



OBSERVATOR
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RIMCO
METEOROLOGY

RIM-FVU



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instruments

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RIM-FVU Manual

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Document History

Paper copies are valid only on the day they are printed. Contact Observator Instruments if any doubt about the accuracy of this document.

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This document has been revised by:

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V1.01	31-07-17	Updated general content	Ludovic Grosjean
V1.02	24-10-17	Warranty conditions	Ludovic Grosjean

Reference Documents

Please see the following documents for more information:

Document Name	Download from	Author
Online Training documents	http://download.observator.com/files/?dir=User manuals/RIM-FVU	Ludovic Grosjean

Distribution list

This document has been distributed to:

Name	Company, Position	Action
Dana Galbraith	Director at Observator Instruments	Review
Niran Pelpola	Manager at Observator Instruments	Update



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INDEX

INDEX.....	3
1. RIM-FVU INTRODUCTION	5
2. APPLICATIONS	6
3. SAFETY	7
4. SPECIFICATION	8
5. DESCRIPTION	9
6. INSTALLATION	10
Rain Gauge check	10
7. MAINTENANCE & CALIBRATION.....	11
Calibration Validation.....	11
Maintenance.....	14
8. SERVICE & SUPPORT COVERAGE	15
Warranty conditions.....	16
Contact & more information.....	16

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1. RIM-FVU INTRODUCTION

Thanks for purchasing an Observer Instruments Field Verification Unit. The RIMCO RIM-FVU is a simple device for the verification of Tipping Bucket Rain Gauges calibrations in the field. The FVU is ideal for Hydrologists who do rain gauge maintenance checks in remote locations. The RIM-FVU is manufactured to exacting tolerances and can produce repeatable volumes when used in accordance to this manual. As such, the RIM-FVU can be used as a primary standard in field and laboratory calibrations of Rain Gauges.

The RIMCO Field Verification Unit comes with a 200mm/hr nozzle as standard.



2. APPLICATIONS

RIM-FVU device typical use includes many type of applications:

1. In the factory.
2. Upon receipt by reseller or end user.
3. In the field.

RIM-FVU products are also ideal for **rain gauge calibrations and validations.**



3. SAFETY



For correct functioning of Observator RIM-FVU the calibration device must be installed according installation instructions.



The nozzle is extremely sensitive piece of the RIM-FVU, make sure it is always protected from shocks.



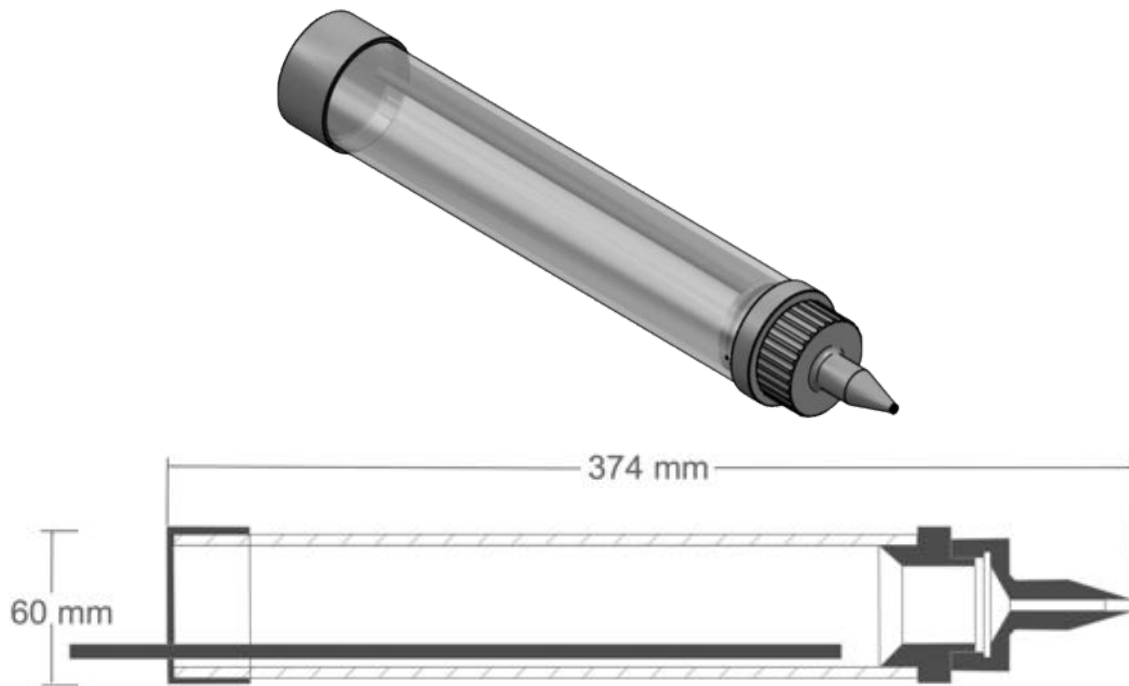
Always clean and dry the RIM-FVU after use.



After end of life dispose this product according local regulations or return to manufacturer.

4. SPECIFICATION

Field Verification Unit Dimensions	
Length	374mm
Diameter	60mm
Weight	564.5 grams
Capacity	653mls
Nozzle flow	200mm/hr
Material Body	PVC and Perspex
Material Vent / Nozzle	Stainless Steel
Material Funnel Mount	Acrylic







Case Details	
Case Construction	ABS
Length	550mm
Width	400mm
Depth	220mm



5. DESCRIPTION

When the product is delivered, this is what you will find in the box:

Items found in the box		
Figure 1.1.	Field Verification Unit	
Figure 1.2.	Allen key	
Figure 1.3.	Funnel Mounting plate	
Figure 1.5.	Instrument Case	



6. INSTALLATION

Rain Gauge check

The RIM-FVU verifies the accuracy of rain gauge calibration. To ensure optimum results, the rain gauge should be cleaned and maintained as outlined below.

1. Remove the rain gauge's jacket using the supplied Allen key.
2. To clean the precision orifice unit, remove it by unscrewing it from the underside of the collecting funnel. Please note that it also holds the mesh strainer cylinder in position - this may be cleaned at the same time.
3. Use a pipe cleaner to clean the orifice - never use an abrasive cleaner. Replace the precision orifice in the rain gauge taking care to properly install the mesh strainer.
4. If the rain gauge has a precision siphon, dismantle it and clean all parts
5. Clean all the rain gauge components (funnel, filter, siphon, and orifice parts). Use methylated spirits and a clean cloth.
6. Reassemble the filter-siphon assembly and reattach it to the rain gauge enclosure. Note: Take care when tightening the siphon nut.
7. Check that the bucket is tipping freely without restriction or resistance. No lubrication is required on the bearing surfaces and they are normally self-cleaning. If necessary remove any dust from the bucket bearings with a small soft hairbrush.
8. The inside surfaces of the bucket may be cleaned with a clean soft cloth wetted with mild soapy water followed by a clean water rinse. Do not touch the inside surfaces with fingers or greasy substances as this will increase the surface tension of the rainwater resulting in higher counts (rainfall over-estimation).
9. Ensure the rain gauge is level by checking the spirit leveler the rain gauge base.
10. Check the reed switch pulse with a multi-meter.

Important: *You need to check the Rain Gauge operation prior to use of FVU.*

7. MAINTENANCE & CALIBRATION

Calibration Validation

Rain gauge calibration using the RIM-FVU is performed as outlined below. Repeat the calibration check at least once for more accurate results.

1. Unscrew the nozzle from the RIM-FVU and make sure the valve, on the opposite end is closed.



2. Fill in the cylinder with clean water until the top.

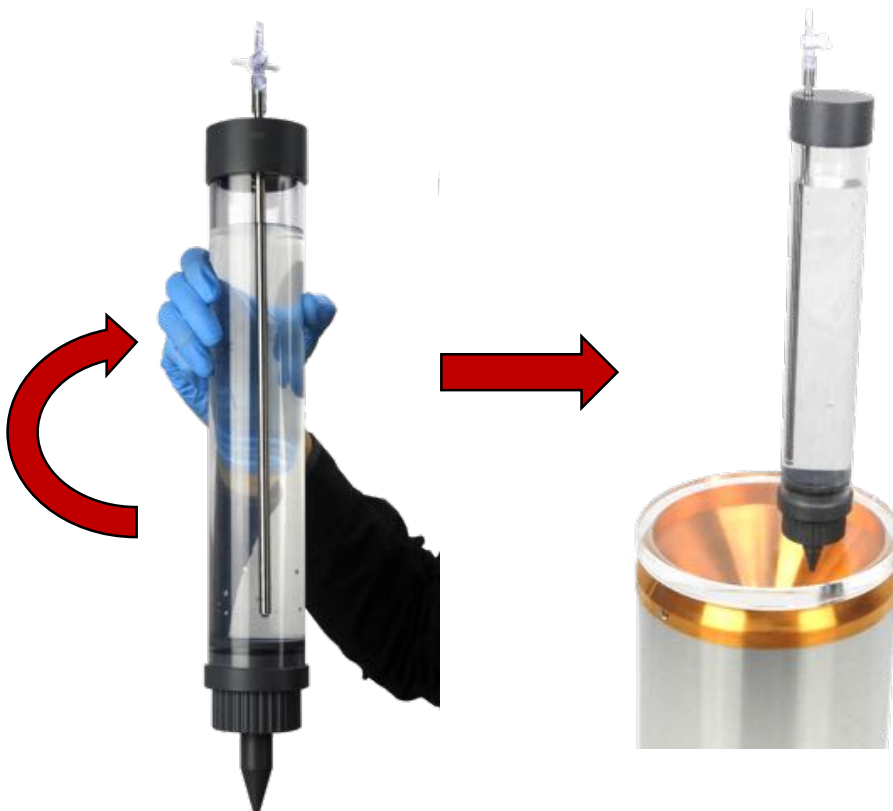


3. Reattach the nozzle to the RIM-FVU.

Note: Wet the rain gauge syphon before performing the calibration for improved results.



4. Flip the RIM-FVU and position it on top of the rain gauge through the mounting plate on the catch of the rain gauge.



5. Open the siphon valve. The water will flow out of the RIM-FVU to the tipping bucket rain gauge at a predetermined rate. The number of tips can be audibly counted or retrieved from a data logger and checked against calibration specifications.



6. With an approximate volume of 653 mls, the tip count should be 101, but can vary from around 6 minutes. ± 2 tips are counted on two progressive runs*, then the instrument is within acceptable calibration limits. If not, then tipping bucket limit screws will have to be adjusted until an acceptable result is obtained on two passes.



(*) Special Note:

Please be aware that tip counts can vary from tube to tube

Maintenance

The RIM-FVU is relatively maintenance-free apart from routine cleaning. This is performed using the following:

1. Fresh water.
2. Warm water.
3. Mild soap solution

Do not use any solvent it will damage the FVU.

Manually clean the Field Calibration Device using a fine tool to clean the nozzle hole.



The tool should fit in the hole as a close fit (not tight or loose fit)

8. SERVICE & SUPPORT COVERAGE



RIM-FVU



Valid Warranty

Warranty on Rimco products is one year.
See our Warranty and Terms and condition for details.



Telephone Technical Support

You can contact us any time about Technical Support.



Repair and Service Coverage

Please **enquire** about a maintenance program.

**If warranty or repair is required, please request an RMA
number at the Observator Website:**

<https://observator.com/en/support/rma-request>

You will need: 1. Your Serial Number (can be found on the probe sticker)

2. A valid E-Mail



S/N: 16110002

Warranty conditions

The RIM-FVU, Field Verification Units are warranted against defects in material and workmanship for one year from date of warranty registration. The **warranty does not cover the orifice tip from being banged. Unauthorized service, tampering or abuse will void this warranty. Damage as a result of improper installation will also void this warranty.**

Should you require service (under warranty or otherwise) please **contact Observator Instruments distributor from whom you purchased the RIM-FVU, or our Service Centre.** If the RIM-FVU is being returned for service under warranty, please supply proof of purchase and the Warranty document which has been emailed to you during the warranty registration.

All support enquiries must include:

1. The serial number of the field calibration device labelled on the casing of the device
2. The shipping address for RIM-FVU returns

Contact & more information

Additional Information, including training video, this manual up-to-date and tutorials are available on our training page:

<http://download.observator.com/files/?dir=User manuals/RIM-FVU>



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