



HOUNÖ TOUCH

Installation Manual

ENG

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INTRODUCTION

Dear customer,

Thank you for choosing a Visual Cooking oven from HOUNÖ.

This manual contains the information required to install, connect and prepare the oven properly for usage. Please comply with the guidelines in this manual. If these guidelines are not complied with, HOUNÖ cannot be held responsible for any damage that occurs after the oven has left the premises of HOUNÖ A/S. Please make the manual available to all who service and maintain the oven and retain it for future reference. The latest version of the manual can be downloaded from www.houno.com.

Note that this document is subject to change without notice.



IMPORTANT SAFETY INFORMATION

The following icons are used throughout this manual to draw special attention to safety related information.



The service personnel should observe and/or act according to the information in order to obtain the best possible function of the oven.



The service personnel must observe and/or act according to the information in order to avoid any personal injury or damage to the oven.

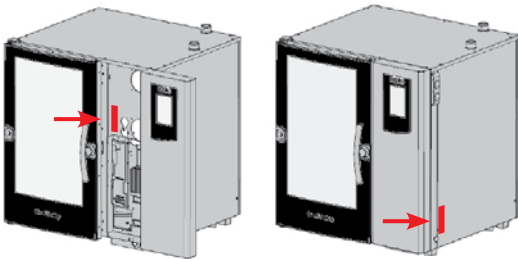


The service personnel must observe and/or act according to the information in order to avoid any fatal injury. The symbol indicates a hazard arising from dangerous voltage.

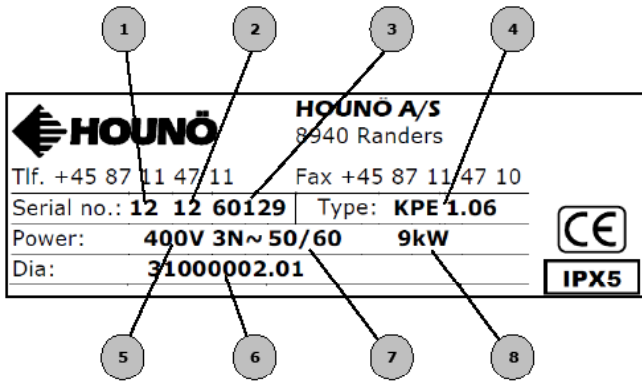
LOCATING THE SERIAL NUMBER OF THE OVEN

When you order spare parts, additional equipment or request service for the Visual Cooking oven, you need the oven's Serial Number,

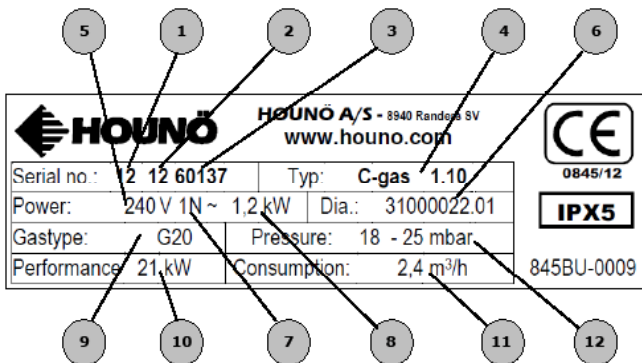
You can find the Serial Number and Type information on the right-hand corner post of the oven and behind the front panel as shown in the following illustrations.



Type Plate of Electric Oven



Type Plate of Gas Oven



Type Plate Information

Number	Description
1	Year of production: For example 12 = 2012
2	Month of production: For example 05 = May
3	Identity number: For example 4XXXX, 5XXXX, 6XXXX
4	Oven type and size: For example C-Gas: Oven type C, Gas version For example 1.06: 1/1 GN 6 shelves
5	Voltage: For example 400V
6	Electric diagram: This can physically be found inside oven (remove front panel), and on Hounö's home page: www.houno.com
7	Phase and frequency: For example 1N: (1 phase with neutral), 3 (3 phase without neutral) For example 50/60 Hz.: Hounö ovens can operate on both frequencies
8	Electrical consumption: For example 9 kW (shows how much electricity the oven is using)
9	Gas types: For example G20, G25, LPG 3BP/3P (G30/G31)(the different gas types you have in the world)
10	Gas consumption: For example 21kW (shows how much gas the oven is using)
11	Consumption: For example 1,2 m3/h
12	Gas pressure: For example 18-25mBar (shows what the inlet gas pressure should be)

UNPACKING AND INSTALLING THE OVEN

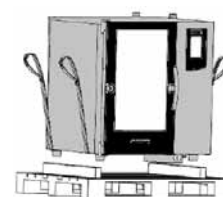
Before you begin the installation, check the oven for any transport damages. If there are signs of damage, inform your supplier and freight forwarder immediately.

Unpacking and Installing the Oven

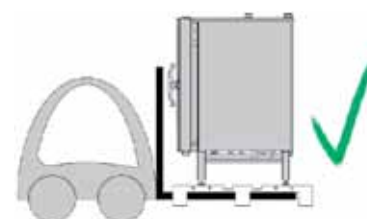
We recommend using a pallet trolley for lifting the oven. Some oven types must only be lifted with a pallet trolley.

Oven Weight

Oven Type	Weight (transportable without a pallet)
1.06	155 kg – 341.7 lbs.
1.10	195 kg – 249.9 lbs.
2.06	195 kg – 249.9 lbs.
2.10	235 kg – 518,1 lbs.



Oven Type	Weight – only transportable with a pallet
1.16 Roll-In	270 kg – 595.2 lbs.
1.20 Roll-In	305 kg – 672.4 lbs.
2.20 Roll-In	405 kg – 892.9 lbs.

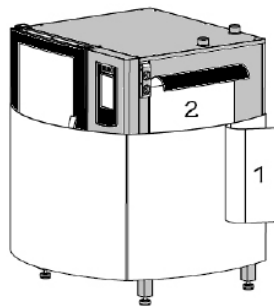


Oven Weight CombiPlus

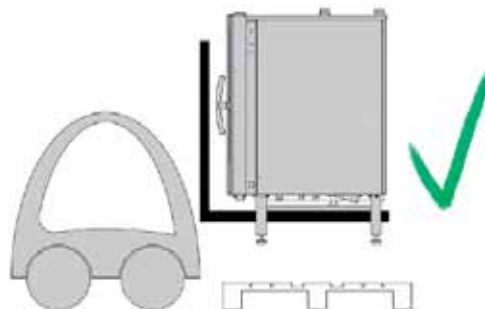
Oven Type	Weight
1.06/1.06	300 kg – 662 lbs.
1.06/1.10	340 kg – 750 lbs.

To Unpack and Move the Oven

1. Leave the oven packaging while moving the oven. Use a pallet trolley to move the oven to the place where you are going to install it.



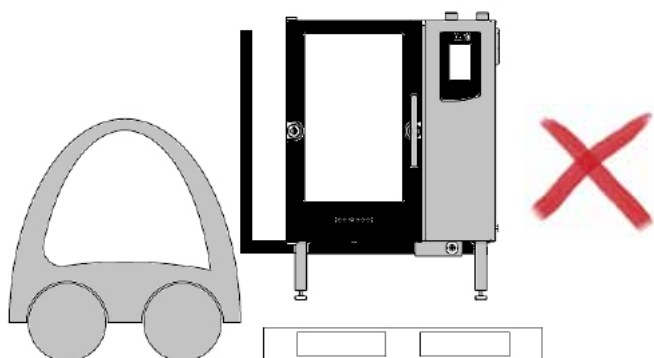
2. Insert the forks under the lower cross tube of the stand and place a couple of wooden blocks between the cross tube and the pallet trolley. You achieve the best possible balance by introducing the forks from the front of the oven or from the motor side. Keep clearance under the oven when you move it from the pallet.



3. When you have placed the oven in the desired place, you can remove the oven packaging. However, leave the foil that covers the surfaces until you have installed the oven. The foil protects the surfaces from sharp objects.
4. Remove the packaging from the racks in the oven chamber.



Do not lift the oven from the left side.

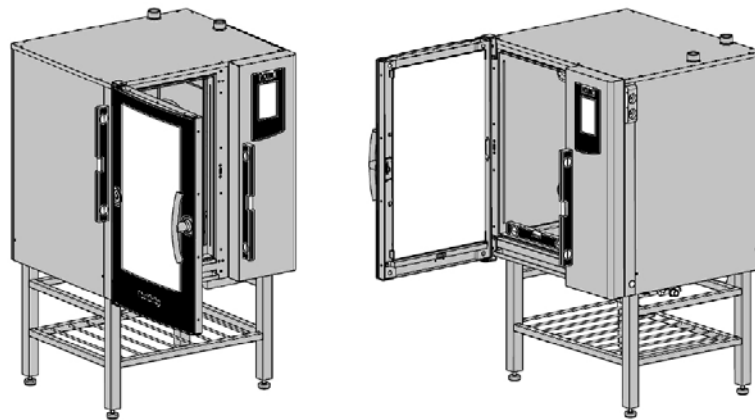


Disposal of Packaging Material

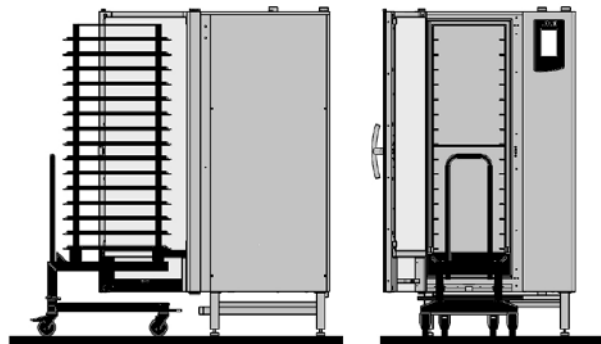
The packaging material must be destroyed in compliance with local rules and regulations. You can request detailed information about the composition of the packaging material from the HOUNÖ customer center.

Installing the Oven

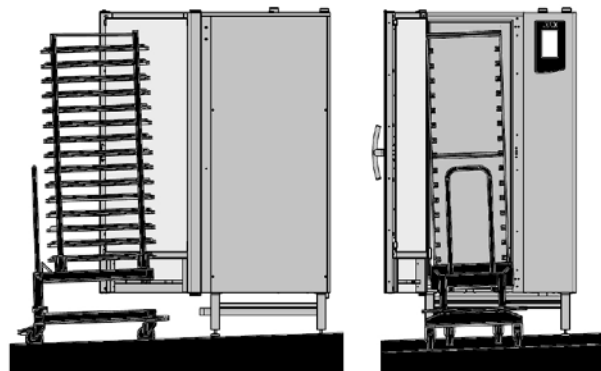
The oven must be installed upright and leveled. You measure this on the inside front and inside edge of the oven chamber. You can adjust the position by using the adjustment screws on the stand or on the legs of table models. You can also adjust the installation height of the oven by using the same adjustment screws. This enables you to adjust the installation height to fit the rack trolley.



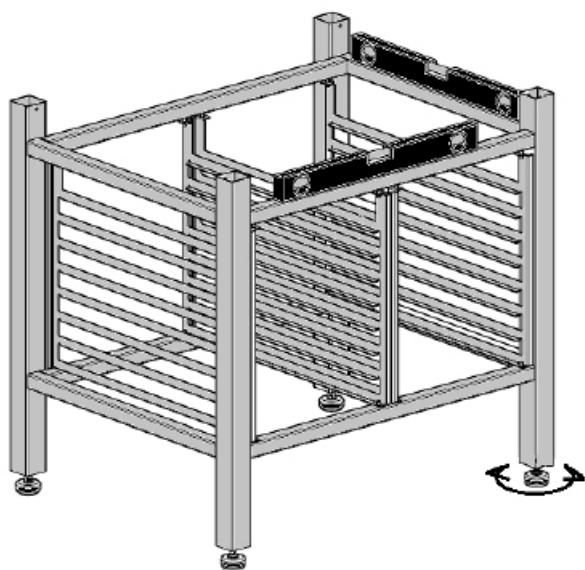
Correct leveling



Incorrect leveling



You level the stand by turning the adjustable feet.

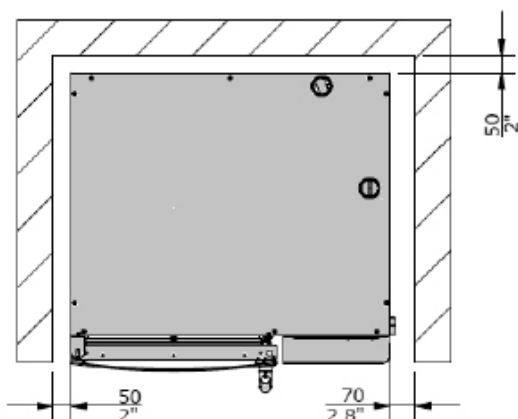


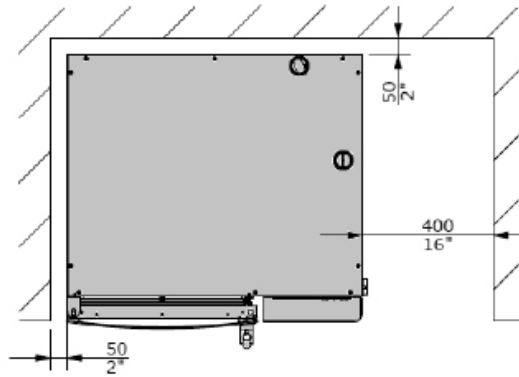
Clearance

You must ensure that there is sufficient clearance around the oven to allow for the necessary flow of cooling to the oven. It is therefore important that you plan the installation so that all minimum clearances are met or exceeded.



At least 50 mm/ 2 inches clearance from the rear wall is required at the back of the oven.





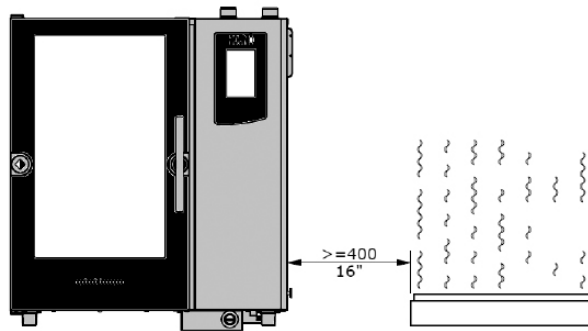
WARNING

If the temperature on the right side of the oven is too high, a safety shut down can occur.



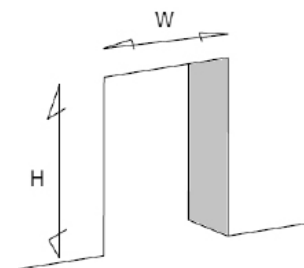
WARNING

Do not place strong sources of heat such as hotplates, tilting frying pans, deep fat fryers and other sources of strong heat near the oven. Otherwise, it may invalidate your warranty.



Oven Dimensions

Oven Type	Height with stand x width x depth*
	-millimeters -inches
1.06 / 1.10	1492 x 899 x 831 mm 58.75 x 35.40 x 32.75 in
1.16	1592 x 899 x 831 mm 62.70 x 35.40 x 32.75 in
1.20 Roll-In	1852 x 899 x 831 mm 72.95 x 35.40 x 32.75 in
2.06 / 2.10	1492 x 1122 x 951 mm 58.75 x 44.20 x 37.45 in
2.20 Roll-In	1852 x 1122 x 951 mm 72.95 x 44.20 x 37.45 in



CombiPlus Oven Dimensions

Oven Type	Height with stand x width x depth*
	-millimeters -inches
1.06/1.06	1800 x 900 x 970 mm 70.67 x 35.43 x 38.19 in
1.06/1.10	2030 x 970 x 900 mm 79.92 x 35.43 x 38.19 in

*Heights may vary depending on stand configuration

CONNECTING

Connecting to Water Supply

The Visual Cooking oven comes with two water connections by default. However, the oven also comes with a special adapter so that you can use the oven with only one water connection. See below for descriptions.

Use an approved flexible $\frac{3}{4}$ " connection hose to connect to the water supply. Permanent water supply connections must be fitted with a stop tap.



Flush the tubes thoroughly before you connect the oven to the water supply.

Plumbing Specifications

- Hardness of the water: max. 3 dH
- Conductivity: min. 75 microsiemens
- Water pressure: min 2.5 bar (36 PSI) dynamic pressure when using CombiWash max. 6 bar (87 PSI)
- Water flow: min 12 l/m
- Water temperature: max 20°C (68°F)
- Chloride concentration max. 100 mg/liter
- Sulphate: max. 150 mg/liter

If the water feeder is connected to the water supply with a flexible connection hose, the hose should comply with local rules and regulations.



If the water temperature exceeds 20°C / 68°F, you may experience issues with ClimaOptima calibration and cooling.



Do not connect an oven with a steam generator to a reversed osmosis plant. You may experience issues with the reading of the water level in the steam generator.



The water supply connection must be carried out by an authorized plumber in compliance with local rules and regulations.



The warranty does not cover clogged up water filters or dirt in the solenoid valves.



To ensure that the water quality conforms to the above requirements, we recommend that you install a water filter in front of the water connection.

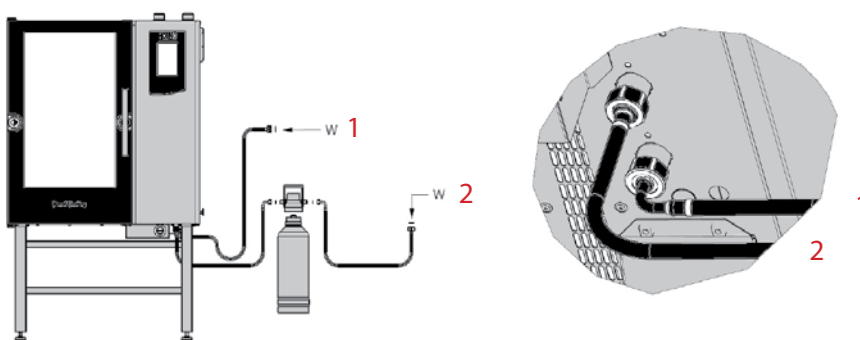


We recommend that you install a 0.25 mm particle filter.

Two Water Supply Connections with Water Filters

There is one connection for raw, cold water for the condensation jet. The connection is located at the back of the oven (1).

There is one connection for the steam generator and the jet in the oven chamber. This connection must comply with local rules and regulations for water supplied to household appliances. However, it is possible to use hot water with a temperature of no more than 20°C / 68°F. The connection is located at the front of the oven (2).



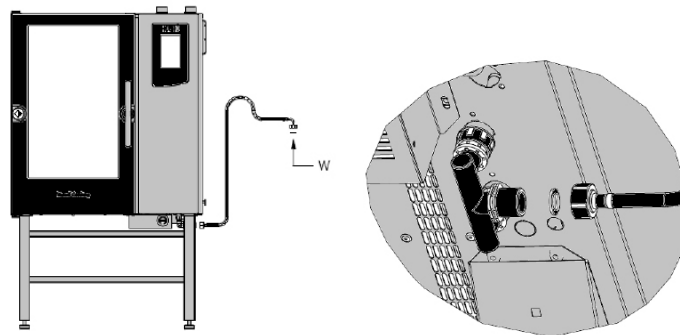
Water Filters

We recommend that you use a water filter to ensure that you use only the best quality water. Poor water quality may affect the quality of the food and cause problems with the equipment. You can combine up to 4 different types of filters.

Filter type	Description
Particle	Used to avoid particles in the water
ION	Used when the chloride concentration is high. Prevents corrosion.
Carbon	Used when there is a high level of chlorine in the water.
Water softener	Used to soften the water and prevent scale.

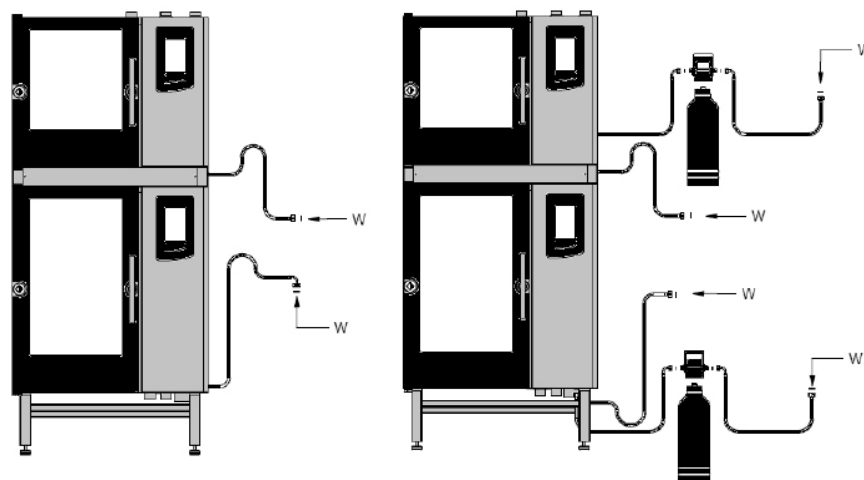
Connection with Adapter

If you decide not to use a water filter, you only need one connection, in which case you can use an adapter.



CombiPlus Water Connection

When you connect a CombiPlus oven to the water, ensure that you have separate water connections for the top and bottom oven.



Connecting to the Drain

From the factory, the Visual Cooking oven comes equipped with a drains system that removes surplus water from the oven chamber. Surplus water may be condensed water from the products, water from the cool down process when the oven chamber is cooled down with cold water, or water from cleaning of the oven chamber.



A licensed plumber must perform the connection to the drain.



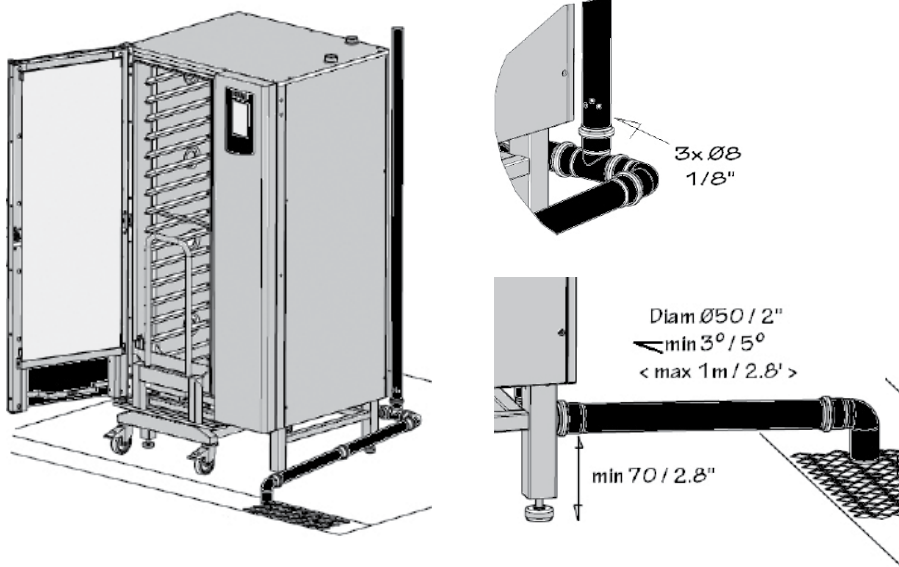
We recommend that there is a water outlet in the floor of the room where the oven is located.



The drain must never end directly under the oven.

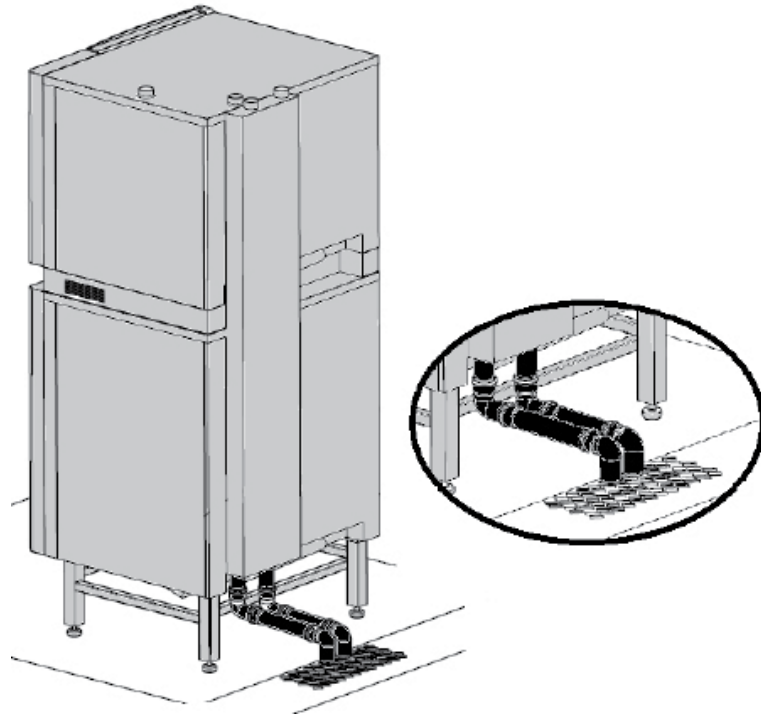
Drain specifications

- The drain must be made of stainless steel or an equally temperature-resistant material.
- The drain must have a diameter of at least 50 mm/ 2 inches.
- The drain must have a fall of at least 3° or 5%.





CombiPlus ovens require two separate drain connections.

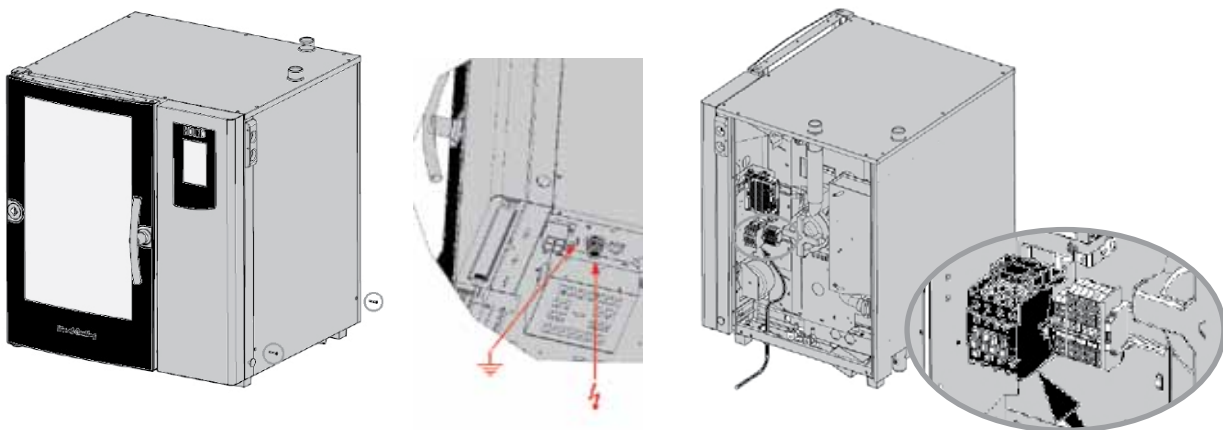


Electrical Connections



A licensed electrician must perform the installation in compliance with local rules and regulations.

- The wiring diagram is located behind the front cover.
- The terminal/contactors for the electrical connection is located behind the right side plate. You have to remove the side plate, and then insert the main power cable through the strain relief at the bottom of the oven.



Observe the color coding of the wires. Wrong connection may cause electric shock. Yellow/green = earth connection, blue = neutral



To ensure that the oven can be disconnected during installation and repair, an approved plug outlet or safety cut-out must be located close to the oven. The safety cut-out must be able to automatically cut off all poles with a total distance of break of at least 3 mm. Each of the two units in a stacked arrangement (CombiPlus) must have its own plug outlet or safety cut-out.



Improper electrical installation will invalidate your warranty.

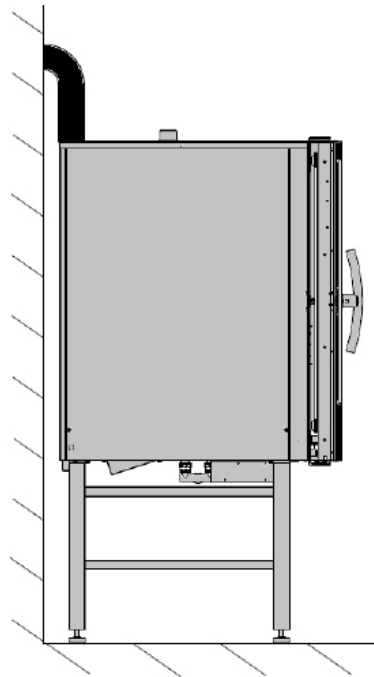
During installation, always follow the installation instructions and the information provided on the rating plate and ensure that the installation complies with local rules and regulations.

We recommend that you use a (Type B) RCD/RCCB 300 mA because an uneven current may be supplied from the frequency inverter in the oven.

For detailed electrical specifications, see Appendix A (page 39).

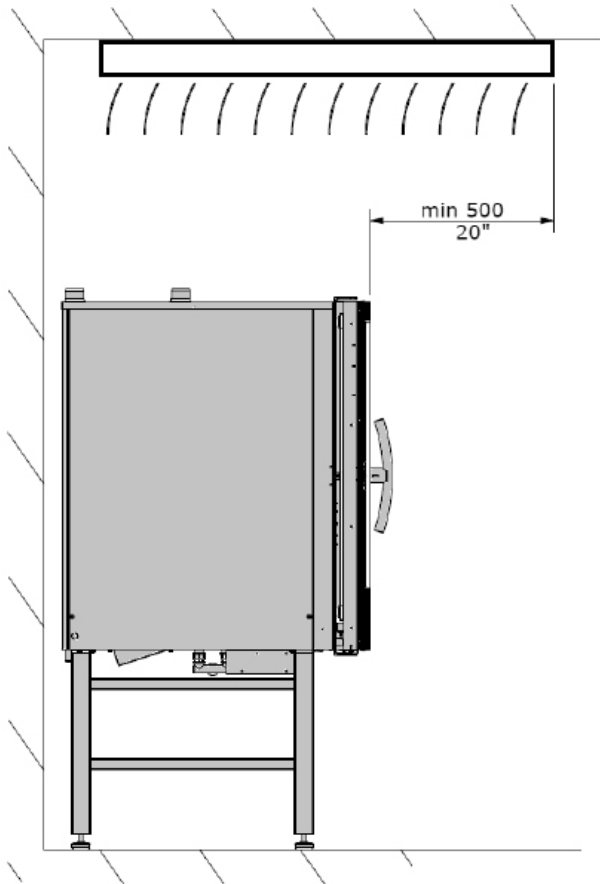
Exhaust

Visual Cooking ovens are equipped with an open/direct exhaust system that removes surplus humidity from the oven chamber. The exhaust system has an electrically operated damper.



Using an Extraction Hood

If you install an extraction hood in the ceiling, it should project 50 cm over the front of the oven. The suction effect should be 400-800 m²/h.



If the ventilation motor is controlled directly from the oven, the ventilation starts when a program is started, and runs for 10 minutes after completion of the program.



The installation of the ventilations must be carried out in compliance with local rules and regulations.

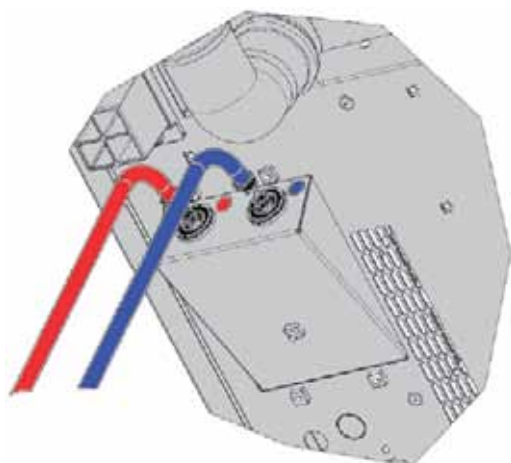
CombiWash Containers

Ovens with the CombiWash function enabled are supplied with tubes that can be connected to the detergent and rinse aid containers.

- At the bottom of the oven near the rear, connect the blue hose to the fitting with the blue sticker and to the rinse aid container.
- At the bottom of the oven near the rear, connect the red hose to the fitting with the red sticker and to the detergent container.



Do not place the containers above the oven.



GAS OVEN SAFETY PRECAUTIONS

Isolate the oven from the mains supply before opening the oven.

After maintenance or repair, the oven must be checked for electric safety in accordance with local rules and regulations.

When you are working with gas components such as gas valves, gas blowers or are changing the connected type of gas, you must perform a detailed flue gas analysis using adequate CO and O₂ measuring equipment. The flue gas analysis must be performed by trained technicians.

Always check the oven for possible gas leakages.

Gas Leak Safety Measures

If you discover that gas is leaking, take the following safety measures.

- Immediately quench all flames.
- Immediately open all doors and windows.
- Do not enter rooms where smell of gas is recognizable with open fire.
- Do not activate any electrical switch.
- Do not pull out any electrical plug
- Do not activate any electrical alarm.
- Close all main shutting facilities, and then see if all gas mountings are closed and close those still open.
- Only switch on the light when there is no smell of gas anymore.

If the reason for the smell of gas cannot be found although all gas mountings are closed, immediately call your gas supply authority. Even a faint smell of gas, the cause of which cannot be found, has to be reported to the gas supply authority.

If the smell of gas penetrates rooms that are not easily accessible, the police or the fire brigade must be called in immediately and the gas supply authority must be informed.

If there is penetration of gas in the cellar, air the cellar but do not enter.

Do not repair gas fitting damages yourself. Such damages are only to be repaired by experts; that is, the authorized agents of the gas supply authority and the contractual enterprises.

Safety Measurements for Gas Oven Installation and Maintenance

Follow the guidelines below when you install and commission a gas oven.

The connection and disconnection of the gas supply line as well as maintenance work on gas components are subject to local rules and regulations.

1. Verify that the connected type of gas is correct or convert the unit if necessary.
2. Measure the static gas pressure.
3. Switch on the oven and measure the dynamic gas pressure. This dynamic gas pressure must be between the following values.
4. Natural gas: "1.8-2.5 kPa" - "18 - 25 mbar" - "3.2-8 inch WC"
5. LPG: "3-5.7 kPa" - "30 - 57 mbar" - "5.2-14 inch WC"
6. Note: Local rules and regulations might state otherwise.
7. Check all gas lines for any gas leakage by using an appropriate leakage tester.
8. Perform flue gas analysis and record or print the results. Leave a copy of the adjusted gas setting in the oven.

Emitted flue gas must be disposed of according to local rules and regulations.

All factory settings of the gas blower and gas valve are direct measures of the connected load.

Factory settings may only be changed after consulting HOUNÖ A/S.

Changes may only be carried out by specially trained technicians. The warranty does not cover incorrect installation and adjustments made by non-authorized personnel

TOOLS FOR GAS ADJUSTING

Flue Gas Analyzer and Gas Detector

It is a HOUNÖ requirement that you use a flue gas analyzer that can measure both CO and O₂%.

HOUNÖ recommends the following flue gas analyzer and gas detector: Econ CN-P and Econ LSG

You can order the flue gas analyzer and gas detector from HOUNÖ by ordering spare part no. 32720027. Note that the default language of the gas analyzer is English.



Flue Gas Adapter

HOUNÖ recommends the use of a specially designed adaptor to ensure correct measuring of the flue gas from the gas oven.

If this flue gas adaptor is not used, incorrect measurements may occur.

You can order the flue gas adaptor from HOUNÖ by ordering spare part no. 32710055.

If you order the recommended flue gas analyzer and gas detector, the gas adaptor is included. Order spare part no. 32720027.



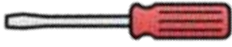
Gas Pressure Meter

HOUNÖ recommends the use of a gas pressure meter to ensure the correct inlet gas pressure.

HOUNÖ recommends the following gas pressure meter: Ecom UNO

You can order the gas pressure meter from HOUNÖ by ordering spare part no.32700189.



Miscellaneous Tools

- Flat-headed screwdriver, size 1.0 x 5.5, used for adjusting the maximum setting on the gas valve.
- Flat-headed screwdriver, size 0.6 x 3.5, used for the gas-test nipple when measuring the gas pressure on the gas valve.
- Allen key, size 2 mm, for fine-adjusting the offset governor (minimum) setting on the gas valve and for adjusting the maximum setting on the gas valve



The offset governor (minimum) must only be fine-adjusted during adjustment of the O₂% and must never be turned before the oven is running and the maximum screw is adjusted.

GAS BURNER SETTINGS

When you adjust the gas burner, the tolerances are as follows:

Max. rpm setting: $\pm 0.2\%$

Min. rpm setting: $\pm 0.2\%$

Adjustment "CE" gas ovens (burner 1)

Houno Gas Oven Adjustment Settings				Hot Air Burner 1 "Bottom"										
Type of Gas	Heat Power kW	Ovn Types	Gas inlet Pressure	O ₂ %, CO ₂ % "MAX" RPM				O ₂ %, CO ₂ % "MIN", RPM			RPM Adjustment normal operation			Air Proving Switch - ON
				O ₂ %	CO ₂ %	RPM	kW	O ₂ %	CO ₂ %	RPM	"u16" Min	"u16" Start	"u16" Max	OFF -> ON
Nature Gas (G20)	13 kW	1.06/5	18-25 mbar	4,1%	9,4%	6700	13 kW	4,6%	9,1%	4800	4800	4800	6700	3100 ± 100
	21 kW	1.10/8	18-25 mbar	4,3%	9,3%	6300	21 kW	4,1%	9,4%	2700	2700	3900	6300	2300 ± 100
	42 kW	1.20/15	18-25 mbar	4,3%	9,3%	6300	21 kW	4,1%	9,4%	2700	2700	3900	6300	2300 ± 100
	21 kW	2.06	18-25 mbar	4,1%	9,4%	6200	21 kW	4,1%	9,4%	3800	3800	3900	6200	2800 ± 100
	24 kW	2.10	18-25 mbar	4,1%	9,4%	6600	24 kW	4,5%	9,2%	2800	2800	3600	6600	2300 ± 100
	48 kW	2.20	18-25 mbar	4,1%	9,4%	6600	24 kW	4,5%	9,2%	2800	2800	3600	6600	2300 ± 100
Nature Gas (G25)	13 kW	1.06/5	18-25 mbar	4,0%	9,3%	6800	13 kW	4,3%	9,1%	4800	4800	4800	6800	3100 ± 100
	21 kW	1.10/8	18-25 mbar	4,0%	9,3%	6400	21 kW	4,0%	9,3%	2800	2800	3900	6400	2300 ± 100
	42 kW	1.20/15	18-25 mbar	4,0%	9,3%	6400	21 kW	4,0%	9,3%	2800	2800	3900	6400	2300 ± 100
	21 kW	2.06	18-25 mbar	3,8%	9,4%	6200	21 kW	3,8%	9,4%	3800	3800	3900	6200	2800 ± 100
	24 kW	2.10	18-25 mbar	3,8%	9,4%	6600	24 kW	4,1%	9,2%	2800	2800	3600	6600	2300 ± 100
	48 kW	2.20	18-25 mbar	3,8%	9,4%	6600	24 kW	4,1%	9,2%	2800	2800	3600	6600	2300 ± 100
LPG 3BP (G30/G31)	13 kW	1.06/5	28-57 mbar	4,5%	11,0%	6500	13 kW	5,1%	10,6%	4800	4800	4800	6500	3100 ± 100
	21 kW	1.10/8	28-57 mbar	4,5%	11,0%	6000	21 kW	4,5%	11,0%	2600	2600	4300	6000	2300 ± 100
	42 kW	1.20/15	28-57 mbar	4,5%	11,0%	6000	21 kW	4,5%	11,0%	2600	2600	4300	6000	2300 ± 100
	21 kW	2.06	28-57 mbar	4,5%	11,0%	6200	21 kW	4,5%	11,0%	3800	3800	3900	6200	2800 ± 100
	24 kW	2.10	28-57 mbar	4,0%	11,4%	6200	24 kW	4,7%	10,9%	2800	2800	3600	6200	2300 ± 100
	48 kW	2.20	28-57 mbar	4,0%	11,4%	6200	24 kW	4,7%	10,9%	2800	2800	3600	6200	2300 ± 100
LPG 3P (G31)	13 kW	1.06/5	30-50 mbar	5,2%	10,3%	6800	13 kW	5,2%	10,3%	4800	4800	4800	6800	3100 ± 100
	21 kW	1.10/8	30-50 mbar	5,4%	10,2%	6300	21 kW	5,4%	10,2%	3900	3000	3900	6300	2300 ± 100
	42 kW	1.20/15	30-50 mbar	5,4%	10,2%	6300	21 kW	5,4%	10,2%	3900	3000	3900	6300	2300 ± 100
	21 kW	2.06	30-50 mbar	5,4%	10,2%	6400	21 kW	5,4%	10,2%	3800	3800	3900	6400	2800 ± 100
	24 kW	2.10	30-50 mbar	5,1%	10,4%	6600	24 kW	5,8%	9,9%	2900	2900	3600	6600	2300 ± 100
	48 kW	2.20	30-50 mbar	5,1%	10,4%	6600	24 kW	5,8%	9,9%	2900	2900	3600	6600	2300 ± 100

Adjustment "ETL" gas ovens (burner 1)

Houno Gas Oven Adjustment Settings				Hot Air Burner 1 "Bottom"										
Type of Gas	Heat Power BTU/hr	Ovn Types	Gas inlet Pressure	O ₂ %, CO ₂ % "MAX" RPM				O ₂ %, CO ₂ % "MIN", RPM			RPM Adjustment normal operation			Air Proving Switch - ON
				O ₂ %	CO ₂ %	RPM	BTU/hr	O ₂ %	CO ₂ %	RPM	"u16" Min	"u16" Start	"u16" Max	OFF -> ON
NAT (G20)	58000	1.06/5	3,2-8,0 inH ₂ O	4,1%	9,4%	6700	58000	4,6%	9,1%	4800	4800	4800	6700	3100 ±100
	87000	1.10/8	3,2-8,0 inH ₂ O	4,3%	9,3%	6300	87000	4,1%	9,4%	2700	2700	3900	6300	2300 ±100
	174000	1.20/15	3,2-8,0 inH ₂ O	4,3%	9,3%	6300	87000	4,1%	9,4%	2700	2700	3900	6300	2300 ±100
	81800	2.06	3,2-8,0 inH ₂ O	4,1%	9,4%	6200	81800	4,1%	9,4%	3800	3800	3900	6200	2800 ±100
	95500	2.10	3,2-8,0 inH ₂ O	4,1%	9,4%	6600	95500	4,5%	9,2%	2800	2800	3600	6600	2300 ±100
	190000	2.20	3,2-8,0 inH ₂ O	4,1%	9,4%	6600	95500	4,5%	9,2%	2800	2800	3600	6600	2300 ±100
LP (G31)	60000	1.06/5	5,2-14 inH ₂ O	5,2%	10,3%	6800	60000	5,2%	10,3%	4800	4800	4800	6800	3100 ±100
	87000	1.10/8	5,2-14 inH ₂ O	5,4%	10,2%	6300	87000	5,4%	10,2%	3900	3000	3900	6300	2300 ±100
	174000	1.20/15	5,2-14 inH ₂ O	5,4%	10,2%	6300	87000	5,4%	10,2%	3900	3000	3900	6300	2300 ±100
	81800	2.06	5,2-14 inH ₂ O	5,4%	10,2%	6400	81800	5,4%	10,2%	3800	3800	3900	6400	2800 ±100
	95500	2.10	5,2-14 inH ₂ O	5,1%	10,4%	6600	95500	5,8%	9,9%	2900	2900	3600	6600	2300 ±100
	190000	2.20	5,2-14 inH ₂ O	5,1%	10,4%	6600	95500	5,8%	9,9%	2900	2900	3600	6600	2300 ±100

Adjustment "CE" gas ovens (burner 2)

Houno Gas Oven Adjustment Settings				Hot Air Burner 2 "Top"										
Type of Gas	Heat Power kW	Ovn Types	Gas inlet Pressure	O ₂ %, CO ₂ % "MAX" RPM				O ₂ %, CO ₂ % "MIN", RPM			RPM Adjustment normal operation			Air Proving Switch - ON
				O ₂ %	CO ₂ %	RPM	kW	O ₂ %	CO ₂ %	RPM	"u17" Min	"u17" Start	"u17" Max	OFF -> ON
Nature Gas (G20)	13 kW	1.06/5	18-25 mbar											
	21 kW	1.10/8	18-25 mbar											
	42 kW	1.20/15	18-25 mbar	4,3%	9,3%	6300	21 kW	4,1%	9,4%	2700	2700	3900	6300	2300 ±100
	21 kW	2.06	18-25 mbar											
	24 kW	2.10	18-25 mbar											
	48 kW	2.20	18-25 mbar	4,1%	9,4%	6600	24 kW	4,5%	9,2%	2800	2800	3600	6600	2300 ±100
Nature Gas (G25)	13 kW	1.06/5	18-25 mbar											
	21 kW	1.10/8	18-25 mbar											
	42 kW	1.20/15	18-25 mbar	4,00%	9,3%	6400	21 kW	4,00%	9,3%	3900	2800	3900	6400	2300 ±100
	21 kW	2.06	18-25 mbar											
	24 kW	2.10	18-25 mbar											
	48 kW	2.20	18-25 mbar	3,80%	9,40%	6600	24 kW	4,10%	9,20%	2800	2800	3600	6600	2300 ±100
LPG 3BP (G30/G31)	13 kW	1.06/5	28-57 mbar											
	21 kW	1.10/8	28-57 mbar											
	42 kW	1.20/15	28-57 mbar	4,5%	11,0%	6000	21 kW	4,5%	11,0%	2600	2600	4300	6000	2300 ±100
	21 kW	2.06	28-57 mbar											
	24 kW	2.10	28-57 mbar											
	48 kW	2.20	28-57 mbar	4,0%	11,4%	6200	24 kW	4,7%	10,9%	2800	2800	3600	6200	2300 ±100
LPG 3P (G31)	13 kW	1.06/5	30-50 mbar											
	21 kW	1.10/8	30-50 mbar											
	42 kW	1.20/15	30-50 mbar	5,4%	10,2%	6300	21 kW	5,4%	10,2%	3900	3000	3900	6300	2300 ±100
	21 kW	2.06	30-50 mbar											
	24 kW	2.10	30-50 mbar											
	48 kW	2.20	30-50 mbar	5,1%	10,4%	6600	24 kW	5,8%	9,9%	2900	2900	3600	6600	2300 ±100

Adjustment "ETL" gas ovens (burner 2)

Houno Gas Oven Adjustment Settings				Hot Air Burner 2 "Top"										
				O ₂ %, CO ₂ % "MAX" RPM				O ₂ %, CO ₂ % "MIN", RPM			RPM Adjustment normal operation			Air Proving Switch - ON
Type of Gas	Heat Power BTU/hr	Ovn Types	Gas inlet Pressure	O ₂ %	CO ₂ %	RPM	BTU/hr	O ₂ %	CO ₂ %	RPM	"u17" Min	"u17" Start	"u17" Max	OFF -> ON
NAT (G20)	58000	1.06/5	3,2-8,0 inH ₂ O											
	87000	1.10/8	3,2-8,0 inH ₂ O											
	174000	1.20/15	3,2-8,0 inH ₂ O	4,3%	9,3%	6300	87000	4,1%	9,4%	2700	2700	3900	6300	2300 ±100
	81800	2.06	3,2-8,0 inH ₂ O											
	95500	2.10	3,2-8,0 inH ₂ O											
	190000	2.20	3,2-8,0 inH ₂ O	4,1%	9,4%	6600	95500	4,5%	9,2%	2800	2800	3600	6600	2300 ±100
LP (G31)	60000	1.06/5	5,2-14 inH ₂ O											
	87000	1.10/8	5,2-14 inH ₂ O											
	174000	1.20/15	5,2-14 inH ₂ O	5,4%	10,2%	6300	87000	5,4%	10,2%	3900	3000	3900	6300	2300 ±100
	81800	2.06	5,2-14 inH ₂ O											
	95500	2.10	5,2-14 inH ₂ O											
	190000	2.20	5,2-14 inH ₂ O	5,1%	10,4%	6600	95500	5,8%	9,9%	2900	2900	3600	6600	2300 ±100

FLUE GAS ANALYSIS

Before you start the analysis, the fan motor in the chamber must run **High left**, and the oven door must be open during adjustment of the burner.

To Make the Flue Gas Analysis



Make sure that the ventilation is running when you adjust the oven, and monitor the CO values closely. The CO values must not exceed 400 ppm for an extended period of time. If this happens, it can cause fatal poisoning.



1. Place the adaptor for the flue gas meter at the top of the exhaust pipe from the heat exchanger, and then insert the probe from the flue gas meter into the 14 mm pipe on the adapter.
2. Ensure that the tip of the probe is exactly in the center of the 50 mm pipe on the adapter.
3. Open the oven door.
4. On the **Technician** display, touch **Test functions**, and then touch **Gas**.
5. Touch **Main contactor**, and then touch the **Fan button** next to the Main contactor button.
6. Touch **RPM**. Select the correct value based on the Gas Burner table, see Gas Burner Settings (page 29).
7. Touch **Gas Control** and wait for 10 seconds.
8. Touch the **Fan button** next to Pres. **Switch**. The gas valve is activated and the burner starts. The pressure switch is also activated.
9. Touch **RPM** and select **Max RPM for O₂ setting**. For more information, see Gas Burner Settings (page 29).

10. Adjust the maximum settings on the gas air unit according to the O₂% values in the table, see Gas Burner Settings (page 29). Before you begin the adjustment, ensure that the burner is running.
11. Turn the **Max screw** counter-clockwise if the O₂% is too high and turn it clockwise if it is too low.
12. Touch **RPM** and select **Min RPM for O₂ setting**. (table) Turn the **Min offset** governor clockwise if the O₂% is too high and counter-clockwise if the O₂% is too low. The offset governor is very sensitive, so only turn it 1/10 of a round at a time.
13. When you have adjusted the Min rpm on the gas-air unit, you must check the Max rpm again.
14. When you have completed the final Max check, make a print of the O₂% reading on the flue-gas meter as proof that the oven has been properly adjusted.
15. Run the oven in manual mode, choose start in hot-air mode, and verify that the oven is running without problems.



FLUE-GAS ANALYSIS (C-MODEL)



1. Place the adaptor for the flue gas meter at the top of the exhaust pipe from the heat exchanger. Insert the probe from the flue gas meter into the 14 mm pipe on the adaptor.
2. Make sure that the tip of the probe is exactly in the center of the 50 mm pipe on the adaptor. This will insure a correct reading.
3. Open the oven door.
4. Enter the **test function/mode** (press and hold the **HOT-AIR** and **COMBI** buttons for 5 sec.)
5. Activate the **main contactor** in "d0" (press the **step button**, display shows 1 when active)
6. Turn the knob clockwise to "d3" fan right
7. Turn the knob clockwise to "d50" gas burner 1
8. Activate the **gas control box** (press the **step button**, display shows 1 when active. (wait 5 sec.)
9. Set the "start" RPM for gas-air unit according to table on page 29 in the time display (press the **clock button**, display flash turn with the knob to the right RPM and press the clock button to confirm)
10. Activate the **gas fan** (press the **fan button**)
11. When the **RPM** of the fan reach a specific speed the pressure switch activates. (see the **LED** next to the **exhaust button**)
12. About 15 sec. after the pressure switch has been activated, the oven ignite and open the gas valve to turn ON. **Note** if the oven has just been installed, you might have to go through the process a couple of times before there will be a flame.
13. Touch the **clock button** and select **Max RPM O₂% setting**, for more information, see Gas Burner Settings (page 29)
14. Adjust the maximum setting on the gas air unit according to the O₂% values in the table, see Gas Burner Settings (page 29). Before you begin the adjustment, ensure that the burner is running.

15. Turn the **Max** screw counter-clockwise if the O₂% is too high and turn it clockwise if it is too low. Adjust the RPM for the gas-air unit to minimum RPM according to the table, see Gas Burner Settings (page 29)
16. Touch the **clock button** and select **Min RPM O₂% setting** (table) Turn the **Min offset** governor clockwise if the O₂% is too high and counter-clockwise if the O₂% is too low. The offset governor is very sensitive, so only turn 1/10 of a round at a time.
17. When you have adjusted the Min rpm on the gas-air unit, you must check the Max rpm again.
18. When you have completed the final Max check, make a print of the O₂% reading on the flue-gas meter as proof that the oven has been properly adjusted.
19. Run the oven in manual mode, choose start in hot-air mode, and verify that the oven is running without problems.

Note Remember to do the adjustment on both gas-air units if the oven has 2 (only 1.20 and 2.20)



ADDITIONAL OPTIONS

The following is a list of additional equipment that you can order from HOUNÖ.

Number	Equipment	Oven Type
30200086	Heat shield	1.06
30200088	Heat shield	1.10
30200090	Heat shield	1.16
30200091	Heat shield	1.20
30200092	Heat shield	2.10
30200094	Heat shield	2.20
30520358	Pipe kit for drain	
30500337	Hose for water connection 2 m	
30510092	Startkit water filter XL incl. filter	1.06, 1.10, 2.06
30510093	Startkit water filter 2XL incl. filter	1.16, 1.20, 2.10, 2.20
30500328	Water filter XL	1.06, 1.10, 2.06
30500329	Water filter 2XL	1.16, 1.20, 2.10, 2.20

CHECKING THE OVEN BEFORE USE

When you have installed the oven and before the customer starts using the oven, go through the checklist in the order listed below.

Note that the installation checklist and the instruction checklist in appendices B and C on page 41 and page 45 should be filled in and returned to HOUNÖ no later than 30 days after the installation.

Oven Exterior

- Check that the oven has not been damaged in transit (dents, scratches, and so on)
- Check and, if necessary, adjust the height
- Check that the oven level
- Check and, if necessary, adjust oven door

Connections

- Check for correct water connection
- Turn on water supply
- Check for leaks
- Turn off water supply
- Check and clean dirt filter
- Turn on water supply again
- Check hand shower
- Check for correct electrical connection
- Check connection to drip tray
- Check for correct mounting of drip tray
- Check for correct fall of hose from drip tray, and check for leaks
- Check for correct exhaust and drain connection
- Clean oven
- Apply steel oil

Oven Chamber

- Check that the filter housing is mounted correctly
- Check the interior light
- Clean the oven

Operation Panel

- Check and, if necessary, adjust each of the pre-set values
- Heat up the oven to 250°C and leave it turned on for 5 minutes

APPENDIX A

Electrical Units:

	Power kW							Electric consumption A						
	1.06	1.10	1.16	1.20	2.06	2.10	2.20	1.06	1.10	1.16	1.20	2.06	2.10	2.20
400V 3N ~ 50-60Hz	9	18	24	36	21	27	60	13	26	35	52	31	39	87
415V 3N ~ 50-60Hz	9	18	24	36	21	27	60	13	25	34	50	30	38	84
400V 3 ~ 50-60Hz	9	18	24	36	21	27	60	13	26	35	52	31	39	87
440V 3 ~ 50-60Hz	9	18	24	36	21	27	60	12	24	32	47	28	36	79
480V 3 ~ 50-60Hz	9	18	24	36	21	27	60	11	22	29	44	26	33	73
200V 3 ~ 50-60Hz	9	18	24	36	21	27	60	26	52	70	104	61	78	174
208V 3 ~ 50-60Hz	9	18	24	36	21	27	60	25	50	67	100	59	75	167
230V 3 ~ 50-60Hz	9	18	24	36	21	27	60	23	45	60	91	53	68	151

	Fuse protection = A							Cable size mm ² *						
	1.06	1.10	1.16	1.20	2.06	2.10	2.20	1.06	1.10	1.16	1.20	2.06	2.10	2.20
400V 3N ~ 50-60Hz	16	35	50	63	35	50	100	5x2,5	5x4	5x10	5x10	4x6	5x10	5x25
415V 3N ~ 50-60Hz	16	35	50	63	35	50	100	5x2,5	5x4	5x10	5x10	4x6	5x10	5x25
400V 3 ~ 50-60Hz	16	35	50	63	35	50	100	4x2,5	4x4	4x10	4x10	4x6	4x10	4x25
440V 3 ~ 50-60Hz	16	35	50	63	35	35	100	4x2,5	4x4	4x10	4x10	4x4	4x6	4x25
480V 3 ~ 50-60Hz	16	25	35	50	35	35	80	4x2,5	4x4	4x6	4x10	4x4	4x6	4x25
200V 3 ~ 50-60Hz	35	63	100	125	80	100	200	4x4	4x16	4x25	4x35	4x16	4x25	4x70
208V 3 ~ 50-60Hz	25	63	80	125	63	100	200	4x4	4x10	4x25	4x35	4x16	4x25	4x70
230V 3 ~ 50-60Hz	25	50	80	100	63	80	200	4x4	4x10	4x25	4x35	4x16	4x25	4x70

*Recommend power cable H07RN-F

CombiWash – Use of water

Water use (litre)							
Step	1.06	1.10	1.16	1.20	2.06	2.10	2.20
1/Light	22	22	22	22	N/A	22	22
2/Medium	24	24	24	24	N/A	24	24
3/Heavy	43	43	43	43	N/A	43	43
4/Intensiv	60	61	61	62	N/A	61	62

GAS units:

	Power kW							Electricity consumption A						
	1.06	1.10	1.16	1.20	2.06	2.10	2.20	1.06	1.10	1.16	1.20	2.06	2.10	2.20
115V 1N ~ 50-60Hz	1	1	N/A	2	1	1	2	8,5	8,5	N/A	17	8,5	8,5	17
230V 1N ~ 50-60Hz	1	1	N/A	2	1	1	2	8,5	8,5	N/A	17	8,5	8,5	17

	Fuse protection = A							Cable size mm ²						
	1.06	1.10	1.16	1.20	2.06	2.10	2.20	1.06	1.10	1.16	1.20	2.06	2.10	2.20
115V 1N ~ 50-60Hz	10	10	N/A	20	10	10	20	3x2,5	3x2,5	N/A	3x2,5	3x2,5	3x2,5	3x2,5
230V 1N ~ 50-60Hz	10	10	N/A	20	10	10	20	3x2,5	3x2,5	N/A	3x2,5	3x2,5	3x2,5	3x2,5

Weight:

	Electric ovens							GAS ovens						
	1.06	1.10	1.16	1.20	2.06	2.10	2.20	1.06	1.10	1.16	1.20	2.06	2.10	2.20
Weight KG	150	190	240	270	190	230	370	155	195	N/A	275	190	235	375

Technical data:

Noise level: <70dBA

Degree of protection (Protection Class): IPX5

APPENDIX B: HOUNÖ INSTALLATION CHECKLIST FOR VISUAL COOKING OVENS

This checklist must be filled out after each installation of a HOUNÖ oven.

For the oven to qualify for warranty, this check list must be filled out by the service engineer that installs the oven and returned to HOUNÖ within 30 days of the date of installation.

E-mail the form to support@houno.com, or fax the form to HOUNÖ at +45 87 11 47 10.

Serial no.:	
Installed by:	Date of installation:
Tick the appropriate box:	
<input type="checkbox"/>	The installation was carried out on the basis of the requirements specified in the service and installation manual
<input type="checkbox"/>	The installation was not carried out on the basis of the requirements specified in the service and installation manual.
<p>If the measurements do not correspond with the values stated in the service and installation manual, please notify your HOUNÖ distributor.</p> <p>By signing this, we confirm that the installation has been carried out on the basis of the attached check list and in compliance with local rules and regulations.</p> <p>When the oven was handed over, it was free from any kind of defect.</p> <p>_____</p> <p>Signature / date – service engineer Signature / date - customer</p>	

Access to the oven:

Recommended clearance for service and for installation near other heat-generating appliances (all oven sizes).

All ovens	Distance in millimeters
Left side minimum 50 mm (2")	
Rear side minimum 50 mm (2")	
Right side minimum 400 mm (15")	

Drain Connection	Yes	No
Heat-resistant drain tube connected.		
Fall of at least 3° or 5%.		
CombiPlus fitted with open drain for both ovens.		

The drain must never end directly beneath the oven.

Voltage and water supply

Insert the measured values.

Voltage measured at:	
Water pressure measured at: (min. 2 bar/28,5 psi max. 6 bar/88 psi).	

	Yes	No
Does the voltage on site comply with the voltage stated on the approval plate?		
Dirt filter fitted.		

Function Test

	Yes	No
All electrical connections are tight.		
All water connections are tight and have been fastened.		
All functions are operable.		
All equipment is operable		

APPENDIX C: HOUNÖ INSTRUCTION CHECKLIST FOR VISUAL COOKING OVENS

To be filled out after each installation of a HOUNÖ Visual Cooking oven.

In order for the oven to qualify for warranty, this check list must be filled out and returned to HOUNÖ within 30 days of the date of instruction.

E-mail the form to support@houno.com, or fax the form to HOUNÖ at +45 87 11 47 10.

Customer:	
Address:	
E-mail:	
Telephone:	Fax:
Serial no.:	
Instruction carried out by:	Date of instruction:
Tick the appropriate box:	
<input type="checkbox"/>	The customer has been instructed in the manual use and programming of the oven
<input type="checkbox"/>	The customer has been instructed in the daily cleaning of the oven
<input type="checkbox"/>	The customer has been instructed in the maintenance of the oven
When the oven was handed over, it was free from any kind of defect. The customer has been informed about handling, maintaining, and cleaning of the oven	
_____ Signature / date – salesperson Signature / date - customer	

SERVICE AND REPAIR

- All maintenance and repair must be carried out by qualified installation and service personnel only. Installation or service by other than qualified personnel may result in damage to the oven and/or injury to the operator.
- When cleaning the oven, only use cleaning detergent that matches the specifications from the factory. Do not use corrosive cleaners not intended for oven cleaning on your Visual Cooking oven.

Contacting support

You can reach HOUNÖ Technical Support at tel: +45 87114711 and fax: +45 87114710

SAFETY

Please read the safety instructions carefully.

- Ensure that installation is carried out by qualified installation and service personnel only.
- Read, understand, and follow the instructions for use.
- Place trays filled with hot liquid at the bottom runners of the oven chamber and practice extreme caution when removing the tray from the oven chamber.
- Do not store petrol or other flammable vapors or liquids in the vicinity of this appliance.
- Do not touch hot surfaces. The temperature of some surfaces may exceed 60°C or more.
- Do not attempt to operate or open the oven during the automatic cleansing process.
- Use the parking brakes on the trolley wheels to prevent trolleys from rolling on uneven floors.
- Contact qualified service personnel before you make changes to the set-up of the oven. Incorrect changes may have serious effects on its reliability in service.

WARRANTY

If you have registered your Visual Cooking oven on our website, it is covered by a 48-month factory warranty. The warranty covers the oven cabinet and spare parts. There is a special 10-year warranty on the exterior door glass. The warranty takes effect from the date of production.

Damages caused by faulty installation that does not comply with the installation instructions stated in this document are not covered by warranty terms. The requisite connections (electricity, gas, water/drain, exhaust) must only be carried out by suitably qualified technicians in compliance with local rules and regulations.

To view the full terms of the warranty and to register, go to www.houno.com/warranty.

Excluded from Warranty

Excluded from the warranty are certain damages including but not limited to the following:

- Glass parts such as interior door glass, lamp glass or halogen lamps
- Sealings
- Damage or malfunction resulting from installation that is not in accordance with HOUNÖ instructions and specifications for the product.
- Damage resulting from accidents, including damage caused by water, transport, misapplication or negligence.
- Malfunction and interruptions of operation that are the result of the oven not being operate in accordance with HOUNÖ instructions and specifications on how to use the product.

HOUNÖ cannot be made liable for indirect loss, including loss of profits.

GET IN TOUCH.

As your combi oven specialist,
we always do our utmost
to help our customers.
Worldwide.



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