



RGTB-525
6 and 8 Inch Tipping Bucket
Rain Gauges

57-6096 Rev B

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Warranty

3 years

Manufacturer

Dyacon, Inc.
1770 Research Park, Suite 168
Logan, UT 84341
US

I.0 RGTB-525 INTRODUCTION

1.1 Overview

RGTB-525 is a tipping bucket rain gauge with a 6" (148 mm) or 8" (203 mm) orifice. The rain gauge is a custom configuration sourced from Texas Electronics, a US company.

RGTB-525 is a practical solution for commercial and industrial users that need a practical instrument that is easy to install, clean, and maintain.

The mounting system has been designed and manufactured by Dyacon. The rigid system use a tip and rotate mechanism that can be attached to any pipe angle or flat surface.

The gain gauge can be attached directly to several places on Dyacon Tripod-1 or other structures.

The rain gauge is compatible with Dyacon CM-1 which is used for all Dyacon MS-100 weather stations, MS-120, MS-130, MS-135, MS-140, and MS-150.

2.0 ASSEMBLY INSTRUCTIONS

2.1 As Shipped

RGTB is shipped with the mounting system and cable attached to the rain gauge.

If purchased with a Dyacon weather station, the cable will be terminated with a pluggable connector.



The bracket may be gold or clear anodized.

2.2 Mounting Position Considerations

All sensors will measure the conditions in which they are placed. Measurements from a high-end instruments will provide high resolution that is absolutely worthless when they are not properly installed. Even when installed correctly the data is for a single point. Placing a duplicate sensor six feet away may yield significant differences. In other words, natural phenomena will have spacial differences.

Ideally, rain gauges should be mounted with the following considerations.

Clear view of the sky – Nearby equipment, trees, and structures may block precipitation, resulting in under reporting. These structures could also channel air currents and rain or splashes into the rain gauge orifice, causing over reporting.

Height above ground – In open areas, the rain gauge should be 2 feet off of the ground. If there are surrounding shrubs, a height of 5 feet is recommended.

Distance from nearest objects – If possible, it is best position the rain gauge at a distance from the nearest objects that is at least twice the height of those objects.

Example: If the rain gauge is located near a 25 ft (7.6 m) building. The rain gauge should be 50 ft (15 m) away.

Stable mount – All rain gauges are mechanical devices, they convert the collected rain into a volume, impact, drop count, or weight of water (and sometimes debris) falling from the sky to an approximate depth over an area. Vibration will affect the measurement.

In the end, you just have to work with what you have and recognize that there will be some effects from the local environment. Often these are minimal.

2.2.1 Dyacon Mount Options

Post

Dyacon can provide a 3 ft long galvanized post.

When installed with a Dyacon weather station, the post would be located near the tripod or weather station structure.

Tripod

RGTB-525's can mount to several places on Dyacon Tripod-1.



Image 2.1: Horizontal Pipe Mounting Position



Image 2.2: Vertical Mast Mounting Position



Image 2.3: Tripod Leg Mounting Position

Alternatives

The main mounting bracket has three screw holes for fastening the rain gauge to flat surfaces. This allows for the rain gauge to be screwed to a fence post or similar structure faces.



2.3 Installation

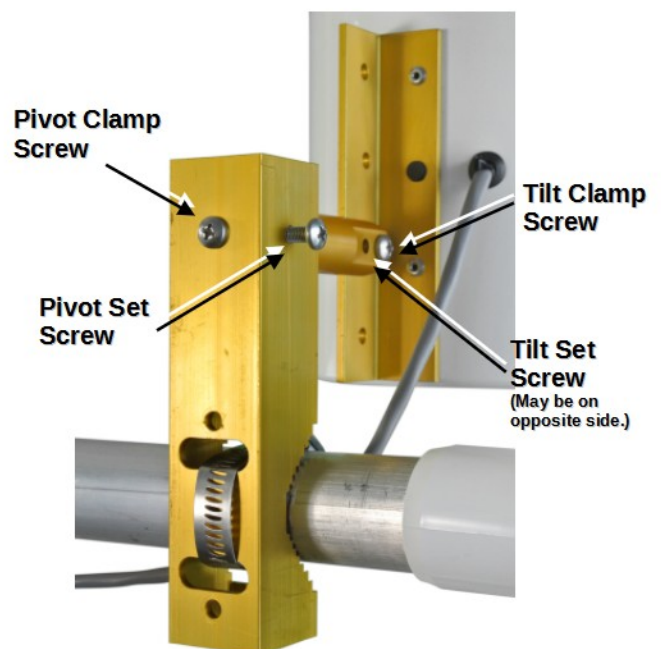
2.3.1 Required Tools

8 mm (5/16 inch) socket for band clamp and mounting system screws

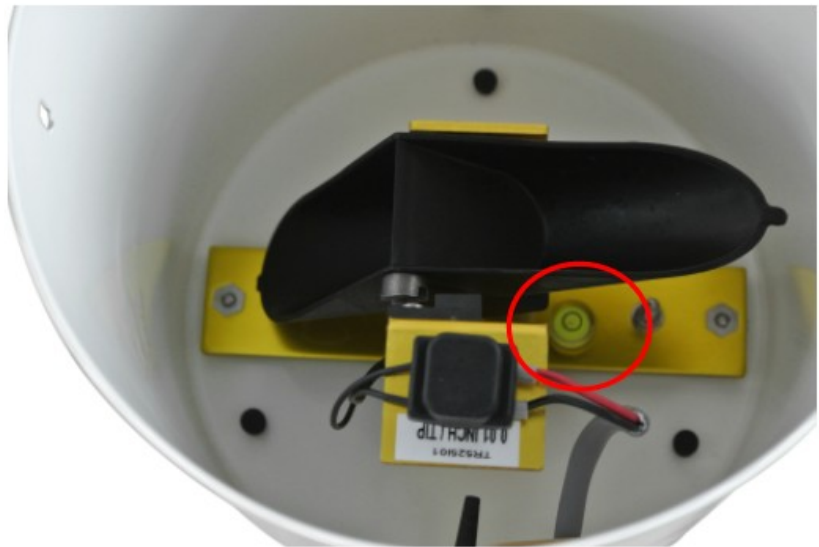
Note: Early versions used #2 Phillips screws.

2.3.2 Installation Steps

1. Identify the best rain gauge placement for your situation.
2. Temporarily, adjust the tilt and pivot movements using only the clamp screws.
3. Install the rain gauge on the pipe or structure.



4. Remove the top of the rain gauge.
5. **Remove the rubber band securing the tipping bucket.**
6. Using the tilt and pivot movements level the rain gauge using the bullseye
7. Once the gauge is fully leveled, fully tighten the clamp screws and tighten the set screws.



2.3.3 Weather Station Configuration

Insert the cable into the enclosure for the Dyacon CM-1 weather station controller.

Plug the cable into the 3-pin connector labeled “RAIN”.

Pressing **Select** and the down arrow key until you see **>Setup Rain**

CM-1 can be configured for any measurement resolution and inch or millimeter units.

```
>Setup Rain
Type: None
```

Select Rain Gauge Units

```
>Type: None
```

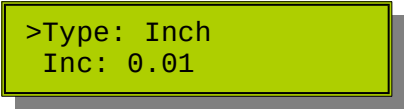
Pressing **Select** will open the rain gauge type (inch or millimeter) configuration.

```
Set Bucket Type
None
```

Pressing the ▲ (Up) and ▼ (Down) buttons will switch between None, Inch, Millimeters. When set to None, precipitation measurements are disabled.

Set the Bucket Type to Inch.

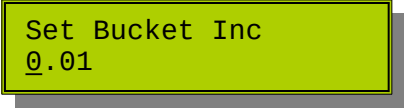
Press **Select** to advance to the resolution selection parameter.



>Type: Inch
Inc: 0.01

Scroll down to the Increment value and press **Select**.

This will open the tipping bucket resolution parameter for editing. 0.01 is the default value and is used for RGTB-525i and RGTB-525U.

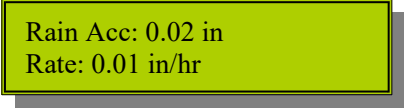


Set Bucket Inc
0.01

Press **Select** to advance to the next digit. Pressing select on a blank digit will save the resolution value.

Press **Cancel** two times to return to the home screen.

You can check the operation of the rain gauge by scrolling down to the Rain page. Moving the tipping bucket will increment the rain counter.



Rain Acc: 0.02 in
Rate: 0.01 in/hr

3.0 ACCESSORIES

3.1 Bird Spikes

Bird spikes may help prevent birds from resting and nesting on the rain gauges. These are available for both size options, 6" and 8".



Order BS-6 or BS-8 for the respective rain gauge size.
BS-8 also fits ISCO 674 rain gauges.



3.2 Heater

120 VAC, thermostatically controlled heaters are also available for RGTB-525i and 525U.
Call Dyacon for more information.

4.0 SPECIFICATIONS

MEASUREMENT

Orifice/Collector	RGTB-525i – 6.06 inch (154 mm) RGTB-525U – 8 inch (203 mm)
Resolution	One tip per 0.01”
Accuracy	1% at 0 to 2 inches/hr (0-50 mm/hr)
Resolution Options	0.2 mm and 0.01” (standard)

ENVIRONMENTAL

Operating Humidity	0% to 100% RH
Operating Temperature	0°C to 50°C
Storage Temperature	-40°C to 70°C

ELECTRICAL

Switch Characteristics	135 ms switch closure 0.75 ms debounce time 2 A max @ 30 VDC
Wire Connection	2-position screw terminal strip
Cable	3 m or 5 m 2-conductor, 20 AWG, PVC Jacket

MECHANICAL

Body	Powder-coated Aluminum
Bucket	Injection-molded ABS or Polypropylene
Mounting System	Anodized aluminum Stainless steel band-clamp and screws 3x 0.2 inch (5.1 mm) screw holes.
Drain Ports	1 screened port
Orifice Debris Screen	Perforated and anodized aluminum with retaining clip.
Tipping Pivots	Brass (Sapphire pivots are available.)
Weight	2.4 lbs (1.1 kg) 4 lbs ship weight
Dimensions	As Shipped, including mounting system: 12 x 7.5 x 7 inches (30 x 19 x 18 cm) 13.5 x 9.5 x 9 inches (33 x 24 x 22 cm)

5.0 DOCUMENT REVISION HISTORY

Rev	Description	Author	Date
A	Initial release.	E. Bodrero	16 Mar 2021
B	Update manual to include 8 inch diameter. Notices – Added 525U. 1.1 – Added description 2.3.3 – Added 525U. 3.0 – Inserted Accessories section. 4.0 – Updated specifications to include 525U.	E. Bodrero	20 June 2023