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Legal Metrology

Métrologie Légale

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Approval No. d'approbation

Ottawa, February 6, 1981

NOTICE OF APPROVAL – AVIS D'APPROBATION

HOWE-RICHARDSON - SSD 500 WEIGHT INDICATOR

Company Requesting Approval: Howe Richardson Scale Co. of Canada Ltd.
217 Brunswick Blvd.,
Pointe Claire, Québec

Manufacturer: Howe Richardson Scale Co. Consolidated Controls Corp
680 Van Houten Avenue AND 15 Durant Avenue
Clifton, N.J. U.S.A. Bethel, Conn. U.S.A.

Type of Device: A fully electronic digital weight indicator, that when interfaced to an approved weight platform, becomes a weighing system.

MODEL NUMBER

CAPACITY

LOAD CELL

SSD-500

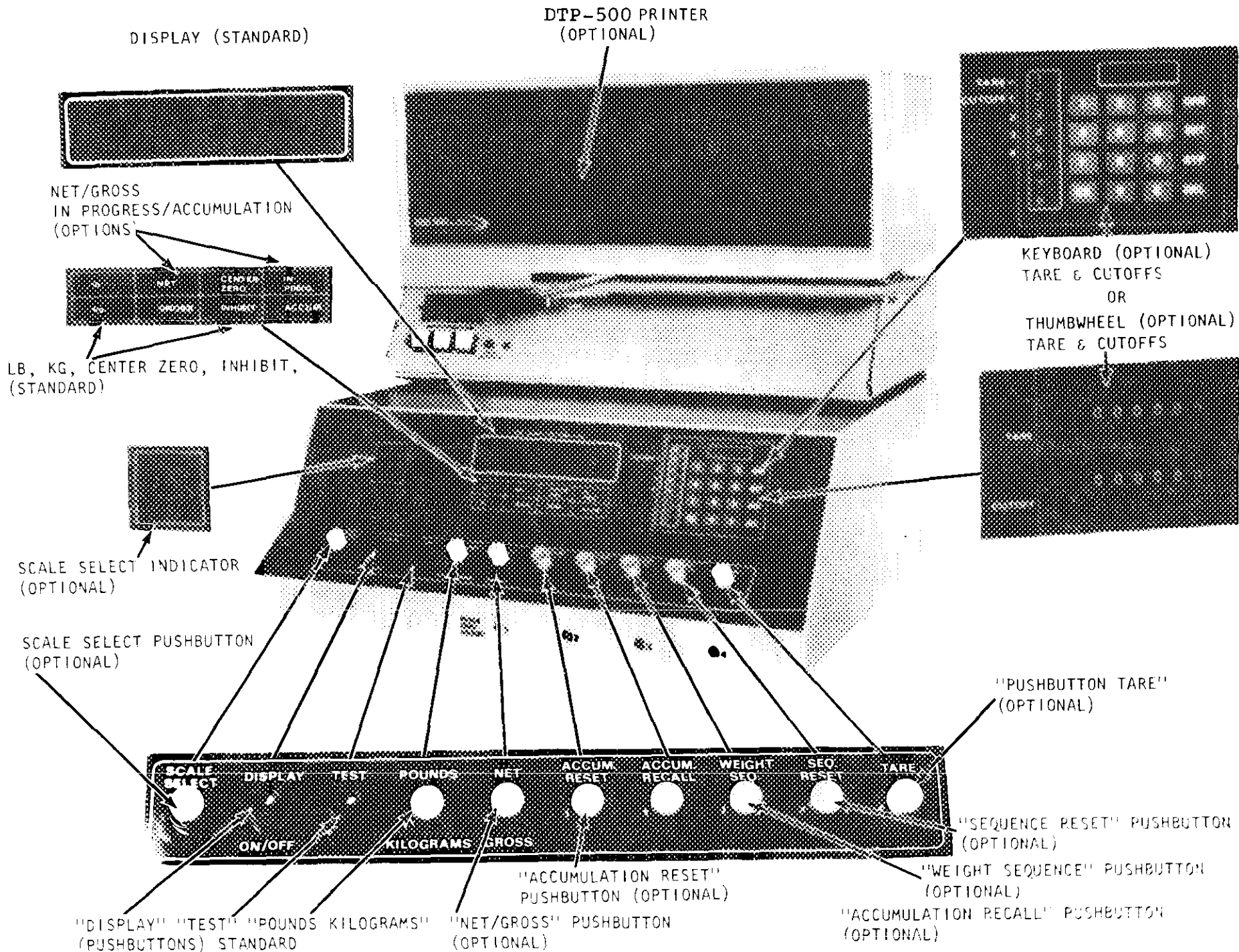
7½ active display digits with internal program to display x1, x2 and x5 with programmable decimal points.

On single scale application - up to 6-350 ohm load cells. On multiple scale operation up to 16-350 ohm load cells with additional power supply components.

Approved Accessories and Options:

- (1) DTP-500 Printer
- (2) Net Weight Computation
- (3) Net Weight Computation and Accumulation
- (4) Keyboard Tare with Set Points
- (5) Pushbutton Tare
- (6) Thumbwheel Tare
- (7) Thumbwheel Set Points
- (8) ECD/TTL Outputs
- (9) Multi-Scale-Operation-a maximum of 4
- (10) Zero Tracking

Application: Industrial



SSD-500 CONFIGURATIONS

FIGURE 1

Device Description:

1. This is a computer controlled digital weight indicator. It consists of a basic instrument to which a number of options can be added. This approval lists the controls for a basic instrument first and then goes on to list those that are used with the available options and combination of options.

(A) The basic SSD-500 instrument is fitted with the following controls and features:

- (i) DISPLAY OFF/ON - pushbutton switch
- (ii) DISPLAY - consists of $7\frac{1}{2}$ digits .43 inch high that are made up from seven red LED segments
- (iii) TEST - a pushbutton switch that when activated will cause all segments of the display and all annunciators to light, it will also display a diagnostic number that is related to internal switch settings.
- (iv) POUNDS/KILOGRAMS - pushbutton selector switch
- (v) LB and KG ANNUNCIATOR - indicates units of measurement
- (vi) CENTER ZERO ANNUNCIATOR - indicates display within $\frac{1}{2}$ grad. of zero
- (vii) INHIBIT ANNUNCIATOR - indicates motion, Negative Weight or an overload condition
- (viii) SCALE ZERO ADJUST - a tool operated adjustment to set display to zero

NOTE: When units of measurement are changed i.e., LB/KG, all display and memories are converted automatically.

(B) The following is a list of options available for the SSD-500 with a short description of their function and operation:

- (1) ZERO TRACK - This option can be selected IN or OUT by a toggle switch located on the rear of the instrument. This switch shall be wire locked and sealed IN to prevent operator control or wire locked and sealed OUT to disable it.
- (2) PRINTER MODEL DTP-500 - This printer will print displayed scale weights in LB or KG, it has a number of options available such as; time & date stamp; consecutive numbering; identification numbers; Print scale No. for multi scale operation. It is also used with some of the SSD-500 options and its operation will be explained there.

Device Description:

(B) Continued

- (3) PUSHBUTTON TARE - This option provides a means of manually acquiring tare.
- (4) THUMBWHEEL TARE and/or THUMBWHEEL SET POINTS - Either a single or dual thumbwheel can be installed on the upper RH side of the instrument. The first thumbwheel can be fixed tare or a set point depending on internal switch settings. The second thumbwheel is used as a set point cut-off. LED annunciators are located to the left of the thumbwheels.
- (5) KEYBOARD - This option provides a means of entering, modifying and verifying tare values and up to 4 set point values. The keyboard consists of:
 - (a) a 6 digit red LED display .3inch high to display tare and set point values;
 - (b) a numeric keyboard (0 to 9) for input of tare and set points;
 - (c) an OPR key that is used to set the option in the operate mode.

Note: If the option is not put back to the operate mode from setting modes, it will automatically return at any time there is a lapse of 30 seconds from the last key pressed;

- (d) SET key - operation of this key will blank the main display to indicate keyboard mode and the numeric keys are used to set values;
- (e) STP key - used to step the keyboard through tare and set points to verify or change the values that will be displayed;
- (f) DEL key - used to delete a tare or set point value and return the display to zero;
- (g) E key - used to enter values to memory when the correct numeric values are displayed;
- (h) CE key - used to erase incorrect entries when using the numeric keys;
- (i) LED annunciators - located adjacent to tare and set point identifiers. Tare will be lit when tare is in use. The set points LEDs will be lit when the set point values have been reached or exceeded.

Device Description:

(B) Continued

(6) NET WEIGHT COMPUTATION and ACCUMULATION - 2 options!

Note: Weight accumulation without Net Weight Computation is not approved for use in trade (see special conditions).

These options provide the instrument with the capability of computing a net weight and accumulating and totalizing net weights.

This option is activated by an "OPTION IN/OUT" switch located on the rear of the instrument. Once activated a fixed 3 step weighing sequence is set up, the first gross weight is compared to a second gross weight, the indicator changes to a net mode and displays a Net weight i.e.; the difference between the first and second weighings, the NET weight display is now locked in and the third step is to commit it to memory and the scale returns to normal.

To carry out this sequential operation the following controls are provided:

- (a) WEIGHT SEQ. pushbutton - used to step through the weighing sequence;
- (b) SEQ. RESET pushbutton - used to abort a weighing sequence in progress;
- (c) ACCUM. RECALL pushbutton - when activated will blank weight display, light ACCUM annunciator and will display total of accumulated NET weights;
- (d) ACCUM. RESET pushbutton - when pushed with accum recall button will reset accumulated weight totals to zero;

The following annunciators will be lit at various times when this option is in use, they are:

- (e) IN PROGRESS - indicates a weighing sequence in progress;
- (f) INHIBIT - indicates valid conditions for printing are not satisfied;
- (g) NET or GROSS - indicates what displayed value is;
- (h) ACCUM - indicates that displayed weight is an accumulated weight.

Device Description:

(B) (6) CONTINUED:

The above sequential weighing operation can be carried out by a model DTP-500 printer when interfaced with a SSD-500 instrument. The printer controls are:

- (i) PRINT key on printer can be substituted for the WEIGHT SEQ. button on the indicator. When pressed it will cause the displayed weight to be printed for each sequence;
- (j) SUBTOTAL key when activated will display accumulated total on indicator and print it;
- (k) TOTAL key - when activated will cause indicator to display accumulated weight; printer to print it and re-set accumulated totals to zero.

NOTE: Once the weighing sequence is entered the LB/KG selector is disabled. The totals accumulated will be the sum of both LB and KG. (When switching from one unit of measure to the other all values displayed or in memory are automatically converted).

- (7) MULTI-SCALE OPERATION - This indicator can provide weight display for, from 1 to 4 scales.

The SCALE SELECT pushbutton provides a means of selecting scale in use and will indicate its number on the scale select indicator. When more than 1 scale is connected to the indicator, separate external zero controls are provided and separate internal controls for span, excitation voltage and zero offsetting controls for each scale.

On multiple scale operations, cut-offs and net weight accumulations are common to all scales. For 2 scale operation separate pushbutton tare is provided for 3 and 4 scale operation, thumbwheel and keyboard tare are common to all scales.

- (8) BCD/TTL outputs - These are connectors on the rear of the instrument.

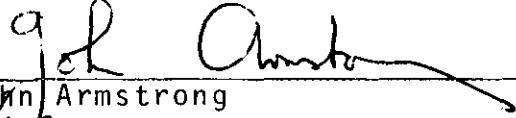
Special Conditions:

- (1) The Weight Accumulation option may only be used in conjunction with the NET Weight Computation option.
- (2) With the Net Weight Computation option or the Net Weight Computation and Accumulation option on the instrument, the IN/OUT option selector switch on the rear of the instrument is to be sealed as follows:
 - (a) Either of the above options in use; switch sealed IN.
 - (b) If options present and not being used; switch sealed OUT.

The sealing means is exempt from providing ready access to other components or adjustments as per SGM3/10.

CONDITION OF APPROVAL: 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.

Reference No.: ¹⁰⁰⁴ G6922-H186-33



John Armstrong
Chief
Weights and Measures Division
Legal Metrology Branch