DIGI®
When Accuracy Counts

DI-10

Check Weighing Scale

Operation Manual

RICE LAKE WEIGHING SYSTEMS
Industrial Solutions on a Global Scale®
ISO 9001 REGISTERED

73354

DI-10 OPERATION MANUAL

1.0. GENERAL

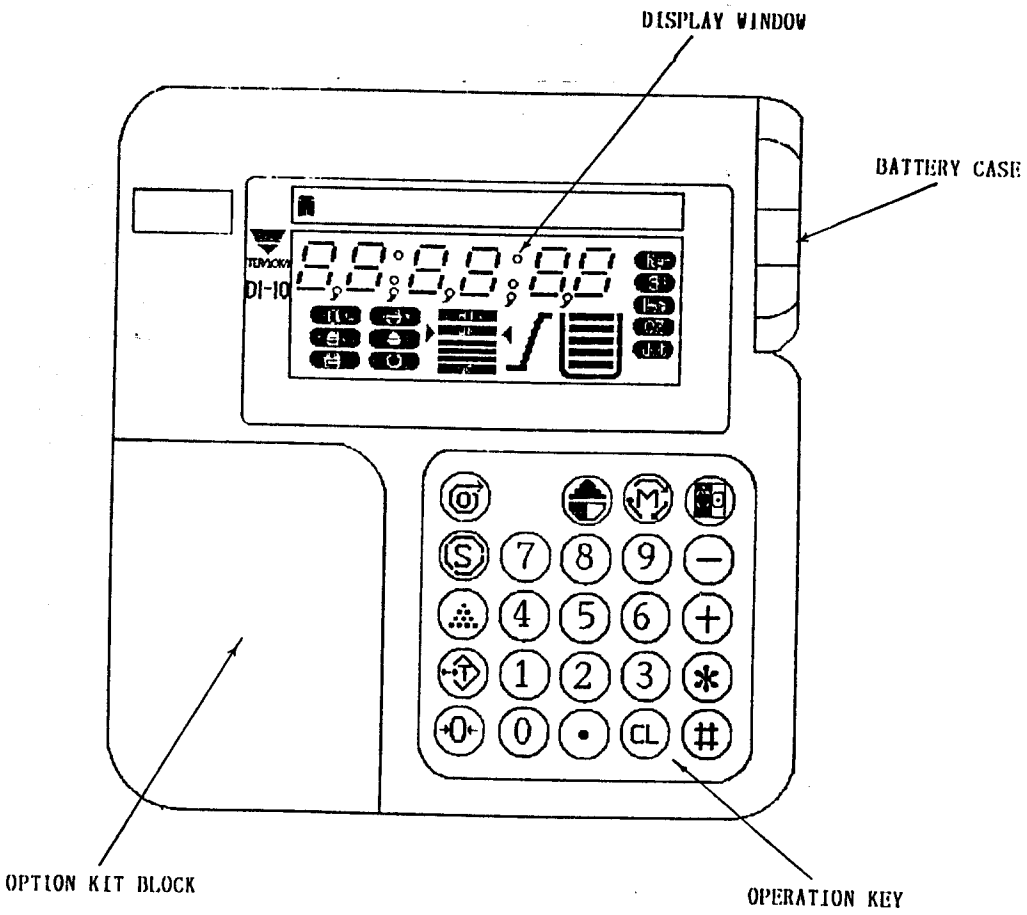
1.1. DESCRIPTION

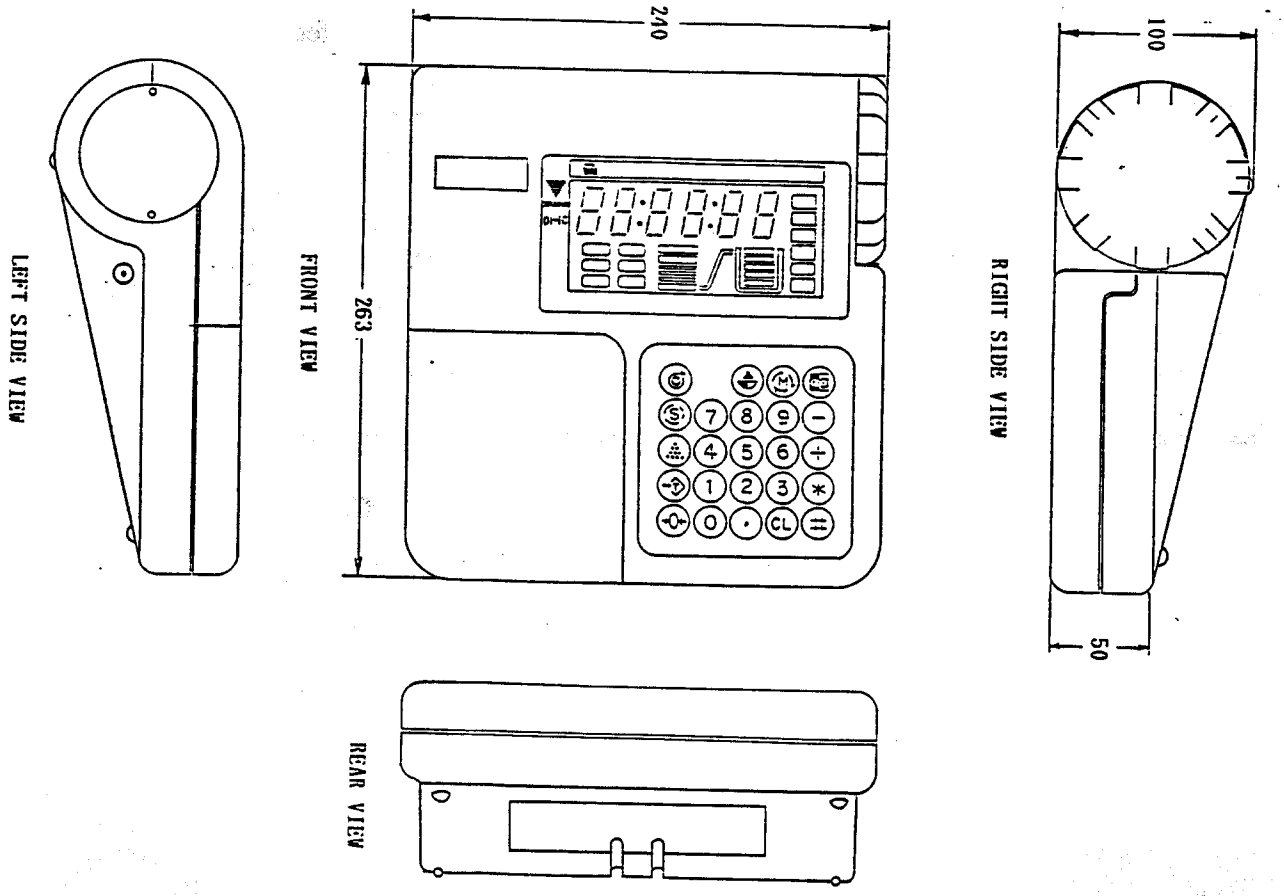
The DI-10 Indicator offers a practical solution to a wide range of weighing applications. There are a variety of weight capacities and increments available. The display resolution is selectable from 1/3000 to 1/10000. It features keyboard calibration with auto-span. Operates on 6 "C" cell batteries or with its AC/DC adapter. The DI-10 is able to support single load cells that have an output range of 0.4mV/V to 4.0mV/V. The DI-10 is able to support up to 4 load cells when used with the AC/DC adapter. This indicator features LCD graphic display, 5 weighing modes, optional devices such as RS-232, Set Point Output, and a built in Printer. For a list of platforms sizes and available above mentioned capacities see page 2.

This instruction manual will provide the user with all the information necessary to understand, set-up and operate the DI-10 scale. Included in this manual are descriptions, specifications, drawings, and operating instructions.

1.3. APPEARANCE
EXTERNAL VIEW

DI-10

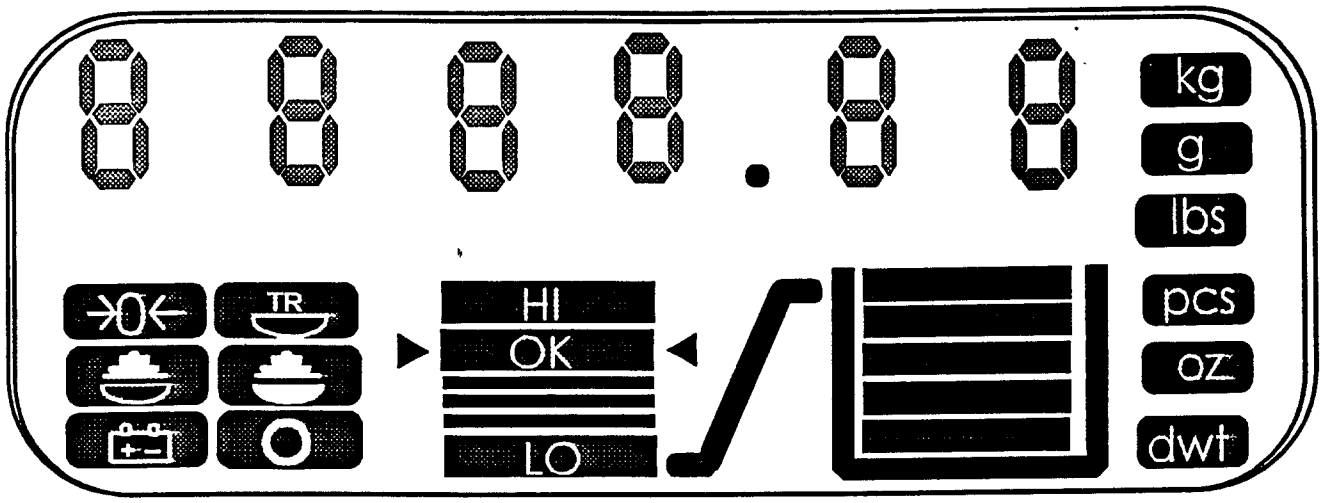




1.4. DISPLAY & KEYBOARD

1.4.1. DISPLAY

* Weight value is displayed loaded on the scale.
* Weighing unit, sign lamps and filling graphic for setpoint are displayed.



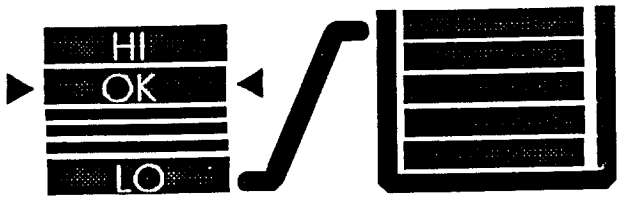
1.4.2. SIGN LAMPS

→0←	Zero lamp:	ON when display is true zero.
TR	Tare lamp:	ON when tare is subtracted.
	Net lamp:	ON when net weight is displayed.
	Gross lamp:	ON when gross weight is displayed.
	Battery lamp:	ON when battery needs recharging.
	Wt Stable lamp:	ON when weight is in stable condition.

HI lamp: ON, when weight value reaches programmed "HI" setpoint.

OK lamp: ON, when weight value reaches programmed "OK" setpoint.

LO lamp: ON, when weight value reaches programmed "LO" setpoint.

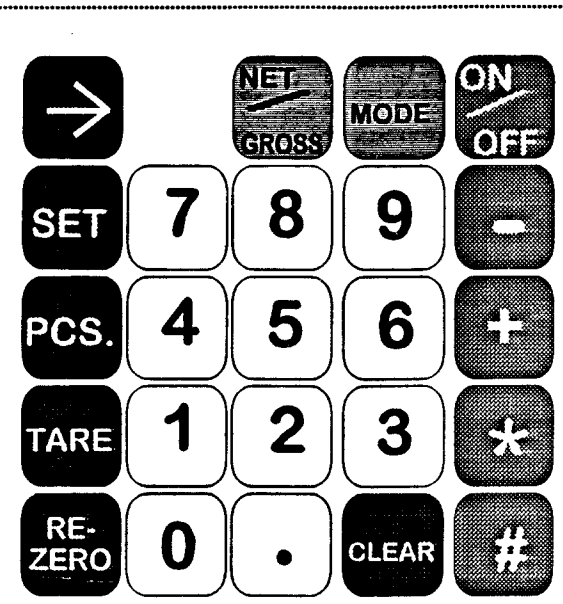


Dynamic Filling Display

Weighing units and quantities:

kg	kilogram
g	gram
lbs	pounds
pcs	pieces
oz	ounces
dwt	penny weight

1.5. KEY SWITCH INFORMATION

KEY SWITCH IFORMATION		
[ON/OFF] key	Display ON/OFF key. (Not for main power.)	
[MODE] key	Weighing conversion key	
[NET/GROSS] key	Display change for NET and GROSS	
[→] Feed key	Paper feed key. (when PRINTER is connected)	
[SET] point key	Set point programming key for "HI","OK" and "LO".	
[PCS.] Sample key	Use for number of sample entry on counting mode.	
[TARE] key	Use for tare reduction	
[RE-ZERO] key	Weight display re-zeroing	
[Clear] key	Use for data clear	
[#] Code key	Use for programmed code number read out	
[*] Total key	Use to dsplay and print total weight,& print weight with no accumulation	
[+]Plus key	Use for weight data addition/print out	
[–] Minus key	Use for weight data subtraction/ print out.	
[0] ≈ [9] Numeric key	Use for data entry	
[•] Decimal point key	Use for decimal point setting	

2.0. INSTALLATION

This section provides the information required for installation of the DI-10 weight indicator. The following steps accomplish installation.

1. Unpacking
2. Set-up Procedure

2.1. Unpacking

Each component of the DI-10 is packed in a specially designed carton. Remove each component from its carton, separate the component from its polystyrene shell assembly and set aside. Inspect the carton interior to be sure that all accessories have been removed from the carton. Inspect the carton inner panels for accessories.

NOTE: Be sure to repack all materials within the carton set. Store the cartons in a secure area so they can be available whenever shipment of the scale is required.

2.2. Inspection

Immediately after unpacking, a visual inspection of the instrument should be performed. If any damage has been incurred during transportation the shipper and DIGI MATEX INC. should be notified immediately. Instructions for assessment of damage and further procedures will then be determined.

2.3. Repackaging

If, at anytime, the DI-10 weight indicator must be returned for modification, calibration, or repair, be sure that it is properly packed with sufficient cushioning materials.

Whenever possible, the original carton assembly should be retained for this purpose. Any damage caused by improper packaging will not be covered by warranty.

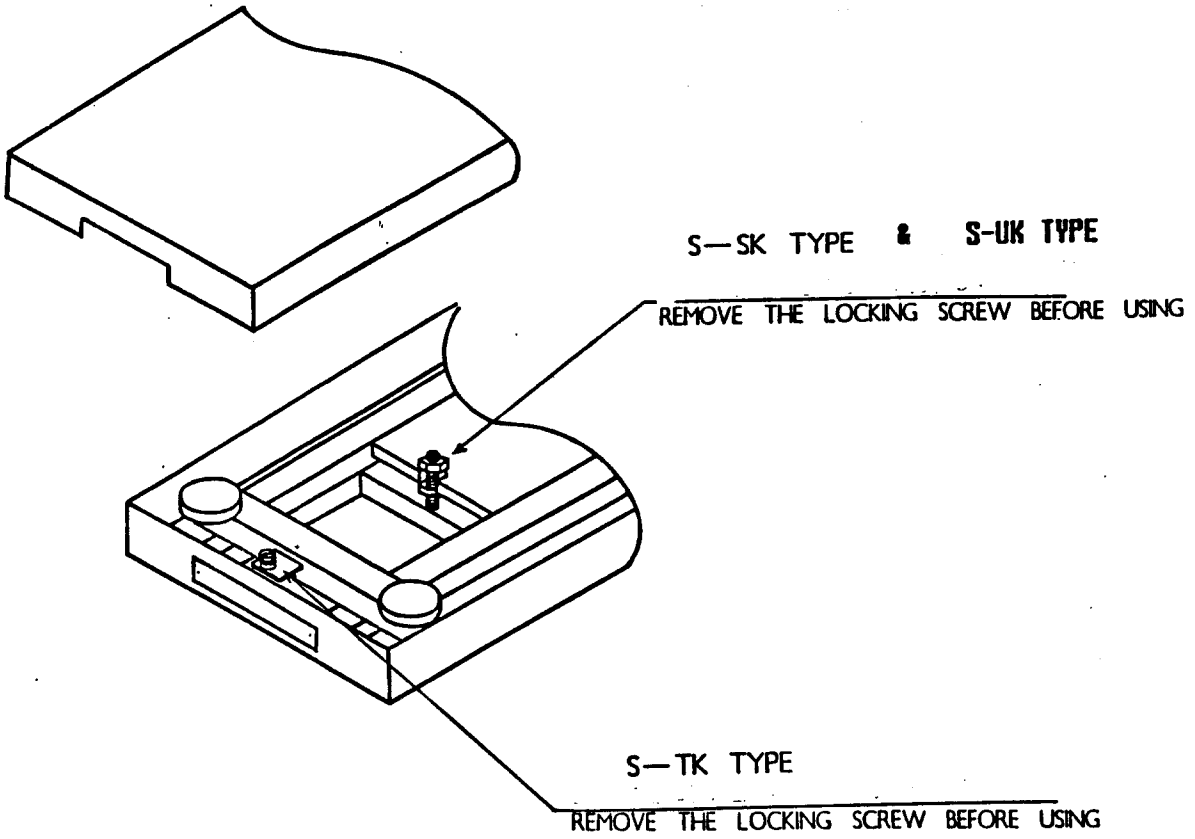
2.4. Platform Unlocking Procedure

The unlocking procedure is different for each style of platform and are included on the following pages.

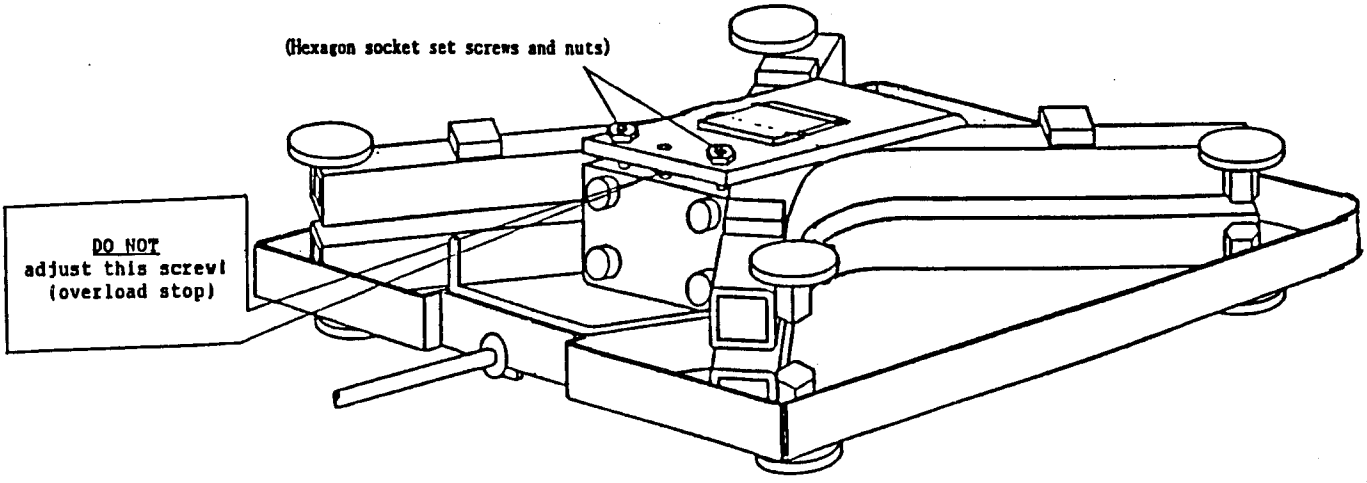
2.5. Digi Grand Pole Assembly

The optional pole mounting kit comes with all the necessary hardware and assembly is easy. See page 9 for details.

2.4.1. UNLOCKING PROCEDURE

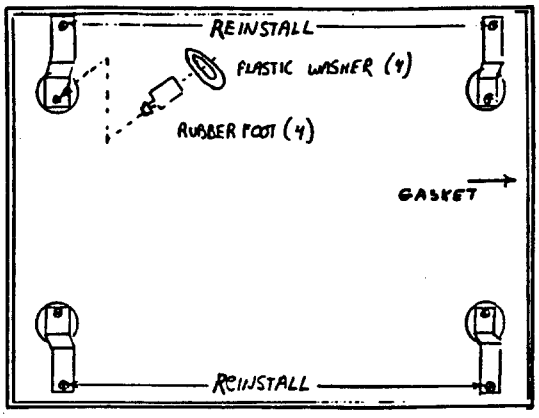


BEFORE USING THE SCALE, REMOVE THE TWO NUTS AND THE SCREWS AS SHOWN



2.4.2. UNLOCKING PROCEDURE

SA-L 10 Lb., 25 Lb., 50 Lb.

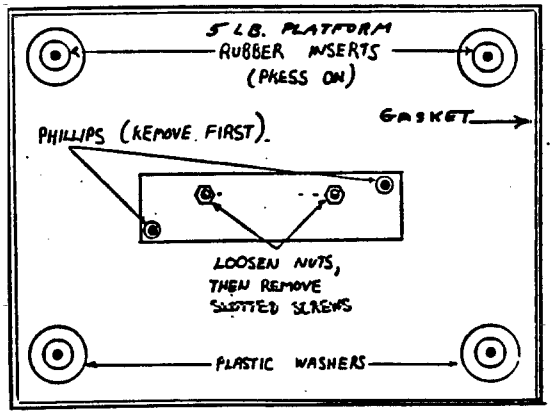


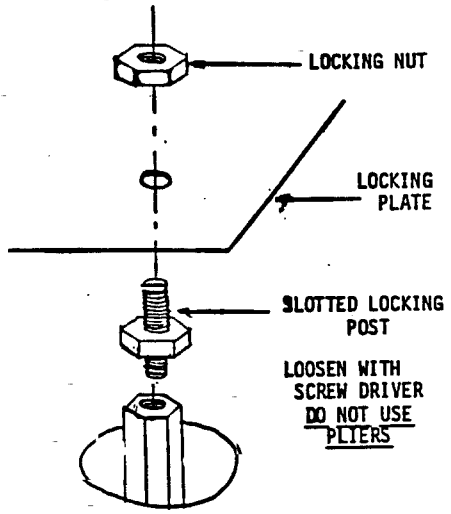
NOTE:
BE SURE GASKET FITS SNUG AND WILL NOT RUB AGAINST PLATFORM

PUSH IN AND TWIST RUBBER FOOT

1. Remove & Save All 4 Locking Brackets
2. Reinstall Outside Screws
3. Install 4 Rubber Feet As Shown
4. Install Plastic Washers
5. Place Platter Onto Rubber Feet

SA-L 1 Lb., 5 Lb.



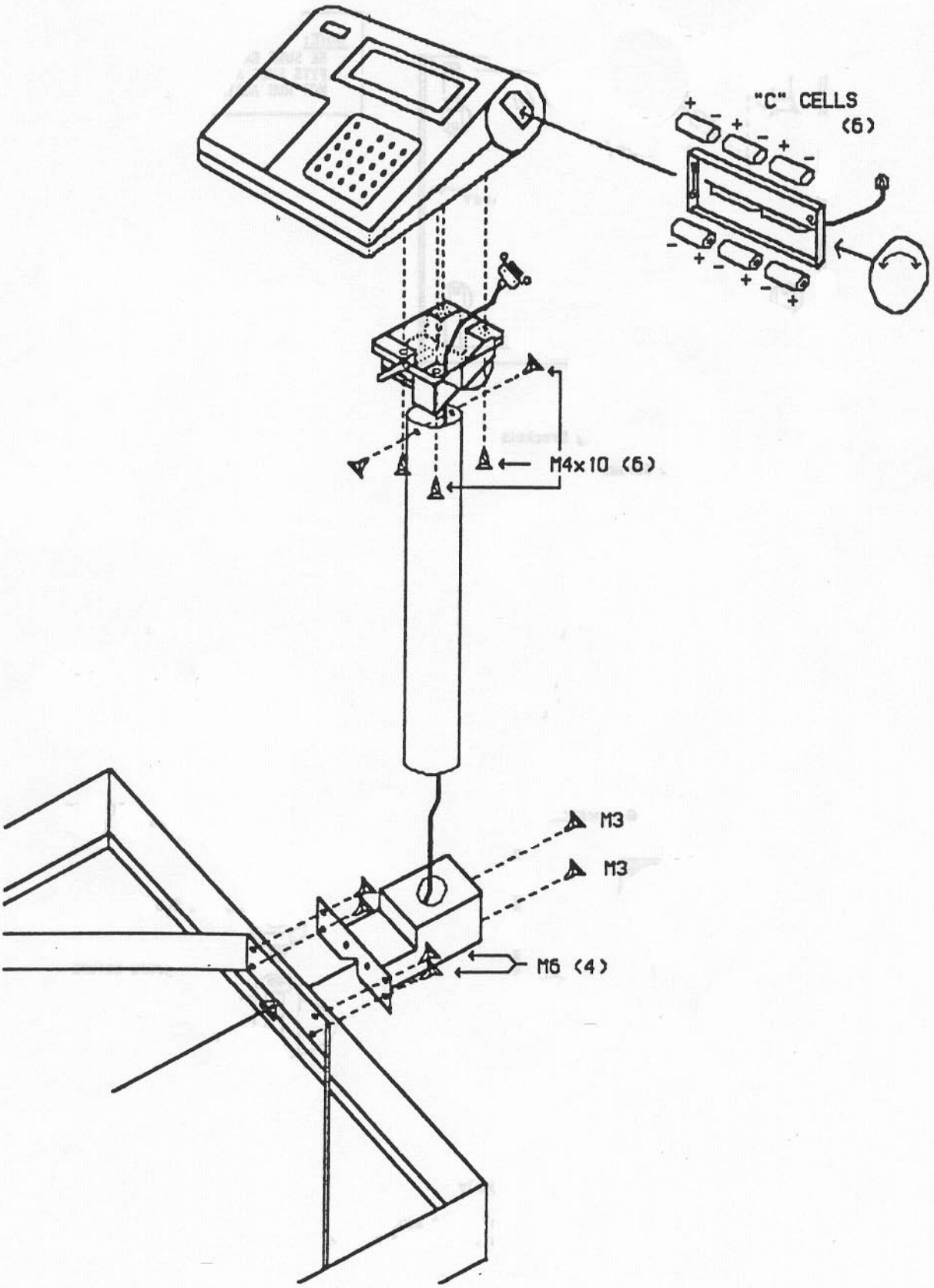


UNLOCKING PROCEDURE

1. Remove locking plate corner screw
2. Loosen locking nuts
3. Unscrew locking posts and remove plate assembly
4. Install weighing platter
   a) For 5 Lb. Platform, twist-on rubber platform supports
   b) For 1 Lb. Platform, install 2 side rails and 4" x 6" tray

NOTE:
BE SURE GASKET FITS SNUG AND DOES NOT RUB AGAINST THE 5 LB. PLATTER

2.5.1. DIGI GRAND ASSEMBLY



3.0. SPECIFICATION

3.1. PLATFORMS

The following is a list of platforms :

Model		Platform Size/Platter	Capacities				
S-AL	bench	12” x 14” x3”	1 LB.	5 LB.	10 LB.	25 LB.	50 LB.
S-SL	bench / floor	13” x 17”	60 LB.		150 LB.		300 LB.
S-TL	floor	17” x 21”	150 LB.	300 LB.	500 LB.		1000 LB.
S-UL	floor	24” x 28”	150 LB.	300 LB.	500 LB.		1000 LB.
S-PL	floor	30” x 30” 36” x 36”	1000 lb. to 3000 lb.				
S-PL	floor	48” x 48” 48” x 72” 60” x 60” 60” x 84”	2500 lb. to 25000 lb.				

Ramps , Other Capacities And Stainless Steel Platforms Also Available

Choosing A Capacity : Multiply the Decimal Location by the Minimum Weight by the Display Resolution (=) Capacity

Decimal Location	Minimum Weight	Display Resolution	Available Capacities
0.0000	1	1 / 2000	1lb,2.5lb,3lb.,5lb.,6lb,.
0.000	2	1 / 2500	10lb.,25lb.,30lb.,50lb.,
0.00	5	1 / 3000	60lb.,75lb.,100lb.,125lb
0.0	10	1 / 5000	150lb.,200lb.,250lb.,
0	20	1 / 6000	300lb.,375lb.,500lb.,
	50	1 / 7500	600lb.,750lb.,1000lb.,
	100	1/10000	1500lb.,2000lb.,2500lb.
	200	1/12500	3000lb.,3750lb.,5000lb.
	500	1/15000	6000lb.,7500lb.,10000lb

Example: dec. loc. ‘TIMES’ min. wt. ‘TIMES’ disp. res. = avail cap.
0.00 ‘TIMES’ 5 ‘TIMES’ 1 / 7500 = 375. 00 lb.

* Units can be programmed to primarily weigh in lb., oz., kg., g., or dwt.

3.2. TECHNICAL (MODEL SPEC)

* Power source	* D.C 12V 0.5A (AC/DC adaptor) * D.C 1.5V x 6 pcs. (“C” cell) (“C” cell can't operate printer)
* Operating temperature	* -10 ... +40EC
* Operating humidity	* 15 ... 85% RH.(Non-condensing)
* Power consumption	* 1 w/h.

ANALOG SPEC. (DI-10)

* Input sensitivity	* 0.25 :V/div. to 20 :V/div.
* Zero adj. range	* 1 mV
* Temp. characteristic	* ZERO"(0.2:V " 6ppm of ZERO)/EC SPAN ..." 6 ppm/EC
* Speed of A/D conversion:	* 10 times/sec.
* Non linearity	* 0.016 % of F.S or less
* L/C to be used	* 0.4 mV/V to 4 mV/V
* L/C excitation voltage	* DC 5V.
* Number of the scale	* 1 (one) scale
* Display resolution	* up to 1/10000

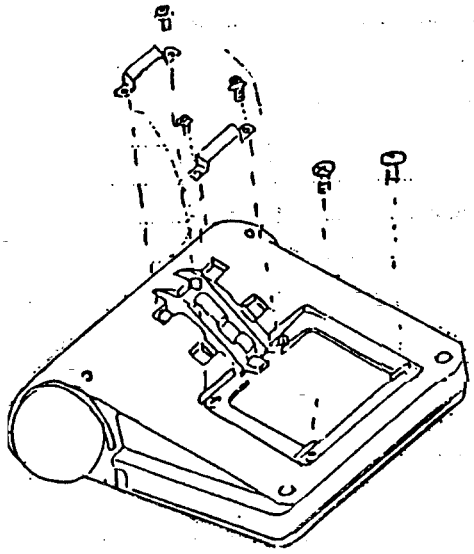
DISPLAY SPEC.

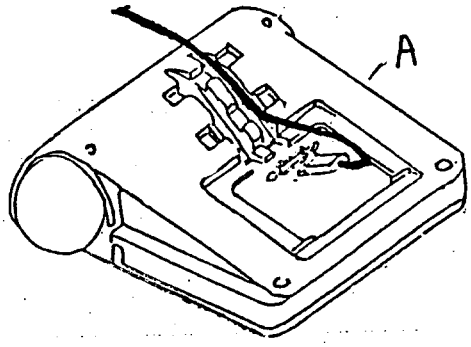
* Display	* 6 digits.
* Tare	* 6 digits
* Setpoint 1 (LO)	* 6 digits.
* Setpoint 2 (OK)	* 6 digits.
* Setpoint 3 (HI)	* 6 digits
* Weighing unit	* 5 kinds "g","kg","lbs","oz","dwt".
* Counting unit	* 1 kind "pcs"
* Sign lamps	* 9 kinds "ZERO","TARE","NET","GROSS "BATT","W.S","HI","OK","LO".
* Filling graphic	* 2 kinds rough and fine

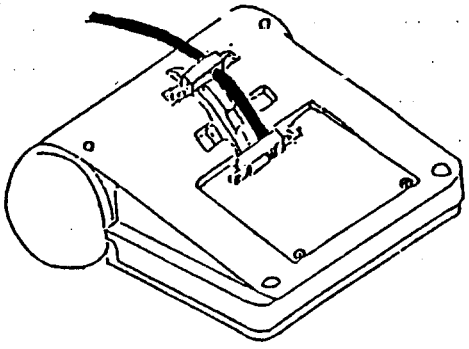
3.3. SET UP PROCEDURE

3.3.1. DESK TOP SET-UP

1.Put display side on the soft cloth or similar.
2.Remove rear lid and brackets by 6 screws.
3.Fix the cable to connector A.
4.Re- mount the rear lid and brackects.



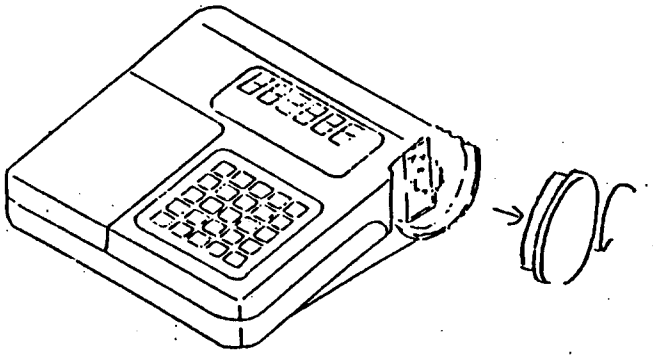


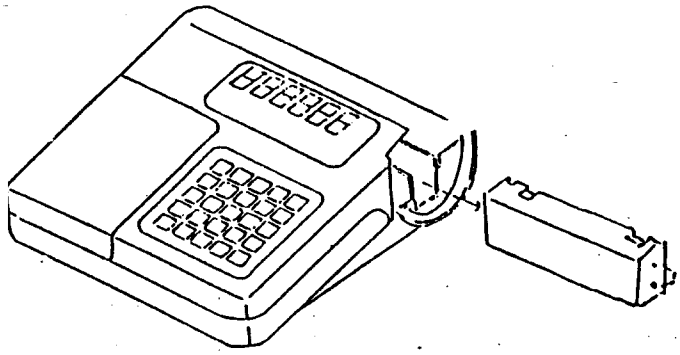


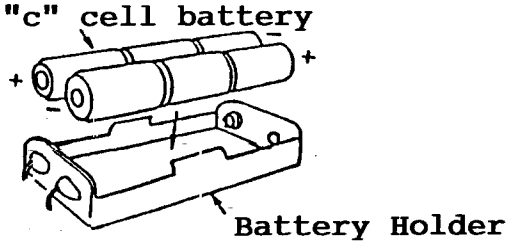
3.3. SET UP PROCEDURE (continued)

3.3.2. HOW TO INSTALL "C" CELLS

1. Remove the right side cover.
2. Remove the "C" cell battery holder.
3. Put the "C" cells in the battery holder. (6 pcs.)
   (Please pay attention to the polarity of the "C" cells)
4. Re-mount the "C" cell battery holder.







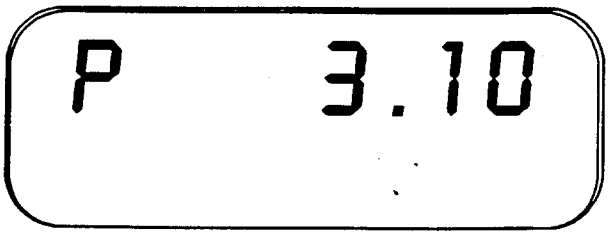
3.4. FEATURES

1. Super Large LCD And Dynamic Filling In Graphic Display.	* 25.4 mm figure height. * 2 kinds of filling in graphic, rough and fine.(selectable) * 9 kinds of weighing sign and 5 kinds of weighing unit.
2. Battery Drive Available.	* D.C 1.5 V x 6 pcs.(AM-2) *** In The Case Of Battery Drive, Printer Option And 4 Load Cell Construction Scale Is Not Available** * Alkaline cell is better than another material.
3. Automatic Power Off.(Selectable Time Off)	* To save power specially in the case of battery drive, automatic power off function is provided
4. Up To 4 - 350Ω Load Cells Can Be Driven with a (DI-10)	* This is available only in the case AC/DC adaptor is used as power supply. **(Only One Load Cell Can Be Driven In The Case Of Battery Operation.)** * DIGI's S-S,S-T,S-U are recommendable as external scale.
5. Five Kinds Of Weighing Mode.(Selectable)	* In "kg","g","lbs","oz" or "dwt" mode.
6. Weighing Conversion.(Selectable)	* "kg" to "lb." and vise-versa. (1 lb = 0.45359 kg, 1 kg = 2.2046 lb.) * "g" to "oz" or "dwt" and vise-versa. (1 g = 0.03527 oz, 1 oz = 20 dwt.)
7. Three Kinds Of Taring Method.(Selectable)	* One touch tare, Digital tare, Digital tare during weighing.
8. Addition & Subtraction.	* Max. 6 digits and an alarm sign "Add OFF" and "SUb OFF" are provided when they exceed the limit.
9. NET/GROSS Conversion.	* Individual indicator for NET and GROSS.
10. Automatic Zero Tracking.	* To eliminate small weight display drifting.
11. Automatic Print.(Selectable)	* To print out weighing result automatically
12. Automatic Calibration.	
13. Data Output By RS-232C For External Device. (Option)	* For data transfer to external device

FEATURES (continued)	
14. Setpoint Data Output. (Option)	* To drive external device.
15. Built In Printer. (Option)	* To print out weighing result. **In The Case Of Battery Drive, Printer Option Is Not Available**
16. Code No. Printing.	* To specify the printed out weighing result.
17. Date & Time Printing.	* To specify the printed out weighing result. * Built in clock.(no back up after power disconnect)
18. Counting Function.	* For parts counting operation. * Print out, addition and subtraction are not possible.
19. Programmable Scale Capacity And Scale Interval.	* Minimum graduation (increment),1,2,5,10,20 and 50 are available. * Display resolution up to 1/10.000 is available.
20. Meets Or Exceeds The Requirements Of OIML Class 3	1/3000 display resolution.
21. Articulated Head Mount for Pole Mount	*At an angle of 80 °.

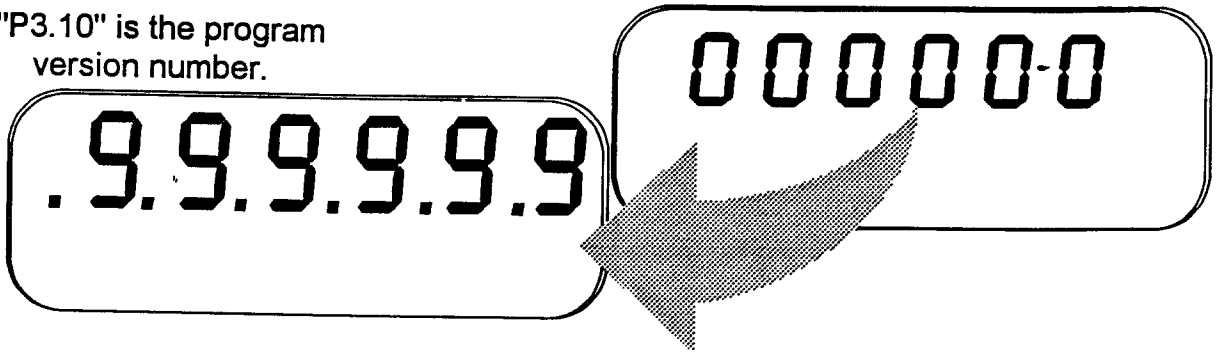
4.0. OPERATION INSTRUCTION

4.1. POWER ON



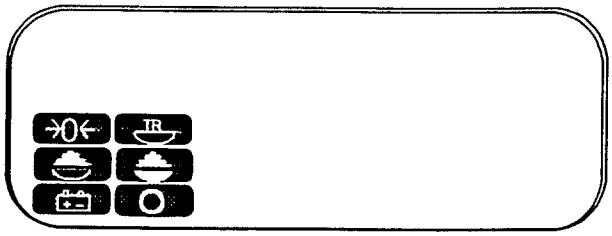
1. Set battery or AC/DC adaptor then depress the ON/OFF key.

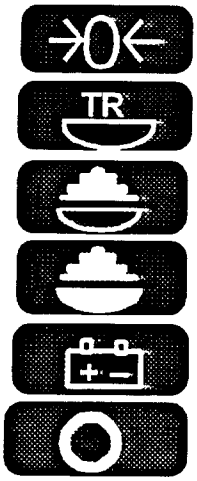
*"P3.10" is the program version number.



Display scrolls 000000 to 999999 then all the sign lamps, weight unit and filling-in graphic are displayed for checking.

*If you want to stop the display scrolling, depress the * key.





Zero lamp

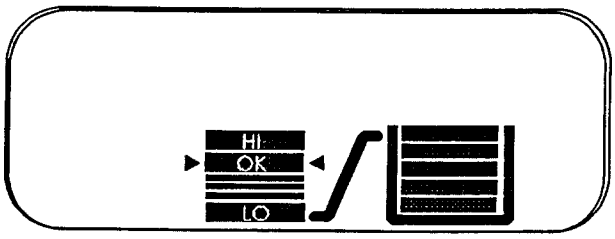
Tare lamp

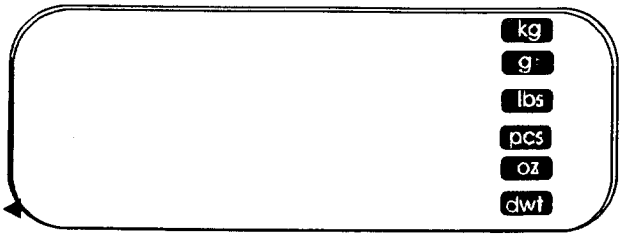
Net lamp

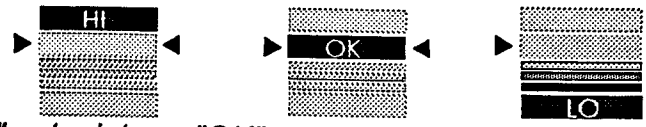
Gross lamp

Battery lamp

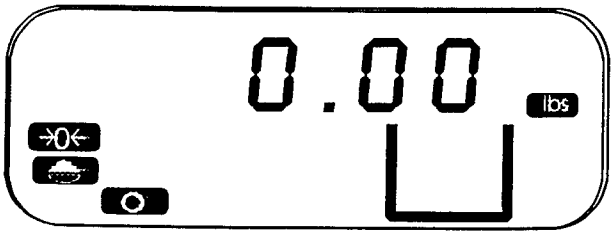
Weight stable







"HI" setpoint *"OK" setpoint* *"LO" setpoint*



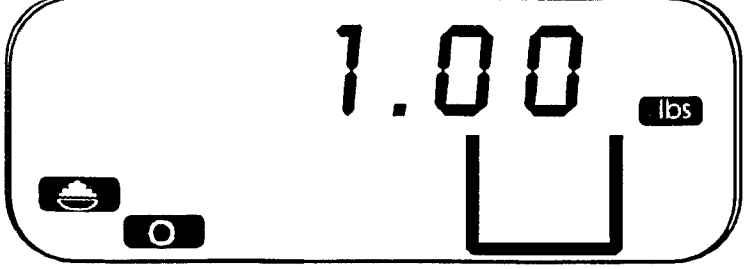
* After this page, all descriptions are based on a 60.00 lb/0.02 lb scale.

4.2. ONE TOUCH TARE

(when tare weight is known)

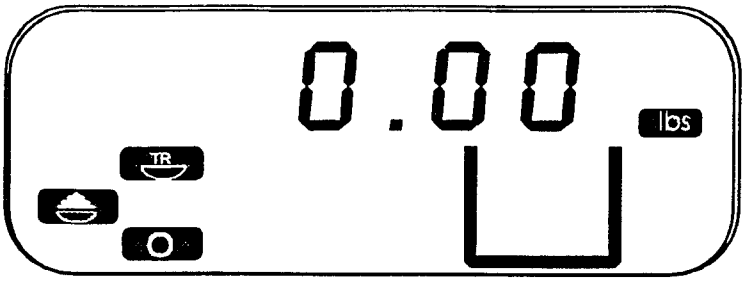
1. Place tare weight.

   example: 1 pound



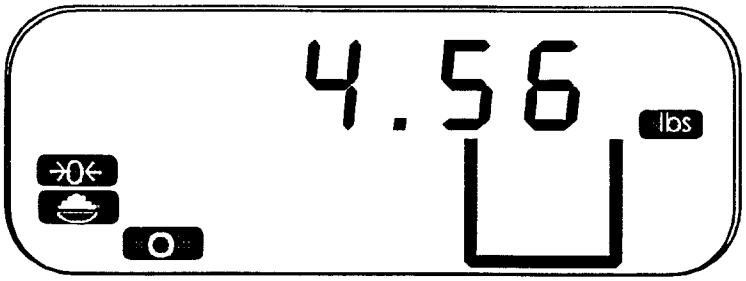
2. Depress TARE key.

   *Ready to weigh.

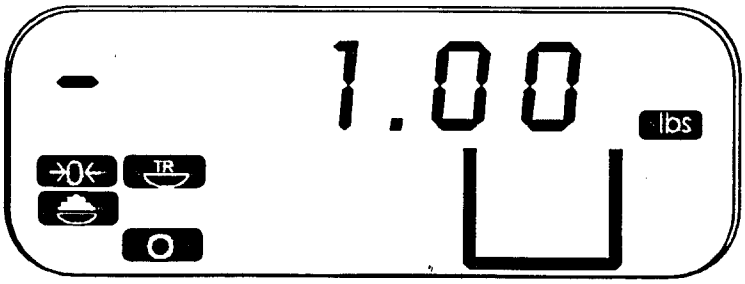


3. Place weight.

   example: 4.56 lb

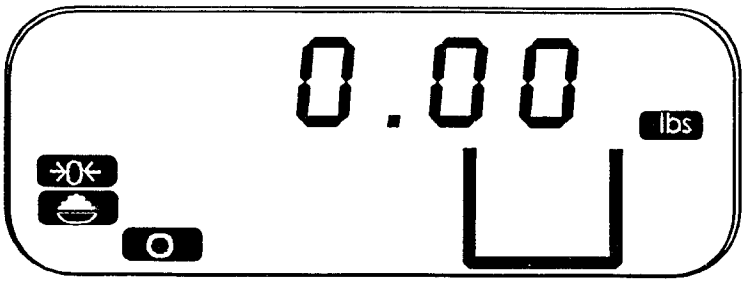


4. Remove tare & weight



5. Depress TARE key.

   *Tare weight is cleared.



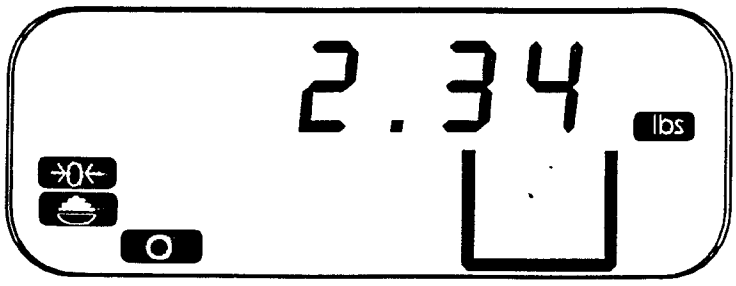
4.3. DIGITAL TARE

(when tare weight is known)

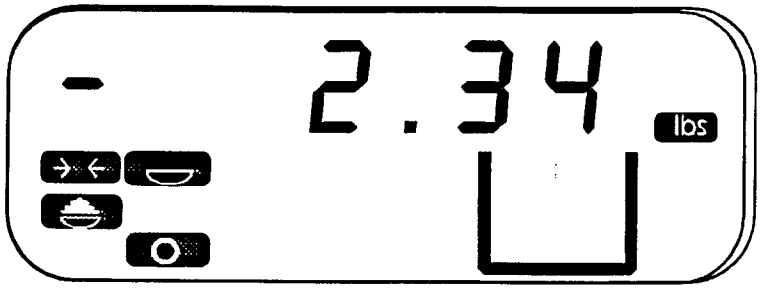
1. Enter tare value by numeric keys.

   (Ex. 2.34 lb)

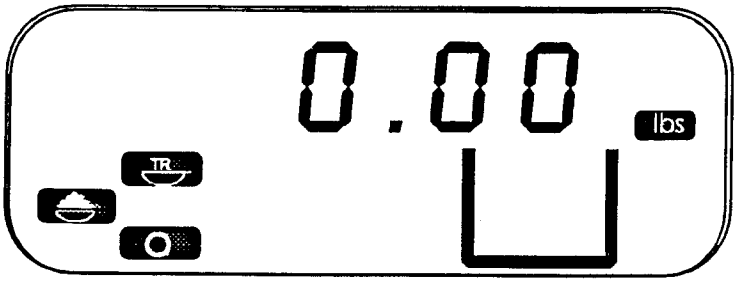
   Enter [2] [.] [3] [4]



2. Depress [TARE] key.

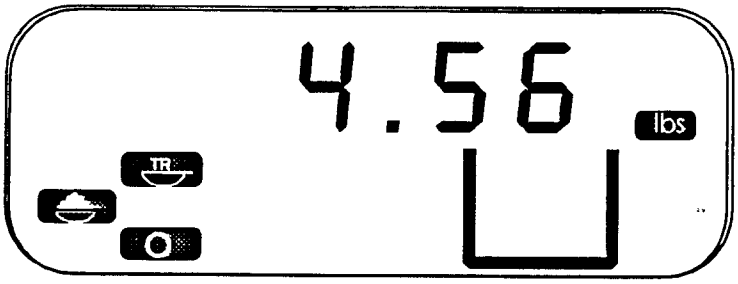


3. Place tare weight 2.34 lb.
   *Ready to weigh.

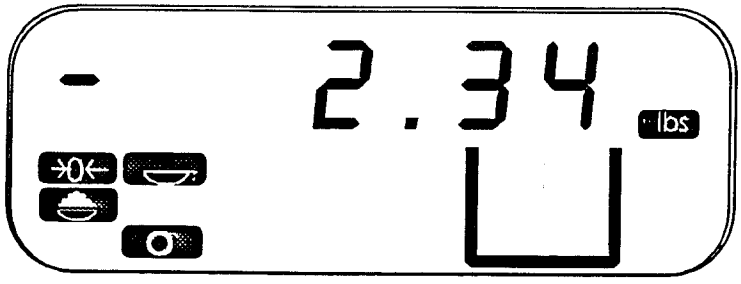


4. Place weight.

   Example: 4.56 lb

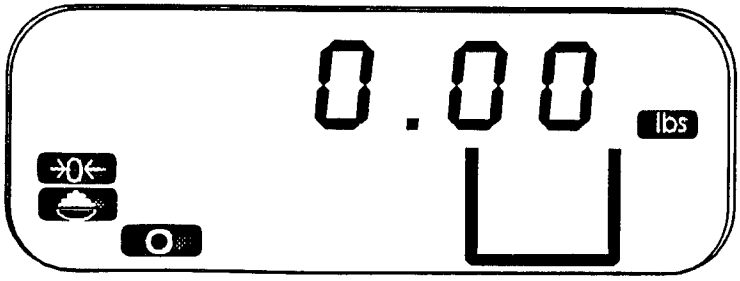


5. Remove tare & weight.



6. Depress [TARE] key.

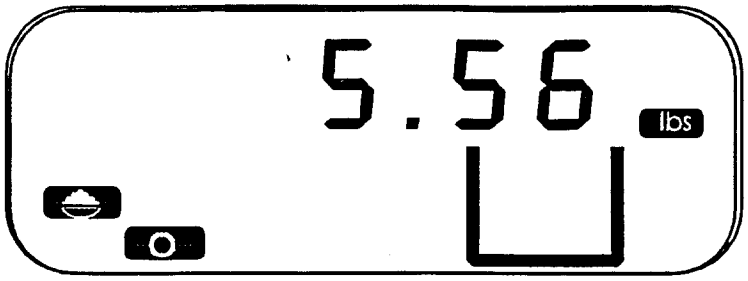
   *Tare is cleared.



4.4. DIGITAL TARE DURING WEIGHING

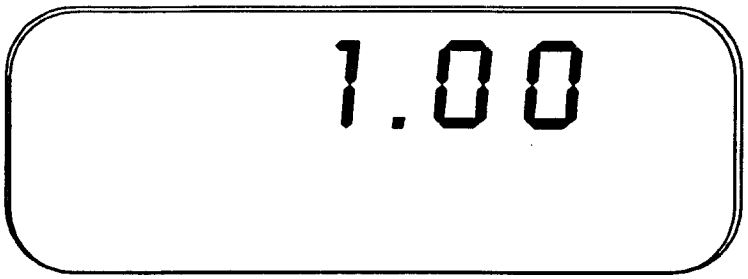
1. Place tare & weight.

   tare: 1.00 lb
   weight: 4.56 lb
   total: 5.56 lb

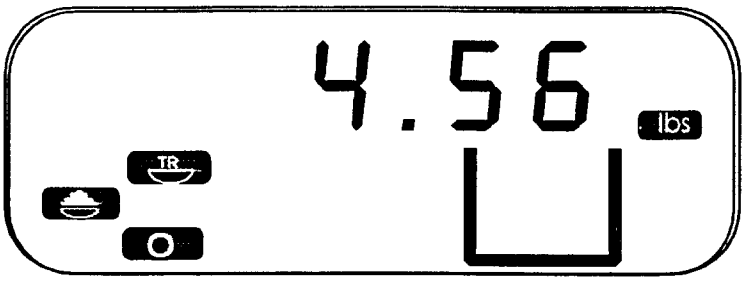


2. Enter tare value by numeric key.

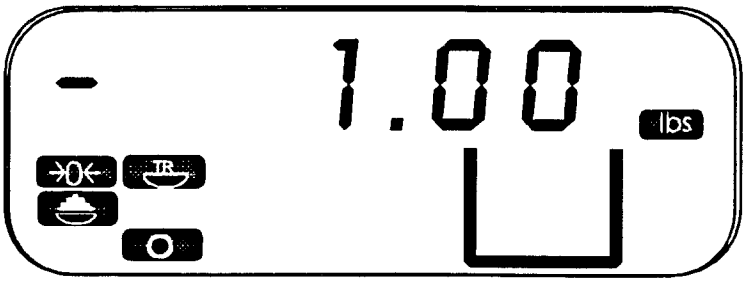
   Enter [1] [.] [0] [0]



3. Depress TARE key.

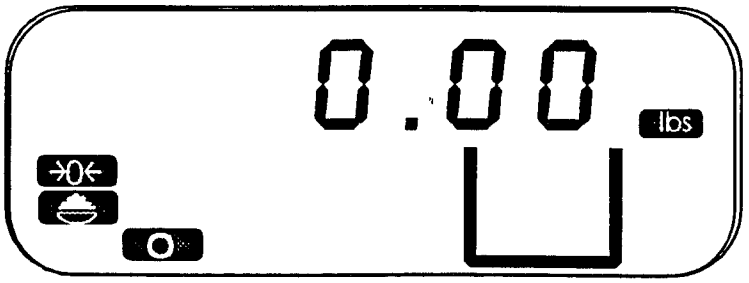


4. Remove tare & weight.



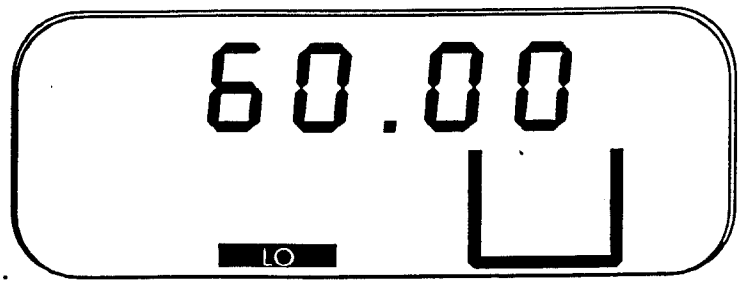
5. Depress TARE key.

   *Tare is cleared.



4.5. SETPOINT ENTRY

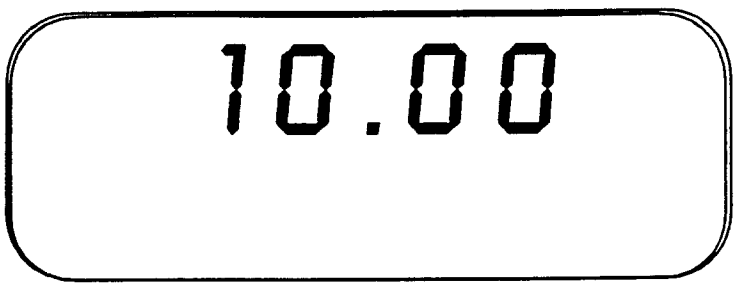
1. Depress SET key.



*Scale capacity (60.00lb) is set automatically for "LO", "OK" & "HI" when there is no data.

*See "NOTE" on next page for detail.

2. Enter setpoint for "LO".

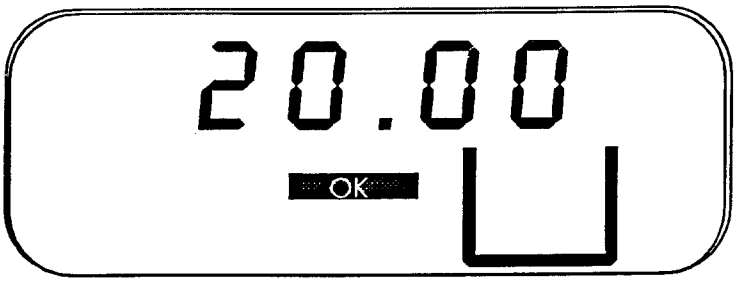


Example:

setpoint "LO"	=	10.00 lb
setpoint "OK"	=	20.00 lb
setpoint "HI"	=	30.00 lb

Enter 1 0 . 0 0

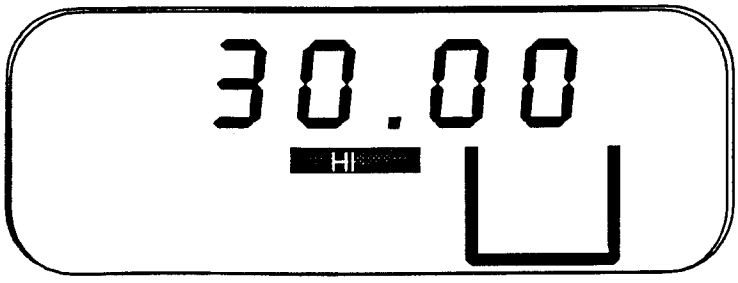
3. Depress SET key.



Enter setpoint for "OK".

Enter 2 0 . 0 0

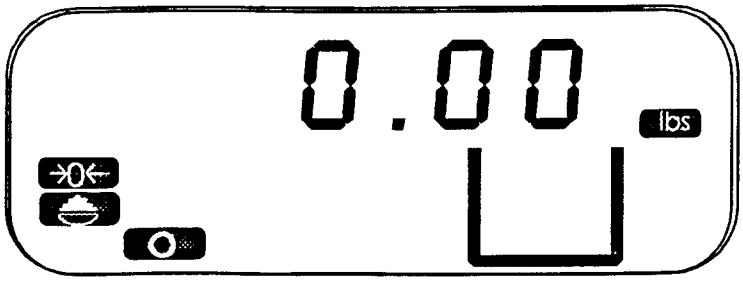
4. Depress SET key.



Enter setpoint for "HI".

Enter 3 0 . 0 0

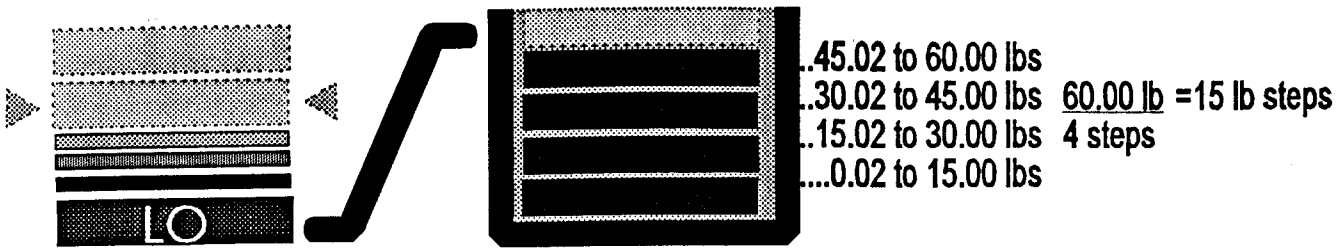
5. Depress SET key.



*Setpoint entry completed & ready to weigh.

NOTE: The filling graphic will be as follows when the same value is set to each setpoint.

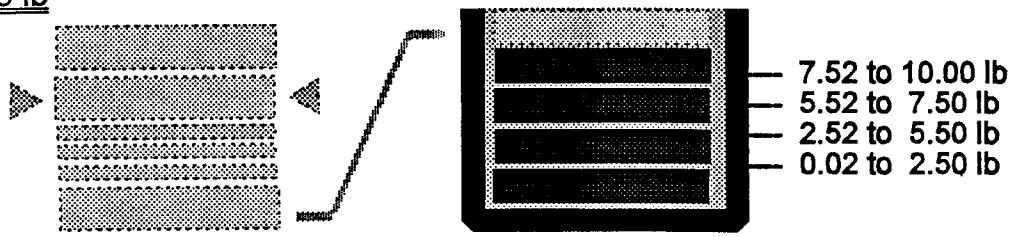
Example: 60.00 lb/0.02 lb. Setpoint "LO" = "OK "= "HI" = 60.00 lb.



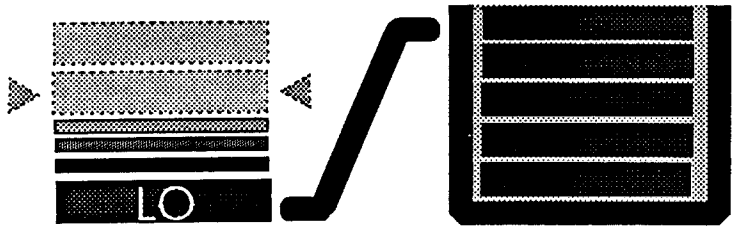
* The filling graphic will be as follows when different values are set for each setpoint:

Example: 60.00 lb/0.02 lb.
Setpoint "LO" = 10.00 lb, "OK" = 20.00 lb, "HI" = 30.00 lb

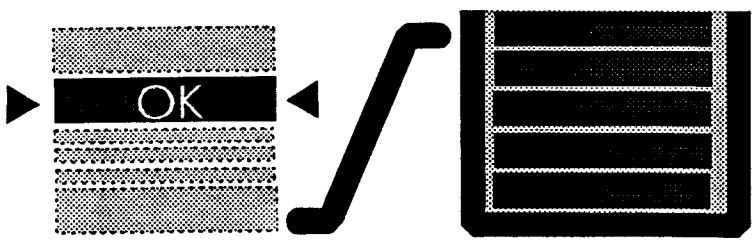
0.02 to 10.00 lb



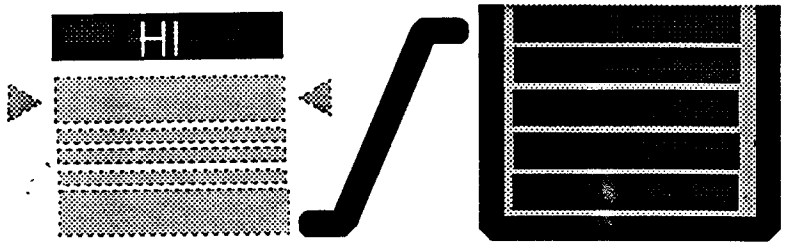
10.02 to 20.00 lb



20.02 to 30.00 lb



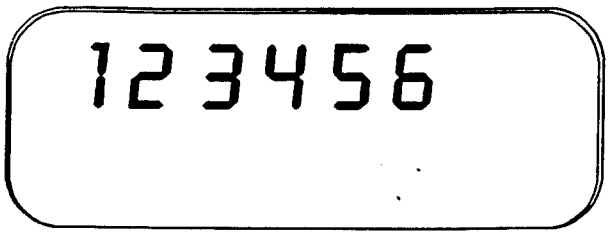
30.02 to CAPACITY



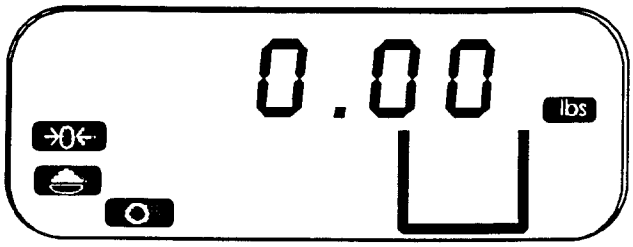
4.6. ADDITION & SUBTRACTION

1. Enter Code No. by numeric key
   Example: Code No = 123456

   Enter [1][2][3][4][5][6]



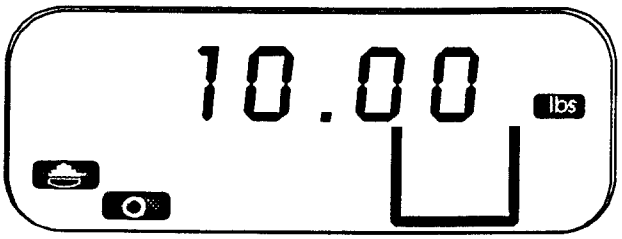
2. Depress [#] key.



3. Place weight, depress [+] key.

   Example: 10.00 lb

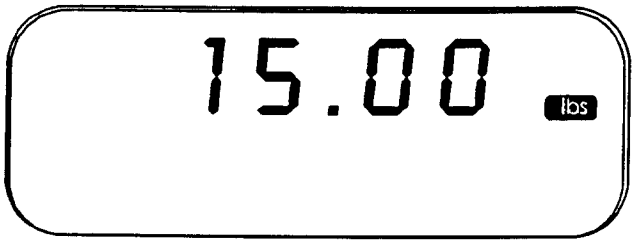
   *Total weight appears and
   NET display flashes 4 times.



4. Remove 10.00 lb and place another weight;
   then depress [−] key.

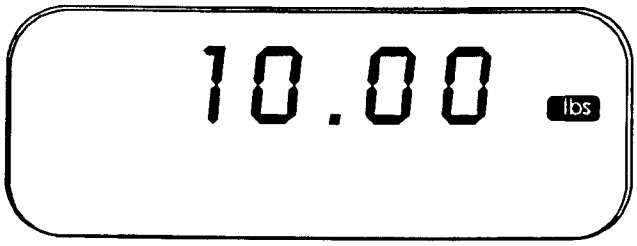
   Example: 15.00 lb

   *Total weight appears and
   display flashes 4 times.



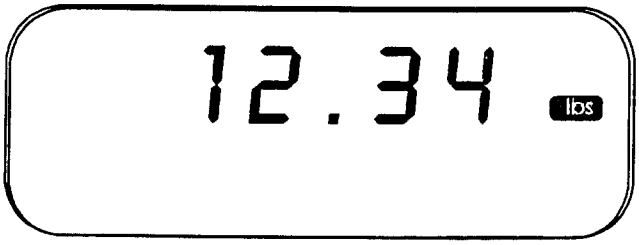
5. Depress [+] key for

   data correction (subtraction).



6. Remove weight and enter weight value
   if it is a known weight.

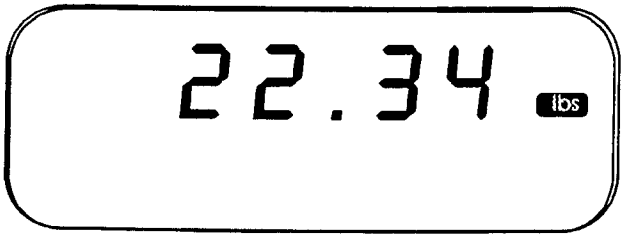
   Ex. 12.34 lb [1][2][.][3][4]



7. Depress [+] key for addition,

   then depress [*] key

   to call up total weight.



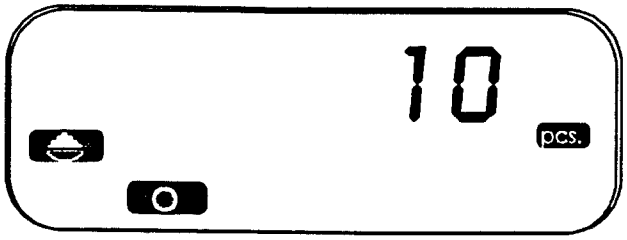
8. Depress [*] key again

   to print out total weight.

4.7. COUNTING

1. Place samples 10 pcs., then

   depress PCS key.



Ex. 10 pcs. sample = 0.10 lb

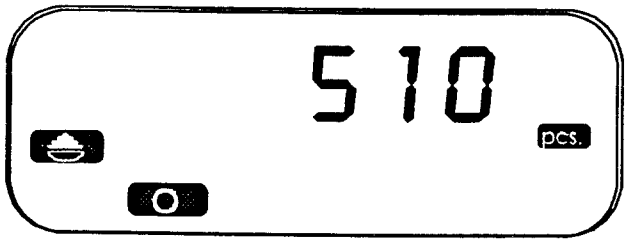
**If the sample weight is less than 0.1% of scale capacity, add XX will be displayed.*

Please place XX more samples, then depress PCS *key again.*

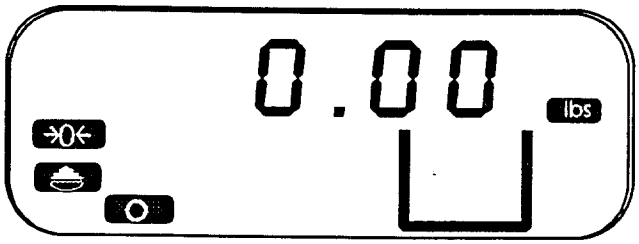
60.00 lb x 0.1% = 0.06 lb

2. Place items to be counted.

   Example: 500 pcs.



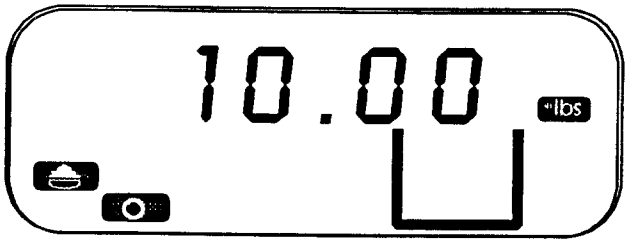
3. Remove items, depress CLEAR key to release counting mode.



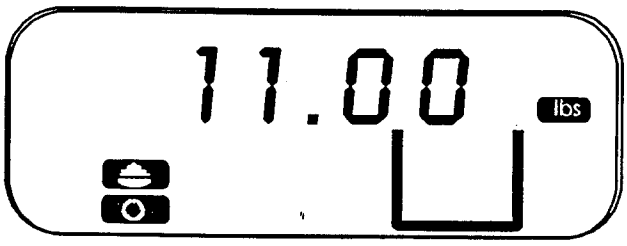
4.8. NET / GROSS DISPLAY

1. Subtract tare and place weight

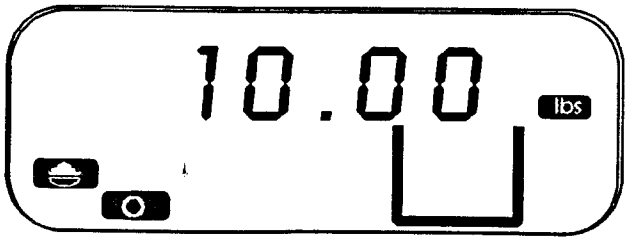
   Example: tare = 1.00 lb
   weight =10.00 lb



2. Depress NET/GROSS key to indicate GROSS weight.

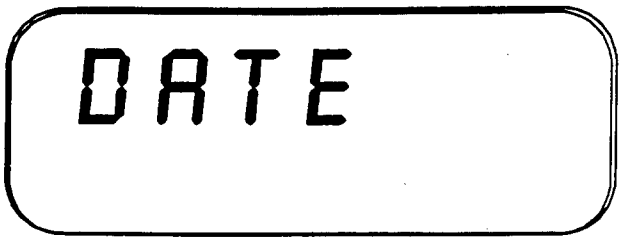


3. Depress NET/GROSS key to indicate NET weight.



4.9. DATE & TIME SETTING

1. Depress RE-ZERO and TARE keys at the same time.

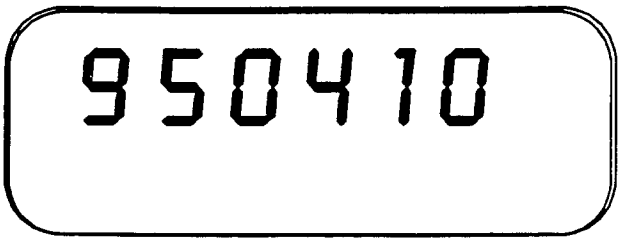


2. Enter date by numeric key

   Example: April 10, 1995

   9 5 0 4 1 0

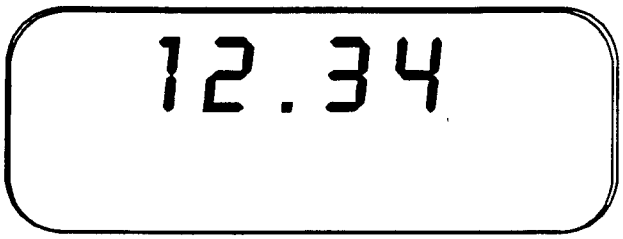
   * Enter date in order of YY.MM.DD.
   * Display flashes for confirmation.
   * From 3.00 version, date entry is required according to spec. setting of date order.



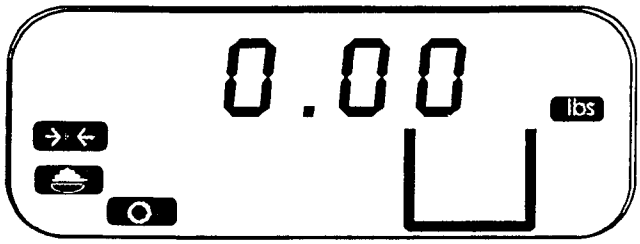
3. Depress * key then enter time by numeric key.

   Example: 12:34 1 2 3 4

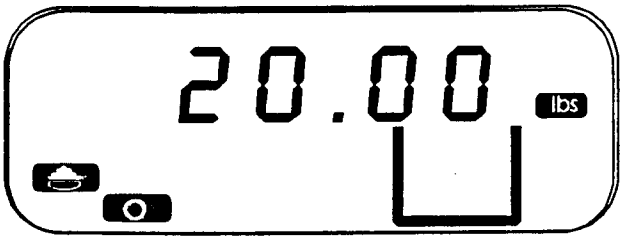
   * 24 hours.
   * Display flashes for confirmation.



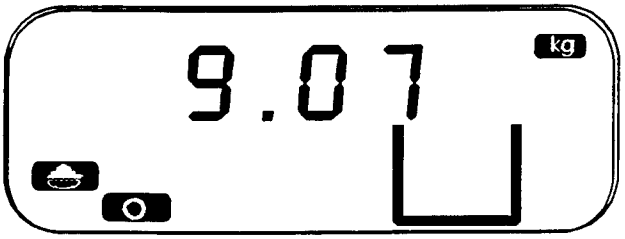
4. Depress # key.



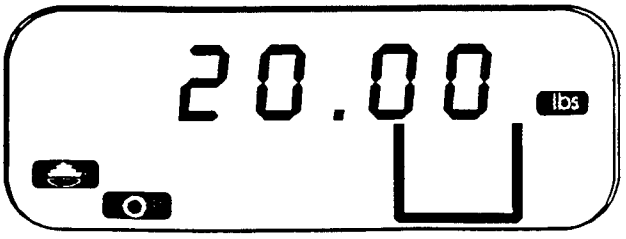
4.10. LB / KG CONVERSION



1. Place 20.00 lb weight.
2. Depress MODE key.



3. Depress MODE key.



NOTE: Weighing conversion "kg to "lb or vice versa available. Weighing conversion "g" to "oz","dwt" or vice versa are available.

5.0. OPTIONS

5.1. PRINTER SPEC. (Option)

* Printer	* Model 150 II 16 digits/line. 5 x 7 dots/chara.
* Print method	*Dot impact printer Ink ribbon cartridge
* Items to be print	* Date(MM.DD.YY.).... 2 digits each. * Time(HH.MM) ..... 2 digits each. * Code No. ..... 6 digits * Weight ..... 6 digits. * Total weight ..... 6 digits. * No. of transaction..4 digits. * Signs "+" .... Addition "-" .... Subtraction "*" .... Non addition "T" .... Total "kg" .... kg mode. "lb" .... lb mode. "g" .... g mode "oz" .... oz mode. "dwt" ....dwt mode.
* Paper	* Normal paper is used.
* Print color	* Black or purple. (depends on ink ribbon cartridge)

INTERFACE FOR EXTERNAL DEVICE (Option)

* RS-232C I/F
* SETPOINT OUTPUT

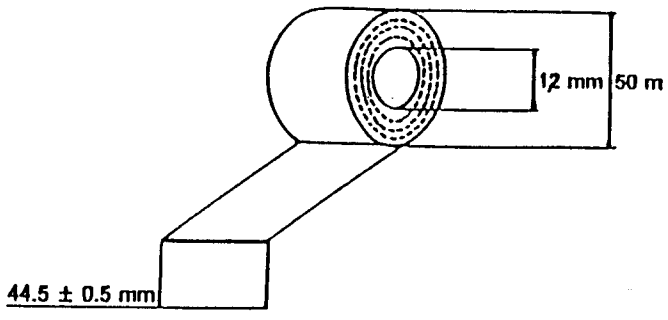
*NOTE : Only one option (printer, RS-232C or setpoint) is available due to limited space *

PRINT SAMPLEAND ROLL PAPER SPEC.

```
12.01'89  12:34

123456
   +  500.00 kg
123456
   +  500.00 kg
123456
   +  200.00 kg
123456
   -  100.00 kg

  2T 1100.00 kg
```



5.2. SETPOINT OUTPUT (Option)

When the displayed weight value is equal to (or over) the setpoint, the setpoint "ON" signal for each setpoint 1, 2 and 3 are output to drive external device through the SSR (Solid State Relay).

Setpoint signal with 5 v level is also output separately through RS-232C I/F

Buzzer has not been provided.

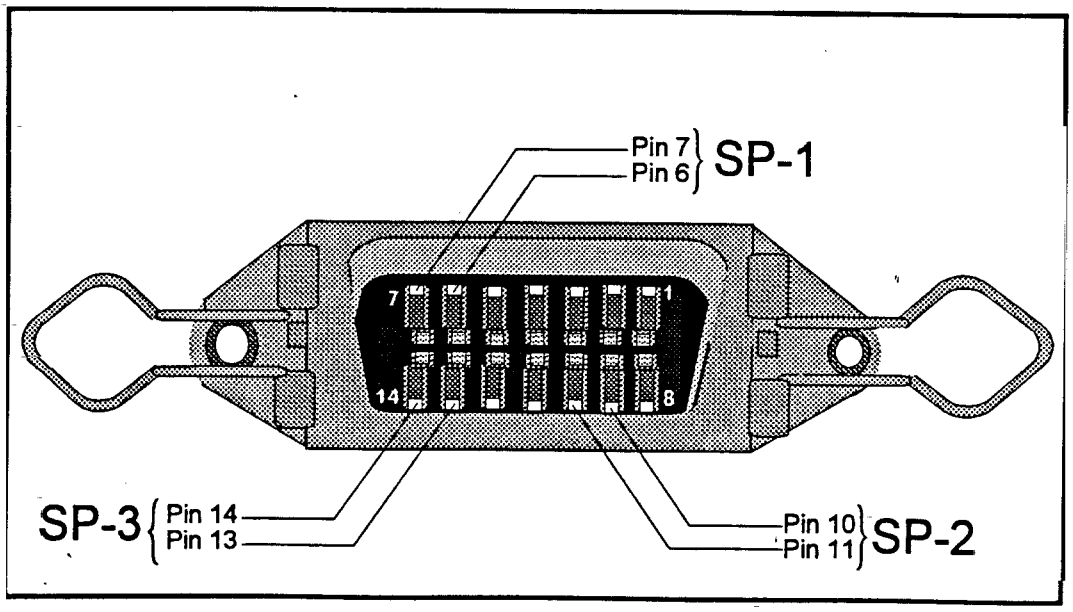
Specification of SSR

* Load voltage ..... 75 — 250V AC
* Operating voltage ..... 5V DC (4 —6V)
* Operating Frequency ..... 45 HZ — 60HZ
* Input impedance ..... approx. 0.18 kΩ
* Max. load current ..... 2 A
* Min. load current ..... 50 mA
* Surge on current ..... 30 A

Connector —— Amphenol 14 pin

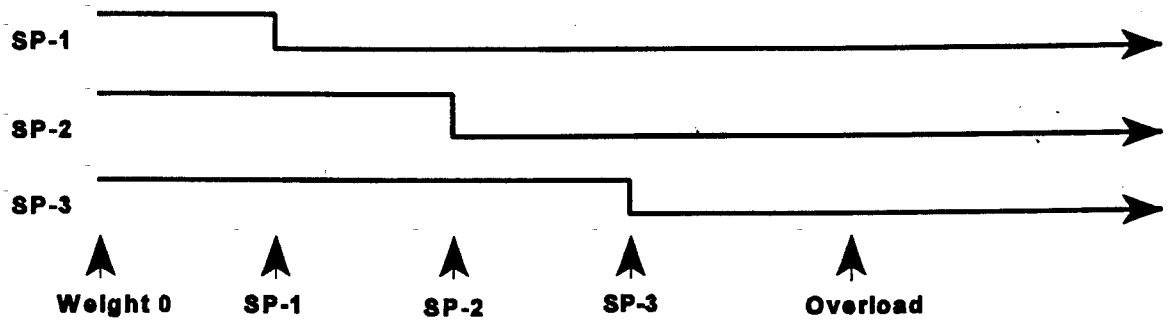
1,2 pin ..... SW (common)
6,7 pin SP-1
10,11 pin SP-2
13,14 pin SP-3
the other pins are all NC

* Connector is located in the compartment to the left of the display.

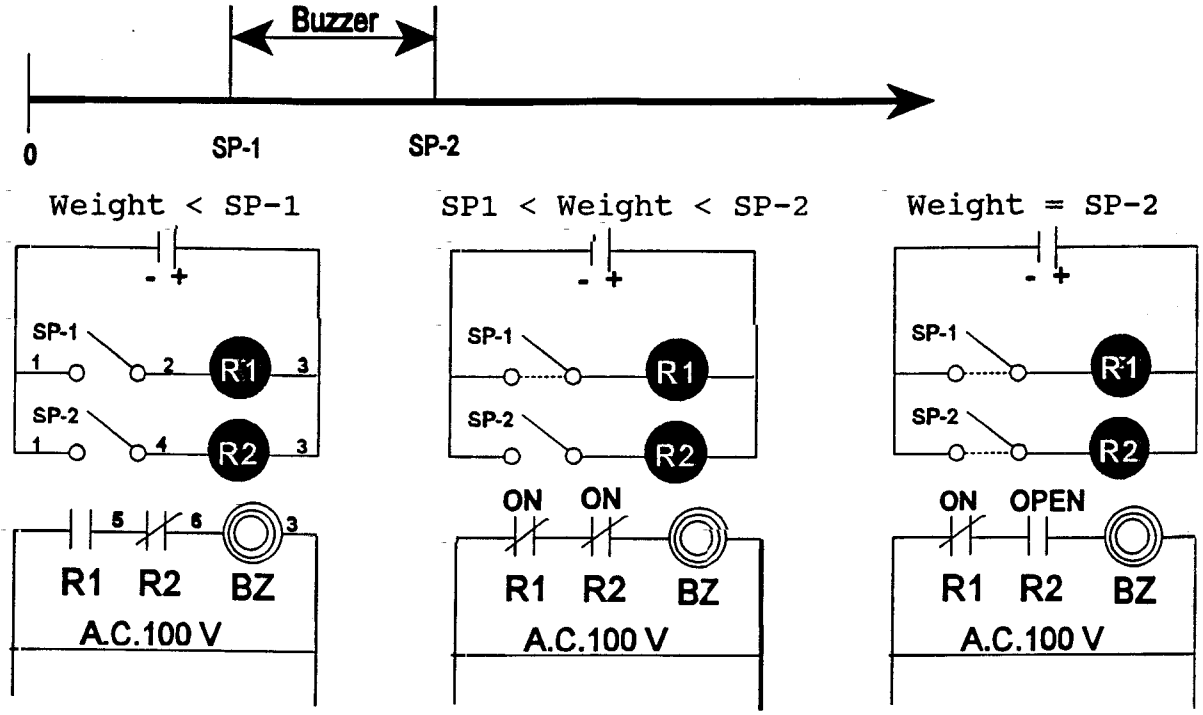


5.2. SETPOINT (continued)

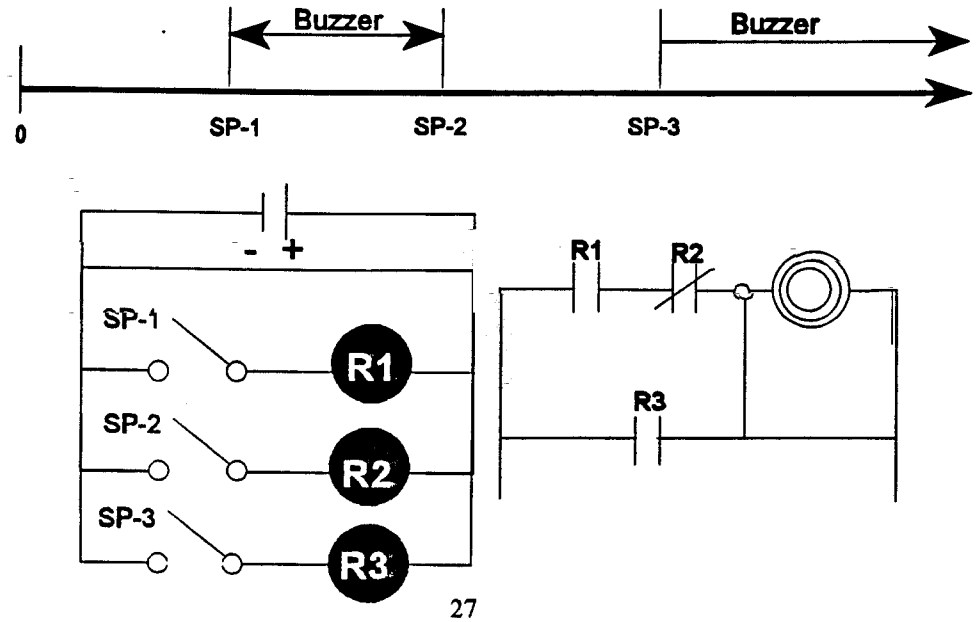
* Wave form (From ver. 3.00)



Connection example (1)



Connection example (2)



5.3. RS-232C DATA OUTPUT (Option)

* Method RS-232C
* Transmission ..... Start-Stop transmission.
* Baud rate ..... 2400 BPS.(Selectable from VER. 3.00)
* Start bit ..... 1 bit (Fixed)
* Stop bit ..... 1 bit (")
* Data ..... 8 bits (")
* Parity bit ..... Even (")
* Connector ..... DIN 8 pin (DIN45326)
* Code used ..... ASC II

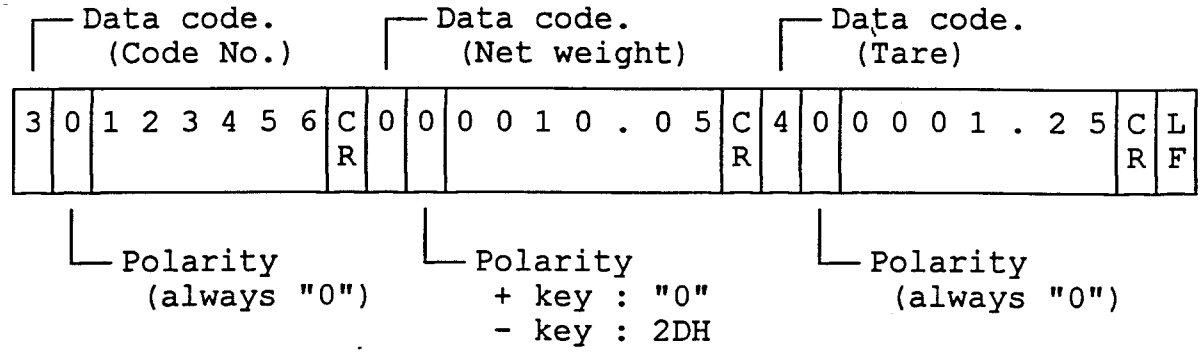
1. Communication timing

When * key (for non-accumulation printing) is depressed and weight is being printed while weight is stable, the following data are sent to the PC, except total data.

* Data format

Code No . . . 6 digits
Weight . . . . 6 digits
Tare . . . . . 6 digits

Example) Code No: 123456
Net weight . . . 10.05 lb
Tare: . . . . . 1.25 lb



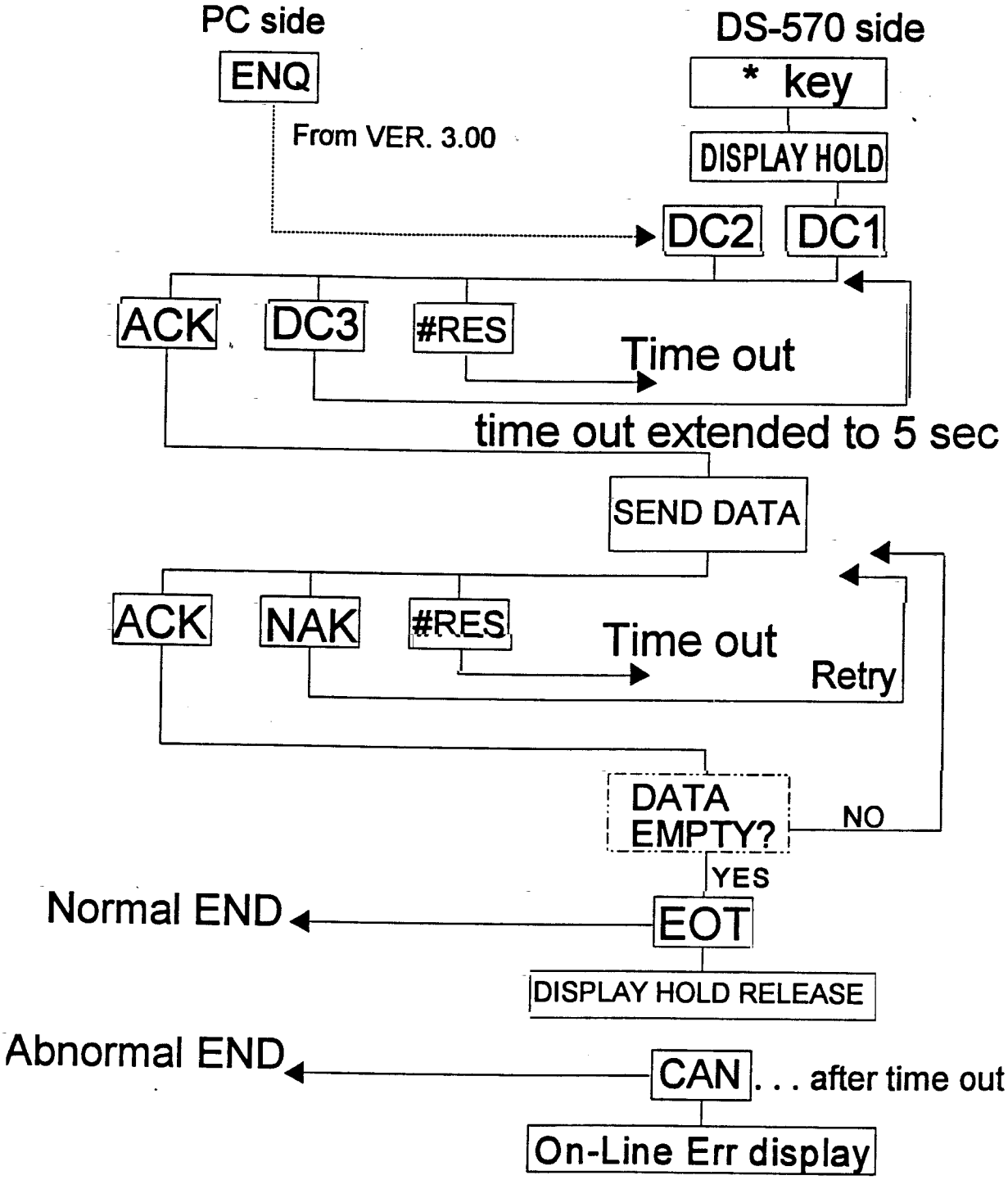
The polarity of the Code No. and Tare are always "0".

The data code of the weight becomes "A" if the displayed weight is gross weight.

In the case of manual weight entry, the manual entry data will be transferred instead of displayed weight.

5.3. RS-232 (continued)

Communication flow chart



* Time out: 3 sec.
* "CAN" is sent to PC when there is no response within 3 sec.
* "On-L Err" is displayed until clear key is depressed.
* When DS-570 received "DC3" during 3 sec., time out is extended to 5 sec
* Any other command except "ACK","NAK" and "DC3", is ignored by DS-570.
* Time out extend by "DC3" and retry by "NAK" will be done endlessly.

5.3. RS-232 (continued)

2. Communication Control Command.
   DC1 (11H) : Data request from DI-10.
   DC3 (13H) : Communication break request.
   (DI-10 receives "DC3", the time out will be extended to 5 sec.
   ACK (06H) : Positive response.
   NAK (15H) : Negative response.
   EOT (04H) : Communication end.

3. Text Code
   * Data Code
   0 (30H) Represents NET WEIGHT.
   3 (33H) Represents CODE NO.
   4 (34H) Represents TARE
   A (41H) Represents GROSS WEIGHT

   * Data
   – (2DH) : Represents minus. (plus=0)
   • (2EH) : Represents decimal point.

   * Terminal Code
   CR (0DH) : Represents data terminate code.
   LF (0AH) : Represents text end code.

4. Location Of Connector And Pin Assignment.

pin 1	SP-1 (LO)
pin 2	COM (GND)
pin 3	SP-2 (OK)
pin 4	RXD
pin 5	TXD
pin 6	CTS
pin 7	RTS
pin 8	SP-3 (HI)

***SP-1,SP-2 AND SP-3 ARE SETPOINT OUTPUT with 5V**

5.4. AC / DC ADAPTER

The specifications for the AC/DC adapter are as follows:

* Input voltage	to your needs
* Output volyage	12V
* Output current	1.0 A (minimun)
* Type of connector	see below

Center Electrode Is Negative (–)	D 1	D 2	L
Outer Electrode Is Positive (+)	5.5 mm	2.1 mm	9.5 mm

6.0. MAINTENANCE, CALIBRATION, TEST PROCEDURE & SERVICE

This section contains information and instructions concerning maintenance of the DI-10 weighing Scale.

Preventive maintenance consists of periodically cleaning the external surfaces of the instrument and should be performed as often as operating conditions warrant.

The calibration procedure is designed to be an aid in maintaining the scale accuracy within specifications. The calibration procedure may also serve as a performance test procedure.

CAUTION: **DO NOT ATTEMPT ANY SERVICE WHILE THE INSTRUMENT IS CONNECTED TO THE POWER LINES.**

6.1. MAINTENANCE PROCEDURES

6.1.1. EXTERIOR MAINTENANCE

The exterior surfaces of the counting scale can be easily cleaned using soap and water. However, extreme caution should be used so that there is no possibility of water penetration into the scale electrical or mechanical sections. A damp cloth or sponge is suggested. NEVER USE ACETONE, MEK, OR SIMILAR SOLVENTS ON THE PLASTIC HOUSING AS THEY WILL ETCH THESE SURFACES.

For grease or other difficult spots, a chlorothane or naptha based cleaner may be used. Never use any solvents on the front or rear panels.

Accumulations of dust or direct particles between the pins of the connectors may be removed by using dry forced air or a small dry brush.

6.1.2. INTERNAL MAINTENANCE

Internal maintenance is not normally required and if it is, should not be attempted except by a qualified, authorized service technician.

6.1.3. CALIBRATION

The following procedure should be followed periodically (every six to twelve months is suggested) to determine that the scale is functioning in all modes.

a. Electrical

Follow section 4.0 through all its steps

b. **ACCURACY**

Weighing: The scale weighing accuracy can be determined by applying various known weights to the platform. Because of the scale's very high accuracy, only weights that are certifiably more accurate than the scale's specifications should be used in testing for accuracy. (NBS class "F" or higher)

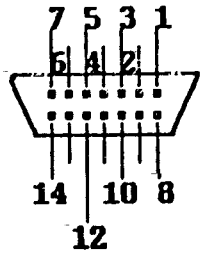
Since the scale owner does not normally have such certifiable weights available to him, it is suggested that the customer call their authorized DIGI dealer.

6.2. SERVICE & REPAIR

No service or repair should be attempted except by qualified personnel, and not until it has been positively determined that the counting scale requires such service. All service should be done in a clean, dry, dust-proof area.

6.3. PLATFORM WIRING DIAGRAM

FUNCTION	PIN
+ SENSE	1
- SENSE	2
+ EXCITATION	3
- EXCITATION	4
SHIELD	5
+ SIGNAL	6
- SIGNAL	7



CONNECTOR
(WIRING SIDE)

NOTE: IF THE SENSE LINES ARE NOT USED THEY MUST BE TIED TO THEIR RESPECTIVE EXCITATIONLINES. (EX.PIN 1 TIED TO PIN 3 AND PIN 2 TIED TO PIN 4.)

6.4. ERROR MESSAGE LIST

The following error messages will appear when an incorrect operation is taken :

Add OF	Whwn accumulated weight total exceeds 6 digits. When quantity displayed exceeds 6 digits.
OF	When displayed weight exceeds scale capacity.
Spn Er	When weight value entered during calibration procedure is not in proper range .
– – – – – –	When zero calibration is not correct during calibration procedure. Please try Zero and Span calibration.
8 8 8 8 8 8	When zero calibration is not correct when in weighing mode. Please try Zero and Span calibration
Add X X	When sample weight is an insufficient sample size. Please place X X more pcs on scale press [PCS] key
SP Err	When an incorrect setpoint value is entered ↓ (Err) (ex.SP1 = 2.00**[LO]** SP2 = 4.00**[OK]** SP3= *0.00***[HI]**)
Sub UF	When total weight is minus.
F F F F F F	When quantity result exceeds 6 digits.

6.5.1. SPEC. CHANGES

1. There are 2 ways to access the specification changeover mode:

   * Depress [1][4][1] while depressing [RE-ZERO] key.

   This is a specification changeover access code which is related with user's changeable functions. Specs 00 to 09 are available.

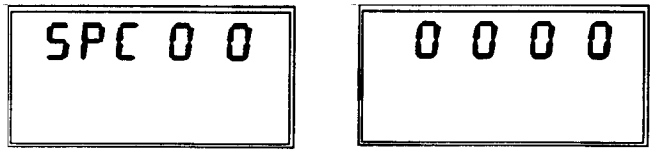
   * Depress [1][4][2] while depressing [RE-ZERO] key.

   This is a specification changeover access code related with the W & M regulations. Spec.10 to 19 are available.

   From 3.00 version up, this operation will be inoperative when a "CAL ENABLE" switch keyboard TPB-1672-3, is closed.

2. All the specification data consists of 4 digits binary code and some of them are available in combination with other spec. data.

3. When above codes are accessed, the display shows the factory set spec # (2 digits) and its data (4 digits) as shown below.

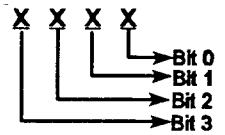


Spec. No Data of Spec. 00

4. Data construction.

5. Useable keys.

SPEC 00



[0] & [1] — Data entry (only 0 & 1 are available.)

[*] — Skip Spec. No. & data set.

[-] — Skip back Spec. No. & data set.

[#] — Program end.

6. The spec. data marked below Spec. No. are standard spec. data when shipped.

"Not used" should always be set to "0".

6.5.2 SPEC. LIST
Function Table Of 141

SPEC # & standard setting	Bit 3	Bit 2	Bit 1	Bit 0
Spec 00 0 0 0 0	not used	Setpoint Function 0 = yes 1 = no	Negative Wt. Acc. 0 = yes 1 = no	Printer Connection 0 = no 1 = yes
Spec 01 0 0 0 0	Key-In Wt. Print 0 = yes 1 = no	Date & Time Print 0 = no 1 = yes	Data Output	Serial I / F 0 = no 1 = yes
Spec 02 0 0 0 0	**Print out by ∗ key when "0" weight** **0 = no** **1 = yes**	**Net/Gross Display Change** **0 = yes** **1 = no**	Weighing Unit Change 0 = yes 1 = no	Automatic Print 0 = no 1 = yes
Spec 03 -Spec 06	not used			
Spec 07 0 0 1 0	**Setpoint Out & Display** **0 = only + weight** **1 = only – weight**	**Setpoint Out & Display** **0 = absolute value** **1 = sign selectable**	Date Order 00 = yy.mm.dd 01 = dd.mm.yy 10 = mm.dd.yy	 yy = year mm = month dd = day
Spec 08 1 1 0 0	Print Code # 0 = no 1 = yes	Filling Display 0 = no 1 = yes	Insufficient Sample Range 00 = 0.1 % of scale capacity 01 = 0.2 % of scale capacity 10 = 0.3 % of scale capacity 11 = 0.4 % of scale capacity	
Spec09 1 0 1 0	Automatic Power OFF Timer 0 0 0 0 = none 0 0 0 1 = 1 min. 0 0 1 0 = 2 min 0 0 1 1 = 3 min	0 1 0 0 = 4 min 0 1 0 1 = 5 min 0 1 1 0 = 6 min 0 1 1 1 = 7 min	1 0 0 0 = 8 min 1 0 0 1 = 9 min 1 0 1 0 = 10 min 1 0 1 1 = 11 min	1 1 0 0 = 12 min 1 1 0 1 = 13 min 1 1 1 0 = 14 min 1 1 1 1 = 15 min

Note : Wt = Weight
∗ key = Print key

Specifications **in bold print** were newly added from Ver 3.00
Specifications from Spec.03 to 06 are deleted from Ver. 3.00

6.5.3 SPEC.LIST (continued)
Function Table Of 142

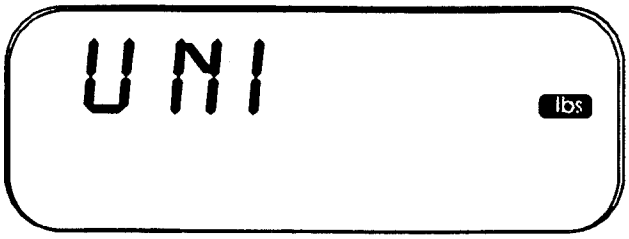
SPEC # & standard setting	Bit 3	Bit 2	Bit 1	Bit 0
Spec 13 0 0 0 0	Zero Tracking During Tare Reduction 0 = yes 1 = no	Re-Zero Key During Tare Reduction 0 = yes 1 = no	Scale Start Range 0 = 10 % of cap 1 = 5 % of cap	Weighing Unit (Display/Print) 0 = yes 1 = no
Spec 14 0 0 0 0	Manual Tare Clear 0 = yes 1 = no	Tare Decrease 0 = yes 1 = no	Tare Increase 0 = yes 1 = no	Tare Limit 0 = 100 % of FS. 1 = 5 % of FS.
Spec 15 0 0 0 0	**NTEP** **0 = no** **1 = yes**	When Net Weight is Below "0" 0 = minus 1 = blank	When Gross Weight Is Below "0" 0 = minus 1 = blank	Zero Lamp Range 0 = gross 0 ±1/4d 1 = net 0 ±1/4d
Spec 16 0 0 0 0	Auto Tare Clear 0 = no 1 = yes	A.T.C. condition 0 = net 21d 1 = net 1d	Digital Tare 0 = yes 1 = no	Print Limit 0 = below 0 d 1 = below 20 d
Spec 17 0 0 0 0	Decimal Point 0 = period 1 = comma	Non-Stable Output 0 = no 1 = yes	Negative Total 0 = yes 1 = no	Double Print 0 = yes 1 = no
Spec 18 0 0 0 0	**Zero Suppress Code # Print** **0 = no** **1 = yes**	**Add Function When Auto Print** **0 = no** **1 = yes**	Scale Start 0 = auto 1 = by RE-ZERO	Tare Exchange 0 = yes 1 = no
Spec 19	Senseitivity Of Load Cell To Be Used			
1 0 0 1	0 0 0 0 = 3.46 – 4.00mV/V 0 0 0 1 = 3.00 – 3.46mV/V 0 0 1 0 = 2.59 – 3.00mV/V 0 0 1 1 = 2.55 – 2.59mV/V 0 1 0 0 = 1.95 – 2.55mV/V 0 1 0 1 = 1.69 – 1.95mV/V 0 1 1 0 = 1.46 – 1.69mV/V 0 1 1 1 = 1.27 – 1.46mV/V		1 0 0 0 = 1.09 – 1.27mV/V 1 0 0 1 = 0.95 – 1.09mV/V 1 0 1 0 = 0.82 – 0.95mV/V 1 0 1 1 = 0.71 – 0.82mV/V 1 1 0 0 = 0.61 – 0.71mV/V 1 1 0 1 = 0.53 – 0.61mV/V 1 1 1 0 = 0.46 – 0.53mV/V 1 1 1 1 = 0.40 – 0.46mV/V	

NOTE: IR. = Internal Count.
FS. = Full Scale.
Cap. = Scale Capacity.

Specifications **in bold print** were newly added from Ver. 3.00
Specifications from spec. 10 to 12 were deleted from Ver. 3.00

6.6. CALIBRATION

When "CAL ENABLE/DISABLE" switch is closed, this operation will be made inoperative.



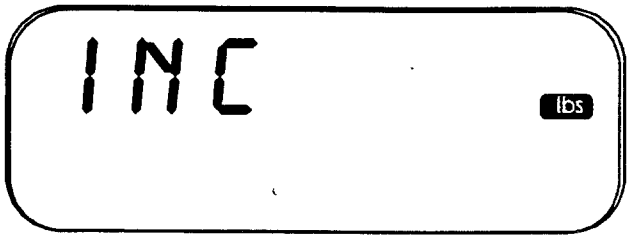
1. Depress 8 7 1 5 while depressing RE-ZERO key.

   * Select appropriate weighing unit "kg","g","lbs","oz" or "dwt" with * key.

   Example: lb

   * Display flashes for confirmation.

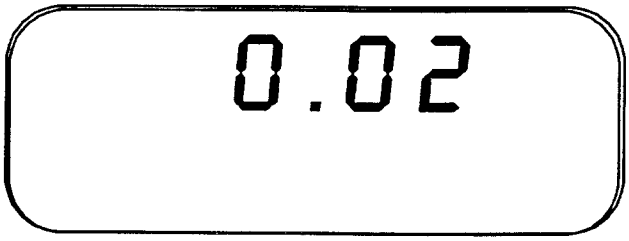
2. Depress # key.



3. Enter scale increment (minimum graduation) by numeric key.

   Example: 0.02 lb

   0 . 0 2

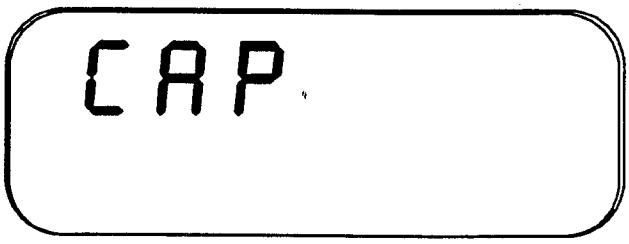


4. Depress # key.

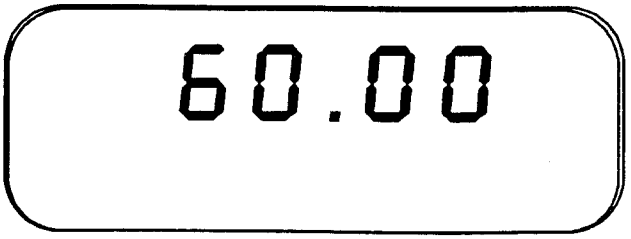
5. Enter scale capacity by numeric key.

   Example: 60.00 lb

   6 0 . 0 0 *



   * Decimal point is not required.

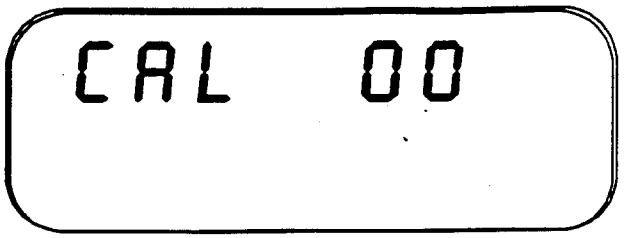


6.6. CALIBRATION(continued)

6. Depress # key.

   CAL is displayed, depress # key.

   * Please make sure that nothing has been placed on the scale.

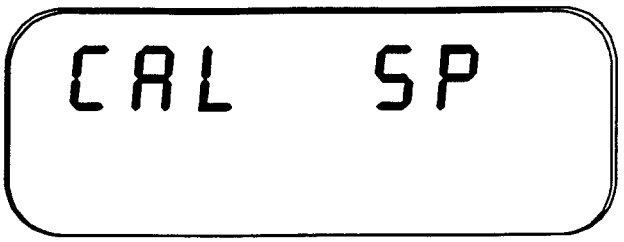


7. CAL SP is displayed.

   Place the capacity weight or enter the value of the weight used.

   If it is capacity weight,

   simply depress # key.



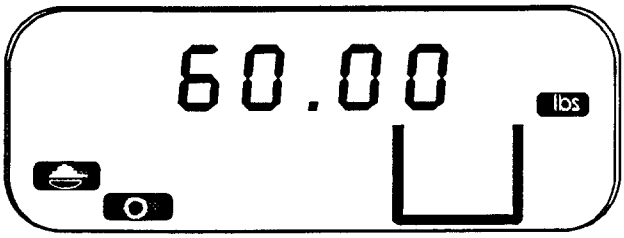
** We recommend using capacity weight for the calibration to have best scale accuracy.*

8. Completed.

   * To check internal SPAN count,

     enter 0 0 9

     while depressing RE-ZERO key.



$$\frac{\text{Internal Count} * \text{Minimum Graduation}}{10} = \text{Capacity}$$

- The scale capacity must be set within the following range.

$$\frac{\text{Scale capacity}}{\text{Min. graduation (scale interval)}} = 3000 \text{ or less}$$

- For example, if the min. graduation is "2", you can set the scale capacity up to the "6000".
- If you don't have the capacity weight for calibration, you can use any known weight instead of capacity weight. (See calibration step 7)
- The minimum graduation must be one of the following values: 1 ,2 , 5 , 10 ,20 , or 50.

NOTES:

DI-10 Limited Warranty

Rice Lake Weighing Systems (RLWS) warrants that all RLWS equipment and systems properly installed by a Distributor or Original Equipment Manufacturer (OEM) will operate per written specifications as confirmed by the Distributor/OEM and accepted by RLWS. All systems and components are warranted against defects in materials and workmanship for one (1) year.

RLWS warrants that the equipment sold hereunder will conform to the current written specifications authorized by RLWS. RLWS warrants the equipment against faulty workmanship and defective materials. If any equipment fails to conform to these warranties, RLWS will, at its option, repair or replace such goods returned within the warranty period subject to the following conditions:

- Upon discovery by Buyer of such nonconformity, RLWS will be given prompt written notice with a detailed explanation of the alleged deficiencies.
- Individual electronic components returned to RLWS for warranty purposes must be packaged to prevent electrostatic discharge (ESD) damage in shipment. Packaging requirements are listed in a publication, "Protecting Your Components From Static Damage in Shipment," available from RLWS Equipment Return Department.
- Examination of such equipment by RLWS confirms that the nonconformity actually exists, and was not caused by accident, misuse, neglect, alteration, improper installation, improper repair or improper testing; RLWS shall be the sole judge of all alleged non-conformities.
- Such equipment has not been modified, altered, or changed by any person other than RLWS or its duly authorized repair agents.
- RLWS will have a reasonable time to repair or replace the defective equipment. Buyer is responsible for shipping charges both ways.
- In no event will RLWS be responsible for travel time or on-location repairs, including assembly or disassembly of equipment, nor will RLWS be liable for the cost of any repairs made by others.

THESE WARRANTIES EXCLUDE ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING WITHOUT LIMITATION WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. NEITHER RLWS NOR DISTRIBUTOR WILL, IN ANY EVENT, BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES.

RLWS AND BUYER AGREE THAT RLWS'S SOLE AND EXCLUSIVE LIABILITY HEREUNDER IS LIMITED TO REPAIR OR REPLACEMENT OF SUCH GOODS. IN ACCEPTING THIS WARRANTY, THE BUYER WAIVES ANY AND ALL OTHER CLAIMS TO WARRANTY.

SHOULD THE SELLER BE OTHER THAN RLWS, THE BUYER AGREES TO LOOK ONLY TO THE SELLER FOR WARRANTY CLAIMS.

No terms, conditions, understanding, or agreements purporting to modify the terms of this warranty shall have any legal effect unless made in writing and signed by a corporate officer of RLWS and the Buyer.

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