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## Introduction

ANKOM Technology designs, manufactures, and markets analytical instruments and support products to laboratories around the world in the food, feed, agricultural, bioenergy, and environmental industries. Our instruments allow for the analysis of fat-soluble vitamins, cholesterol, dietary fiber, crude and detergent fiber, crude and total fat, digestibility, microbial fermentation (anaerobic or aerobic) and more.

ANKOM Technology is committed to total customer satisfaction, designing every product based on a thorough assessment of customer needs.

Congratulations on your purchase of the ANKOM<sup>RD</sup> Dryer. We are confident that this product will effectively serve your needs.

This manual will provide you with details that will help you operate your RD Dryer efficiently and effectively for precise and accurate results.

<b>NOTE:</b> Please review the entire contents of this manual before you begin operating this product.
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## Warranty

ANKOM Technology warrants the ANKOM<sup>RD</sup> Dryer against any defects in workmanship or material for one year after the original date of purchase. This warranty does not include damage to the instrument resulting from neglect or misuse. During the warranty period, should any failure result from defects in workmanship or materials, ANKOM Technology will, at its discretion, repair or replace the instrument free of charge.

Extended warranties are available upon request.

## Operating Environment

Your ANKOM<sup>RD</sup> Dryer is designed to operate within the following environments:

- Ambient Temperature Range: 15–30°C (60-85°F)
- Humidity: 20–60% RH
- Power (domestic): 110 – 120V ~ 50/60Hz
- Power (international): 220 – 240V ~ 50/60Hz

## Contact Information

We are committed to supporting you and value your feedback.

For any questions or suggestions regarding your instrument, please contact us at:

For Sales Support: sales@ankom.com or <https://www.ankom.com/contact-us>

For Technical Support: [www.ankom.com/contact/technical-services](http://www.ankom.com/contact/technical-services)

For Analytical Support: [www.ankom.com/contact/analytical-services](http://www.ankom.com/contact/analytical-services)

Telephone: (315) 986-8090

Fax: (315) 986-8091

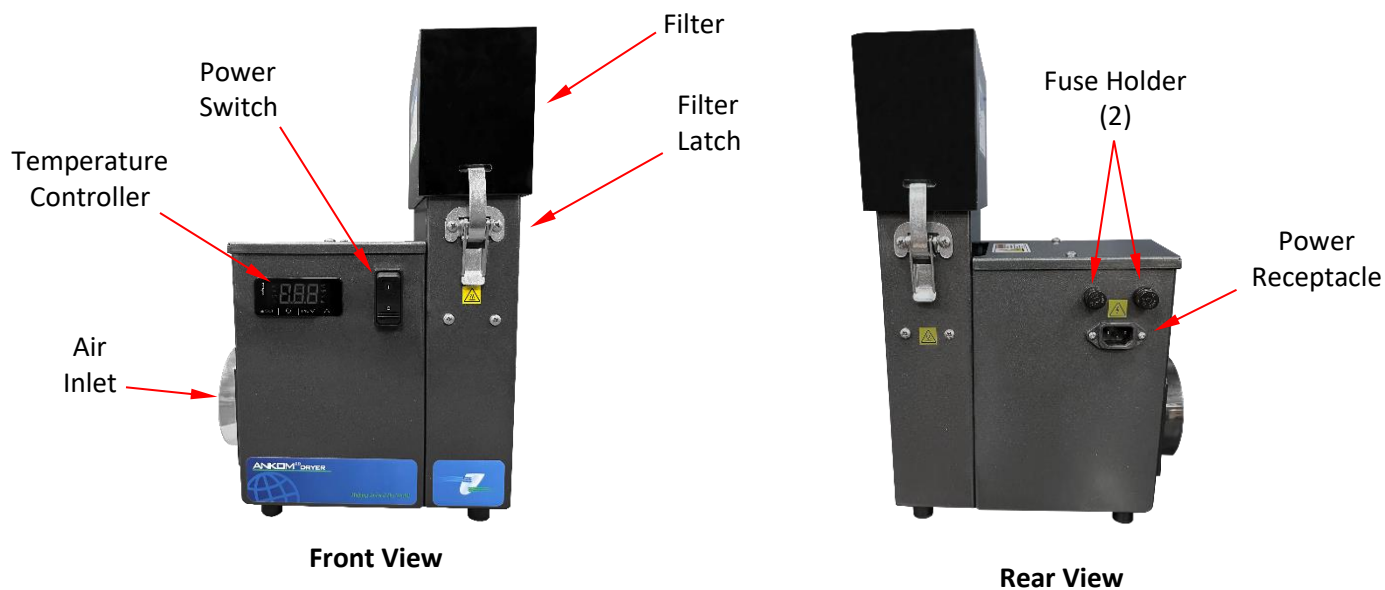
## Instrument Description

The ANKOM<sup>RD</sup> Dryer is designed to remove moisture from ANKOM XT4 or F57 filter bags. Simply place filter bags in the bag holder with the clip-on handle in place and set the holder in the drying chamber. Attach a filter to the top of the drying chamber and press the power switch to turn on the heat and fans to dry the samples.

Two types of filters are used with the Dryer:

- **Dryer Neutralizing Filter #RD2** – This filter is used when drying samples after hydrolysis. The filter neutralizes HCl fumes given off during drying. The filter should be changed when the maroon bottom filter media of the filter degrades or sags below the filter frame. The effectiveness of the filter can be checked by placing a small beaker of Ammonium Hydroxide (NH<sub>4</sub>OH) on top of the filter while samples are drying. If white vapor is present when drying, the filter is no longer working. PH paper can also be placed on top of the filter when drying. If the paper turns red (not orange), replace the filter.
- **Dryer Filter #RD1** – This filter is used when drying fat or fiber samples. It does not need to be replaced. It is used to optimize the drying rate of the instrument.

Below are detailed views of the ANKOM<sup>RD</sup> Dryer.



## Safety Precautions



**Hot Surfaces:** Do NOT touch the cabinet during operation. The surface can exceed 70°C (158°F). **Failure to observe this caution may result in burning.**



**Hazardous Voltages:** Do NOT operate the instrument with the electrical compartment open. Hazardous voltages are present during operation. **Failure to observe this caution may result in electrical shock or electrocution.**

**WARNING:** Using the instruments in a manner not specified by the manufacturer may impair the protection provided and voids the warranty.

**This system is designed to meet and/or exceed the applicable standards of CE, CSA, NRTL and OSHA.**

### NOTE:

Please review the entire contents of this manual before you begin operating this instrument.

## Instrument Set Up and Installation

### Site Requirements

To install and operate the ANKOM<sup>RD</sup> Dryer you will need the following:

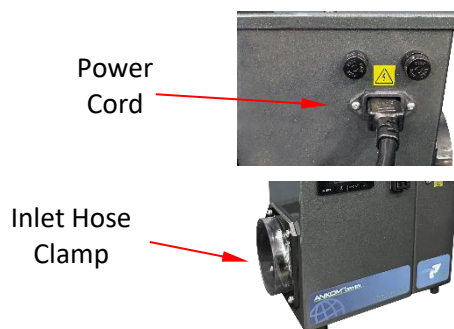
- Flathead screwdriver
- Adequate power (see “Operating Environment,” p. 5)

The ANKOM<sup>RD</sup> Dryer should be installed in a vent hood free of dust and excessive moisture. The ANKOM<sup>RD</sup> power cord must use a grounded receptacle. Hydrolysis leaves small amounts of HCl in the filter bags even after rinsing. Drying the hydrolyzed samples in the ANKOM<sup>RD</sup> Dryer removes moisture and the remaining HCl (for drying after fiber or crude fat determinations, a vent hood is not necessary).

### Instrument Installation Procedure

To install the ANKOM<sup>RD</sup> Dryer, follow the procedure detailed below.

1. Plug the power cord into a grounded receptacle.
2. Install the inlet hose using a hose clamp. Tighten the clamp with a screwdriver and route the hose to a clean source of air.



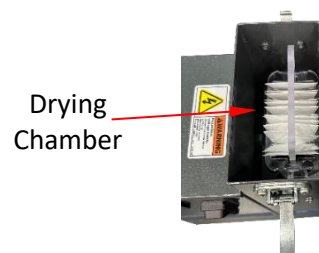
## Operating Instructions

### Sample Drying

Follow the sample drying protocol in each specific procedure. Blotting reduces drying time for hydrolysis samples. After completion of hydrolysis, blot the filter bags on paper towels. Place the wet samples on four sheets of paper towel, and place two sheets on top of the bags. Using an ANKOM Blotter (part #H35) or similar, apply uniform pressure to the paper towels to gently press the water out of the bags. The ANKOM Blotter is foam cushioned and weighs ~10 lbs. After one minute repeat the blotting process for two minutes prior to placing them into the ANKOM<sup>RD</sup> Dryer.

To dry ANKOM filter bags, follow the steps below:

1. Remove the filter by lifting up both filter latches and set the filter to the side.
2. Place processed or blotted filter bags into the bag holder. Hydrolyzed samples may use the HCl bag holder in the ANKOM<sup>RD</sup> Dryer.
3. Place the bag holder into the ANKOM<sup>RD</sup> Dryer and attach the filter.
4. Turn the ANKOM<sup>RD</sup> Dryer ON. The fans, then the heater, will automatically turn on.
5. Press <set> on the temperature controller and use the Up and Down arrows to set the drying temperature. Push <set> to enter the temperature. Use the temperature listed in the assay method (usually 110°C).
6. Dry the samples for the required time and turn the instrument OFF.
7. Remove the filter.
8. Remove the samples and immediately place into a desiccant pouch.
9. Cool to room temperature and weigh.





## Periodic Maintenance

### External Cleaning

Wipe the outside of the instrument with window cleaner or a damp sponge as necessary. **Do not use acetone.**

## Troubleshooting & Replacement Parts

The ANKOM Technology web site has the most current troubleshooting and replacement parts information. For FAQs and replacement parts please visit our web site at [www.ankom.com](http://www.ankom.com).

### Fuse Replacement

Turn off the power and unplug the instrument.

1. Use a screwdriver to twist (counterclockwise) the gray fuse holder. Remove the holder and replace the fuse.
2. Push in and twist (clockwise) to install the new fuse.



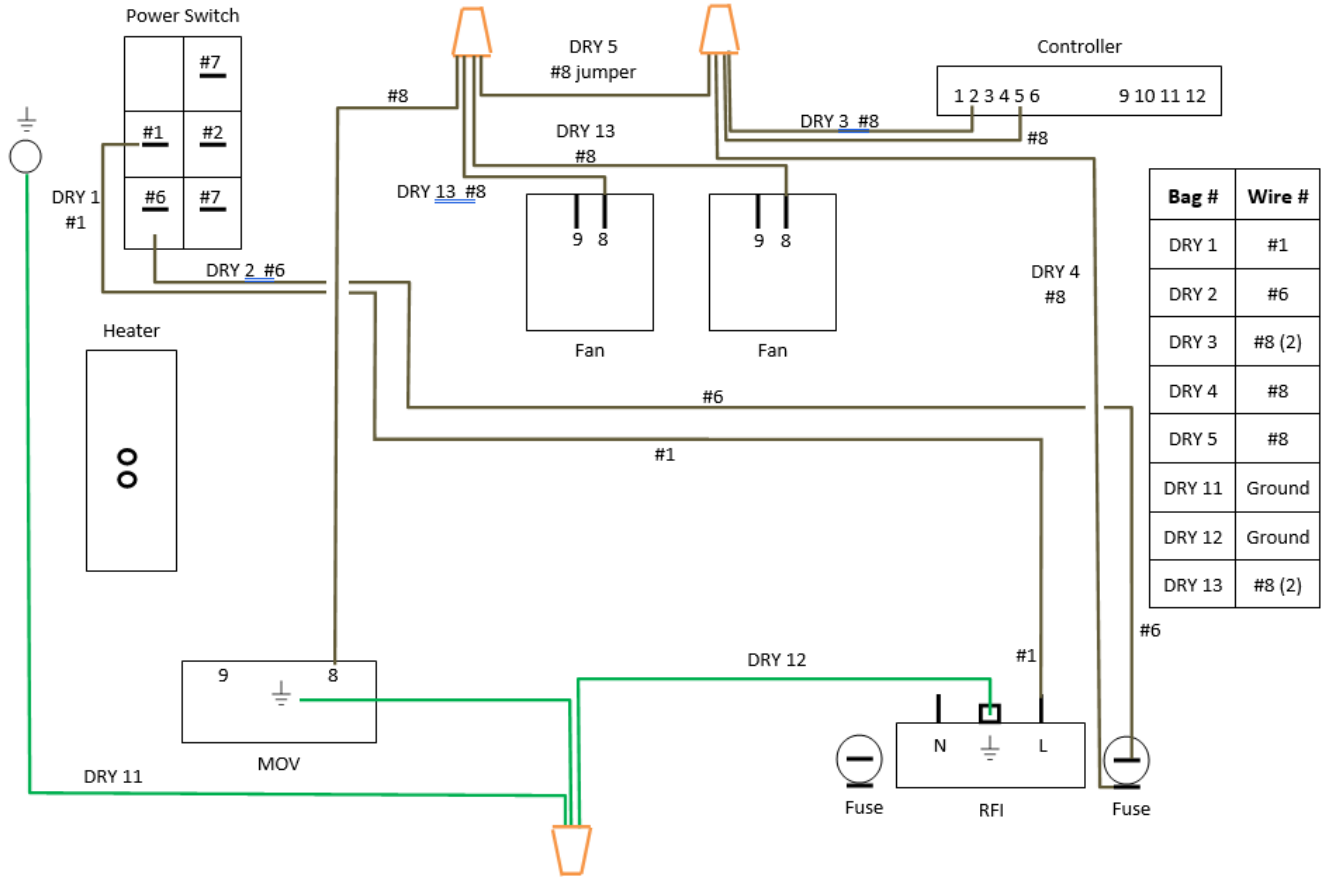
### Filter Replacement

The RD2 Dryer Neutralizing Filter should be replaced when the maroon bottom filter media of the filter degrades or sags below the filter frame.

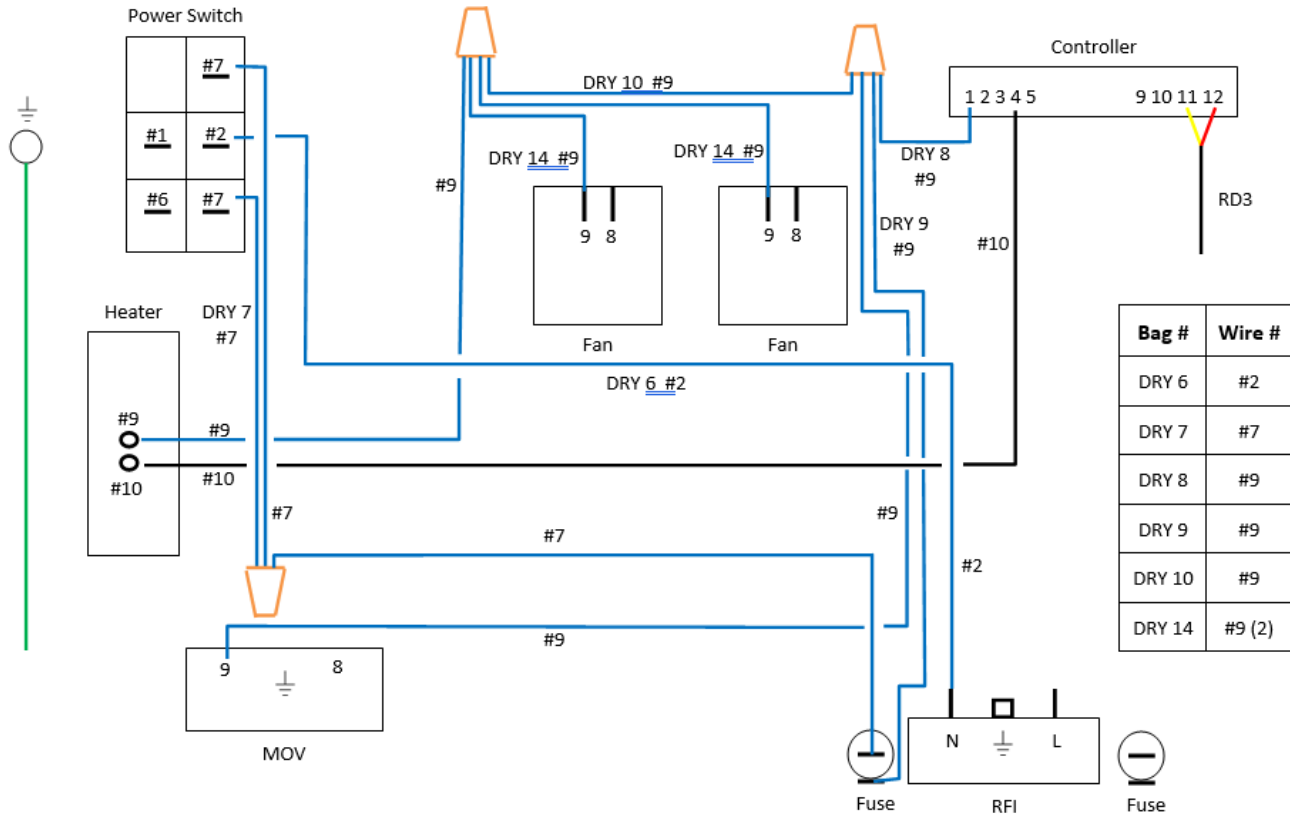
The effectiveness of the filter can be checked by placing a small beaker of Ammonium Hydroxide (NH<sub>4</sub>OH) on top of the filter while samples are drying. If white vapor is present when drying, the filter is no longer working. A strip of pH paper can also be placed on top of the filter when drying. If the paper turns red (not orange), replace the filter.

Generally, the filter should be replaced every 3-6 months depending on usage.

## Appendix A – Wiring Diagram (1 of 2)



## Appendix A – Wiring Diagram (2 of 2)



# Automation saves time and money!

ANKOM Technology is an international company with products that include...

	<p><b>FLEX Analyte Extractor</b></p> <ul style="list-style-type: none"> <li>• Simplifies fat-soluble vitamin and cholesterol analysis</li> <li>• Performs total fat analysis</li> <li>• Eliminates chemical handling to improve safety</li> <li>• Eliminates bi-phase extractions</li> <li>• Provides ability to create custom methods</li> </ul>
	<p><b>TDF Dietary Fiber Analyzer</b></p> <ul style="list-style-type: none"> <li>• Automates AOAC 991.43, 985.29, 2009.01, 2011.25, 2017.16 and 2022.01 (and associated AACC methods)</li> <li>• IDF/SDF and TDF values</li> <li>• Faster, Technician-free Filtering</li> <li>• Computer controlled operation</li> <li>• Reduced per assay costs</li> </ul>
	<p><b>DELTA Automated Fiber Analyzer with Pump System</b></p> <ul style="list-style-type: none"> <li>• Crude Fiber (AOCS Ba 6a-05), ADF, NDF determinations</li> <li>• Automatically adds solutions and rinses</li> <li>• Batch process - up to 24 samples at one time</li> </ul>
	<p><b>XT15 Fat Extractor</b></p> <ul style="list-style-type: none"> <li>• Official Method AOCS Am 5-04</li> <li>• Fully automatic</li> <li>• Solvent recovery at 97% or greater</li> <li>• Batch process - up to 15 samples at one time</li> </ul>
	<p><b>RF Gas Production System</b></p> <ul style="list-style-type: none"> <li>• High sensitivity pressure measurement</li> <li>• Anaerobic activity analyses (rumen, yeast, beer/wine fermentation, biomass, biodegradability, etc.)</li> <li>• Soil respiration</li> <li>• Wireless Computer control and data storage</li> </ul>

Please visit our website at [www.ankom.com](http://www.ankom.com) for more information.

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