISPLAY FOR BAG STOP AND COUNT.
   A. Turn Keyswitch to vertical position, hold Batch Key on Control down, and switch the Sorter Power Switch to ON.
   B. Cycle MOTOR ON / OFF Key until Display shows:
   C. Cycle BAG STOP Key to select either of the following choices:
   D. When the Display shows your choice, exit by pressing the MOTOR ON / OFF Key for the next programming selection or turning the Keyswitch to horizontal, then back to vertical to exit the programming mode.
12. PROGRAM BAG STOP VALUES

Note: To avoid miscounting and/or drawer spills, select a drawer stop quantity that does not fill the drawer above the molded-in “fill-line” (approximately 3/4 full).

A. Turn Keyswitch to vertical position, hold Batch Key on Control down, and switch the Sorter Power Switch to ON.

B. Cycle MOTOR ON/OFF Key until Display shows:

C. Cycle BATCH Key to display the coin to be changed. The existing value for that coin will be displayed.

D. Cycle the ACCEPT Key to show the three choices available for that coin.

E. When the Display shows the choice to be changed:

1. Cycle the GRAND Key to the digit column to be changed. The digit will flash.
2. Cycle the BAG STOP Key to decrement (decrease) the digit value. Cycle the BAG COUNT Key to increment (increase) the digit value.

**Note:** All entries are in **unit values only** !!!

F. To reset all bag stop settings to their default settings, press the CLEAR Key.

G. Exit using one of the following:

   Cycle the BATCH Key to move to the next Bagstop to be programmed

   **OR**

   Press the MOTOR ON / OFF Key to select the next programming choice

   **OR**

   Turn the Keyswitch to horizontal, then back to vertical to exit the programming mode.

**Note:** This will return the Control to normal operation. Cycle the bagstop key to the desired station and select the desired quantity. Refer to “bagstop quantity selection” in earlier in this Guide for additional information.
13. PROGRAM COIN VALUES.

A. Turn Keyswitch to vertical position, hold Batch Key on Control down, and switch the Sorter Power Switch (see FIGURE #7) to ON.

B. Cycle MOTOR ON / OFF Key until Display shows:

C. Cycle BATCH Key to display the station to be changed. The existing information for that coin will be displayed. Refer to FIGURE #10 for coin locations.

D. If you wish to change the existing coin value, proceed to Step “E”. If the coin is to be disabled (no count), programmed for a token count (unit count – does not add to totals), or changed to a coin type (denomination value – adds to total),

E. Cycle the ACCEPT Key until the Display required is shown.
Programming

F. Enter the changes desired using the Numeric Keypad.

G. Depending on selection chosen in step “D”, the Display will change to one of the following examples:

- **DISABLED**
  - NO COUNT

- **UNIT T #1**
  - COIN 3 VALUE
  - UNIT TOKEN TYPE

- **.01**
  - COIN 3 VALUE
  - COIN TYPE

H. If an error is made during entry, press the CE Key to clear the Display and enter the proper coin value.

I. Exit using one of the following:

  Cycle the BATCH Key to move to the next coin to be programmed
  
  OR

  Press the MOTOR ON / OFF Key to select the next programming choice
  
  OR

  Turn the Keyswitch to horizontal, then back to vertical to exit the programming mode.
The Sorter employs one Fuse in each leg of the incoming AC line. If either Fuse becomes inoperative, the Sorter will stop.

**CAUTION**

DISCONNECT SORTER FROM POWER BEFORE EXAMINING OR REPLACING FUSES. ALWAYS REPLACE THE FUSE WITH THE CORRECT SIZE AND TYPE FOR CONTINUED CIRCUIT PROTECTION.

A coin (or other article) jam severe enough to stop the Sorting Motor will cause the Power Supply to go into a “foldback” (semi-shutdown) mode; and, if left unattended, will eventually blow one or both of the fuses.

![Figure #18: Fuse Location](image)
operator maintenance

sorter cleaning / jam removal

!!! IMPORTANT SAFETY INFORMATION !!!

**CAUTION**

Disconnect the power cord from the power source before cleaning or removing a jammed coin or other object. The coin totals and bagstop quantities will be retained by the battery backup circuitry when the power cord is disconnected.

**A. CLEANING / JAM REMOVAL**

Many cleaning-related accidents are caused by failure to follow basic safety rules or written precautions. Accidents can be avoided if the operator is completely familiar with the Sorter and its operation.

Improper or inadequate maintenance or care of the Sorter can be dangerous and could result in damage to the Sorter or personal injury or death to you or other persons.

**CAUTION**

Never attempt cleaning when the Sorter is connected to power.

Never allow tools, fingers, hair, or clothing to come near moving parts.

The frequency of any cleaning program must be determined by the operator, and will ultimately be controlled by operational environment (condition of coin, frequency of use, etc.). The Power Cord should always be disconnected before cleaning.
Operator Maintenance  

sorter cleaning / jam removal

1. General Cleaning

The Sorter should be kept clean and free from dirt and dust. Clean the outside with a soft cloth and a mild soap. NEVER use alcohol, Ketone, or any harsh chemicals on the outside surfaces. NEVER spray any liquid directly onto the Control or inside the Sorter. A small portable vacuum is handy for removing coin dust buildups from surfaces inside the Sorter.

2. Cleaning Coin Sensors / Clearing Jams in Sorting Area

Should a badly bent or mutilated coin or other object enter the sorting area, it could become jammed and must be removed before further operation.

The Coin Sensors, located at the coin exit points, control the counting and must be kept clean and free of dirt buildups, coin dust, bag strings, etc., at all times.

Should either situation arise, proceed as follows:

a. Disconnect the Sorter from Power.

b. Close the Inspection Pan completely and then lift straight up to remove.

c. Lift the Top Cover for access to the finned Elastic Sorting Disc.

Note: A short metal rod, attached to the Front Cover will drop down when the Cover is raised to support the cover in the upright (open) position.

d. Remove the Disc by removing the Elastomeric (O-Ring) Retainer and unscrewing the large knob in the middle of the Disc.

e. Referring to FIGURE #19, remove the protective foam strip and CAREFULLY clean the channel, then clean each Count Sensor with a cotton-tipped swab.

f. Reverse the process to replace the Disc.
Operator Maintenance

sorter cleaning / jam removal

FIGURE #19
COUNT SENSOR CLEANING

g. Close the Upper Front Cover and replace the Inspection Pan. Connect the Sorter to Power, and, if desired, test for proper operation with coin as follows:
3. Clearing jams in the Receiving Area.

Should a Coin Drawer or Bag become overfilled, a Sensor will stop the Sorting Motor.

The likely causes for this condition are:

a. Incorrect Bag Stop setting for size of Drawer or Bag.

b. Failure to empty Drawer or Bag at Bag Stop.

c. Improperly installed or folded Coin Bag.

If a Coin Drawer is overfilled, remove the Drawer slowly so that coins are not spilled.

If a Coin Bag is overfilled, the coins will also back-up inside the Coin Chute. Straighten the Bag and / or shake the Chute to allow the coins to fall / settle.

If the jam persists, carefully remove the Chute (place your hand under the Chute to retain the coins), empty the Chute into the Coin Bag, replace the Chute and resume operation.
SERVICE

A worldwide network of factory-trained service specialists are available either on call or for execution of preventative maintenance programs scheduled through formal service contracts.

Our policy is to continually improve products. We reserve the right to change specifications and / or designs without notice.