BenchMark™

CW-80B Series Bench Scales

Installation/Service Manual

RICE LAKE WEIGHING SYSTEMS
Industrial Solutions on a Global Scale®

ISO 9001 REGISTERED

40543

Contents

April 1997

Installation

Remove the scale from the shipping container and place it in the desired location. Select a location for the CW-80B that is reasonably level and free of unnecessary vibrations and air currents.

Leveling

Remove the scale platter and locate the bubble level. Adjust the four corner feet on the base until the bubble level on the inside frame of the unit reads level. When level, the base should not rock and all four feet should have solid contact with the support surface. If using a column with the scale, adjust the two column feet until they make solid contact with the support surface.

⚠ Caution

Do not lift the scale by the spider assembly that supports the platter. Lifting by the spider can damage the load cell. Always lift under the base when moving the scale.

Grounding

Bench scales can build up a charge of static electricity during weighing operations. If powerful enough, this charge can travel through the load cell cable to the indicator. To prevent this, all bench scales should be grounded so that static charges and transient electrical surges can drain directly to ground.

A chassis ground screw is located on the bottom of the platform (number 26 on the parts diagrams shown on pages 5 and 6) to facilitate grounding. Use a ground wire of at least 18 gauge copper to connect this screw to the same earth ground as the attached indicator.

Load Cell Wiring and Specifications

Use the wiring code shown in Table 1 when connecting the CW-80B bench scale to your indicator. Refer to the indicator manual for information about indicator connections and calibration.

Color	Function
Green	+Excitation
Black	–Excitation
White	+Signal
Red	–Signal
Yellow	Shield

Table 1. RL1380 load cell wiring code

RL1380 load cell specifications:

Full scale output:	2.0 mv/V
Bridge resistance:	350 Ω
Material:	Stainless steel
Temperature:	14°F – 104°F / –10°C to 40°C (compensated range)
Safe overload:	150% full scale
Rated excitation:	10V AC/DC (15V maximum)
Combined error:	0.03% full scale
Insulation resistance:	1000 MΩ
Seal type:	Environmentally protected
Cable length:	10 ft / 3m

Troubleshooting

Symptom	Probable Cause	Remedy
No display	Power disconnected	Connect power
	Cable cut or disconnected	Repair or reconnect cable
	Signal leads incorrectly wired at indicator	Connect according to indicator manual
Display stays at zero	Incorrect load cell cable connections	Connect according to manual
	Faulty indicator	Service indicator
Erratic weight display	Vibration near scale	Remove source of vibration, or adjust digital averaging of indicator to minimize erratic weight display
	Scale not level	Level scale
	Water damage to load cell or cable	Replace load cell
	Faulty indicator	Service indicator
	Loose load cell screws	Tighten to correct torque
	Faulty load cell	Test and replace load cell if necessary
Consistently low weights	Indicator not properly adjusted to zero	Zero indicator correctly
	Scale deck cover binding	Obtain adequate clearance
	Overload stops set too high	Reset stops correctly
	Indicator not calibrated for scale	Calibrate
	Faulty load cell	Test and replace load cell if necessary

Load Cell Replacement

1. Unplug AC power from indicator and disconnect load cell cable from indicator's terminal connection strip.
2. Lift off scale top cover. Locate two upper load cell screws. Use 7/16" wrench to unscrew and remove those two load cell screws. Do not remove four spring-loaded screws that attach load plate to spider assembly. Lift off load plate/spider assembly as a unit. Remove spacer between load plate and load cell and set it aside.
3. Turn scale over and back off Overload Protection Screw one complete turn. Completely unscrew and remove the Lift up Protection Screw.
4. Use 7/16" wrench to unscrew and remove two lower load cell screws. The load cell and cable can now be removed from scale. Do not lose shim beneath load cell.
5. Thread cable of replacement load cell through rubber grommet. Position load cell on shim and screw in two lower load cell screws. Torque to 80 in. lbs.

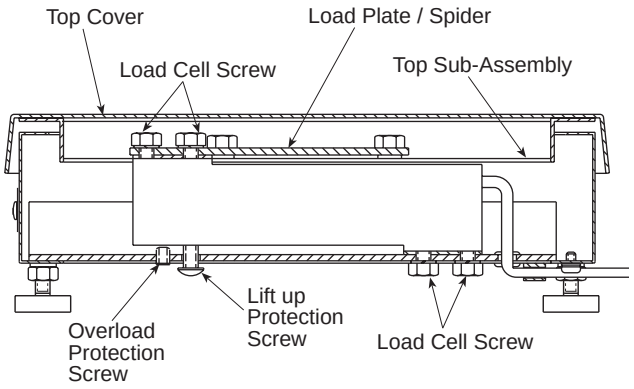


Figure 1. CW-80B load cell mounting

6. Replace Lift up Protection Screw by screwing it in until it lightly bottoms, then back it off 1/4 turn.
7. Turn scale right side up. Position spacer on load cell, then place load plate/spider unit into position. Screw in two upper load cell screws. Torque to 80 in/lbs.
8. Use an accurate caliper to check compressed spring length of the four overload springs as shown in Figure 2. If necessary, adjust length to specifications in Table 2. Replace top cover and re-level scale.

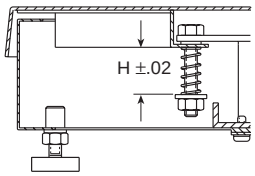


Figure 2. Overload spring height adjustment

Platform	Capacity	Spring Height "H"
10 x 10	6 lb (3 Kg)	1.00"
	10 lb (5 Kg)	0.94"
	15 lb (7 Kg)	1.04"
	30 lb (15 Kg)	1.43"
12 x 12	30 lb (15 Kg)	1.43"
	60 lb (30 Kg)	0.93"

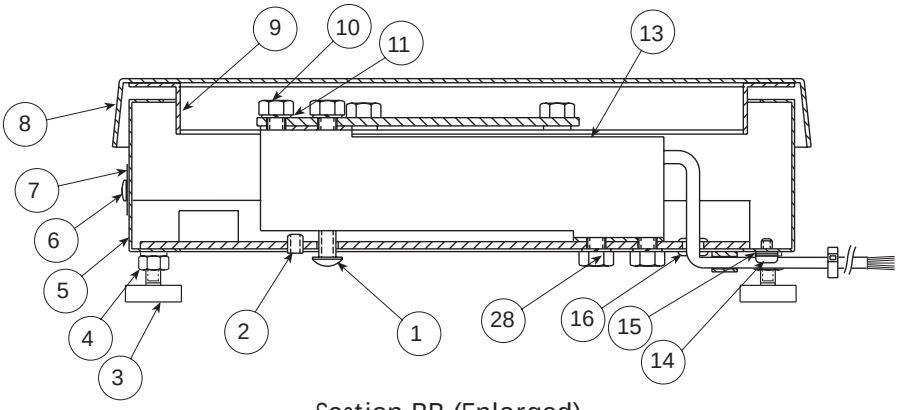
Table 2. Overload spring height values

9. Connect load cell cable to correct pins on indicator terminal strip.
10. Tighten cord grip where cable enters indicator head. Reassemble indicator enclosure if required.
11. Recalibrate scale according to calibration instructions for the attached indicator.
12. Adjust Overload Protection Screw on bottom of scale by loading scale to 125% capacity. Place this weight on top cover, centered on platform. With appropriate size hex wrench, screw in Overload Protection Screw until it touches load cell, then back it off 1/6 turn. Recheck calibration.

10" x 10" Base Assembly Parts

Ref	Part #	Description
1	35087	Screw, pull protection, 1/4-20 NC x 1/2, SS (6-15 lb only)
2	14920	Screw, overload protection, 8-32 UNC x 1/4, SS
3	35128	Foot, 1/4-20 NC
4	14645	Jam nut, foot
5	19086	Bottom subassembly
6	15220	Rivet, sealing
7	16907	Label, bench scale
8	19091	Cover, top, 10" x 10"
9	19088	Spider, top
10	35088	Screw, load cell, top
11	15148	Washer, locking
12	15410	Spirit level bubble, plastic
13	30783	Load cell, RL1380 (6 lb model)
13	30782	Load cell, RL1380 (10 lb model)
13	30781	Load cell, RL1380 (15 lb model)
13	30780	Load cell, RL1380 (30 lb model)
14	14857	Screw, pan head
15	15132	Washer, locking, #8SS
16	15408	Grommet, rubber, 3/16 ID x 7/16 OD
17	14984	Bolt, overload spring (6-15 lb models)
17	21947	Bolt, overload spring (30 lb model)
18	21945	Spring, overload (6 lb model)
18	15416	Spring, overload (10 lb model)
18	21946	Spring, overload (15 lb model)
18	21944	Spring, overload (30 lb model)

Ref	Part #	Description
19	15149	Washer, flat, 1/4 Type A, SS
20	14634	Nut, nylon insert, 1/4-20 UNC, SS
21	35082	Shim, load cell, bottom, SS
22	15409	Clamp, nylon cable
23	19090	Load plate
24	15150	Washer, rubber
25	15138	Washer #8SS
26	14862	Screw, cable clamp
27	30909	Shim, load cell, top, SS
28	14956	Screw, load cell, bottom, SS



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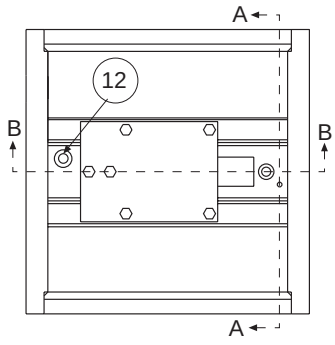
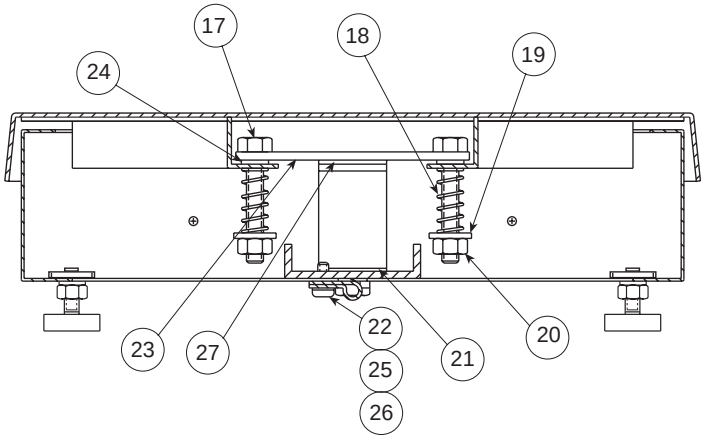


TOP VIEW OF SCALE
WITH COVER REMOVED

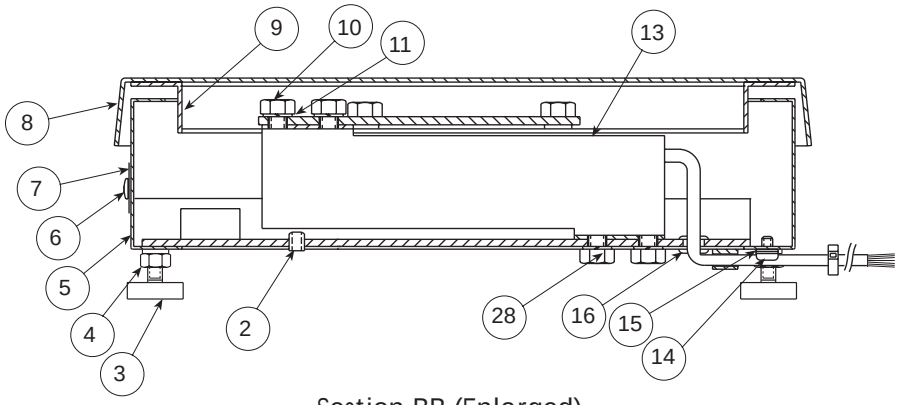


Section AA (Enlarged)

12" x 12" Base Assembly Parts

Ref	Part #	Description
2	14920	Screw, overload protection, 8-32 UNC x 1/4, SS
3	35128	Foot assembly
4	14645	Jam nut, foot
5	35066	Bottom subassembly
6	15220	Rivet, sealing
7	16907	Label, bench scale
8	35069	Cover, top, 12" x 12"
9	35068	Spider, top
10	35088	Screw, load cell, top
11	15148	Washer, locking
12	15410	Spirit level bubble, plastic
13	30780	Load cell, RL1380 (30 lb model)
13	30779	Load cell, RL1380 (60 lb model)
14	14857	Screw, pan head
15	15132	Washer, locking, #8SS
16	15408	Grommet, rubber, 3/16" ID x 7/16" OD
17	21947	Bolt, overload spring (30 lb model)
17	14984	Bolt, overload spring (60 lb model)
18	21944	Spring, overload (30 lb model)
18	35086	Spring, overload (60 lb model)
19	15149	Washer, flat, 1/4 Type A, SS

Ref	Part #	Description
20	14634	Nut, nylon insert, 1/4-20 UNC, SS
21	35082	Shim, load cell, bottom, SS
22	15409	Clamp, nylon cable
23	35067	Load plate
24	15150	Washer, rubber
25	15138	Washer #8SS
26	14862	Screw, cable clamp
27	30909	Shim, load cell, top, SS
28	14956	Screw, load cell, bottom, SS



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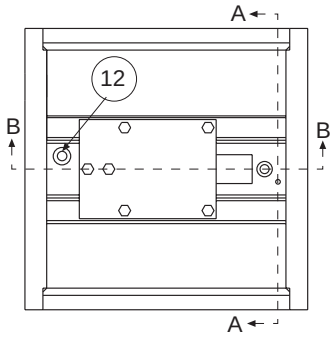
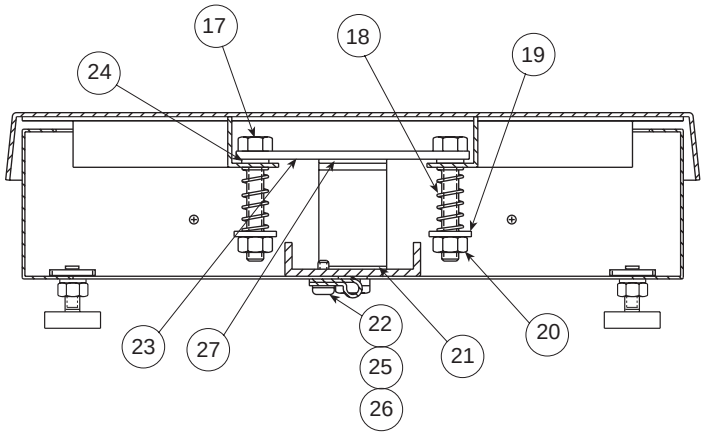


TOP VIEW OF SCALE
WITH COVER REMOVED



Section AA (Enlarged)

BenchMark™ CW-80B 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 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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