

# Induction Cooking

Induction cooking dates back to as long ago as 1933 when it was seen as the 'miracle of cool heating', but back then the technology never really took off. More recently a new generation of induction cooking equipment has entered the marketplace bringing better equipment that costs less to buy and can save on running costs.

Induction cooking delivers heat to the pan using a strong magnetic field created under the ceramic plate. This field generates an induction current which produces heat that is drawn upwards in to ferrous type pans. The induction process heats the pan instantly, which then passes the heat on to the food it contains. This is more efficient, as most of the heat generated is transferred directly to the food thereby reducing cooking times, whereas with conventional gas and electric cooking more of the heat is wasted. When a pan is lifted off the induction hob, heating stops straight away and the hob is switched off automatically, saving energy and improving safety.

Here we answer common questions about induction cooking and set out the pros and cons of the technology.

## **Is induction cooking more energy efficient?**

Induction provides an efficient way to cook food, as it is faster and does not require preheating or the 'burner' switched on, as heat is delivered instantly. There is less wasted heat as induction only heats the pan. This also makes the kitchen cooler so the ventilation doesn't need to work so hard, saving energy.

All of these factors make induction cooking more energy efficient. According to the Carbon Trust the energy requirement of an induction hob is 40-50% less than that of a conventional gas or electric hob. (Carbon Trust, CTV035)

## **Do I need special cookware?**

Not necessarily. You will need cookware with a high ferrous content but many commercial pans used on standard electric or gas hobs may be suitable for induction hobs too. What is important about induction cookware is that the pan's construction is critical to how effectively the induction hob works. The best way to check if your pan is suitable for induction is to take a magnet and test the pull on the base of the pan. The stronger the pull, the faster your hob will work.

There is a wide variety of pans that can be used. Common materials include stainless steel multi-ply, stainless steel with ferrous base welded to the bottom of the pan, cast aluminium with ferrous base, mild steel (black iron) and cast iron.



### **Is the magnetic field produced by the induction hob dangerous?**

The magnetic field is only projected about 2-3cms above the hob's surface. Research suggests that the magnetic fields produced by induction hobs pose no danger to users.

### **Do induction hobs cost more to purchase?**

Induction hobs can be more expensive to buy than conventional hobs. However because they are more efficient than conventional cooking equipment, the operational savings can offer a payback period of a few months on the marginal difference in cost. After payback is achieved, the continued operational savings become profit.

### **How precise and responsive is the temperature control of an induction hob?**

The temperature control of induction hobs is comparable with a gas hob. It's very precise and responsive, giving chefs good control of the cooking process, even at very low temperatures – which makes them ideal for cooking sauces.

If you're not sure which induction unit is right for you, get some advice, either from a manufacturer or a reputable dealer. Both will be happy to discuss your requirements – they may be able to send someone to visit your business to offer on the spot advice or a trial of the equipment prior to purchase.

## Quick look pros and cons of induction cooking

<b>Pros</b>	<b>Cons</b>
<p>Little wasted heat as energy is supplied directly to the cooking vessel.</p> <p>Less wasted heat results in cooler kitchens.</p> <p>Clean cooking as induction cooking does not result in vaporized by-products, unlike burning gas.</p> <p>Cooler kitchens and less vaporised by-products result in less (or no) ventilation requirement and no gas interlock. Additional energy savings can be achieved from reduced ventilation.</p> <p>Heat supplied directly to cooking results in cooler hobs, making them safer to use.</p> <p>No flame or heated element results in improved safety in the kitchen.</p> <p>Faster cooking speed than a standard gas or electric hob.</p> <p>Precise control, with the ability to change temperature instantly and accurately.</p> <p>Uses less energy than conventional gas and electric hobs.</p> <p>Lower operational costs than conventional gas and electric hobs.</p>	<p>Requires specialist cooking utensils with a high ferrous content, which may be more expensive</p> <p>Availability of parts and servicing of induction cookers should be considered. Check warranties, servicing and parts availability with your supplier before purchase.</p> <p>Potentially inadequate power supply for induction cookers may be an issue in some commercial kitchens. Commercial hobs start at 2.2kW per hob and can go up to 16kW per hob, so for example a twin 3kW hob would need a 20amp electrical supply. Make sure your supply can meet the demand of induction equipment.</p> <p>No flame, therefore some limitations in cooking such as no charring of food</p> <p>Equipment is more expensive but this can be offset against operational savings over the life of the equipment.</p>