

1 INTRODUCTION

This document gives advice on how to design, specify and install your Westin extraction system in order to optimize its performance.

Westin can provide a range of services in order to ensure your extraction system is designed and installed so as to achieve a successful outcome. These services include technical advice relating to the type of extractor, accessories such as ducting and, if necessary, site surveys (for which there may be a charge). Our contact details:

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2 PLANNING

The efficiency of an extraction system is not just determined by fan motor power but also by the extractor's position, ducting and fan configuration.

The position of the hob and extractor unit is of great importance in order to efficiently capture the plume generated by the hob rings and the cooking process. It must allow for practical use and aesthetic considerations while at the same time provide a duct route for the exhaust air which will optimise the performance of the extraction system. To some degree this could determine the layout of the kitchen.

In order to advise on these crucial aspects, Westin prefer to assess an application at the early stages of planning and design, keeping in mind the type and specification of the cooker/hob, with some idea of the type of cooking intended (ie griddling, frying, wok cooking, char-grilling, etc).

3 EXTRACTOR TYPE

Westin can supply all the different generic types, both as standard products or custom-designed to match your precise requirements:

3.1 Wall-mounted Hood

This is the most common type of hood. It is attached to the wall above the hob and the duct route is either through the wall or up and into the ceiling void.

3.2 Island Hood

An island hood is suspended from the ceiling above an island workstation. The duct route will be up, usually inside a chimney section, into the ceiling void.

The hood is suspended from the ceiling, so it is important that the support structure and fixings are properly designed to take the weight of the unit.

3.3 Built-in (integrated) Unit

This type of extractor is designed to fit into the furniture above the hob, in an overmantel or in inglenook chimney applications. In the first configuration, the duct route will either pass through the wall, up through the furniture and along the top of the furniture or up into the ceiling void. In the second and third set-ups the duct will either follow the chimney flue or exit at some intermediate point along the flue.

3.4 Ceiling Built-in Unit

As its name suggests, this type is fitted in the ceiling void and the duct route will also be in the void.

3.5 Downdraft

The downdraft extractor is incorporated into the worktop furniture. The fume collection section is positioned just above pan level and can be behind or to the side of the hob. Fumes are taken down into the worktop furniture and then through ducting either under the floor or through the furniture adjacent to the workstation. The fume collection section can be either in a fixed position or can be retracted into the worktop.

Note: Downdrafts have inherently reduced fume capture efficiency compared to other types of extractor. Please consult with Westin before specifying a downdraft for your application.

4 EXTRACTION PERFORMANCE

The following table gives an approximate indication of the relative level of extraction performance obtainable from the different types of extractor.

Note: the performance ratings are for guidance only; please consult with Westin on your particular application.

There are two basic measures of performance based on zones within the kitchen:

Local Zone: this is the region between the hob and the underside of the extractor where the hot plume generated by the hob and cooking processes is formed. It is important to maximize the capture of contaminants and fumes in this zone as they are generated.

Room (Global) Zone: contaminants and fumes not captured in the Local Zone will enter the Room Zone and will usually collect in the region below the ceiling.

Extractor Relative Performance Rating		
Extractor Type	Local	Room
Hood	☆☆☆	☆☆
Built-in Unit	☆☆☆	☆☆
Ceiling Built-in Unit	☆☆	☆☆☆☆
Downdraft	☆	☆

5 FANS AND BLOWERS

There are various types of fan configuration available as described below:

Note: the terms "fan" and "blower" are interchangeable.

5.1 Internal or Integral Fan

The majority of extractors have the fan(s) incorporated into the extractor body. This tends to be the most cost-efficient solution as all the components of the extractor and its controls are in one pre-assembled unit. This also makes installation easy because the electrical and duct connections are in a single location.

5.2 Remote Fan

Remote fans are usually specified if high performance is required. The extractor body can be designed with the emphasis on aesthetics and efficiency because the physical size of the fan is not a limiting factor. Also, any excessive noise from the fan is removed from the cooking area. Remote fans can be installed along the ducting route (in-line), for example in the loft space or in a cupboard. Alternatively, the fan can be installed in a weather-proof housing mounted on an outside wall or on the roof.

5.3 Multiple Fans

Multiple fans will usually require independent duct runs for each fan or, alternatively, a specially designed duct system.

Whichever solution is chosen, it is important to consult with Westin on the duct design. Failure to design the duct system to match the installed fan rating can significantly degrade the overall system performance.

6 DUCTING

6.1 Access for Installation

Easy access to the duct route during installation is important. Lack of access may require the “blind” fitting of flexible ducting, with increased risk of unseen kinks and impaired efficiency.

6.2 Planning the Route

An important influence of the performance of an extraction system is the ducting, which takes the exhaust air/contaminant mixture from the extractor to the outside.

With many types of ducting and accessories available, the ducting system and its route should be a prime consideration during the initial stages of the kitchen design.

6.3 Efficiency

For maximum efficiency, ducting should be kept as short as possible and as straight as possible with a constant cross-sectional area being no less than that recommended by Westin.

Bends in the duct will also degrade performance so the number of bends in a duct run should be kept to a minimum and be gradual and smooth to prevent turbulence.

Where possible, extraction units should be located on an outside wall or as near to an external vent as possible.

6.4 Rigid Ducting

Rigid ducting is the best type to use. It is designed for non-turbulent flow and will withstand the rigours of installation. It is easy to install providing there is suitable access along the route. Available in rectangular or circular sections, it comes in easy-to-use modular components such as bends, joints and adaptors.

If standard rigid components are unsuitable for the application, Westin can provide custom-designed metal ducting.

6.5 Flexible Flue Liner

Semi-rigid circular flue liner (stainless steel or aluminium) is recommended for runs up disused chimneys. It is strong and designed to be pulled up tortuous flues without damage.

6.6 Flexible Ducting

Flexible ducting is economical but its use should be minimised as it gives the worst performance. It should only be used for short duct runs or initial connection and be pulled taut to prevent significant losses in extraction efficiency.

Care should be taken to ensure that bends are gradual, that straight runs are pulled tight and there are no kinks or deformations which reduce the cross-sectional area and therefore degrade air flow. Care needs to be exercised during installation to prevent puncture of the foil.

A 90° bend in 150mm diameter flexible ducting will require 215mm minimum space to give a smooth radius with no kinking or significant reduction in cross-sectional area.

7 CONTROLS

Westin have a range of controls to ensure the system can be operated optimally. These include:

- fan speed;
- lights ON/OFF;
- timed run-on (10 min.) to clear residual fumes;
- CLEAN GREASE FILTER alarm.

8 GREASE FILTERS

Westin can supply a variety of filters which are all suitable for dishwashers:

- aluminium mesh;
- stainless steel baffle.

9 IMPORTANT INFORMATION

The exhaust air must not be discharged into a flue which is used for exhausting fumes from appliances supplied with energy other than electricity e.g. oil- or gas-fired central heating boilers, gas-fired water heaters, etc.

Requirements of the relevant authorities concerning the discharge of exhaust air must be complied with.

Pay particular attention to fire risk when frying. To minimise the risk of fire, all instructions relating to cleaning the grease filters and removing grease deposits must be adhered to.

Do not flambé under the extractor.

WARNING

Proper care must be taken to ensure that the negative pressures caused by high performance extraction systems do not adversely affect the safe operation of certain types of fuel-burning appliances (gas, oil or solid fuel), including those installed in the kitchen and possibly also those installed in other parts of the house.

Where such fuel-burning appliances are installed, adequate ventilation **MUST** be provided in the room of installation, located and sized such that the negative pressure in the room created by the extractor does not exceed 4Pa.

In case of doubt, do not operate the extractor and fuel-burning appliance(s) simultaneously and consult an appropriate (for the fuel type) expert for advice.

For hoods and built-in units the clearance between the hob burners and the bottom surface of the extractor should ideally be within the following range:

- Gas hob-to-extractor clearance (min): 750mm
- Electrical hob-to-extractor clearance (min): 650mm
- hob-to-extractor clearance (max): 900mm

The maximum distance between the hob and the bottom of the extractor is required to ensure that the extractor captures the cooking fumes and odours efficiently.

If this clearance range cannot be accommodated, please call Westin to discuss – we can usually offer a solution.

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