

# Understanding Combi Ovens

A combi-oven combines several cooking functions in one piece of kitchen equipment and the shortening of the description "combination" is how a combi-oven gets its name. The combi-oven uses dry heat - either still or fan-driven - and steam, which is injected into the oven when the food being cooked needs it. An alternative name for the oven is the combi-steamer.

The combi-oven is the most versatile piece of equipment any professional kitchen can have. These are just some of the examples of its benefits:

*Meat* - Up to a third of the weight of a piece of meat can be lost during dry roasting through loss of the water content of the meat. Having gentle steam in the oven during roasting both minimises weight loss and produces a more tender joint.

*Fish* - steaming is an ideal cooking medium for this delicate product.

*Vegetables* - By cooking in steam instead of boiling water, vegetables keep more of their nutritional value and natural colour.

*Baking* - by operating as a fan-driven convection oven, baked goods are evenly and crisply cooked. A slight injection of steam can also enhance some baked foods such as bread.

*Regeneration* - Food which has been pre-cooked and correctly chilled prior to service can be rapidly brought up to serving temperature, avoiding the need to hold food hot for long periods which leads to flavour loss and drying out. Combi-ovens are ideal for busy banqueting operations and can handle both ready-plated meals and multi-portion containers.

## **What is needed in the kitchen to install a combi-oven?**

A water supply and energy supply. Combi-ovens will run off electric, mains gas and LPG.

## **How to calculate the size of combi-oven needed**

This is a job an oven manufacturer will arrange for you. The size of combi-oven needed is calculated by the amount and types of food to be cooked.

## **A combi-oven is not just for big food operations**

Combi-ovens come in a range of sizes and all manufacturers build ovens for the small independent caterer as well as the very high volume outlets

## Technical question to ask before making a choice of combi-oven

- What are the performance and cost implications resulting from steam coming from a water boiler or by spraying water onto heated elements in the oven?
- Why is it necessary to fit a water filtration system to the oven to remove dissolved salts in the water and prevent scaling?
- Is there a high pre-heat function to enable fast heat recovery when cold food is put into the oven?
- How easy the oven cavity and the door seals are to clean and what self-cleaning features the oven has.
- What are the programming features, how easy are they for staff to understand and do they meet my kitchen needs? Is there a self-diagnostic facility to warn me should something go wrong?
- Is there a food core temperature probe, rapid cool-down feature or a reversible fan for even heat distribution?

## Look after it!

The combi-oven is the workhorse of the kitchen and one of the most versatile items of prime cooking equipment any kitchen can have. It can steam, bake, roast and “dry-fry” chips, breaded and battered frozen products using the residual fat in the coating.

This multi-function feature of the combi-oven means many different foods and cooking methods may be put through the combi oven in any one working day. Typically, chickens may be roasted, fish steamed and frozen bakery goods finished off. That versatility means there are lots of different flavours and smells occurring in the combi-oven. Everything cooked will deposit its own residual taste in the oven which brings up “Look After It” rule No. 1 – keep the oven clean to avoid flavour transfer.

This is important where strongly-flavoured foods such as chicken or fish have been cooked and then vegetables are to be regenerated or patisserie and desserts cooked. Many combi-ovens have a push-button clean cycle which will wash the oven cavity and take away any food residue so a delicately flavoured food following on tastes of its ingredients and not what was previously cooked. Where a high production kitchen has a bank of combi-ovens, if there is not an in-built self-clean cycle, it is possible to get mobile cleaning systems which can be wheeled to each oven in turn.

The most important clean cycle is the one at the end of each cooking shift. Food residue and debris left will harden and build up.

Door gaskets are built to withstand high heat and heavy use, but they are not indestructible. The soft and flexible nature of these seals mean that while they keep the cooking atmosphere in; they do need

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care to avoid unnecessary damage and subsequent replacement. Door slamming on any piece of kitchen equipment is a common cause of premature service need and replacement cost. A kitchen manager should always have an ear for this abuse of combi-ovens and train staff to close doors firmly, but not slam.

Door seals can also suffer from a build-up of food debris. The folds in the door gasket which give the close seal will inevitably attract food debris. The manual or automatic clean cycle will clean the oven cavity, but a manual inspection and clean with a grease detergent and clean cloth will bring long life to door seals.

High-fat foods such as chickens can deposit large amounts of fat in the oven. Combi -ovens have different ways of dealing with this. Some have fat drains where the chicken - or any residual grease - drains through a pipe in the bottom of the oven into a collection bucket.

Some have just internal collection depositories or there may not be any facility to collect excess cooking grease.

Where a trap system is built into the combi-oven, the route the fat travels through must be cleaned at the end of every working day to prevent a build-up of fat becoming a hygiene and oven drainage problem.

The combination of different cooking systems in a combi-oven gives versatility, but it also combines water, heat, electricity and computer circuitry in one cooking machine. None of those elements sit easily together and a bad reaction between two of those factors can be a cause of operational problems that need an unplanned visit of a service engineer.

Which highlights the most important point of looking after a combi-oven. A regular service contract is essential. This is preventative maintenance which can spot problems in a combi-oven before they become expensive.

Water treatment for combi-ovens is very important, check the index for a separate section on this.

### **In brief**

#### **Do**

- Fit a water treatment system
- Check door seals weekly
- Clean daily
- Slam doors
- Trap probes in doors

#### **Don't**

- Cook strongly flavoured foods with delicate foods
- Allow fats to carbonise in the cavity
- Overload
- Leave food debris trapped in door seals
- Neglect to clean fat drains

## How to find out more about combi-ovens

Talk to the experts.

The Catering Equipment Suppliers Association

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E-mail: [enquiries@cesa.org.uk](mailto:enquiries@cesa.org.uk)

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