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Technical Document #27

Recognizing Moisture in a Base Tank

The management of water within a dry cleaning machine is incredibly important, therefore it is essential to recognize the problem and understand the symptoms and issues that will result from uncontrolled moisture.

Water enters the dry cleaning machine every day through a variety of sources:

- Humidity in the air which is absorbed by garments waiting to be dry cleaned. It is not uncommon for a full basket of clothing to also contain one or two quarts of water due to humidity. Fibers like cotton and wool will absorb a large amount of water, while silk, rayon, and polyester will absorb relatively little humidity.
- Humidity in the air entering the machine any time the loading door, button trap, or air filter lids are opened.
- Water present in clothing such as perspiration and body fluids
- Water present in pre-spotters applied before dry cleaning

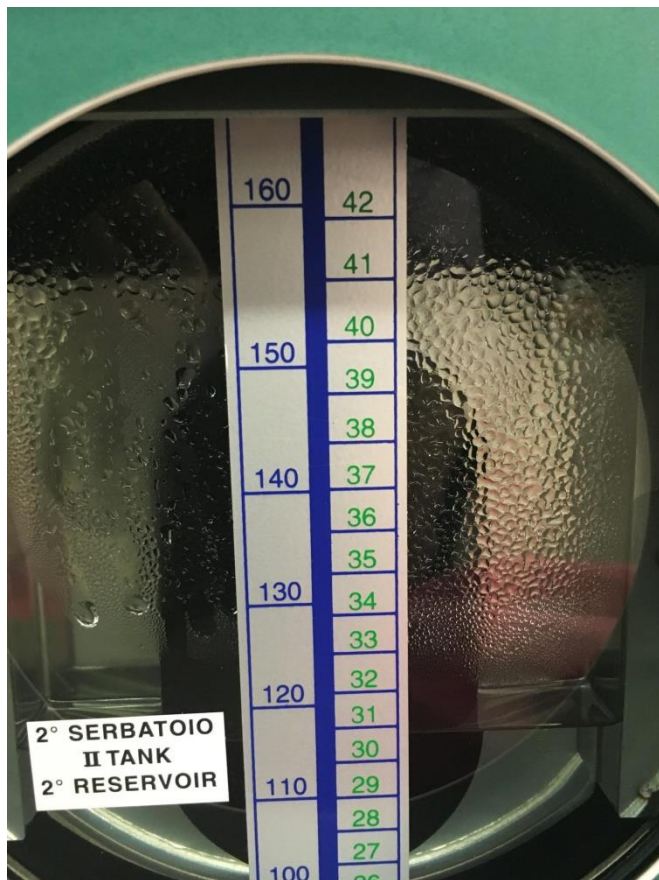
Water can also enter the machine when things go wrong such as:

- Malfunctioning water separator (almost always caused by lack of maintenance)
- Failing to manually drain the primary separator with each batch of dirty solvent sent to distillation on Union, Realstar, and Firbimatic machines (see Technical Document #24)
- Steam coil leak, still condenser leak, solvent cooler leak
- Lint completely plugging up the drain under the evaporator, causing normal dry recovery which includes GreenEarth and moisture to back up the evaporator chamber and flow backwards into the button trap (very rare but possible on certain machines).
- Water separator which is not optimally engineered for GreenEarth (usually not an issue on today's popular machines)

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When the dry cleaning machine is holding excess water, it is usually first identified by these complaints or symptoms:

- Bad odor in the machine, particularly on wool and cottons (remember which fabrics hold the most water??). The odor is a bacterial smell, resembling dirty gym socks.
- Complaints about shrinkage, dye bleeding (water soluble dyes)
- GreenEarth in one or more base tanks appears hazy, cloudy, and might be tinted purple.



Typically if there is moisture in a base tank, it can be hard to identify in the middle of the day since the tank has probably been mixed around while running loads.

A simple way to confirm moisture in the tank is to wait overnight, perhaps over a weekend, and then right away on Monday morning before turning on the machine, look into each base tank with a flashlight and check for fog or moisture on the tank glass. The beads of moisture are water which has condensed as the machine cooled down and sat still overnight. Since GreenEarth has a surface tension which is too low to collect on glass, we can be sure we are dealing with water in the tank.

If moisture is detected on the glass, we suggest that you read Technical Documents 2, 3, and 24 to learn more about how the machine deals with water and recommended steps to remedy the situation.

If the steam coil is suspected as the cause of moisture, it will be necessary to visually inspect the coil while it is loaded with steam (with the fan disabled) so that a steam leak can be confirmed.

Most of the time, moisture in the tanks is caused by poor water separator maintenance, a conductivity probe that is not working, or the manual distillation issues discussed in Technical Document 24. On most machines the base tanks are connected together at the top so that they can overflow into each other if overfilled. Which tank has moisture may be a clue as to the origin.