

THE CESA GUIDE TO... INDUCTION COOKING



Induction cooking has been with us a long time – the 'miracle of cool heating' was put on display at the Chicago World's Fair in 1933 – but use of the technology has only grown modestly over the years. Until now.

So what's changed? Firstly, a whole new generation of induction cooking equipment has been launched in recent years. At the same time, costs to produce the technology have dropped. Thirdly, and critically, energy costs have rocketed, making induction cooking an even more attractive proposition.

In a nutshell, the equipment is better, it costs less to buy and it saves more on running costs.

So it's no surprise that induction cooking is gaining in popularity – but there are still a few myths that need to be debunked.

MYTH BUSTERS

I don't do induction cooking because....

...I need special cookware

No you don't. You just need cookware with a high ferrous content – many commercial pans are equally at home on induction as on standard gas or electric hobs. (See Choosing The Right CookWare, below).

...I can't use stainless steel cookware

Yes you can. Even stainless steel cookware labelled 18/8 or 18/10, which is not generally suitable for induction cooking due to the nickel content, can be used if it has a ferrous base. 18/0 stainless steel is suitable for induction cooking.

...the magnetic field is dangerous

No it's not. All the research indicates that the magnetic fields created by induction units pose no danger to users. In fact, the field is only projected about 2-3cms above the hob's surface.

...induction hobs are expensive

Induction hobs are more expensive to buy BUT they are so much more efficient than gas or electric hobs that their payback period can be just a few months. After which users are gaining savings every time they cook.

WHY INDUCTION?

- **Speed** It's faster than a standard gas or electric hob
- **Precise control** Change temperature instantly and accurately
- **Energy efficiency** It uses significantly less power than a standard gas or electric hob
- **Cost saving** Lower running costs than gas or standard electric hobs
- **Safety** It's safer than a standard hob
- **Hygiene** The flat surface is easy to wipe clean
- **Choice** A huge range of sizes and applications, from multi-burner island suites to table-top models
- **Reduced (or no) ventilation**
- **No gas interlock**

HOW INDUCTION WORKS

Cooking

An induction coil or 'element' is basically a powerful, high frequency electromagnet. When switched on, it creates a magnetic field spreading over a few centimetres. Place anything made of magnetic material (such as a cast iron pan) inside this field and it will heat up. That's because the field induces (or transfers) energy to the metal and the energy turns into heat.

This means the heat is created INSIDE the pan, as opposed to under it (as with gas or standard hobs), which is why the system is so efficient. Nothing outside the pan is affected by the induction electromagnetic field. And as soon as the pan is removed from the hob, or if the element is switched off, heat generation (and energy consumption) stops.

Precise, instant temperature control

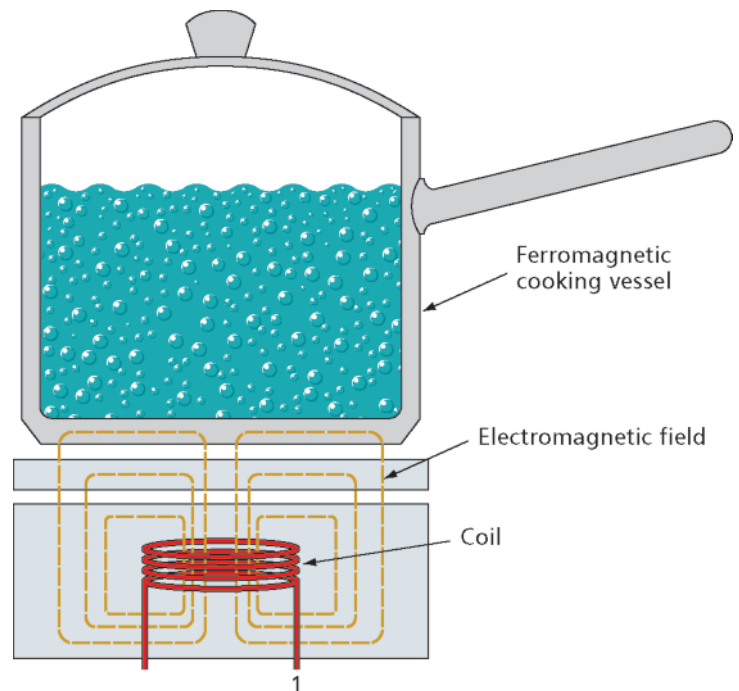
Changing the power level of the electromagnetic field changes the temperature of the pan. Just like a gas hob, this change is instantaneous and, again like gas, it's very precise. Which gives chefs complete control of the cooking process – even with very low cooking temperatures (unlike some gas hobs), so accurate 'seeping' of sauces is a cinch.

Speed

Because the energy goes straight to the pan, it's super-fast. A commercial induction hob can boil a pan of water more quickly than an electric kettle and can heat an empty (induction-compatible) pan up to 200C in less than a minute.

Safety

The hob or stove top barely gets warm, except directly under the pan (where the latent heat from the pan heats the glass), so its surfaces can be much safer than standard electric or gas hobs.



Energy efficiency

Induction is a very efficient way to heat pans, and because it is so fast there's no need to preheat or have the 'burner' switched on - it delivers instant heat. And even if you DO leave the element switched on, if there's no pan on the hob then it will only consume approximately .38 watts of power per hour – virtually nothing. Because induction only heats the pan, there's less waste heat released, which means the kitchen is cooler and the ventilation won't need to work so hard. This lack of excess heat makes induction cooking ideal for front of house and at-table cooking.



HOW TO SPECIFY INDUCTION COOKING EQUIPMENT

Commercial only – don't buy a domestic unit

The first rule is: BUY COMMERCIAL. DO NOT try to use domestic induction units in a catering kitchen. They are not designed for heavy-duty use and will overheat if they are overworked. This could damage the unit beyond repair. Typically a domestic unit draws less than 2kW of power – a single 'element' in a commercial induction hob will be rated anywhere between 2.2kW and 16kW.

What will it be used for?

There is now a huge variety of models on the market, from tabletop units to island suites. First you need to establish what sort of service the induction hob will be used for. For example, a front of house unit in a hotel, being used for breakfast and bistro-style service, will be relatively light duty. A unit for an island suite in a busy kitchen will be heavier duty.

Electric loading

Be aware that 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. The electrical loading on a commercial induction hob can be relatively high depending on the kilowatt loading of the hob you are choosing. (This may seem odd given that an induction hob uses less energy than a conventional electric hob. It is because an induction hob draws significant power – but only when it is actually being used. The energy saving is a result of the speed and efficiency of the induction process and the fact that as soon as the pan is removed from the hob, the power shuts off).

Check the warranty

As with any piece of commercial equipment, buyers should carefully check the warranty. Make sure that:

- 1 The warranty covers the equipment for commercial use
- 2 The warranty includes on site labour and parts
- 3 The company supplying the induction hob offers a full after-sales support package (such as planned preventative maintenance contracts)

Replacing a standard hob with an induction unit

If you are replacing an old hob, then the chances are you can get an induction unit that will replicate the old unit's capacity – four or six elements and so on. However, bear in mind that induction hobs are very fast and need no pre-heating, so cooking should be significantly quicker than on the old hob. You may find you only need a four 'burner' induction hob if you used to have a six burner electric or gas one.

New build

If you are planning a new kitchen, or if the induction hob is an additional piece of equipment rather than a replacement, then you need to decide what capacity you need. Use similar rules of thumb as you would for any hob, based on your menu and throughput at peak times.

Front of house and 'at-table' cooking

Because they are fast and safe, and produce so little waste heat, induction hobs are ideal to use near guests, for front of house and 'at-table' cooking. That's why there is such a wide choice of tabletop units available, including induction wok hobs.

Siting your equipment

With induction hobs it is important to avoid overheating of the electronic components – they can be damaged if they get too hot. With heavy duty island suites induction manufacturers often site electronics well away from the heat source. Also ensure that any air filter vents are clear and are regularly cleaned, just as you do for (for example) a fridge, so that the airflow is maintained.

The bottom line is: 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.



CHOOSING THE RIGHT COOKWARE FOR INDUCTION COOKING

The most important fact about induction cookware is that the pan's construction is crucial to how powerfully 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.

Commercial, not domestic

Again, its Rule Number One and it's crucial. BUY COMMERCIAL. Using domestic cookware on a commercial induction hob can be dangerous. A domestic pan is designed for much lower power levels compared to commercial cookware, which may need to be able to handle up to 16kW of induction power. So make sure your cookware is made for commercial use.

Check the base

Lots of induction cookware uses a disc made of ferrous metal, welded onto the base. This is fine, so long as the disc covers the whole of the base. Sometimes the discs are set into the base and thus are smaller than the circumference of the pot or pan – these are not suitable for induction cooking. That's because the outer section of the base, outside the ferrous disc, becomes a 'cold bridge' where food can stick. A disc that covers the whole of the base will ensure a uniform spread of heat.

Is it big enough?

If the cookware is too small it may not be big enough to draw power from the induction coil. For example, it is fashionable to use small (10cm to 12cm) sauciers to make sauces and then present them at table. These may not be big enough to work on many heavy-duty induction hobs.

What's the best cookware material?

There's a wide choice – basically it needs to be ferrous or have a ferrous base. Popular materials include stainless steel multi-ply, stainless steel with ferrous base, cast aluminium with ferrous base, mild steel (black iron) and cast iron.

Non-stick?

There are plenty of non-stick cookware ranges that work well with induction.

A word of warning...

Never leave an empty pan on an induction hob that is switched on (a common practise with standard hobs, to heat up the pan). Induction is incredibly fast – faster even than gas – and heats up an empty pan so quickly it can cause damage. With non-stick pans, the coating may break down and give off noxious fumes.

