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Tare, Shelf Life, and Commodity I.D. number for the commodities to be used. An auxiliary data link provides means for interrogating a remote computer to obtain pricing data and for transmitting accumulated data for each group of packages. The auxiliary output may also be used in conjunction with a magnetic tape recorder to provide recording from and reloading of data into the Price Rite file.

The 311 Printer provides a label 1.5 inches high by 3 inches wide on which may be printed two 32 character lines for Commodity Description, one 32 character line for Grade, Store Code, Operator Code and Date, and a fourth line showing Weight, Unit Price and Total Price.

Data is transmitted from scale to printer using ASCII code with both lateral and longitudinal parity checks to insure error free data transfer. The printer uses an etched drum with photoelectric detection of drum position via windows in the drum skirt, four hammers, (one per row) and a carbon ribbon to provide the printing function. Position of the label stock under the print hammer is determined by photodetection of a precut "notch" between each label, and by a stepping motor to precisely control paper motion.

After printing, the label is cut from the supply stock by a solenoid operated knife, then is conveyed to a glue activating heater block located on the front of the printer housing.

In addition to the information shown on figure 2 for the model 311 printer a model 312 printer is available that will in addition print a U.P.C. bar code required for scanning.

II. Scale Control and Display Panel:

- 1) POWER ON-OFF SWITCH - Used by the operator to remove power from the printer and front panel. Power remains applied to the scale electronics.
- 2) PRICE BY WEIGHT/COUNT SWITCH - Used to select pricing mode. (Example: \$1.00 per pound or 12 items for \$1.00).
- 3) DEMAND SWITCH - Allows printer to duplicate labels each time the activator frame is pressed.
- 4) REWRAP SWITCH - Forces an "R" to be printed on the label to signify the item has been re-wrapped.

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- 5) PRICE-RITE PUSHBUTTON - When the lamp is illuminated, it signifies that the commodity information (price, tare, grade, shelf-life) is stored in Price-Rite memory. When the switch is depressed, it allows a manual override of the commodity information without affecting the data stored in memory. An "M" is printed on the label to show that the information has been manually entered.
- 6) SET DATE AND OPERATOR NO. SWITCH - Allows time, date and operator number to be entered.
- 7) PRIME KEY
- 8) CHOICE KEY
- 9) INSPEC. KEY
- 10) ADV'T KEY

The four keys above are as illustrated on figure 1, they may in fact be found blank or have other identifiers on them. These are the secondary or grade description keys and they can be programmed by the retailer.
- 11) ENTER KEY - Has the various functions listed below.
 - a) Used as the operative key to enter data. (Example: to enter a price per pound of \$1.29, you would depress 1, 2, 9 followed by the "ENTER" key.)
 - b) Used as a Commodity identifier. When depressed, following the desired Commodity number, no description is printed on the label.
 - c) Used to print out the entire programmed Price-Rite file when in the "File Print Out" position of the Price-Rite switch.
 - d) Used to transfer the Price-Rite file from the scale to a cassette recorder when in the "TRANSMIT" position of the Price-Rite switch.
 - e) Used to transfer the Price-Rite file from a cassette recorder to the scale when in the "LOAD REMOTE" position of the Price-Rite switch.
 - f) Used as the operative key to enter data when in the "SPECIAL NAME" position of the Price-Rite switch.
 - G) Used as the operative key to enter data when in ITEM NUMBER entry mode.

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- 12) TARE KEY - Used for entering tare weight when the pushbutton tare method is used. (Example: Place the desired container on the platter and depress the "Tare" key. The proper value for tare is automatically accepted.) Further, when in the "Ready" mode, depression of the "Tare" key allows alteration of the tare weight without affecting the stored tare information.
- 13) RESET KEY - Used to clear all non-memory information from the system. It must be used after one commodity has been used and before the next commodity can be called. Also, when in the "TRANSMIT" or "LOAD REMOTE" positions of the Price-Rite switch, depression of the Reset key allows the scale to become ready to again transmit or load.
- 14) CLEAR KEY - Has three functions listed below:
 - a) Used to erase data entered through error. (Example: You are entering a price per pound of \$1.29. You have depressed 1, 2, 8 but not the Enter key. You may now depress the Clear key and re-enter 1, 2, 9 followed by the Enter key.)
 - b) Used to erase data in the Price-Rite memory while in the "Enter All" position of the Price-Rite switch. (Example: Turn Price-Rite switch to "Enter All". Enter the desired Commodity number followed by the Commodity Identifier. Depress the Clear key and all stored data for that commodity will be erased.)
 - c) Used to verify all displays and lamps. When depressed, following depression of Reset key, all lamps will be illuminated and the display will show all 8's. The entire front panel will then blank. Again, the panel will illuminate and blank. This flashing will continue until the Reset key is depressed. Note: Both the Price-Rite switch and the Operator Number switch must be placed in the "RUN" position for this function.
- 15) Z OR ZERO KEY - Used to zero the scale providing the scale is within the correction range and that there is no motion on the platter.
- 16) SLASH (/) KEY - Has various functions listed below:
 - a) Prints a "weight only" label when in the "Test" position of the Operator code switch.
 - b) Indicates the word "FOR" in multiple pricing modes. (Example: 12/\$1.29 or 12 for \$1.29 would be entered 1, 2, /, 1, 2, 9, followed by the Enter key).

- 16) SLASH (/) KEY - Continued
- c) At the end of a package run, "/" key prints a label giving total weight, unit price, number of packages run, commodity name and pack date. If this "Totals" label is required, the "/" key must be depressed before the Reset key.
 - d) Used to enter a Special Name into Price-Rite memory while, at the same time printing a label for verification of that Special Name.
 - e) Used to print out the entire Special Name file only, when in the "File Print Out" position of the Price-Rite switch.
 - f) Used to load a "forcing" character into the Price-Rite memory. This forces the scale to ask the operator for specific information (Price, Tare or Shelf Life, etc.)
- 17) DIGIT KEYS (0 THROUGH 9) - used to enter all Commodity numbers, alpha-numeric codes, Item numbers, Price, Tare, Shelf-Life, Etc.
- 18) SCALE ZERO LAMP - Illuminates to indicate that the scale is at zero. It remains active in the Expand Mode for calibration assistance.
- 19) TARE IN USE LAMP - Illuminates wherever a Tare value has been accepted or is in use.
- 20) OUT OF RANGE LAMP - This indicator flashes for the following reasons:
- a) When the scale is behind zero.
 - b) When the applied weight is beyond the capacity of the scale.
 - c) When the Total Price exceeds \$999.99. *
 - d) When the Price-Rite or Special Name memory files are full.*
 - e) When there is an error in communication between the Scale and Printer.*
 - f) When there is an error in communication between the Scale and an external device such as a cassette recorder.*
- *When the Out of Range flashes for these items, a digit (1 thru 8) is displayed to indicate the cause.

DIGIT DISPLAYED

CONDITIONS

- | | |
|----|--|
| 1. | Price Rite file Memory overflow |
| 2. | Special Name file Memory overflow |
| 3. | Transmission error received from Printer |
| 4. | Non-acknowledgement from Printer |
| 5. | Total Price overflow |
| 6. | Transmission error, checksum, or data format error received in LOAD REMOTE mode. |
| 7. | Non-acknowledgement from External Computer |
| 8. | Printable data sent to Printer exceeds label format specifications. |

- 21) LOW STOCK LAMP - Flashes for the following reasons:
 - a) When label or ribbon stock needs replacement.
 - b) If label or ribbon stock breaks.
 - c) If labels slip from notch detector.
 - d) If there is a notch detection error.
- 22) REWRAP LAMP - Illuminates when in the Rewrap Mode.
- 23) BY COUNT LAMP - Illuminates when in the "By Count" mode of operation.
- 24) TAKE LABEL LAMP - Illuminates shortly after power is applied to the scale and when a label is printed and ready. NOTE: While this lamp is illuminated, printing of the next label is inhibited. Depression of the activator frame extinguishes this lamp and allows printing.
- 25) READY LAMP - Illuminates for the following reasons:
 - a) When the system is ready to weigh a product and print a label.
 - b) When the system is ready to receive data for a Special Name entry.
 - c) When the system is ready to transmit to or receive data from an external source such as a cassette recorder.
 - d) To indicate that a Price-Rite file Print out has begun.
- 26) COMMODITY LAMP - Is illuminated to indicate that the scale is ready to receive a Commodity code or Special Name code from the operator.
- 27) GRADE LAMP - Used for verification when programming the Price-Rite file.
- 28) PRICE LAMP - Illumination indicates that the system is ready to receive price information from the operator.
- 29) TARE LAMP - Illumination indicates that the system is ready to receive tare information from the operator.
- 30) SHELF LIFE LAMP - Illumination indicates that the system is ready to receive Shelf Life (no. of days) information from the operator.
- 31) ITEM NO. LAMP - When in the Item Number entry mode, this lamp indicates that the system is ready to receive an Item number code from the operator.

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- 32) SET TIME - RUN LAMP - Its function is described in the Operation instructions.
- 33) PRICE-RITE SWITCH - A key operated switch allowing controlled access to all stored information. It is located behind the Price-Rite door.

III. Weighing Functions:

The scale uses a flexure system and single load cell to provide capacities of 30 x 0.01 lbs, 15 x 0.005 kg and 6 x 0.002 kg. Platter size is 12 x 14 inches and a roller platter is available for use with the 601 labeller.

Automatic Zero Maintenance

The scale includes automatic zero maintenance which operates as follows: The zero increment is divided into 9 minor increments. Once per second, the weight reading is sampled, and if the reading is on the center increment, no change is made. If the reading is within the major zero increment, but not on the center minor increment, a minor increment is added to or subtracted from the weight reading to bring the corrected reading closer to the center minor increment. Thus automatic zero compensation is achieved for zero changes which occur at a rate of one increment per second or slower. Range of the compensation is limited to 4% of scale capacity with the center of the range determined by the setting of an internal analog zero potentiometer.

IV. Weight in Motion Detector:

The scale includes a motion detector which operates by comparing weight readings from sequential A/D conversions. No motion is defined as 2 sequential readings within 5 minor increments. A program switch provides selection of 2 sequential readings within 7 minor weight increments. The weight display is blanked when the scale is in motion.

V. Pushbutton Tare:

If an empty container weighing within the tare limits (refer to Table 1) is placed on the scale when the Enter Tare legend is on, the weight may be entered as a Tare weight by pressing the TARE button when there is no weight in motion. Pushbutton tare values are stored to the nearest 0.1 increment, although the display is rounded to the nearest whole increment.

V. Pushbutton Tare (Continued):

The Tare In Use legend turns on when a Tare has been accepted. Tare may be cleared by means of the RESET button.

In the READY mode, the TARE key may be used to override the tare value. In the Price-Rite READY mode, the stored tare value is displayed. In the Manual READY mode, the tare is cleared and a new tare value may be entered.

VI. Keyboard Digital Tare:

Digital tare values may be entered from the keyboard when the Enter Tare legend is lighted, by pressing the digit keys followed by the ENTER key. The maximum tare values are listed in Table 1. Tare values greater than these will not be accepted, i.e.; the ENTER key will not function. Tare values ending in other than the scale capacity increments will not be accepted in the metric mode.

Tare is displayed on the display prior to pressing the ENTER key. Net Weight is displayed during Run operations, and the Tare In Use light turns on whenever a Tare has been entered. Tare is cleared by means of the RESET button.

<u>SCALE CAPACITY</u>	<u>TARE LIMITS MAXIMUM</u>
30 x .01 lb	3.99 lb
15 x .005 kg	1.995 kg
6 x .002 kg	0.798 kg

(Table 1: Tare Limits VS Scale Capacities)

VII. Commodity Description Storage:

In addition to the weighing function program, the ROM has also a capacity for storing about 4000 Commodity descriptions. The descriptions are assigned a 4 digit commodity number for identification.

In order to reduce the ROM storage requirements use is made of the redundance of words in the commodity descriptions.

Each commodity described is assigned a number and the numbers are stored in the ROM. A catalog of numbers and descriptions (commodity dictionary) are provided for customers.

VIII. Special Commodity and Grade Line Names:

To load a special commodity, a copy of the Commodity Dictionary is required in order to determine the code numbers assigned to each word in the dictionary. Codes are also assigned to letters and symbols (including space) so that words not in the dictionary may be spelled out. Refer to Figure 3 and 4 for a form to be used for assistance in loading special commodities.

Operating sequence is as follows:

1. Turn key switch to Special Name.
2. "Enter Commodity" light turns on.
3. Enter commodity number of 1-4 digits, being certain that, that number has not previously been used in either the standard or special file.
4. "Enter Commodity" turns off and "Ready" turns on.
5. Enter the code for the first word or letter.
6. Press ENTER, "Ready" blinks.
7. Continue as per steps 5 and 5 until the description is complete.
8. Press the "/" key. A sample label is printed to permit checking the data entered.
9. "Enter Commodity" turns on.

Commodity numbers 9993 and 9994 are reserved for Grade Lines B3 and B4 respectively. Entering either of these numbers as in steps 1-4 above followed up to 14 characters (printed data) per steps 5-9, will cause that description to be printed at the left end of line 3 on the label when Grade B3 and B4 is selected. The dictionary offsets entered may be character or word.

IX. Price-Rite System:

A Price-Rite Memory (with battery back up to assure memory retention) is furnished to provide storage of Price, Tare, Shelf Life, Grade, and Item.

The Price-Rite file for each commodity is identified by the Commodity Number so that files need be established only for those commodities in active use. Each file entry requires 5 computer words of Price-Rite RAM.

X. Digital Display:

6 digits of 0.5" high LED display, with movable decimal point, display Gross Weight, Commodity Number, Grade Number, Price, Tare, Shelf Life, or Item Number upon command. Net Weight is displayed during labeling operation. Zeroes and the decimal point are programmed for each item displayed to assist the operator in entering data correctly from the keyboard.

XI. Printer:

General Description

The 311 Printer utilizes a print drum with 4 print hammers, one for each printed row. Drum wheel position is sensed by photoelectric detection of holes in the drum skirt. Paper is advanced in one character pitch increment by means of a stepping motor, and is resynchronized for each label by means of photoelectric detection of die cut notches between each label.

The printer power supply includes transformer taps and other capability for operation at 120, 220, and 240 volts, 50 or 60 hz.

Printer control logic provides centering of the commodity description on lines one and two, and for entry of a 6 digit store code by means of slide switches.

The printer enclosure is similar in size and appearance to the 310 Printer, and includes a label activator for manual application of labels.

The 312 Printer uses an additional hammer to print the UPC bar code on a label which is 3 inches wide x 2.375 inches high.

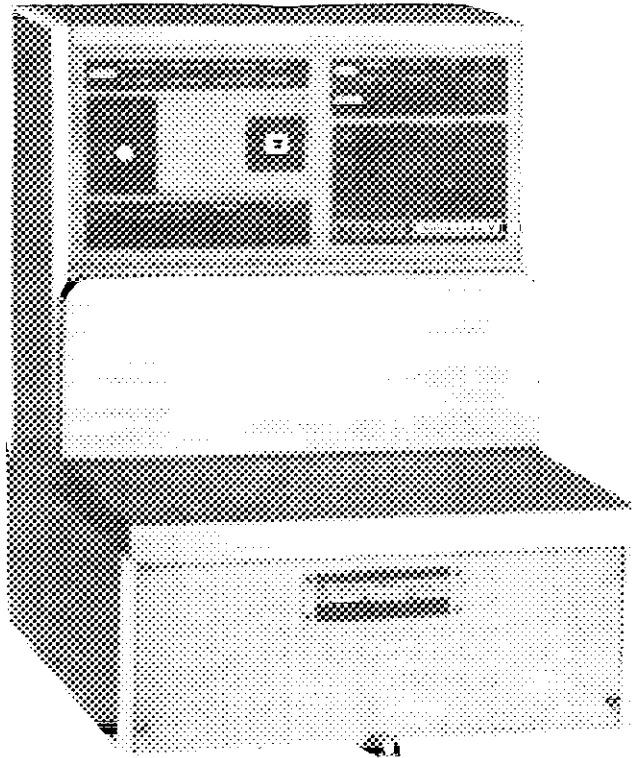
A multistrike ink ribbon provides printing of 20,000 labels before replacement. Label capacity is 5,000 per roll.

For the 311, print speed is about one second per label, providing full speed printing of 50 labels per minute, and labeling speeds of 45 per minute when used with a new labeller, or 28 per minute with the Model 601 Labeller.

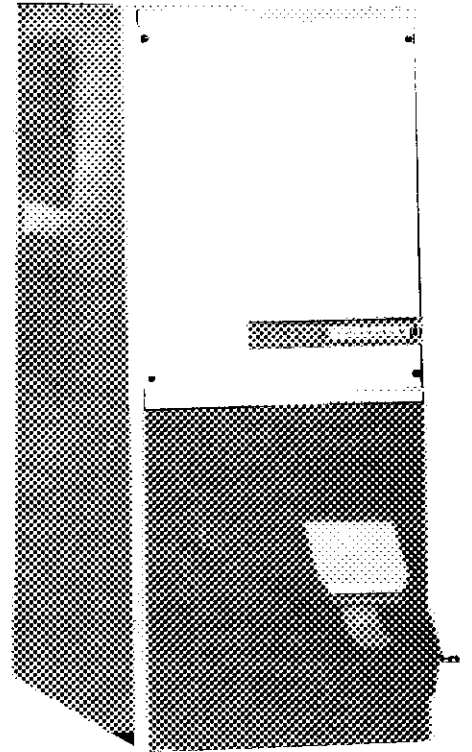
Testing: Standard tests for electronic Pre-Pak scale are required.

Verification of displays may be tested as follows:

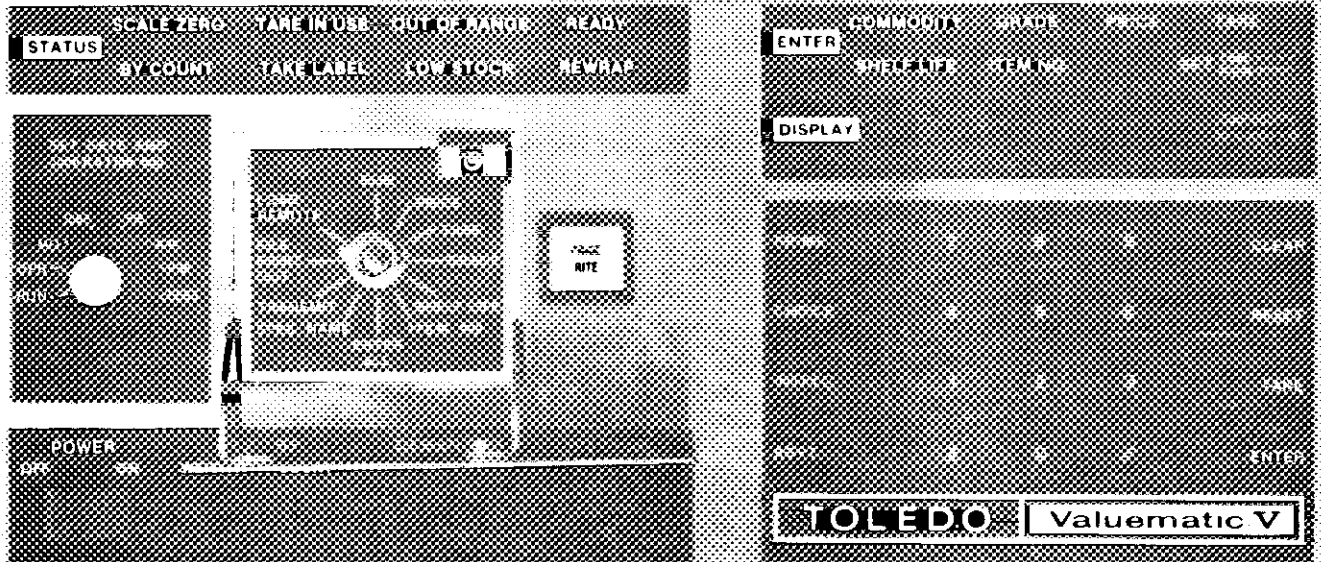
Press "RESET" key then "CLEAR" key, all indicator lamps will light and weight display will show 8's, the entire panel will then blink until the "RESET" key is pressed.



Model 8501 Scale



Model 511 Printer



Scale - Control and Display Panel

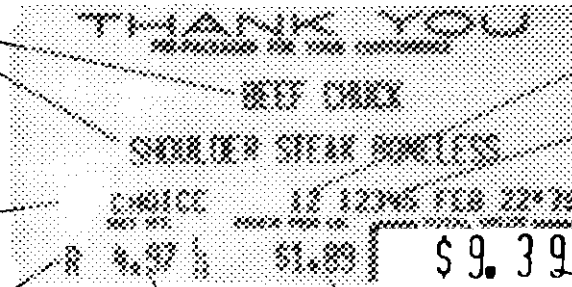
Product description or sales message

Up to 32 alpha-numeric characters per line on 2 lines, automatically centered.

Grade or secondary description

Program 4 of your own or (Up to 14 alpha-numeric characters, including date code.

The Basic Label



Operator number

Quick reference for any particular run. Helps monitor productivity.

Store and scale number

Assign your store and scale codes for easy identification later.

Automatic dating

As the clock advances Valumatic V updates automatically.

Total price

In dollars. Or even in pounds sterling if you wish.

Rewrap (R), Manual (M), or Rewrap Manual (RM)

Automatically identify all rewrap, manual rewrap or manual pricing operations.

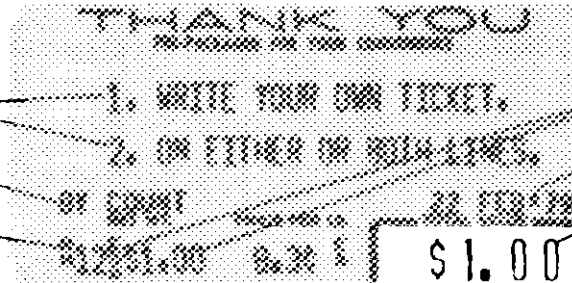
Net weight - lb or kg

Plus automatic or manual tare comes with Price-Rite.

Price per lb or kg

Also allows you to select unit pricing, price per pound or multiple price by weight.

Easy, special variations



Sales messages can be temporarily or permanently stored.

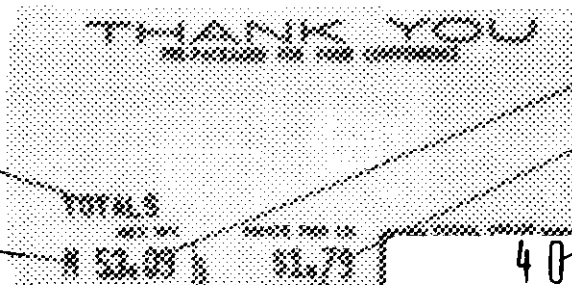
Identify **price by count** on a unit pricing basis.

Indicates "Rewrapped Manually."

Priced "By Count"

The Best Before or Pack Date Coding The total price is where you expect it.

And the summary of any run



When the operator is through with the run, it can be totaled on a label.

Indicates that this is a summary ticket.

Notes that all packages summarized in this run were manually priced.

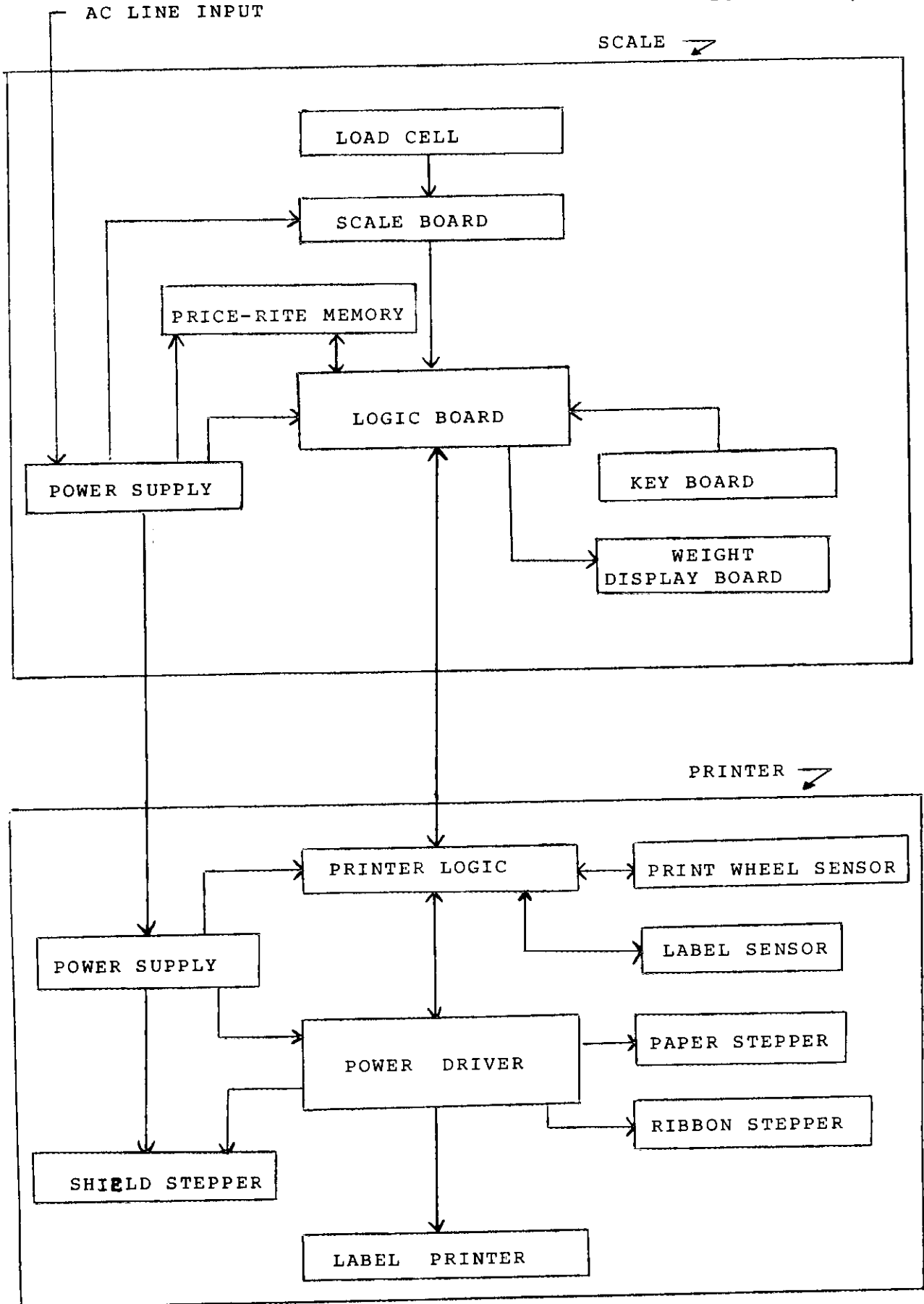
Totalizes net weight.

Establishes the pricing of \$1.79/lb was used for each package in the run.

Shows the total number of packages processed in the specific run.

INFORMATION ON 8301/311 Labels

FIGURE 2



BLOCK DIAGRAM - TOLEDO - MODEL 8301/311 system

Special Conditions:

1. The device is exempt from SGM 1/12.

Approval is granted under the Weights and Measures Act., S.C. 1970-71-72, Chapter 36, and the Weights and Measures Regulations C.R.C. c.,1605, for use in Canada under the general conditions of the said Regulations, and under any special conditions listed above.

FILE NO.: G6922-T170-21 *DL*

J. Buchanan
.....
John Buchanan
Acting Chief
Weights & Measures Division
Legal Metrology Branch

