



DS-671

Bench Scale

Operation Manual

DS-671 SERIES OPERATING MANUAL

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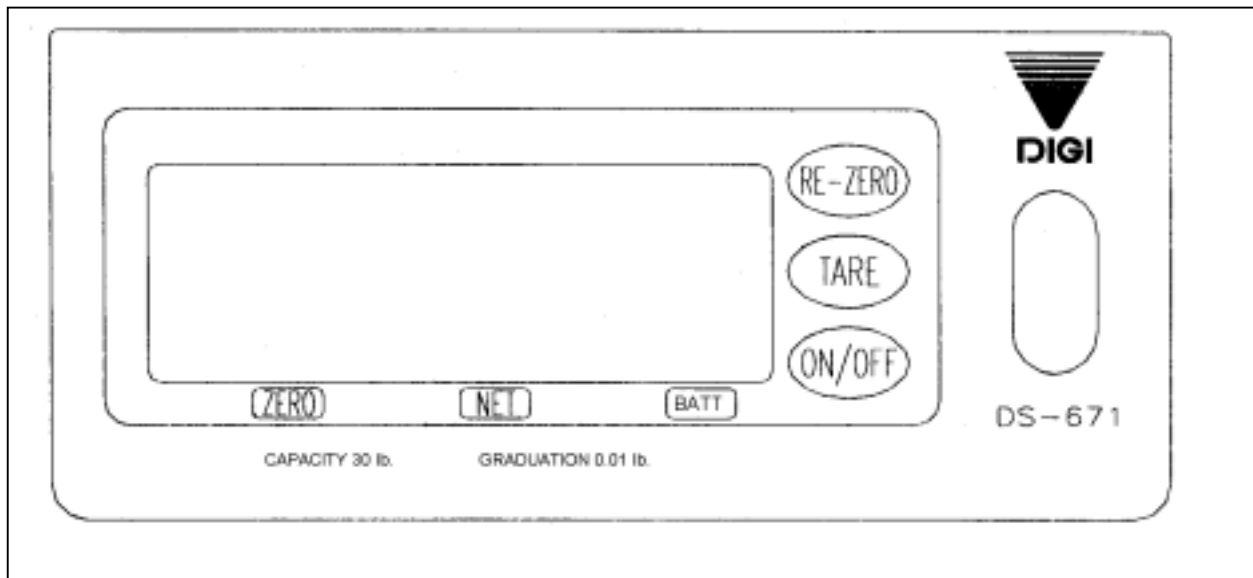
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1.0. GENERAL

1.1. Features

- Wipe down digital weighing scale
- Quick response to weight changes
- Capacity: 100 oz, 200 oz, 600 oz., 1.5 lb, 3 lb, 6 lb, 15 lb, 30 lb, 60 lb
- Resolution:
 - A. Display resolution 1/1000 (multi range) internal res. 1/6000
 - B. Display resolution 1/3000 (single range) internal res. 1/24000
- Low power consumption: 6 x C cell batteries for more than 200 hours of continuous use
- Fast self test procedure when power on
- Selectable automatic shut off time that prolongs battery life
- Two point low battery detect:
 - A. When battery is weak, the battery indicator will light
 - B. When the power from the battery becomes too low to weigh accurately, all displays will shut off except the battery indicator. The power is shut off after 1 minute.
- Calibration by software
- High contrast LCD display
- 3 keys **REZERO** key, **TARE** key, **ON/OFF** key
- Stainless steel platform and indicator housing

1.3. Keyboard & Display Panel Layout



1.4. Key Functions

- **REZERO Key** Reset weight display to zero
- **TARE Key** Set or clear a tare
- **ON/OFF Key** Turn the power ON or OFF

1.5. Indicators Lamps

- **Zero** On when zero point is adjusted and when weight is stable
- **Net** On when tare reduction is performed
- **Battery** On when battery is weak

2.0. SPECIFICATIONS

2.1.1. Technical Specifications

This section includes a detailed listing of all pertinent specifications and parameters for the DS-671 weighing scales. The system weighing accuracy is 0.03 %. All models meet or exceed the requirements of OIML, Class III, and NIST Handbook, Number 44.

2.1.2. Operating conditions

- Power source 12VDC w/DC adapter or 9VDC w/6 “C” cell battery
- Operating temperature $-10^{\circ}\text{C} \approx +40^{\circ}\text{C}$ (OIML)
- Operating humidity 15 – 85% RH
- Power consumption 0.07w when 6V, 0.1w when 9V

2.1.3. Analog specification

- Input sensitivity 0.67mV/V- 10kg & 20kg, all other capacities 1mV/V
- Zero adjust range 40% Full Scale
- Zero balance range 10% Full Scale
- L/C applied voltage DC 5V
- Speed of A/D conversion 4 times /sec.
- Internal resolution 16000 or 24000

2.1.4. Display Specification

- Weight display 6 digits with ZERO, TARE, LOW BATTERY indication
- Spec Display 6 digits
- Decimal Point Spec Selectable

2.1.5. Dimensions

- Platter size 8 _ "L x 8 _ "W
- Overall size 11"L x 9 _ "W x 6 _ "H

2.1.6. External connectors

- DC receptacle

2.2. Appearance

Bench model



Hanging scale with hook



Hanging scale with pan



3.0. INSTALLATION

This section provides the information required for installing this weighing system for operation. The following steps accomplish installation.

1. Unpacking
2. Set-up Procedure

3.1. Unpacking

Each component of the DS-671 system 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 future shipment of the scale is required.

3.2. Inspection

Immediately after unpacking, a visual inspection of the scale should be performed. If any damage has been incurred during transportation notify the shipper and Rice Lake Weighing Systems immediately. Instructions for assessment of damage and further procedures will then be determined.

3.3. Repackaging

If, at anytime, the DS-671 weighing scale 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.

3.4. Unlocking Procedure

The unlocking procedure is included on the next page. The DS-671 should be properly locked whenever it is being transported. See next page for un-locking procedure.

4.0. DS-671 OPERATIONAL PROCEDURES

4.1. Power On/Off

1. Press **[ON/OFF]** key to turn on the scale.

The display will briefly show all segments, then blank for a second, then goes into weighing mode.

2. Press **[ON/OFF]** key to turn off the scale.

4.2. Automatic Shut Off Timer Setting

1. Begin with the scale turned off.

2. Press and hold the **[ON/OFF]** key for 3 seconds. This sets the Timer for **3 minutes**.

3. Release the **[ON/OFF]** key when the display shows the number 3. *The display will then briefly show all segments, then blank for a second, then go into weighing mode.*

1. Begin with the scale turned off.

2. Press and hold the **[ON/OFF]** key for 6 seconds. This sets the Timer for **10 minutes**.

3. Release the **[ON/OFF]** key when the display shows the number 6. *The display will then briefly show all segments, then blank for a second, then go into weighing mode.*

1. Begin with the scale turned off.

2. Press and hold the **[ON/OFF]** key for 9 seconds. This sets the Timer for **no auto shut off**.

3. Release the **[ON/OFF]** key when the display shows the number 999. *The display will then briefly show all segments, then blank for a second, then go into weighing mode.*

4.3. Re-zero

Example 1: Begin in the weighing mode with the scale showing 0.00 *Example based on 60 lb. scale.*

1. Place 20 lb. on the scale.
2. Press the **[REZERO]** key. *The display will show all segments briefly, then go to 0.00*

Example 2: Begin in the weighing mode with the scale showing 0.00 *Example based on 60 lb. scale.*

1. Place 25 lb. on the scale.
2. Press the **[REZERO]** key. *The display will show all segments briefly, then go to 25.00. 25lb. exceeds the 40% limit of the re-zero range.*

4.4. Tare

Example: Begin in the weighing mode with the scale showing 0.00 *Example based on 60 lb. scale.*

1. Place 20 lb. on the scale.
2. Press the **[TARE]** key. *The display will go to 0.00*
3. Remove weight from scale. *The display will go to -20.00*
4. Press the **[TARE]** key. *To clear the tare.*

5.0. MAINTENANCE MODE

5.1. Specification Entry

Example: Begin in the weighing mode with the scale showing 0.00.

1. Press and hold [REZERO] key, while holding the [REZERO] key, press [TARE] [TARE] [ON/OFF] then release the [REZERO] key. *The display will show all 8's while holding the [REZERO] key, when the [REZERO] key is released the scale will be in the **Maintenance Mode**.*

2. Press the [TARE] key. *The display will show the software version.*

3. Press the [TARE] key. *The display will show S0 0 0 0 (spec 0 = 0 0 0.)*

4. Press the [ON/OFF] key. *To change spec data (0 0 0 – 1 11.)*

Ex: Press [ON/OFF] S0 0 0 1, Press [ON/OFF] S0 0 1 0, Press [ON/OFF] S0 0 1 1.

5. Press the [TARE] key. *To store spec data and advance to the next spec. S1 0 0 0.*

6. Press the [REZERO] key. *To save specs to memory and return to the weighing mode.*

5.2. Specification Entry and Span Adjustment

Example: Begin in the weighing mode with the scale showing 0.00

1. Press and hold [REZERO] key, while holding the [REZERO] key, press [TARE] [TARE] [ON/OFF] then release the [REZERO] key. The display will show all 8's while holding the [REZERO] key, when the [REZERO] key is released the scale will be in the **Maintenance Mode**. The display will show StE 00

2. Press the [TARE] key. The display will show the software version.

3. Press the [TARE] key. The display will show S0 0 0 0 (spec 0 = 0 0 0)

4. Press the [ON/OFF] key. To change spec data (0 0 0 – 1 1 1)

Ex: Press [ON/OFF] S0 0 0 1, Press [ON/OFF] S0 0 1 0, Press [ON/OFF] S0 0 1 1,

5. Press the [TARE] key. To store spec data and advance to the next spec. S1 0 0 0

6. Press the [TARE] key. To store spec data and advance to the next spec. S2 0 0 0

7. Press the [TARE] key. To store spec data and advance to the next spec. S3 0 0 0

8. Press the [TARE] key. The display will show CAL 00

9. No Weight Should Be On Platter. Press the [TARE] key. The display will show - - - - - while the scale calibrates the zero point. When zero is calibrated the display will show CAL SP

10. Place Capacity Weight On Platter. Press the [TARE] key. The display will show - - - - - while the scale calibrates the span. When span is calibrated the scale will return to the weighing mode. 60.00

Note: To exit maintenance mode, press the [REZERO] key at any step except when - - - - - are displayed.

5.3. Internal Count Display :

Example: Begin in the weighing mode with the scale showing 0.00.

1. Press and hold [REZERO] key, while holding the [REZERO] key, press [TARE] [TARE] [ON/OFF] then release the [REZERO] key. The display will show all 8's while holding the [REZERO] key, when the [REZERO] key is released the scale will be in the **Maintenance Mode**. The display will show StE 00

2. Press the [ON/OFF] key. To display the Internal (Span) Count

3. Press the [ON/OFF] key. To display the Internal (Zero) Count

4. Press the [ON/OFF] key. To display the Internal(Span) Count

5. Press the [TARE] key. To store spec data and advance to the next spec. S1 0 0 0

5.4. Specification List

| Spec no. | Bit 2 | Bit 1 | Bit 0 |
|-----------|--|---|--|
| S0 | Decimal Point Position 0 0 0 = no decimal point 1 0 0 = 5 th digit (00.0000) 0 0 1 = 2 nd digit (00000.0) 1 0 1 = 6 th digit (0.00000) 0 1 0 = 3 rd digit (0000.00) 1 1 0 – 1 1 1 = not used 0 1 1 = 4 th digit (000.000) | | |
| S1 | Decimal Point Type 0 = period 1 = comma | ZERO Lamp “ON” 0 = gross 0 1 = net 0 | Zero Tracking when Tare 0 = no , 1 = yes |
| S2 | Minimum Display 0 0 0 = 1 0 1 0 = 5 1 0 0 = 20 0 0 1 = 2 0 1 1 = 10 101-111 not used | | |
| S3 | Display Resolution 0 0 = 1/1000 (multi-Interval) 0 1 = 1/2000 (single-interval) 1 0 = 1/3000 (single-interval) 1 1 = not used | | Multi-interval Setting 0 = net multi- interval 1 = gross multi-interval |
| S4 | Swing Filter *V1.02 000 - Level 0 (No swing filter, for standard version) 001 - Level 1 010 - Level 2 011 - Level 3 100 - Level 4 (for hanging version) 101 - Level 5 110 - Level 6 111 - Level 7 | | |
| S5 | Not Used | | |
| S6 | | | Auto Tare Clear V1.21 0=yes, 1=no |

5.5. Error Message List

The following message will appear when an invalid operation is performed.

| Message | Remark | Appropriate Operation |
|-------------------------|---|--|
| OF | When displayed weight on scale exceeds capacity by +9d, or weight is on platter when power up | Remove weight from scale |
| UF | When displayed minus weight $\geq 9d$ | Re-zero scale, turn off and on |
| 888888 | A/D checking error or scale not stable on power up. | Place scale on firm flat surface and level it. |
| ERROR | Calibration is not correct, or A/D checking error on power up | Repeat calibration procedure |
| 0.00 ▼ | Low battery indication when input voltage is low | Change batteries or check power supply |
| ▼ | Weight display blanks when voltage is below minimum level. Low battery indication will go off as the battery is drained | Change batteries or check power supply |

5.6. Maintenance, Calibration, Test Procedure & Service

This section contains information and instructions concerning maintenance of the DS-671 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 SOURCE.**

5.6.1. Maintenance Procedures

5.6.1.1. EXTERIOR MAINTENANCE

The exterior surfaces of the counting scale can be easily cleaned using soap and water.

For grease or other difficult spots, a chlorothane or naptha based cleaner may be used.

5.6.1.2. Internal Maintenance

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

5.6.2. 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. (NIST 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.

5.6.3. Service & Repair

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

DS-671 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 two (2) years.

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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