WATER SWITCH

Prevent water from entering the Drystik and RAD8

User Manual

DURRIDGE

Radon Capture & Analytics

TABLE OF CONTENTS

1 WATER SWITCH DESCRIPTION 3

Figure 1 Water Switch Photo 3

2 WATER SWITCH SETUP 4

2.1 Leak Checking and Repair 4

2.2 Water Switch Configuration 4

3 WATER SWITCH CONFIGURATION DIAGRAM 5

Figure 2 Water Switch Configuration 5

1 WATER SWITCH DESCRIPTION

The Water Switch is a small device that prevents water from entering the Durridge Drystik instrument, and by extension the Durridge RAD8 radon monitor. It delivers power to the Drystik, but it cuts off the power in the event that water enters the switch, preventing the Drystik's pump from drawing water into the RAD8.

It is specifically designed for use with the Drystik ADS-3R and ADS-3 (ruggedized and non-ruggedized models).

The Water Switch consists of a reed switch surrounded by a float, which contains a magnet. If the float rises, it will turn off the switch, interrupting the delivery of power to the Drystik.



Figure 1 Water Switch Photo

2 WATER SWITCH SETUP

It is essential that the Water Switch remain airtight, or else fresh air will enter the sample path and dilute the sample. There is a groove in the lid of the Water Switch that seals it to the jar component, but to ensure that it remains tight, a small amount of vacuum grease is used. If the switch is taken apart and emptied, it may need additional grease during reassembly.

2.1 Leak Checking and Repair

If there is any doubt that the assembly is airtight, it can easily be checked. One meter of tubing, half full of water and hung like a U-tube, will form a manometer. Connect it to one of the hose connectors on the Water Switch. Connect a hand pump (such as a bicycle pump) to the other hose connector, with plastic tubing containing a hose clip. Pump the pressure up until the difference in the water levels between the two arms of 'U' is around 50 cm of water, and apply the clip to seal the switch. Watch the manometer. After the system relaxes as the air cools back to room temperature, start a 10-minute timer. The pressure should drop by no more than 2.5 centimeters in 10 minutes.

If the switch is found to be leaking, place it under water while it is pressurized to see where it is blowing bubbles. If the leak is occurring around the rim, add grease to the inside groove in the lid.

2.2 Water Switch Configuration

The Water Switch is placed along the power supply to the Drystik. If water enters the Water Switch it will turn off the power to the Drystik, stopping the device's pump. Please note that the Water Switch will not cut power to the pump of a RAD8, because the RAD8's internal battery will take over if the external power is interrupted, and this will cause the RAD8's internal pump to remain active. For this reason the Drystik pump should be used to control all airflow, while the RAD8 pump should be set to Off and bypassed by populating only the Detector In and Sample Out air ports on the RAD8's front panel. The full recommended configuration is shown in the diagram on the following page.

3 WATER SWITCH CONFIGURATION DIAGRAM

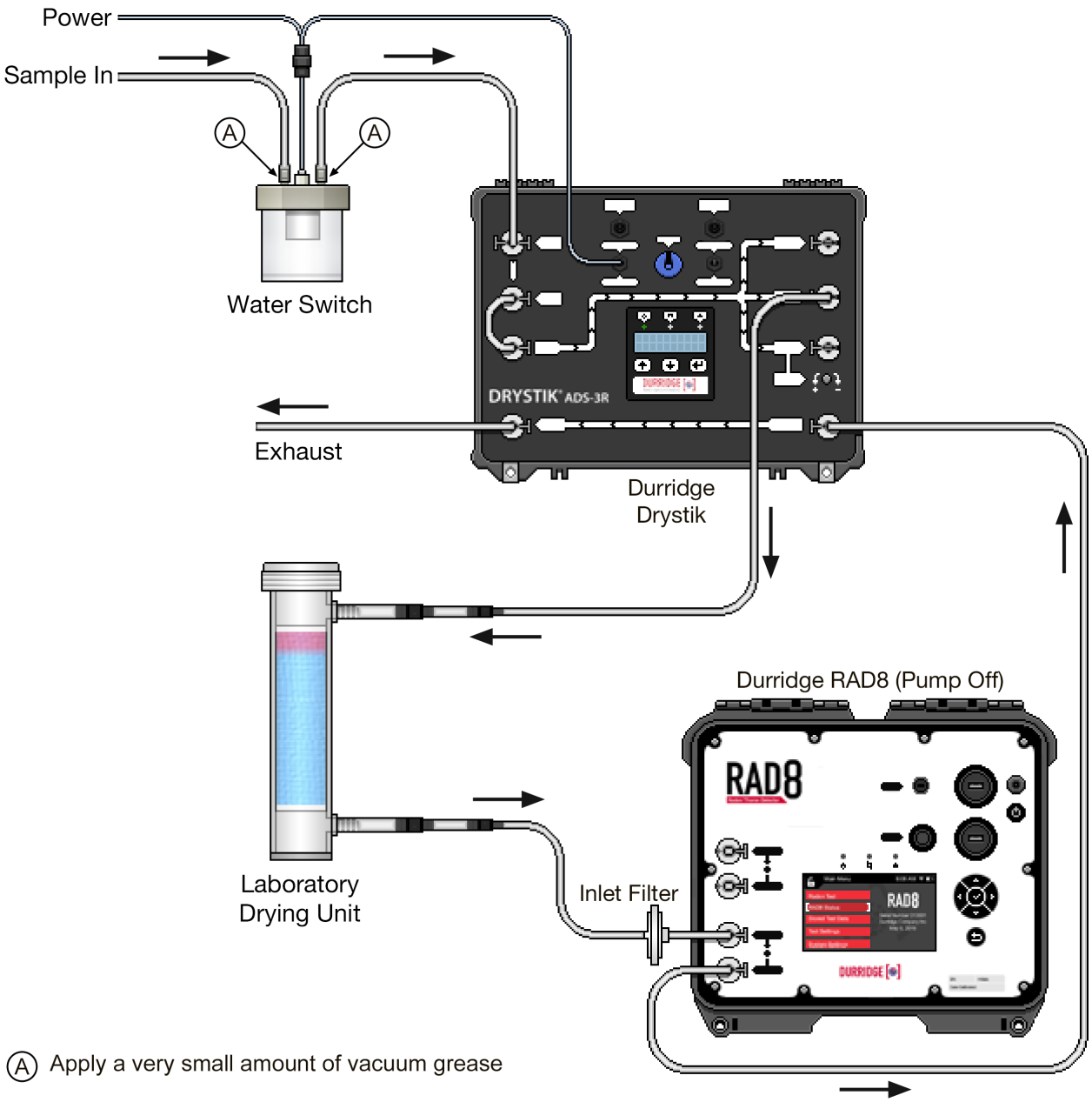

Figure 2 Water Switch Configuration

Note: Additional illustrations showing the Water Switch in use with the Drystik, RAD Aqua, and Soil Gas Probe are available in those products' respective users manuals. Each product manual can be found on the Durridge website at https://durridge.com/support/product-manuals/.

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Note: Durridge frequently updates its product manuals with new information. The latest version of this manual can be downloaded in PDF format from the following location:
https://durridge.com/support/product-manuals/

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