

Experiment No: 06

Experiment Name: Study on Drying Machine (Dryer) & its Function.

Theory:

Dryer:

Objectives:

1. To identify different parts of the machine.
2. To draw the diagram of the machine.
3. To observe function of different parts of the machine.
4. To run the machine and check different functional parameters of the machine.
5. To remove moisture from the garments.

Requirements:

Machine Specification:

Working Procedure:

1. Find the specification of dryer.
2. Observe different parts of the machine.
3. Draw a diagram of the machine by labeling different parts of the dryer.
4. Observe functions of different parts of the machine.
5. Load some garments after hydro-extracting into the dryer.
6. Then run the machine.
7. Check different functional parameters of the machine.
8. Observe moisture remove from the loaded garments.
9. Finally check the garments whether the garments are dried or not.

Diagram:

Machine Description:

Sl. No	Name of Parts	Description and Function
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Working Principle of the Machine:

The basic idea is to blow hot dry air into one side of the drum as it tumbles the clothes around and extract moist wet steam from another part of the drum at the same time. Step-by-step, here's how it works-

1. The heart of the machine is a large metal drum. In large machines, such as those in laundrettes, the drum always rotates in the same direction. In smaller home machines, the drum rotates one way for maybe 30 seconds or so, then stops, then rotates the other way to stop your clothes bunching up.

2. Cold air is drawn into the machine through an air intake. Often it's at the front of the machine to stop it getting dirty and dusty (as it would around the back).
3. A fan sucks the air in and pulls it toward a heating element.
4. The fan is powered by an electric motor.
5. As cool air passes over the heating element, it's warmed and turned to hot dry air. A thermostat (not shown) turns the heating element on and off periodically.
6. Warm air from the heating element enters the drum. In laundrette machines, the entire drum is full of small holes and hot air rises up from below.
7. The drum is rotated slowly by a shaft connected to the electric motor. One electric motor drives the drum and another runs the fan.
8. As the drum rotates, tumble wet clothes until they reach the top of the drum. Then gravity makes them fall back down through the hot, dry air. Dryers work most efficiently when the tumbles through the hot. If we overload them, the garments just bunches up and rolls around in a big ball instead of tumbling and it takes much longer to dry.
9. The air that leaves the dryer passes through a lint filter that catches dust and bits of fluff. To avoid fires, it's essential to clean the lint filter in a dryer regularly (ideally, every time you used it).
10. The humid exhaust air is passed through a heat exchanger and condenser so the water is cooled and drained away and the heat it contains is captured and reused, making the whole process more efficient.

Conclusion and Comments: