

The BASICS of
AIR HANDLING UNIT
WATER LEAKAGE

A Troubleshooting Guide



Developed for:

Original Equipment Manufacturers
OEM Field Technicians
Building Maintenance Technicians
OEM Design and Quality Personnel

Developed by:

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The purpose for A.J. Manufacturing, Inc. developing this troubleshooting guide is simple:

“We are committed to the industry’s highest standards of ACCESS door and wall panel performance and we recognize our products are part of a larger system of components that must work together for optimum results.”

The information in this guide is not intended to suggest that A.J. is qualified as an Air Handler Designer, Manufacturer, Installer, or Service Technician; however we do have expertise with regards to our products and a range of factors that can affect their performance and the performance of the overall unit.

With over 50 years of experience in the design and manufacture of a variety of door and window products, the approach we offer is **BASIC DIAGNOSTICS** and is intended to suggest an approach for the discovery of water leakage reported in Air Handling Units.

Upon discovery and agreement on the cause of the reported leak A.J. suggests the use of **8D (8 Disciplines of Problem Solving)** to drive to solutions to eliminate additional reports in the future.

As we all know and agree;

“The lowest cost solutions are those that address the concerns at the earliest possible time in the process.”



The BASICS...

REPORT OF AN ISSUE DATA

In order to effectively communicate through the supply chain it is necessary all are speaking the same language, as early as possible. The person being notified of the issue/complaint should capture the following:

- 1) Customer Name
- 2) Customer Contact Information
- 3) Location of Unit / Contact at unit location if different than caller
- 4) Unit Model/Serial/Identifier
- 5) Description of the issue/concern

PRE-SITE CALL CONFIRMATION DETAIL

Before a field visit is made, contact with an on-site person should be made by a technician or customer support person. The purpose of this contact is to identify opportunities to discover obvious conditions that can be adjusted or to clarify what might be necessary to make the most *prepared* field visit possible.

- 1) AHU Serial Number
- 2) AHU Manufacture date
- 3) AHU In-Service date
- 4) In the case of AJ doors
 - a. Serial Number
 - b. Gasketed by Initials
 - c. Glazed by Initials
 - d. Packed by Initials

See example photos of Serial Number and Initial labels on the following page.

FIELD CONFIRMATION – DETAIL Continued

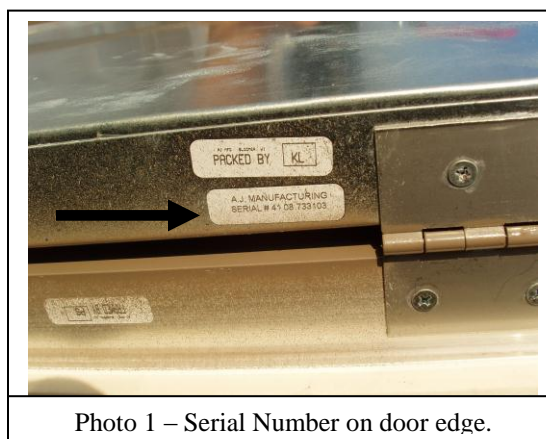


Photo 1 – Serial Number on door edge.

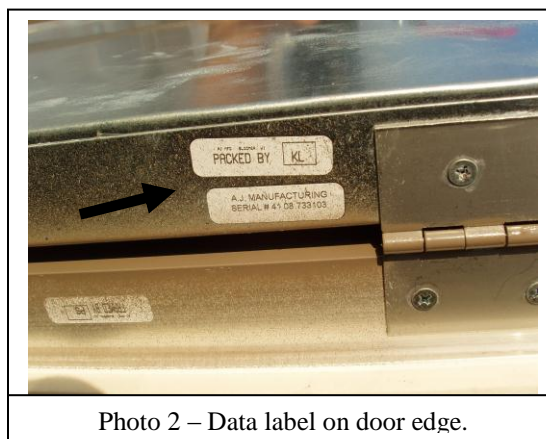


Photo 2 – Data label on door edge.

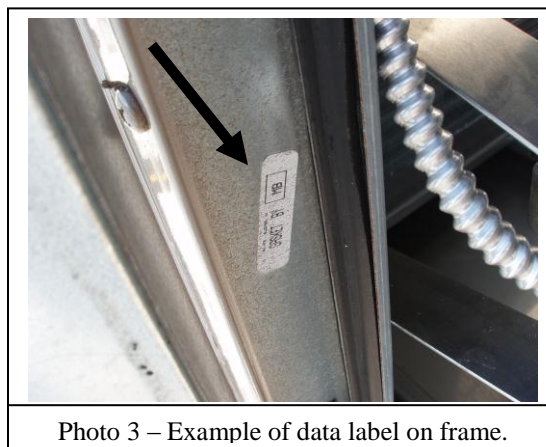


Photo 3 – Example of data label on frame.

The BASICS

FIELD CONFIRMATION – DIALOG

During the process of gathering the DETAILS, a DIALOG is necessary to identify the answers to BASIC questions that will guide the preparation for a potential field call. The following example questions could identify the cause of the complaint and eliminate a field call.

1) Has the hardware been properly installed & adjusted after placement of the AHU into service? *

2) Is obvious damage visible on the AHU roof, doors, walls, curb, plenum, or louvers?

3) If the source of the leak is clearly identifiable, what steps were taken to determine the source of the leak?

4) Do the doors operate without interference of frame and is the gap between the frame and door panel consistent in dimension?

5) Have the doorframe to cabinet connections been checked for proper sealant or gasket installation?

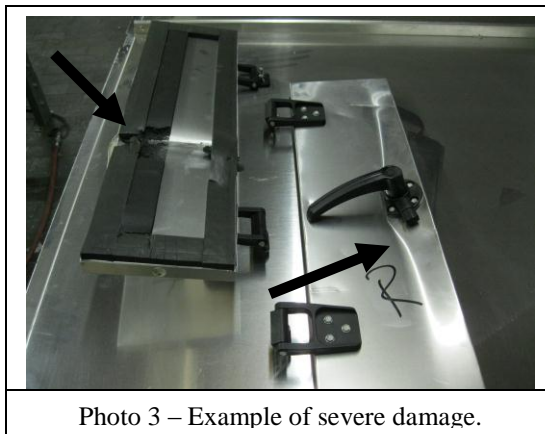
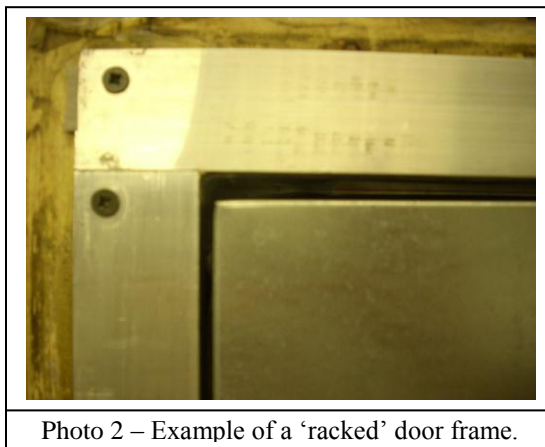
6) Have all pipe chases, louvers, dampers, hoods, roofs been inspected for proper installation of sealant and gasket materials?

*Hardware installation & adjustment guides available at:

http://ajdoor.com/wp-content/uploads/2011/06/Allegis-Latch-Install_Outswing.pdf

<http://ajdoor.com/wp-content/uploads/2011/06/Allegis-Latch-Install-inswing.pdf>

PRE-SITE CALL CONFIRMATION DIALOG - Continued



The BASICS...

TIME FOR ACTION

The process of gathering DATA and engaging in a DIAGNOSTIC DIALOG are the necessary steps to determining an action plan. Fundamental DIAGNOSTICS are essential to an effective approach to ANY situation where a concern has been identified. Answers to these additional questions may be necessary prior to crafting an action plan;

- 1) Have the doors been modified, painted, removed, or replaced and why?
- 2) Was the unit pressure tested at the factory and to what performance level? What is the operating pressure of the unit?
- 3) What types of latches are installed and are they adjustable, progressive cam or strike style?
- 4) How are the cabinet seams and doorframe to cabinet sealed - tape, sealant, other?

In our experience working with our OEM Customers on claims of water infiltration, the answers to these questions typically reveal the root cause of 90% of the leak issues. In addition, it is common that reports of leakage at doors are made because when the initial observation of the unit is made – the doors are opened exposing water on or near the door.

Anyone who has worked on an AHU or other enclosure that is operating under positive or negative pressure knows that water will “wick” and travel throughout the unit and is just as likely to be observed near the problem as it is to be observed far from the source.

JOB SITE....

TOOLS OF THE TRADE

Keep it simple with the following tools and reduce the cost of fieldwork.

- 1) Personal Protective Equipment.

The best first impression on a job site is to be over prepared and to meet the expectations of the Project owner with regards to safe work habits. Steel toe boots, hard hats, gloves, safety glasses, and arm guards should be on-site.

- 2) Digital camera, note pad, pen or pencil.

Record keeping, note taking, and photo documentation will provide the best possible dialog with Suppliers, OEM, and the Project Owner/Customer. Quality communication is necessary for quality results.

- 3) Flashlight, towels, poly sheeting, duct tape, water supply, calibrated nozzle, ladder and basic hand tools.

Inspection and adjustment of the doors, in particular, is basic. A quality cordless drill, various drivers, metric and standard wrenches are generally adequate for hardware and door adjustments and testing. The sheeting and tape allow for simple isolation of doors as part of the process of elimination when testing the units.

- 5) Time – Allow for enough time to do the job right and once.

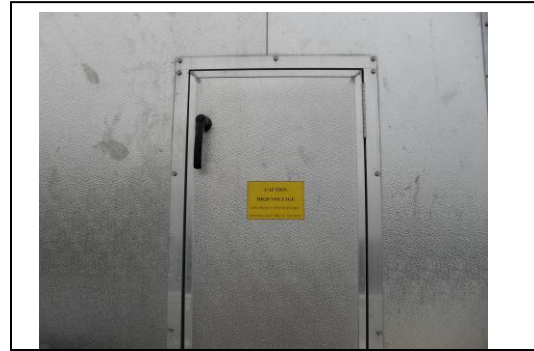
Planning the site visit, knowing the “lay of the land” and organizing the resources prior to stepping foot on any job are a good idea. Pre-planning will reduce costs, save time, and generate the best solutions and will assure the Project owner is confident in all involved.

THE BASICS...

Photo Taking Guide

A picture is worth a thousand words and when problem solving across the country it can be an invaluable tool. The following are suggestions when documenting an issue for use by others, record keeping, or for use as a teaching aid.

- 1) Wide angle view of the entire door or area of concern.
- 2) Close-up of the doorframe inside and out.
- 3) Close-up of the gasket including the corners.
- 4) Close-up of the hinges inside and outside.
- 5) Photo of areas of concern or question.



Area of Concern – Individual Door



Area of Concern – Latch Detail



Area of Concern – Wide Angle View



Area of Concern – Gasket Detail



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