

Description of the idea – Steam Pod for Food Conveyor Belt System

The inspiration came about when I was having my favorite sushi being served on a moving conveyor belt but they were always at a room temperature condition. I began to wonder why in Asia, a region where majority of the population who loves their food to be piping hot, does not have a device or equipment to be able to serve hot food on the convenient and fun conveyor belt other than cold sushi?

I became more and more excited and intrigued to find out how is it possible to materialise this idea and benefit as many people as possible. I studied and observed the mechanics and working of a railway track and the double liner casing of safety windows to prevent condensation. I went into details of drawing, experimenting as well as making a homemade prototype to fine tuning every little details that matter.

Conveyor belt itself was an amazingly successful invention. Being able to have a device on the conveyor belt to keep the food warm and fresh at a temperature range of 60°C to 70°C and is safe for direct contact with our hands without scalding anyone from this range of heat will definitely bring a breakthrough for others to develop new creation of other products for many industries, such as the manufacturing and Food & Beverages industries.

With this device invention, a good example is the Food & Beverage industry, where one can use it for different type of hot serving food on a conveyor belt. A plate of food can be placed inside the device with a working temperature of 60°C to 70°C will not pose any scalding risk from human handling.

It has been tested that this temperature range is the safe and comfortable level of temperature to maintain the hot food chain and permits the food to maintain its freshness and heat on the conveyor belt.

This device invention is simple and yet a breakthrough using two technologies that complement one another, i.e. a “STEAM POD” and a conveyor belt.

THE “STEAM POD”

With reference to the Steam Pod drawings, the top of Steam Pod has holes for steam to rise up and heat the plate of food on top of it. The glass cover is to keep the steam inside the Pod to keep the food warm. This glass cover has a “double-wall design” in order to prevent the problem of steam condensation on the glass surface. This allows a clear view of the food inside the Pod.

The Steam Pod has a base that is able to hold certain level of water. Inside the base, there is a low-voltage water heater with a 12-volt operation. This 12-volt operation was taken into consideration as it does not pose any scald injury to users. 12-volt has the ability to keep the water hot but not at boiling temperature.

The Steam Pod has a security lock in the conveyor belt so that it cannot be removed by the user. So users can take the plate of food but they cannot take the Steam Pod with the water inside. The Steam Pod is locked from the border of the conveyor belt, and the rail for the electricity. You can remove it only in the kitchen where the rail is interrupted for the purpose of refilling the water.

Additional security design is the plate, it can have a design with a handle. This allows the users not to touch something hot when you take the plate of food through its handle.

Behind the base of the Steam Pod, you will find the electrical connection. We can use the base as the negative pole connection, and from behind we have the positive pole connection for the rail of the

conveyor belt. This is one of the electrical design, alternatively, we can use two electrical lines behind the Steam Pod (two rails) for both positive pole and negative pole connections.

The Conveyor Belt and The Rail

The conveyor belt is slightly different from the usual, we have added one attachment, the Rail, to the internal side of the conveyor belt, to supply a 12-volt power to the Steam Pod. The technology is similar to the third rail power in train system, but this application is simply like the toy train that runs with a low voltage without the problem of electric shock even if touching it on purpose.

We have catered for safety protections for this invention, but everything work for don't permit it.

For the Rail electrical connections, you can use either one-rail or two-rail design. If the conveyor belt is made of steel, you can take the negative pole connection from the bottom of the steel base. If the conveyor belt is made of non-steel, you will need the two-rail design described above.

One section of the conveyor that does not have the electrical lines is usually inside the kitchen that allows the staff to either refill water to the Steam Pod or remove the Steam Pod totally if it is faulty.