TSW Automation, Inc.
IPAC System
Documentation

6115 Robertson Avenue
Nashville, TN 37209
P 615-356-8785
F 615-356-8744
www.tswa.com

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System Overview

The IPAC System uses an office based PC and the Weigh-Tronix Solution Series Indicator to Identify Pallets and Cartons in a commodity packing environment. IPAC generates barcode based identification labels and PC based production reports. The IPAC system provides product data to the scale stations and in return the scale station provides completed weighment data back to the PC.

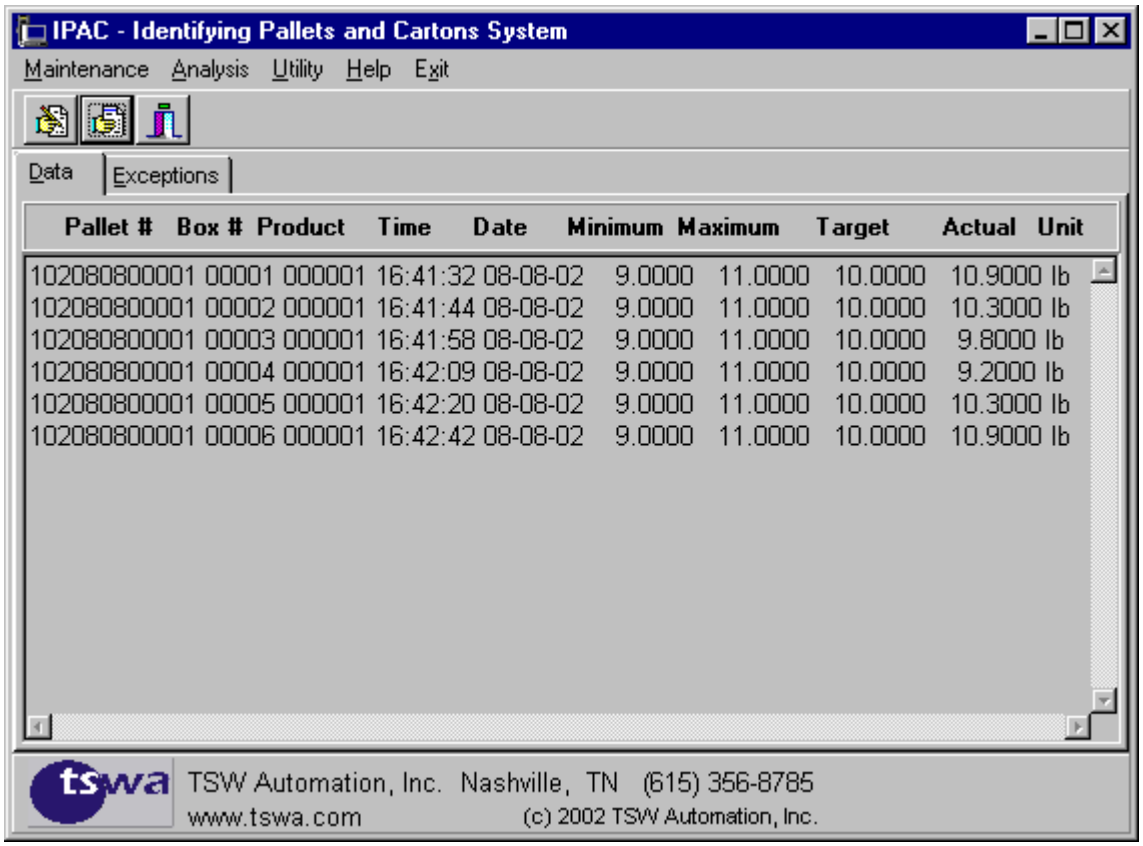


Figure 1

PC Operation

IPAC should be up and running at all times to collect the data that is being generated at the scale stations. If you must close the application, do so briefly, as the scale stations will store up to 300 transactions while the PC is off. Once the on-board storage of 300 is full, the scale stations will be shut down until the PC is up and running again.

Set-Up & Maintenance

Prior to operating the system you will need to do three things:

1. Define a product database consisting of Product ID's, descriptions, Minimum weight, and maximum weight.
2. Define an operator database.
3. Define the system parameters.

The next three sections will describe these functions.

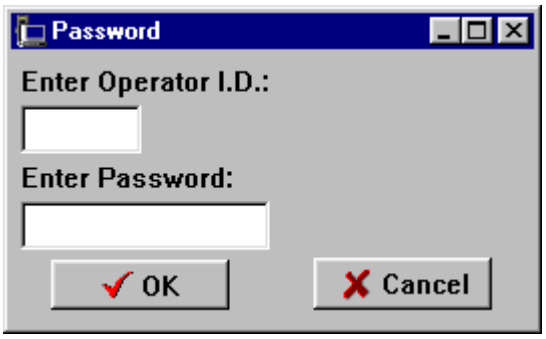


Figure 2

Prior to editing products, operators, transactions, or system configuration, the system will, (If an operator database has been built), prompt you to enter an operator ID and Password (Figure 2). To do so, key in your operator ID and hit ENTER or TAB. Next key in your password and hit ENTER or TAB. Hit ENTER or click the OK button and your ID and password will be verified

System Parameters

To configure the necessary system parameters, select *Maintenance, System Configuration* from the main menu and the System configuration form will appear (Figure 3). At this time, the following parameters may be modified:

- **Company Name** - used as a heading in reports
- **Communications** - The communications parameters should only be set by a certified scale technician. Do not change these settings.
- **Shift Start Times** - Input the starting time of each shift in your production schedule.
- **Production Day begins with** - If your production day begins with shift 1, then data generated on the current day prior to shift 1 will be applied to the previous day's production totals. If your production day begins with shift 3, any data generated prior to midnight will be applied to the next day's production totals.

- **Active Lines** - Active lines is used to select which Scale Stations are being used. The Active line references the port a particular Scale Station is connected. For instance: If A scale is plugged into Port number 1 of the Bay Tech, You would check the box beside the 1 under Active Lines, do this for all Scale stations being used. You may have up to 8 lines connected, (Hardware dependent).

NOTE: Only check the lines that have Scale Stations Connected to them. If you check lines that have no Scale Station connected to them, the PC program will try to read from those as well and will slow down the updating of the lines that actually do have Scale Stations connected to them.

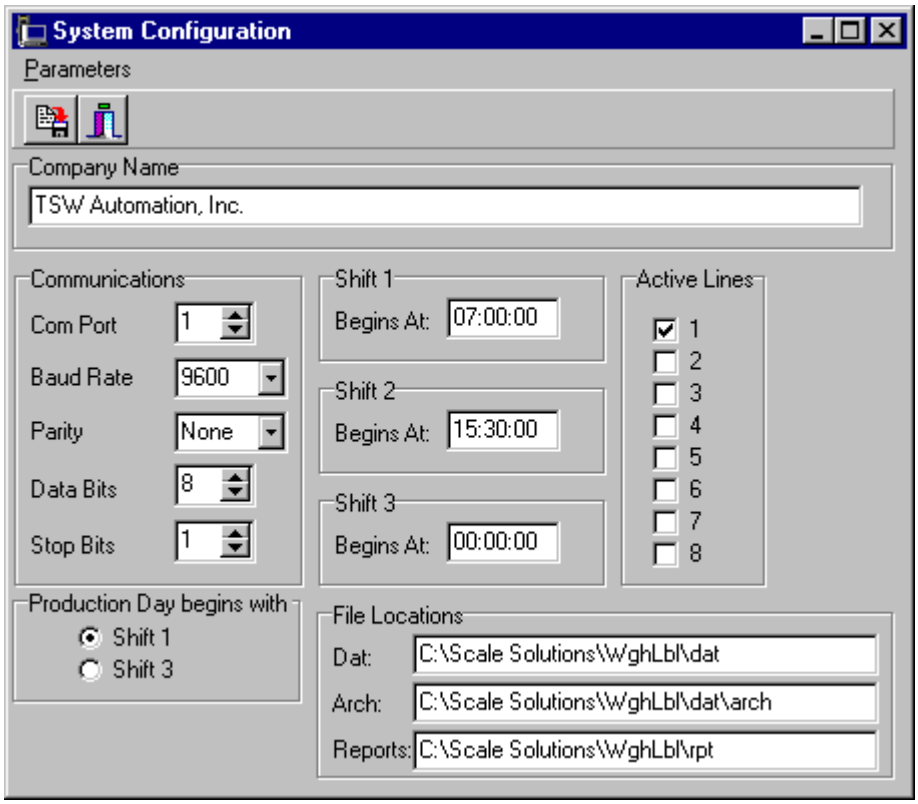


Figure 3

Product Maintenance

To maintain the product database, select *Products* from the *Maintenance* menu and the product maintenance screen will appear (Figure 4). From the Product Maintenance screen, you can perform the following functions:

1. Create new products
2. Modify existing products

3. Print the product database
4. Transmit the product database to a scale station

Creating a new Product

To create a new product, select *Record*, *New* from the *Product Maintenance* menu and the cursor will be flashing in the Product ID field. Following is a description of each field.

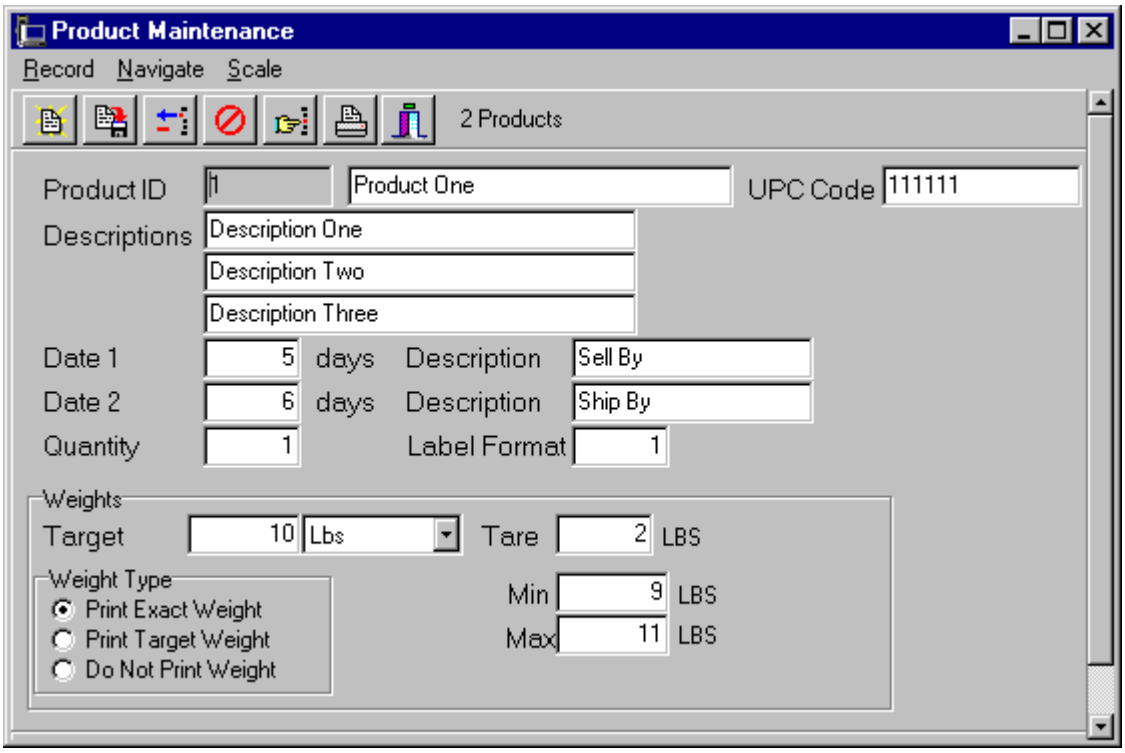


Figure 4

Product ID – The product ID is used by the scale operator to retrieve the product record at weighment time. This number can be up to six digits long.

Product Description - Up to 32 characters used to describe this product. The description is not used at the scale or printed on the label.

UPC Code – If used, this number should consist of a 7 digit mfg ID and a 6 digit item number.

Descriptions – Up to three lines of 32 character descriptions. These three lines of description will optionally be printed on the label.

Date 1 – Date 1 is the first of three dates that can be printed on the label. The number of days input in this field will be used to calculate the printed date. The printed date will be the weighment date plus this figure.

Date 1 Description - Description to be printed for Date 1, such as Sell By, Use By, etc.

Date 2 – Date 2 is the second of three dates that can be printed on the label. The number of days input in this field will be used to calculate the printed date. The printed date will be the weighment date plus this figure.

Date 1 Description - Description to be printed for Date 2, such as Ship By, Use By, etc.

Quantity – Quantity can be optionally printed on the label.

Label Format – Label Format tells the system which stored label format to print for this product.

Weight Type

Exact Weight- when selecting "Exact Weight", the label will be printed with the actual weight of the product and the system will check-weight the product using the minimum and maximum weights entered.

Target Weight- when selecting "Target Weight", if a product falls in between a certain weight range a label will be printed with a given value, not the actual weight. (example: a product falls between 20 lb. and 22 lb., label will be printed with the target weight.).

No Weight – When selecting "No Weight", the label will not print a weight and will not check –weigh the product.

When you have input these fields, Select *Record, Save* from the product maintenance menu.

Modifying an existing Product

To change an existing product, select *Record, Find* from the product maintenance menu and the Find box will appear. Input the ID of the product you would like to edit and hit enter. The system will search the product database, and if it is found, will load it into the Product Maintenance Screen. You may change the description, minimum, target, or maximum weights, but you cannot change

the product ID. Once you have made your changes, be sure to select *Record, Save* from the Product maintenance menu.

Printing Products

To print the product database, select *Record, Print* from the product maintenance menu.

You can use the Navigate menu or the quick buttons to browse from record to record of the Product database.

Transferring products to the scale station

To transfer the product database to a scale station, select *Scale, Download All Parts to Scale* from the product maintenance menu. The system will begin transferring the parts and updating a progress bar on the product screen If you get an error message stating the transfer was aborted, wait a minute or two and try it again.

Operator Maintenance

To maintain the operator database, select *Operators* from the Maintenance menu and the Operator maintenance screen will appear (Figure 5). From the Operator Maintenance screen, you can perform the following functions:

1- create new Operators
2- modify existing Operators
3- print the Operator database
4- transmit the Operator database to a scale station

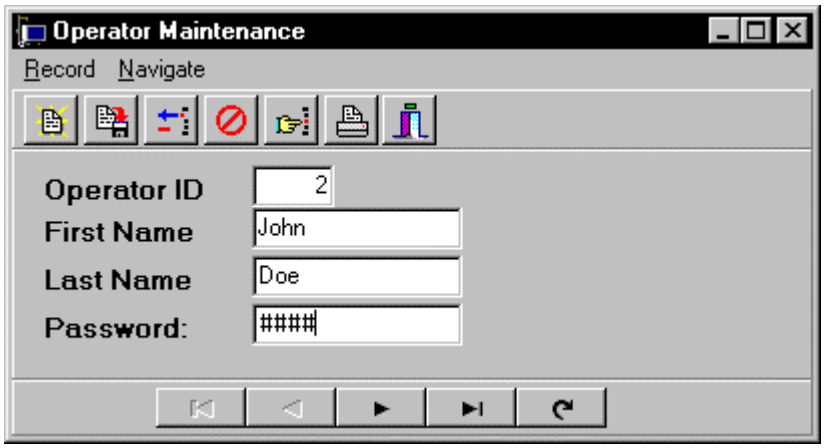


Figure 5

Creating a new Operator

To create a new operator, select *Record, New* from the operator maintenance menu and the cursor will be flashing in the Operator ID Field. Input the ID, First Name & Last Name of the Operator, and the Password for that Operator. When you have input these fields, select *Record, Save* from the operator maintenance menu.

Modifying an existing Operator

To change an existing operator, select *Record, Find* from the operator maintenance menu and the Find box will appear (Figure 6). Input the ID of the operator you would like to edit and hit enter. The system will search the operator database, and if it is found, will load it into the Operator Maintenance screen. You may change the name and password, but you cannot change the Operator ID. Once you have made your changes, be sure to select *Record, Save* from the Operator Maintenance menu.

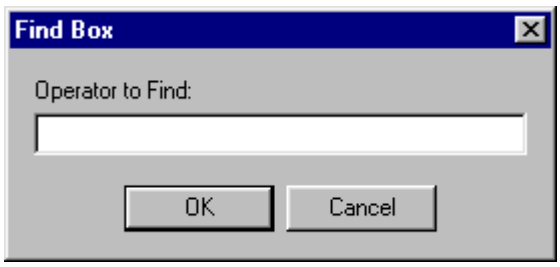


Figure 6

To delete an operator, use the find function to load the operator record, and then select *Record, Delete* from the Operator maintenance menu.

To print the Operator database, select *Record, Print* from the Operator maintenance menu.

You can use the Navigate menu or the quick buttons to browse from record to record of the Operator database.

Transactions

The system allows you to modify or delete the transactions that are collected in the PC. These transactions are stored in daily files such as 20020628.dbf. This is an example of the file for June 28, 2002. If you need to modify or delete a weighment transaction, select *Maintenance, Transactions* from the Main Menu. A list of daily transaction files will appear for you to select the day from which the transaction resides (Figure 7).

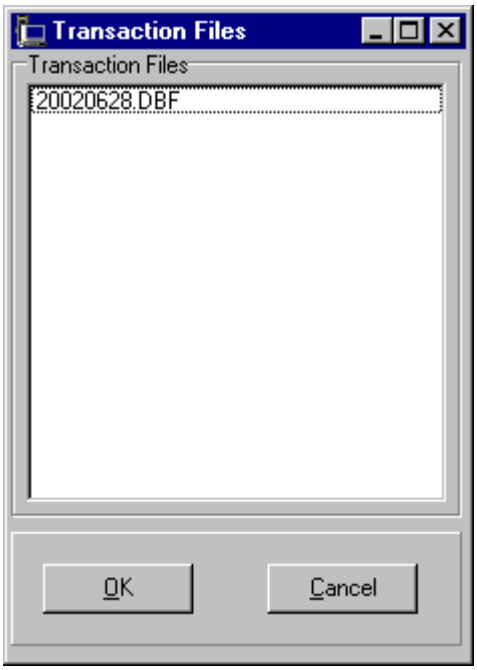
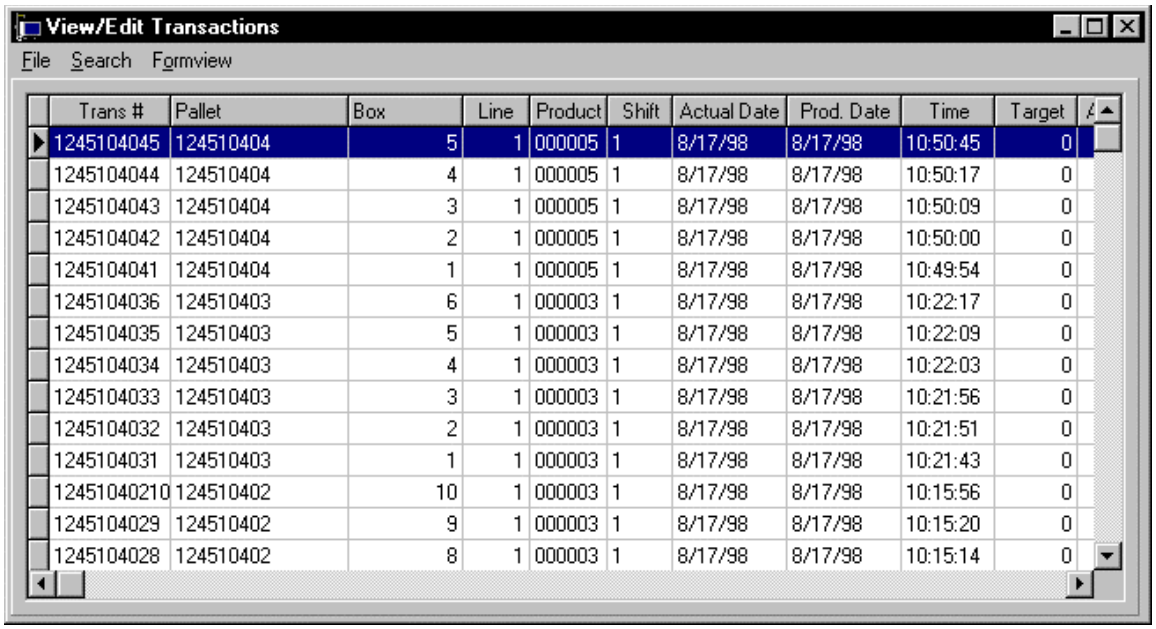


Figure 7

Highlight the name of the file and click the OK button. The system will open the file in a spreadsheet style form (Figure 8). You may browse the file to look at transactions. To delete a specific record, highlight the record and hit CTRL-DEL key combination. To view a single record at a time select Formview (Figure 9) from the menu.



Trans #	Pallet	Box	Line	Product	Shift	Actual Date	Prod. Date	Time	Target
1245104045	124510404	5	1	000005	1	8/17/98	8/17/98	10:50:45	0
1245104044	124510404	4	1	000005	1	8/17/98	8/17/98	10:50:17	0
1245104043	124510404	3	1	000005	1	8/17/98	8/17/98	10:50:09	0
1245104042	124510404	2	1	000005	1	8/17/98	8/17/98	10:50:00	0
1245104041	124510404	1	1	000005	1	8/17/98	8/17/98	10:49:54	0
1245104036	124510403	6	1	000003	1	8/17/98	8/17/98	10:22:17	0
1245104035	124510403	5	1	000003	1	8/17/98	8/17/98	10:22:09	0
1245104034	124510403	4	1	000003	1	8/17/98	8/17/98	10:22:03	0
1245104033	124510403	3	1	000003	1	8/17/98	8/17/98	10:21:56	0
1245104032	124510403	2	1	000003	1	8/17/98	8/17/98	10:21:51	0
1245104031	124510403	1	1	000003	1	8/17/98	8/17/98	10:21:43	0
12451040210	124510402	10	1	000003	1	8/17/98	8/17/98	10:15:56	0
1245104029	124510402	9	1	000003	1	8/17/98	8/17/98	10:15:20	0
1245104028	124510402	8	1	000003	1	8/17/98	8/17/98	10:15:14	0

Figure 8

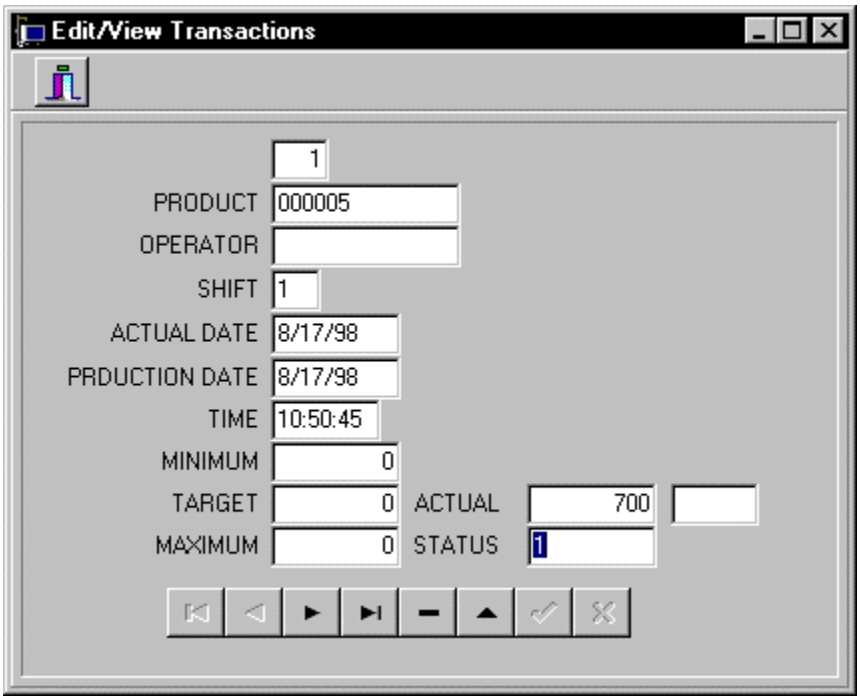
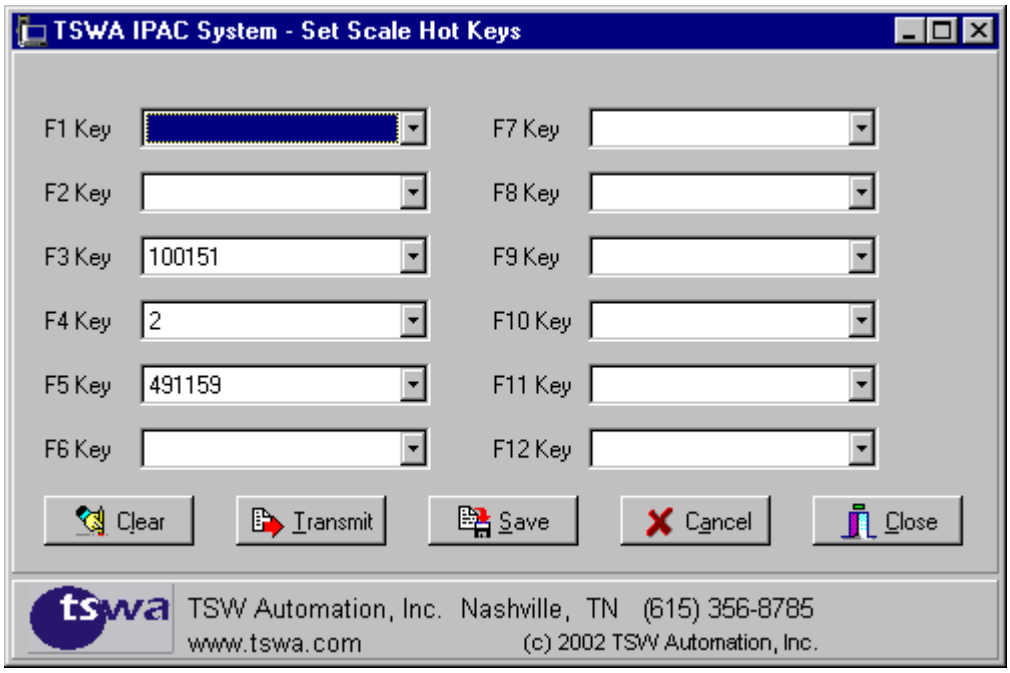


Figure 9

Setting Scale Hot Keys



[Figure 10]

Choose Maintenance, then Set Scale Hot Keys from the main menu to activate the Hot Keys form. IPAC allows you to establish some product bases Hot Keys at the scale station. By setting a product code to any of the 12 function keys, the system will label the function key which allows the scale operator to press the associated key for the desired product and begin the weighing process. This allows the operator to bypass the product code entry routine.

To set the function keys, select a product code from the drop-down box beside each of the function key descriptors.

To clear the form, click the “Clear” key. To clear the scale, press the “Clear” button and then the “Transmit” button and the system will clear the hot keys in the scale.

Leave the F1 key blank if you want to allow the operator to key in product codes and use hot keys.

To transfer the hot keys to the scale, click the Transmit button.

Analysis

Transaction Reports

To generate transaction reports from the Production Analysis System, Select *Analysis, Transaction Reports* from the main menu and the Transaction Reports from appears (Figure 11). As indicated by the Report Type section, a report can be generated by Time and Date, Product, Shift, or by Operator. Select the type of report desired by highlighting the desired report.

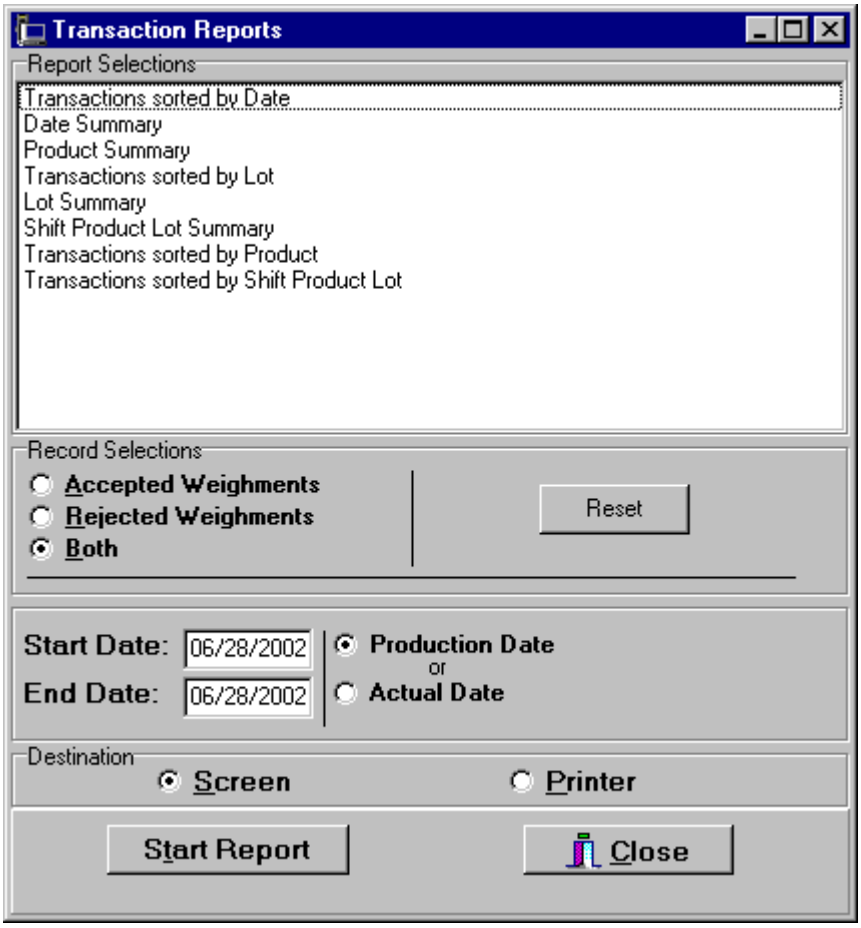


Figure 11

Enter the starting and Ending date for the report. Any data within this data range will be included in the report.

After choosing the destination for the report--Screen or Printer, click the Start Report button. If you select Screen as the report destination, the report viewing form will appear on the screen and will begin to load the results of the report (Figure 12). If there are a large number of records being retrieved, be patient, as it may take a few moments.

From the Report Viewing screen you may print the report by clicking the “Printer Icon” or move from page to page with navigation keys in the top left corner.

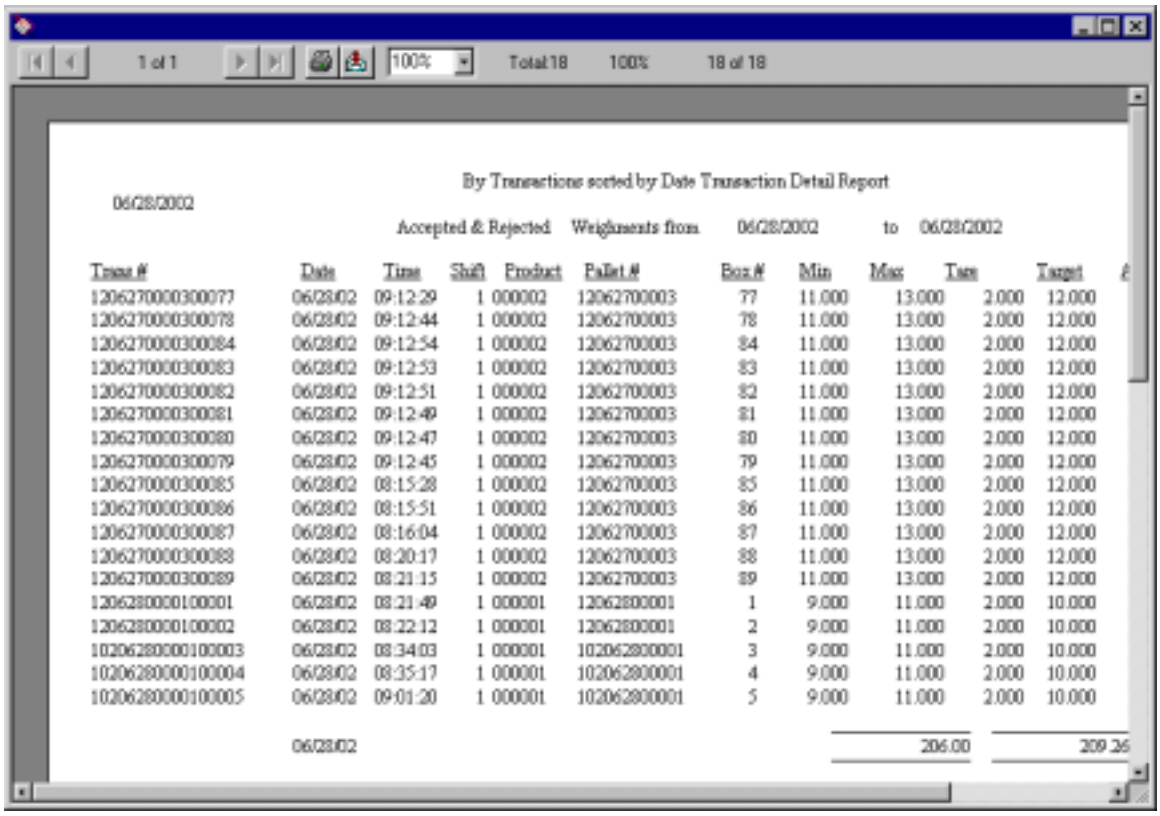


Figure 12

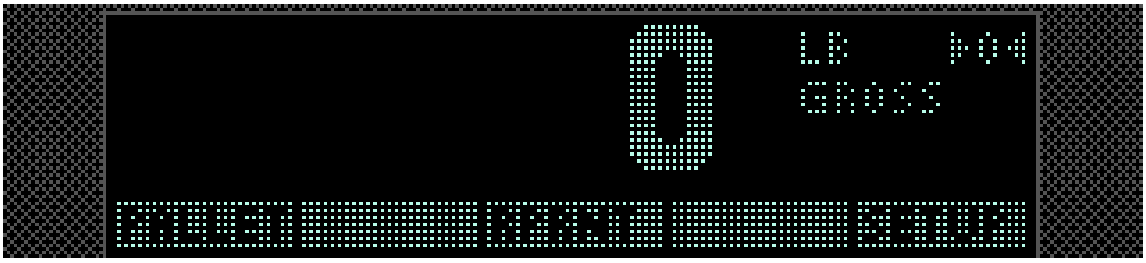
To close the report viewing screen, click the  in the top right corner of the screen.

SYSTEM OVERVIEW

The WPI-135 Product Weighing & Labeling system is designed to accumulate the weights of product containers as they are weighed and added to a pallet. As a container is weighed, a container label is generated with information about the container printed in text and in a UCC/EAN 128 bar-code. When a pallet of product is completed, a pallet label is generated with the number of containers and net weight.

SYSTEM OPERATION

Figure 1 below shows the main menu of the labeling system. From the main menu, you can perform three functions: **PALLET** - Start weighing containers for a new pallet, **RPRNT** - Reprint the last pallet label, **SETUP** - Configure the operating parameters of the system. To select any of these functions, press the appropriate function key and the process will be initiated. The following sections will describe each function in detail.

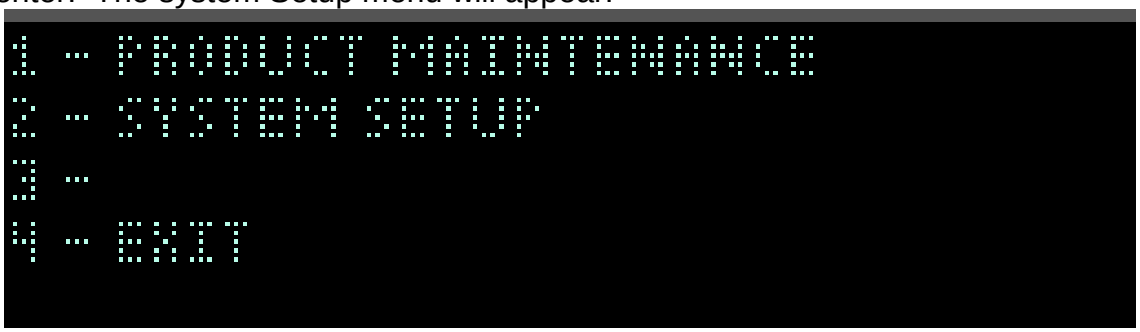


[Figure 13 - Main Menu]

SYSTEM SETUP

Before placing the Labeling system into production, you will need to configure certain parameters that tell the system how you want it to perform.

To access the operating parameters, hold down the “Escape” key for approximately 3 seconds or until the system prompts for “Setup Password”. Upon prompting for this password, input the default password of “135” and hit enter. The system Setup menu will appear.



[Figure 14 – Setup menu]

System Setup – Operating Parameters

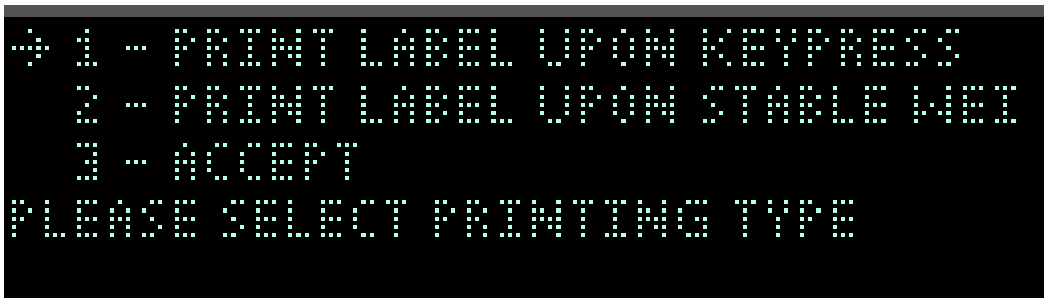
To modify the system operation parameters, press the “2” key and the system will prompt for the following parameters:

[Figure 15]

Screen Save(Mins) - The screen saver will activate when you have not used the scale for a period of time. You may define what this period of inactivity is in minutes. This is a very important tool in extending the life of the vacuum fluorescent display.

[Figure 16]

Wt Trigger – Wt Trigger is the amount of stable net weight that must be seen on the scale to trigger a label print. This will only work when the system is set to print a label on stability mode.



[Figure 17]

Printing Type

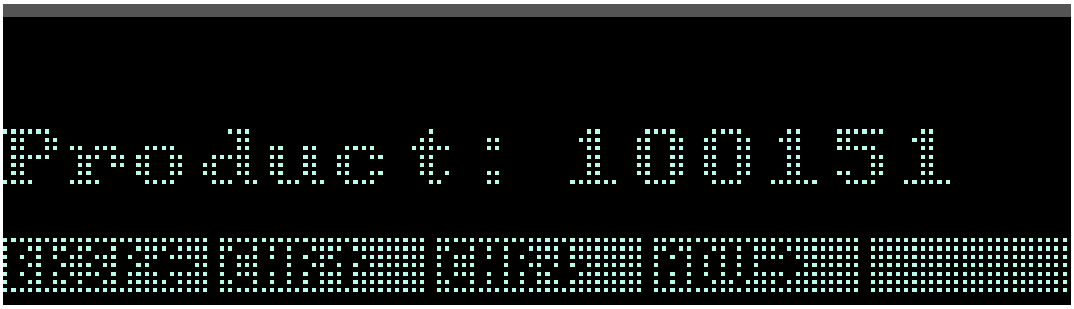
Select the label printing mode by pressing “1” or “2” on the keypad. Mode 1 requires the operator to press the F2 “Print” key to trigger a label print each time. Mode 2 automatically prints a label upon detection of a stable net weight on the scale.

System Setup – Product Database Maintenance

To maintain your product database, press the “1” key and the Product Edit menu will appear on the screen giving you three choices: Add/Edit Products, Delete Products, and Exit. To select a function from the menu, you will press the associated numeric key from 1 to 3 and the system will initiate the process. Following is a description of each of these functions.

[Figure 18]

To add or modify products from the WPI-135, press the 1 key at the Setup menu and the Product code input prompt will appear (see figure 19). Input the product code that you wish to add or modify and hit enter. The system will search the product code database to



[Figure 19]

determine if you are adding a new product or modifying an existing one. If the product code entered is not found in the product database, the system will display “Prod not found, Add?”, allowing you to re-enter the product code if you feel the entry was mistakenly typed. To add the new product, press enter at this prompt and the system will step you through each field of the product, just as it will if this is an existing product.

[Figure 20]

If you are adding a new product and you get the message as in figure 10 that the product database is full, you know that you have exceeded the capacity of 500 products.

[Figure 21]

Once you have successfully input the product code, the system will prompt you to input two different 32 character descriptions, UPC number, Date 1 Description (such as Sell by, Consume before, etc.), # of days (till future date), Date 2 Description , Date 2 # of days, default tare weight, # of pieces, Label format and Print Weight Type (see figures 22 - 32).

[Figure 22]

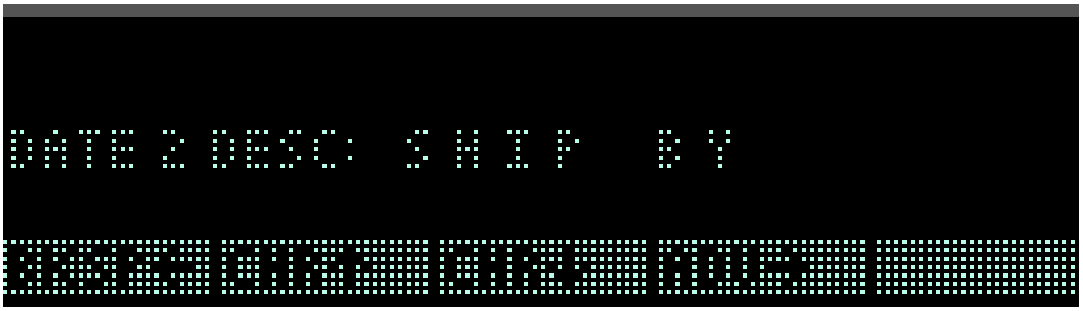
[Figure 23]

[Figure 24]

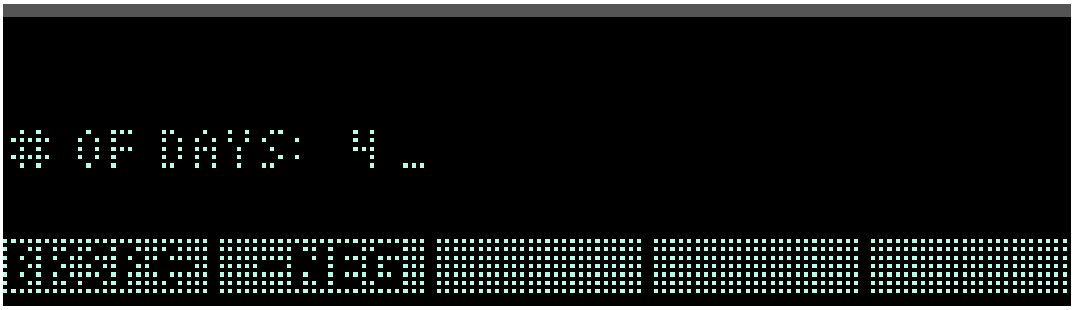
[Figure 25]

[Figure 26]

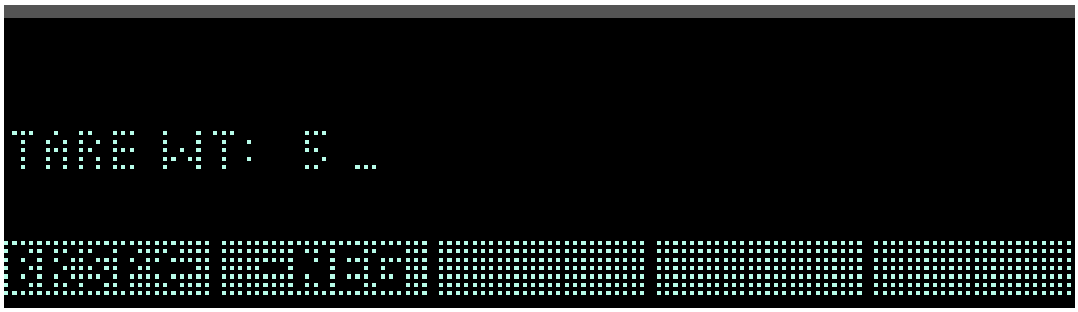
[Figure 27]



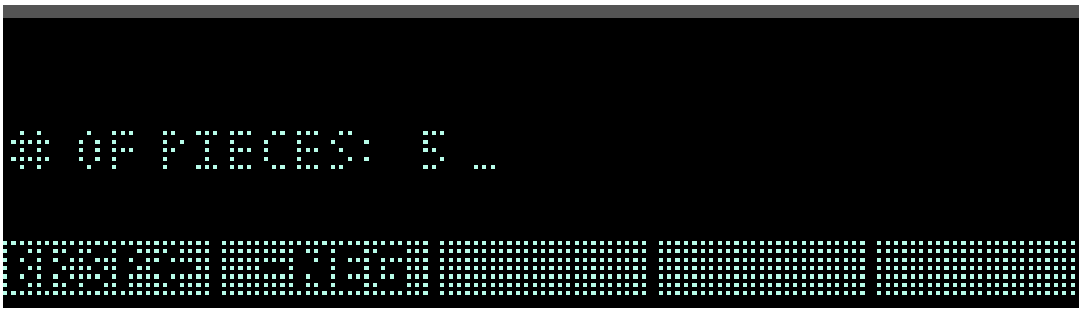
[Figure 28]



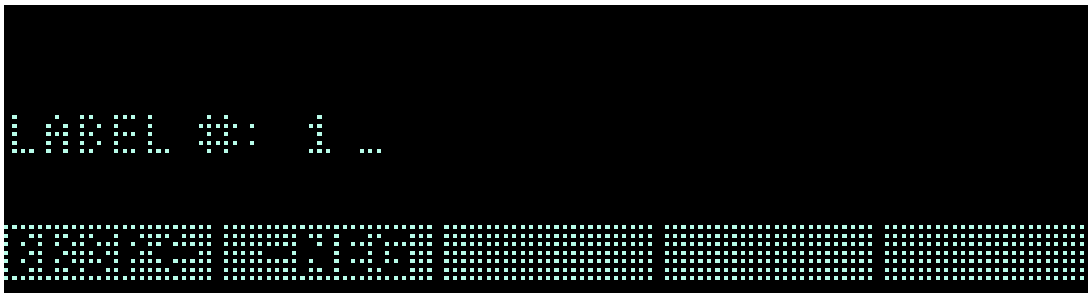
[Figure 29]



[Figure 30]



[Figure 31]



[Figure 32]

Next you will tell the system if the exact weight should be printed on the label or if the system should print and accumulate the target weight of the product or No weight is to be printed. To select press the 1, 2 or 3 key at the weight type selection screen. If you select type 1, the system will always print the exact weight of the product on the label and will not perform a check-weigh function. If you select this weight type, you are finished defining the product. If you select weight type 2, the system will prompt you to input a minimum, maximum and target weight for the product. If you select 3, the system will not print a weight on the label. At weighing and printing time, the system will perform a check-weigh function prior to printing and if the weight of the product falls within the minimum and maximum product weight will print and accumulate the target product weight.

[Figure 33]

[Figure 34]

Once you have input all information on the product, the system will allow you to save the new product or save the changes by pressing enter at the “Save Product?” prompt. To abort your entries, press escape at the prompt.

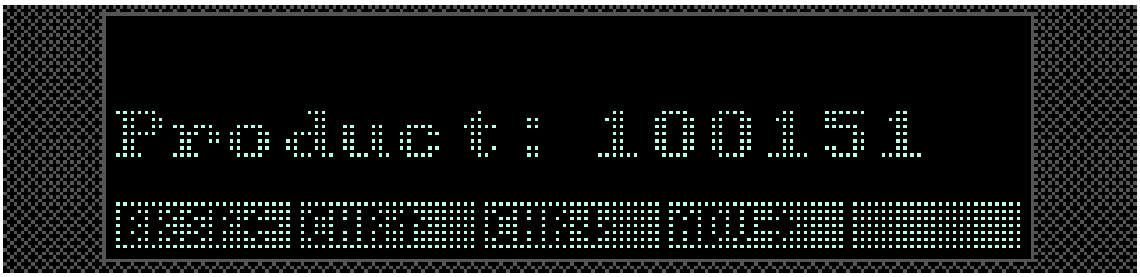
PRODUCT DELETIONS

To delete a product, press the **2** key from the Setup menu and the system will prompt you to input a product code to delete. Input the product code, hit enter, and the system will prompt “Delete *product code*, Are you sure?”. Press escape to cancel the deletion or enter to delete the product.

[Figure 35]

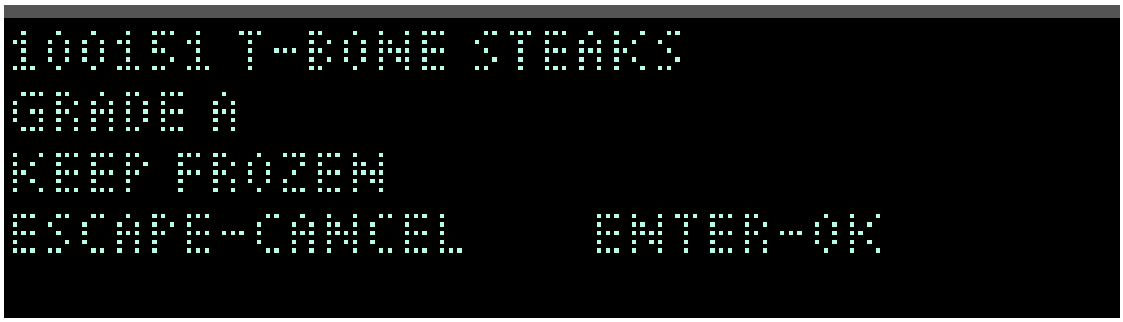
PALLET/PRODUCT WEIGHING

To start weighing products for a new pallet, press the "**PALLET**" key from the main menu. The system will prompt you to input the product code to be weighed. Input a valid product and hit enter.



[Figure 36]

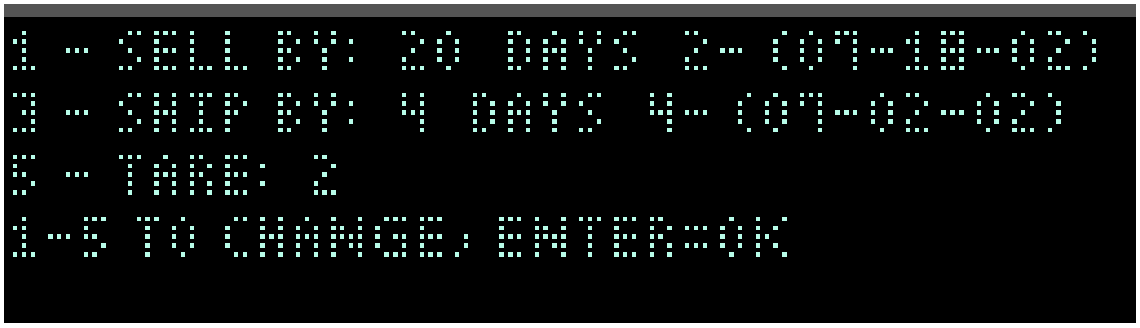
If the product is found in the product database, the system will retrieve the product information. The product code and descriptions will be displayed for your approval (see figure 37). To confirm that this is the correct product, press enter at this screen and the system will prompt for the number of labels to print for each weighment.



[Figure 37]

[Figure 38]

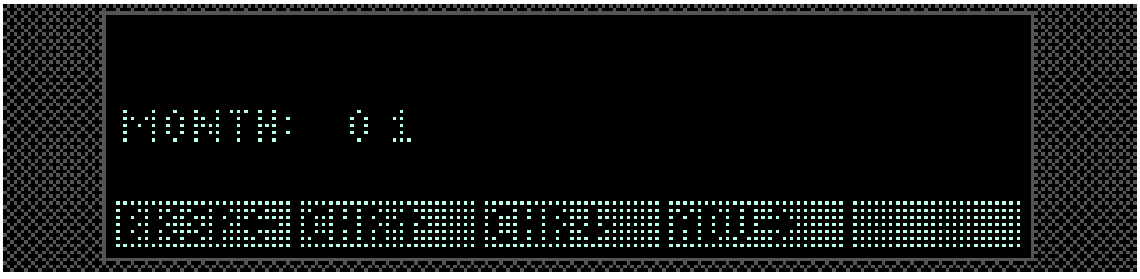
and will then display the future date, date description, and tare weight of the product. You may change any of the three before starting the weighing process. If you change either the future days or future date, the other will change accordingly. Upon changing any of these values, the system will return to this display for your confirmation. Once you are sure of these values, press enter to proceed with the weighing process. See figures 39 – 45 for examples of changing these values.



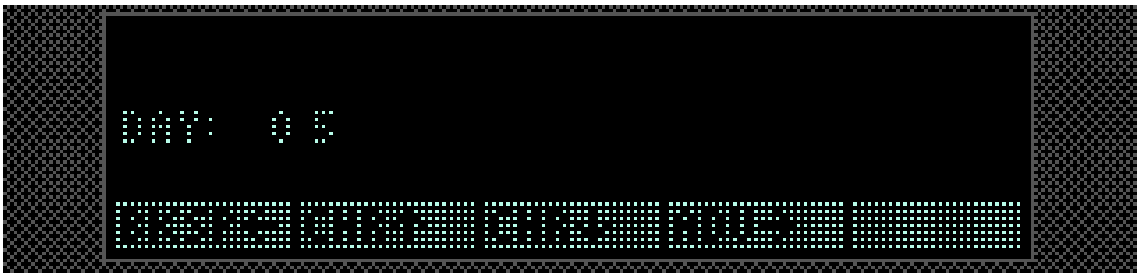
[Figure 39]

[Figure 40]

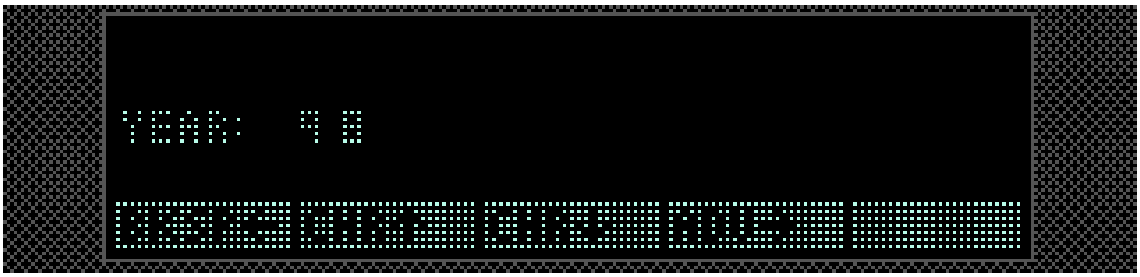
[Figure 41]



[Figure 42]



[Figure 43]



[Figure 44]

[Figure 45]

Once the product information is selected and confirmed, the system will prompt one last time before starting the weighing process. To cancel at this point, press escape at the “Start Weighing?” prompt (see figure 46).

[Figure 46]

Once you start the weighing process, the weighing menu will appear with three choices: **PLLBL -** Print pallet labels and close out a pallet, **WEIGH** - Weigh products, Print and reprint product labels, **BACK** - Delete invalid product weighments.

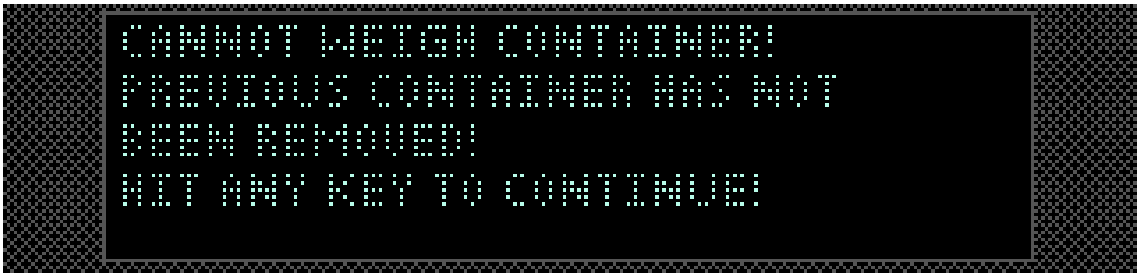
[Figure 47 - Weighing Menu]

Weighing Products

To weigh and accumulate a product, press the F2 or F3 key from the weighing menu. If the system is in auto-print mode, a label will be printed each time a container is placed onto the scale.

When weighing products, you have two choices, 1) **F2 "PRINT"** you can weigh and accumulate the product and generate a product label or 2) **F3 "NOPRT"** you can weigh and accumulate the product without generating a product label (see figure 48).

[Figure 48]



[Figure 49]

Upon pressing the weigh key, if you receive a message such as the one in figure 49, you know that you are attempting to duplicate an accumulation for a product that has been previously weighed. Remove the product and place a new product on the scale.

Reprinting Last Label

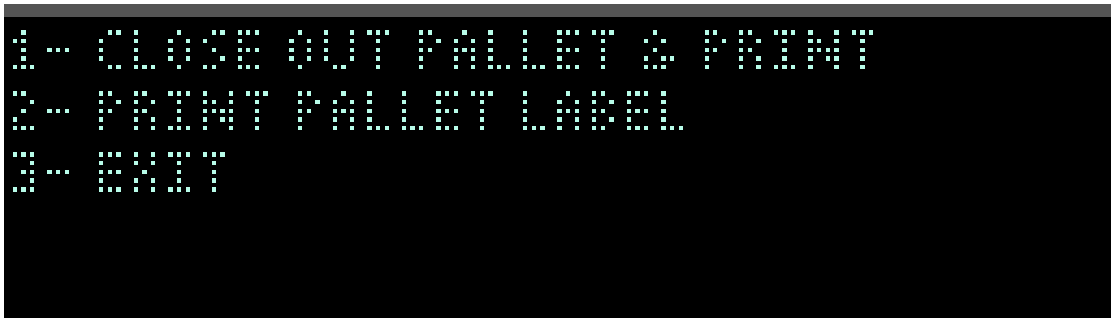
If the printer jams or does not print a quality label, you may always press the **F4 RPRNT** key and hit the enter key to reprint the last label.

Printing a Pallet Label without Closing out the Pallet

To print a pallet label, without closing out the current pallet, press the PLLBL key and hit the **1** key (see figure 50). The current pallet label will be printed.

Closing out the Pallet and Printing a Label

To close out the current pallet, press the PLLBL key and hit the **1** key or enter key (see figure 50). The system will prompt “End Current Pallet?”. To close out the pallet, press the enter key.



[Figure 50]

REPRINTING THE LAST PALLET LABEL

If you have closed out the pallet and need to reprint the last pallet label, press the RPRNT key from the main menu. If you have already started a new pallet, you cannot reprint the last label.

[Figure 51]

Hardware Setup

Scale Port 1 – Connect to Printer

Baud Rate 9600
Databits 8
Stopbits 1
Parity None

Cable:

Port 1		**Printer 25 Pin Male**
xmt	⟷	3
recv	⟷	2
gnd	⟷	7

Scale Port 2 – Connect to PC

Baud Rate 9600
Databits 8
Stopbits 1
Parity None

Cable:

Port 2		**Printer 9 Pin Female**
xmt	⟷	2
recv	⟷	3
gnd	⟷	5