



HUMAN COMPUTER INTERACTION

REVIEW - 1

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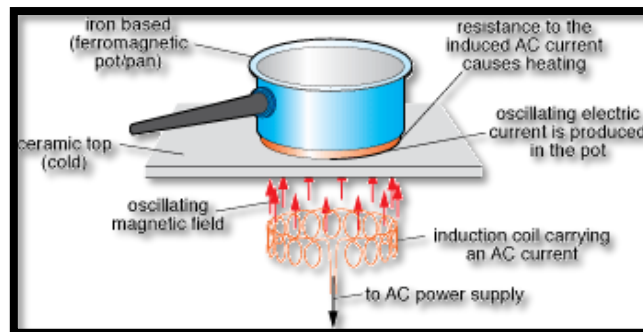
INDUCTION STOVE

INTRODUCTION

An induction stove (sometimes called an induction cooktop), is an electric home appliance used to cook food - efficiently. With induction technology, 85-90% of the heat energy can be used in cooking, which makes cooking very quick compared to other methods.

Induction cooking is performed using direct induction heating of cooking vessels, rather than relying on indirect radiation, convection, or thermal conduction. A cooking vessel is placed on top of a coil of copper wire with an alternating electric current passing through it. The resulting oscillating magnetic field induces an electrical current in the vessel and this large eddy current flowing through the resistance of the vessel results in resistive heating. Induction cooking allows high power and very rapid increases in temperature to be achieved, and changes in heat settings are instantaneous.

Apart from this, induction have presets for different cuisines and for different needs of the user. Regionally, the product comes with many different modes. In India, modes like – chapati, deep fry, idly, pressure cook, curry, etc. are common for every induction stove. They can also detect the presence of a suitable vessel kept on them.



A home-based induction stove and it's mechanism

TARGET USERS

The appliance is mostly used in kitchens, be it

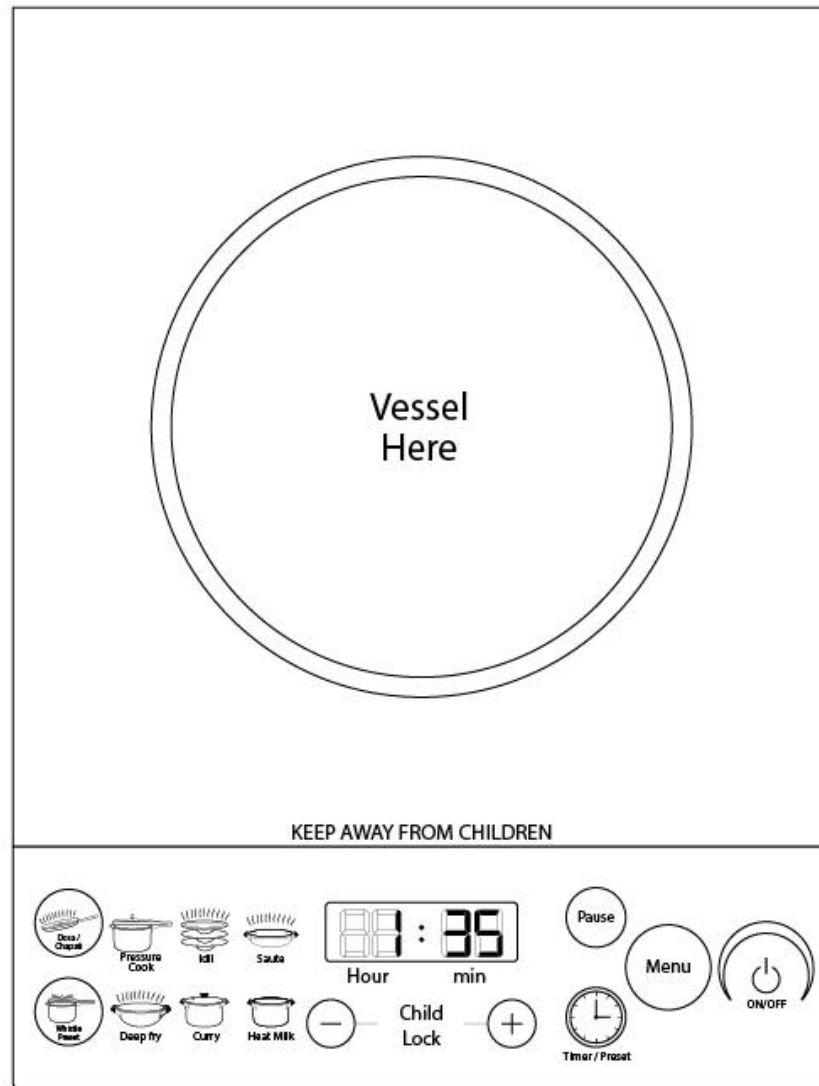
- households or
 - restaurants
- but mostly urban.

Anyone who knows how to cook can use an induction stove very easily.

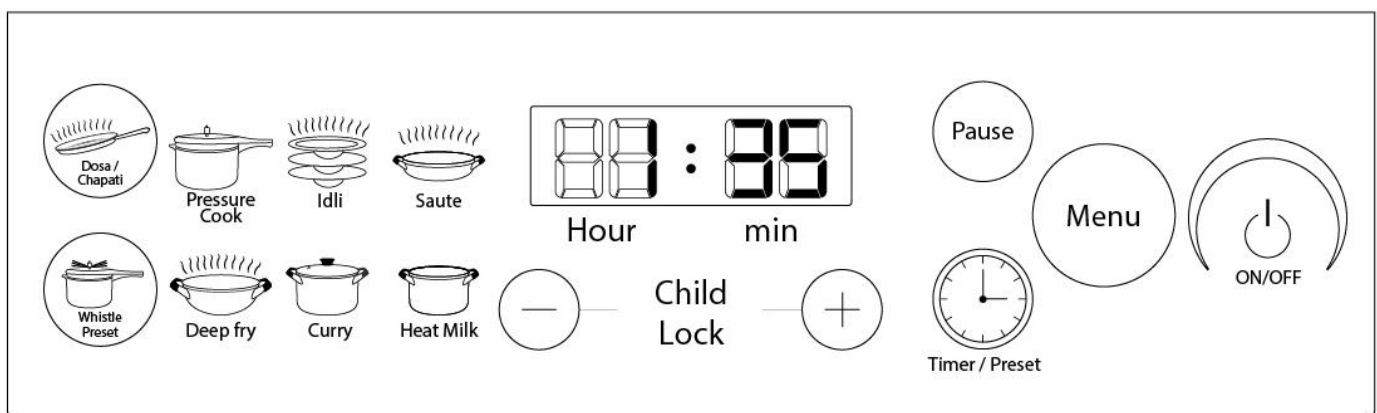
The recommended age, however, can be 15 and above.

INTERFACE OF THE EXISTING PRODUCT

Top view:



Interface of the control panel:



LIMITATIONS

1. Induction stoves still have a long way to be on par with other home appliances in terms of modernism and have a scope where the user experience can still be enhanced.
2. There are many presets available on almost every stove available in the market, but people don't generally use them all because:
 - a. They are not sure how to; they resist the effort to open the manual and read the instructions.
 - b. They don't need to; they settle with the heating capability of the most frequent preset that they generally use.
3. There is no space for multi-national cuisine presets apart from the regional ones on the control panel; even if these multi-national cuisines are added, it will complicate the design of the control panel and it will make it difficult to use.
4. Only a certain kind of cookware can be used on an induction stove. For example- cast iron, enameled cast iron and some types of stainless-steel works, but glass, pure copper, aluminum doesn't.

THEIR SOLUTIONS

1. In today's era of IoT, inductions are still not a part of it, yet. We can implement a Wi-Fi integrated software system inside the stove which can overcome many limitations all at once. Consider:
 - a. A use case where a person forgot to turn off their stove (active without a countdown)
 - b. A use case where a person accidentally applied a wrong setting that they don't even realize.These mistakes are human and can be tackled with smart IoT based systems.
2. If an IoT based system is implemented, it is expected to have a mobile application which could work as a remote. An application will be a flexible approach to provide many features. Within the application,
 - a. We can provide many other multi-national cuisine-based presets which couldn't be placed on the control panel as a button in the application itself.
 - b. It won't complicate the design as well because now the presets will be a part of a mobile application, so the user can directly search the cuisine related to their needs.
 - c. The large gap between users and presets can be covered by providing video tutorials on how to and when to use those presets.

A video is a more approachable form of providing information to the users rather than a manual book. It requires much less effort for the user to view them.
 - d. An AI based recommendation system can be developed which can recommend presets/ settings/ new features of the stove to the user based on user activity.
 - e. Software updates can also be performed on a system like that.
3. The cookware that doesn't work on the induction can work if the bottom layer is a magnetic layer.