

# COFFEE VENDING SYSTEM

The Objective of the system is to prepare a coffee vending machine for commercial purpose.

The system will be able to prepare coffee by processing all its required ingredients. Users will be provided with sophisticated and easy to use user interfaces.

There are many different types of coffee makers using a number of different brewing principles, in the most common devices, coffee grounds are placed in a paper or metal filter inside a funnel, which is set over a glass or ceramic coffee pot, a cooking pot in the kettle family. Cold water is poured into a separate chamber, which is then heated up to the boiling point, and directed into the funnel.

- Cash Box: Knows amount of money put in; Give change; Knows price of coffee;  
Turns front panel on and off.
- Front panel: Captures selection; Knows what to mix in each; Instructs mixer when to mix.
- Mixer: Knows how to talk to the dispensers.
- Dispenser [cup-, coffee powder-, sugar-, creamer-, water-]: Knows how to dispense a fixed amount, knows when it is empty.

Features :

- Small carbon footprint
- Energy saving advanced power management system
- Comprehensive drink range
- Simple user interface
- One touch servicing

Working : Coffee vending machines are quite simple and basic. The way they work is not too different to how a tabletop coffee machine or even a drip coffee machine operates. If you think about it, making coffee is simply adding together coffee beans or grounds to hot water and mixing with milk and sugar, that's exactly what a hot drink vending machine does.

Functions :

- Add heat: to heat the coffee we have 3 options. We could use a heating element

where the water gravity fed into a tubular heating element, external to the water reservoir, and boiled out. Secondly, we could use a submersible heating element placed inside of the water reservoir to heat all of the water at once.

Thirdly, we could use an external hot plate to heat one or multiple walls of the water reservoir and thus heat the water through surface convection.

- Direct Water: The fluids could be directed from the water reservoir to their final destination via tubing, gravity feed, and pump.
- Contain Water/Coffee: To contain the water and coffee we could use one reservoir, two reservoirs or a funnel. If one reservoir was used for both the water and coffee container, our design would be a percolating or French press coffeemaker.
- Reduce Noise: To reduce the overall noise we consider two options: noise dampening material and internal brew mechanism. To lessen the noise produced by our designs we could fill or cover the outer shell of a noise dampening material. We could also keep the brew mechanism, whether it is drip spout.

#### Maintenance:

When it comes to the ways in which coffee vending machines work, it's not all about the coffee, it's also about the upkeep and maintenance of the machine. With regular visits, suppliers should empty the cash drawer, reconcile the proceeds against sales, empty the waste grounds, refill ingredients and cups, and generally undertake any work to both the interior and exterior to keep everything running smoothly, such as ensuring there's no build up of dirt around

the exterior buttons that could cause them to stick, and making sure nothing is blocking the internal sensors that could prevent some ingredients from being added to the mixing chamber.