WARMTH OF HEARTH & HOME

DEFRO home

operating manual

dry stove with water system, fired with pellet

DEFRO HOME AQUAPELL

13 kW

translation of original operating manual
edition 9
February 2022

DEFRO home

DEKLARACJA ZGODNOŚCI WE
DECLARATION OF CONFORMITY EC

nr DH 13/P2/01/2022

DEFRO R. Dziubeła spółka komandytowa

26-067 Strawczyn, Ruda Strawczyńska 103A

DEKLARUJE / DECLARES
z pełną odpowiedzialnością, że produkt / *with all responsibility, that the product*

Ogrzewacz pomieszczeń opalany pelletami / Pellet heating stove
DEFRO HOME AQUAPELL 13 kW
(typ/type DEFRO HOME AQUAPELL 13)

został zaprojektowany, wyprodukowany i wprowadzony na rynek zgodnie z następującymi dyrektywami:
has been designed, manufactured and placed on the market in conformity with directives:

Rozporządzenie Parlamentu Europejskiego 305/2011 / Regulation of the European Parliament 305/2011
Dyrektywa ErP 2009/125/WE / Directive ErP 2009/125/WE
Rozporządzenie Delegowane Komisji (UE) 2015/1186 / Commission Delegated Regulations (EU) 2015/1186
Rozporządzenie Komisji (UE) 2015/1185 / Commission Regulation (EU) 2015/1185

i niżej wymienionymi normami zharmonizowanymi:
and that the following relevant Standards:

PN-EN 14785:2009

dokumentacja techniczna / technical documentation

Wyrób oznaczono znakiem:
Product has been marked:

CE

Ta deklaracja zgodności traci swą ważność, jeżeli w piecu kominkowym wprowadzono zmiany, został przebudowany bez naszej zgody lub jest użytkowana niezgodnie z instrukcją obsługi. Niniejsza deklaracja musi być przekazana wraz z piecem kominkowym w przypadku odstąpienia własności innej osobie.
This Declaration of Conformity becomes invalid if any changes have been made to the Dry Stove, if its construction has been changed without our permission or if the dry stove is used not in accordance with the operating manual. This Declaration shall be handed over to a new owner along with the title of ownership of the dry stove.

Ogrzewacz pomieszczeń opalany pelletami DEFRO HOME AQUAPELL jest wykonywany zgodnie z dokumentacją techniczną przechowywaną przez:
DEFRO HOME AQUAPELL *Pellet heating stove has been manufactured according to technical documentation kept by:*
DEFRO R. Dziubeła spółka komandytowa, 26-067 Strawczyn, Ruda Strawczyńska 103a.

Imię i nazwisko osoby upoważnionej do przygotowania dokumentacji technicznej: Mariusz Dziubeła
Name of the person authorized to compile the technical documentation: ***Mariusz Dziubeła***

Imię i nazwisko oraz podpis osoby upoważnionej do sporządzenia deklaracji zgodności w imieniu producenta: Robert Dziubeła
Name and signature of the person authorized to compile a declaration of conformity on behalf of the manufacturer: ***Robert Dziubeła***

Dwie ostatnie cyfry roku, w którym oznakowanie zostało naniesione: 19
Two last digits of the year of marking: 19

Ruda Strawczyńska, 03.01.2022
miejsce i data wystawienia
place and date of issue.

Robert Dziubeła
prezes zarządu / CEO

Dear Customer,

We would like to inform you that we make every effort to offer the products of quality fulfilling the most restrictive standards and warranting operational safety. All the devices are produced in accordance with the requirements of relevant EU directives and have CE safety mark confirmed by the Declaration of Conformity EC.

CE

We appreciate all your comments and proposals regarding our level of service. We appreciate your comments and proposals regarding our devices and the level of service provided by our Partners and Technical Support/Service.

DEFRO R. Dziubeła sp.k.

Dear Customer,

We would like to thank you for choosing the high-quality DEFRO product which will ensure your safety and operational reliability.

As our customers, you can always count on the help of the DEFRO Service Centre, which is ready to ensure the continuous efficiency of your equipment.

Please note that in order to use the equipment safely and efficiently, it is crucial to get familiar with the following directions.

- Read and follow this Operating Manual - useful remarks concerning the proper operation of the equipment can be found there.
- Determine if all parts have been delivered or if the fireplace was not damaged during transport.
- Check the data on the rating plate against the warranty card.
- Prior to starting the device, check the flue connection against connection recommendations included in this manual and appropriate national regulations.

Basic usage rules are to be obeyed while using the equipment. Do not open the doors during the operation of the device.

DEFRO Service Centre or Authorized DEFRO Service should be always contacted when any intervention is necessary because only these parties have original spare parts and are properly trained within the scope of installation and operation of DEFRO equipment.

For your safety and equipment use convenience please get acquainted with this operating manual and send back a correctly filled copy of the Warranty Card to the following address:

DEFRO R. Dziubeła sp.k.. - Centrum Serwisowe
Ruda Strawczyńska 103a
26-067 Strawczyn

serwis@defro.pl

By sending back your Warranty Card, you will be registered in our DEFRO products users' database and we will be able to provide you with quick and professional technical support.

If you do not send back a correctly filled in Warranty Card and the equipment quality and completeness receipt within the period of up to two weeks after the date of installation but no longer than within six months, after purchasing, the warranty will become invalid. This results in delays with repairs and the necessity of **covering costs** of service and traveling expenses.

Thank you for understanding.
Yours sincerely,

DEFRO R. Dziubeła sp.k.

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Table of contents

1. INFORMATION

The operating manual is an integral and essential part of the product and must be forwarded to the user also in the case when the property is transmitted. The user should carefully read the manual and save it for the future because all remarks included there are important guidelines concerning safety during installation, usage and maintenance.

Installation of the stove must be carried out in accordance with the mandatory standards in the country of destination, according to guidelines of the manufacturer and by qualified personnel. Improper installation of the device may be a reason for personal injuries and damage to property for which the manufacturer is not liable.

The dry stove can be used only for the purpose it was explicitly intended. Any other use should be treated as inappropriate and in consequence as dangerous.

In the case of error during installation, usage or maintenance works caused by non-observance of the legislation, applicable regulations or instructions contained in this manual (or others, delivered by the manufacturer) the manufacturer rejects any contractual or non-contractual liability for resulting damages and the warranty for the device becomes void.

All illustrations, pictures and photos are only indicative.

Versions of the publication

Due to continuous improvement of the product, DEFRO reserves the right to update this publication without prior notice.

The content of this Operating Manual is a property of DEFRO. Any copying, duplicating, publishing of content of this User's Manual without the prior written consent of DEFRO is forbidden.

Manual storage and browsing of its contents

We recommend taking care of this manual and storing it in an easily and quickly available location. If this manual has been lost, damaged or destroyed you should request a copy in the sales outlet or directly from the Manufacturer providing identification data of the product. All the most important information included in the operating manual is marked with "bold" and has symbols pointing out the user's attention to hazards that can be present during the operation of the dry stove. The symbols used in the text are explained below:

Danger!
Direct threat to life and health! Non-compliance with the recommendations marked in this way and misuse may result in death or major injuries.

Danger!
Danger from electrical voltage! Incorrect installation and incorrect electrical connections may cause danger to life by electric shock.

Note!
Warning symbol indicating that you should read carefully and understand the given information, to which it relates. Non-compliance with those recommendations may result in major damage to the equipment and create a hazard to the user or the environment.

Danger!
Direct threat to health! Non-compliance with the recommendations distinguished in this way may cause a fire or burns.

Hint!
Informative symbol. Useful information and hints are marked in this way.

2. BASIC SAFETY RULES

2.1. SAFETY WARNINGS

- The national and local provisions should be met.
- The equipment should be installed in compliance with the legal standards applicable in the given location, region or country.
- The equipment should be used by persons (including children) of impaired physical, sensory, and mental capabilities and by persons without experience and required knowledge provided that such operation is not carried out under their supervision or after proper instruction by a person responsible for their safety.
- You should always observe the guidelines given in the operating manual to ensure the correct use of the equipment and to prevent accidents.
- Operation and adjustment should be carried out by adults. Errors and incorrect settings can cause hazardous situations and/or incorrect operations.
- Prior to any operations the user (or any person operating the equipment) should read and understand the whole contents of this manual.
- Equipment should be used only as intended. Each other use is considered as misuse and hazardous as a consequence.
- The equipment should not be used as a ladder or object to lean against.
- Prior to installation, you should make sure that the substrate will resist the force of the equipment considering its weight.
- In the case of disturbances in operation, the equipment can be restarted only when the occurred problem has been removed and the equipment is brought back to its original condition.
- The user is fully responsible for misuse of the product and relieves DEFRO from any civil and criminal liability.
- All types of modifications or replacement of equipment parts with non-original components or without authorization may present a risk for operator and relieves DEFRO from any civil and criminal liability.
- Incorrect installation or maintenance (incompatible with the contents of this manual), can cause injuries to people, animals or property damage. Then DEFRO shall be relieved of any civil or criminal liability.

- Part of equipment surface is very hot (doors, handle, window panel, flue gas discharge pipe, etc.). You should avoid direct contact with such components without suitable protective clothing or protective equipment such as e.g. heat-resistant gloves.
- Do not touch the window panel after heating up of the equipment.
- Keep children away from the equipment when it is operating because each hot surface can cause burns.
- It is forbidden to start up the equipment when the doors are opened or the window panel is cracked.
- Do not place and dry the underwear on the equipment. Possible dryers for hanging underwear or similar should be located at an adequate distance from the equipment - fire hazard.
- It is absolutely forbidden to open the doors if the flue is on fire. Then call the appropriate services.
- It is recommended to keep 400 mm distance between the hot parts of the equipment and medium inflammable materials; otherwise use commercially available insulation materials. Apply this hint also for furniture, curtains etc. Minimum distances are given in point 5.2 of the operating manual.

- It is absolutely forbidden to use flammable liquid for equipment firing up.
- If the substrate, on which the equipment is located, is made of inflammable materials, such as parquet or floor lining then you should place a protective plate under it (the plate should protrude 250-300 mm from the front of the equipment).

2.2. WARNINGS RELATED TO OPERATION

- Equipment should be shutdown in case of failure or incorrect operation.
- Fuel used in the equipment should meet the conditions described in this manual.
- Internal parts of the equipment should not be washed with water.
- Avoid contact with water; above all do not wash any painted surfaces until they are fully cured. The coating on new devices is not an anti-corrosion coating; heat-resistant paint achieves its protective properties only after curing under the influence of heat (after several ignitions).
- Do not expose the body to the action of hot air for a long period of time. Do not heat excessively the room where you are staying and where the equipment is installed. It may have an adverse impact on physical condition and be a reason for health problems.
- Equipment should be installed in rooms with fire protection and equipped with all required components such as supply (with air) and flue gas discharge.
- Equipment and cladding made of ceramics should be stored in rooms free from moisture and they cannot be exposed to adverse effects of the weather.
- It is not recommended to place the body of the equipment directly on the floor and if such floor is made of inflammable materials it should be properly insulated.
- To facilitate possible interventions by the technical personnel you should not place the equipment inside the closed rooms and just by the walls which can also disturb air intake.
- Always make sure and check whether doors of the combustion chamber are tightly closed when the equipment is operating.
- Equipment consumes the exact amount of air that is required for the combustion process; it is recommended to connect the equipment for air intake from outside using a suitable pipe and through a special outlet located at the back of the equipment.

ADDITIONAL INFORMATION

- You should contact sales outlet or qualified personnel authorized by DEFRO in the case of any problems. Request original spare parts if the repair is necessary.
- Use only fuel with properties compatible with the recommendations of this operating manual.
- Check and clean flue gas discharge ducts (connecting piece to flue) periodically.
- Store this manual carefully because it should be available for a whole period of equipment operation. In the case of sale or giving the equipment to the other user you should always make sure whether the product has the manual enclosed.
- Request a new copy from an authorized sales outlet in the DEFRO company if it has been lost.

3. INTENDED USE

The DEFRO HOME AQUAPELL stoves are intended for the combustion of pellet. They are intended for heating of houses and spaces where they are installed. They can be also used as an additional source of thermal power.

Dry stove can be connected multiple times.

The DEFRO HOME AQUAPELL pellet stove with a water system can be operated only after connection to the central heating system and filling with water. Only then proper heat discharge is ensured. Operation of the equipment without water and outside the CO system results in loss of warranty.

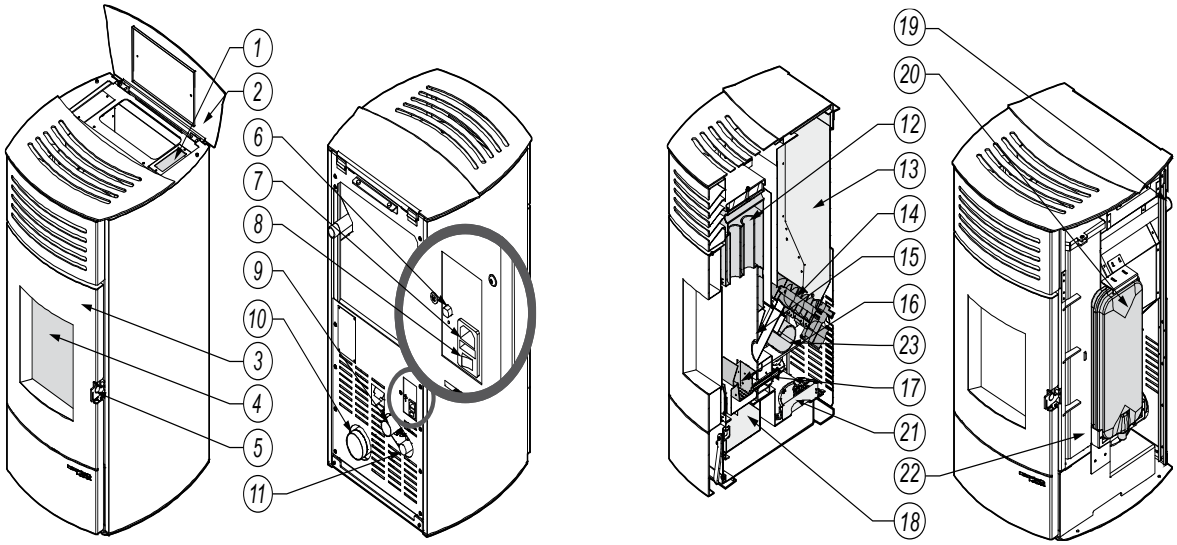
4. TECHNICAL SPECIFICATION

4.1. DESIGN

The DEFRO HOME AQUAPELL stove is fired with a pellet and may be used as a source of hot water for the central heating system. Part of the ambient air is heated directly by the furnace through the window panel and the water system in the upper part of the stove. Air heated by the water system gets out through the openings located above the doors and in the top wall of the furnace. More than 80% of heat energy is given back to water in the water system of the stove.

The stove body - walls in contact with fire - is made of a heat-resistant steel sheet. The combustion chamber is encased with the water system, which removes a considerable amount of heat and transfers it to water located inside. The stove is equipped with a so-called combustion chamber.

The furnace chamber is equipped with a discharge pellet (16) burner adapted for the combustion of biomass. Fuel required for the combustion process is transported using an automatic feeder (14), which takes the pellet from the container (13) located behind the combustion chamber. Igniter (17) located in the furnace, in form of an electric heater, initiates the ignition of fuel supplied during the start-up of the stove. Fuel required for combustion is taken from the air intake (9) and then supplied to the burner. Hot flue gas flows through flame pipes where they give up the heat - are cooled down. A forced draught fan (23) forces airflow around the combustion chamber with the water system, which heats the environment of the furnace through the convection openings located in front of the stove over the doors. Flue gases are discharged to the chimney through a flue (10). The discharge process is supported by a flue gas fan unit (21).



Picture 1. Design of the DEFRO HOME AQUAPELL heating stove.

Explanatory notes to picture 1:

1 – control panel with display, 2 – pellet container cover, 3 – doors, 4 – glass sheet, 5 – lock, 6 – STB temperature limiter, 7 – 230 V supply socket, 8 – supply switch, 9 – air intake socket Φ 48 mm, 10 – flue Φ 80 mm, 11 – socket Φ 1" for return of water from central heating system, 12 – water system of heat exchanger, 13 – container for pellet, 14 – pellet feeder, 15 – pellet discharge pipe, 16 – burner, 17 – igniter, 18 – ash-pan, 19 – socket Φ 1" for supply of central heating system, 20 - diaphragm vessel, 21 – flue gas fan, 22 – stove body, 23 – forced-draught fan.

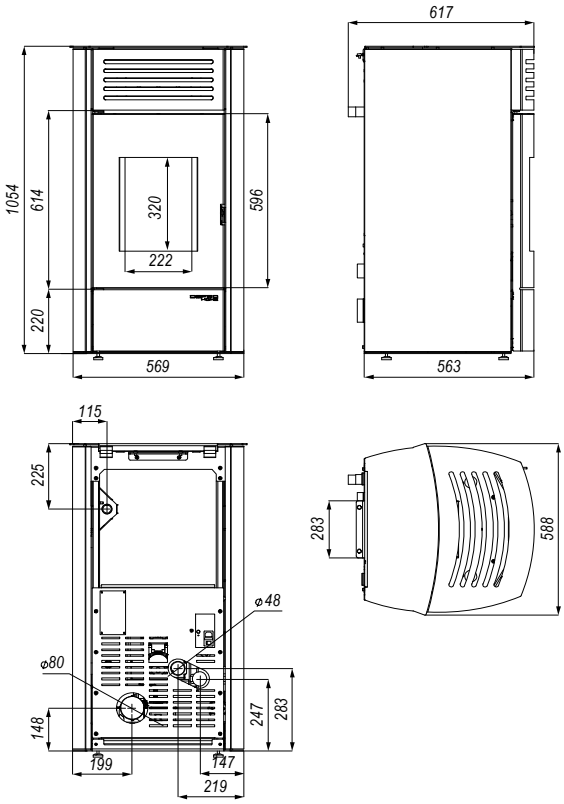
4.2. TECHNICAL DATA

Table 1. Technical data of the DEFRO HOME AQUAPELL stove.

Parameter	unit	value
Nominal power	kW	13.1 (6.0)
Thermal power of water cycle[1]	kW	10.2 (4.6)
Thermal power to the environment[1]	kW	2.9 (1.4)
Nominal efficiency[1]	%	95.1% (96.4%)
Seasonal energy efficiency	%	91
CO emission for 13% O_2[1]	%	0.0098 (0.0081)
Flue gas temperature[1]	°C	84.2 (53.0)
Weight[2]	kg	165
Water capacity	l	12
Work pressure	bar MPa	1.5 0.15
Flue gas stream for nominal power[1]	g/s	8.8 (6.0)
Minimum draught at rated power	Pa	12
Diameter of intake	mm	48
Flue size	mm	80
Supply voltage	V	230
Maximum power consumption	kW	0.380
Power consumption for nominal power[1]	kWh	0.12 (0.08)
Fuel consumption[1]	kg/h	3.0 (1.35)
Fuel tank capacity	kg	26
Capacity of diaphragm vessel	l	8
Type of heater	of periodic combustion	
Fuel	pellet with a diameter of 6 mm	

[1] Values for nominal power are given in brackets.

[2] Device weight depends on the selected design version and its equipment.



Picture 2. Dimensions of the DEFRO HOME AQUAPELL heating stove.

A detailed description of the construction, operation and work of the electronic controller and fan is included in the operating manuals enclosed to this documentation.

Recommendations of operating manual of controller and fan should be unconditionally observed.

4.3. EQUIPMENT

The dry stove is delivered on a pallet, foil-wrapped and is fully assembled. Scope of delivery can include additional components and subassemblies, according to the order. Components that are standard equipment are specified in table 2.

Table 2. Equipment of the DEFRO HOME AQUAPELL stove.

Standard equipment of dry stove	unit	Quantity
Stove operating manual	pcs.	1
Operating manual and warranty card for electronic controller	pcs.	1
Electronic controller	pcs.	1

4.4. FUEL PARAMETERS

Sawdust granulate, called pellet, is a primary fuel for the DEFRO HOME AQUAPELL heating stove. It is recommended to use A1 class pellet in accordance with PN-EN ISO 17225-2:2014-07, with the following parameters:

- granulated product diameter: 6 mm,
- length of granulated product: from 3.15 mm to 40.00 mm,
- calorific value: > 16.5 MJ/kg
- sulphur content: max. 0.03 %
- moisture: ≤ 10 %
- ash content: ≤ 0.7 %
- bulk density: > 600 kg/m^3

During the selection of the pellet, the user should pay special attention to fuel from unreliable sources, to the possible content of contaminations in fuel in form of stones or other inflammable inclusions deteriorating the quality of combustion and increasing the failure frequency of the feeder.
Correct pellet type and assortment ensure:

- fault-free operation of stove,
- fuel saving in comparison to lower-quality types,
- reduced emission of harmful chemical substances.

It is forbidden to burn any other objects on the grate of the automatic furnace. The stove is factory-adapted for the combustion of a pellet with a diameter of 6mm.

Use of bad quality fuel or incompatible with the above-mentioned recommendations would cause irregularities in the operation of the equipment and can lead to loss of warranty and decline of the liability for the product.

Dry stove is not a furnace intended for the combustion of wastes and forbidden fuels cannot be combusted in it.

Completely emptying of the fuel tank should be avoided. The minimum level of fuel container's fill - 25% of its capacity.

DEFRO R. Dziubeła sp.k. does not accept liability for damages caused or improper burning of fuel if the fuel used is prohibited.

Condition of fuel container's cover gasket should be checked periodically. After closing of the container, the gasket should precisely adhere to the surface.

Clearances and gaps between cover and fuel container are forbidden.

4.5. SPARE PARTS

To obtain information on the availability of spare parts for dry stoves or inquiries about equipment servicing please contact with DEFRO Service Center or Authorized DEFRO Service.

	DEFRO R. Dziubeła sp.k. Service Centre Ruda Strawczyńska 103a 26-067 Strawczyn		serwis@defro.pl

5. TRANSPORT AND INSTALLATION

5.1. TRANSPORT AND STORAGE

The dry stove is delivered on a pallet, foil-wrapped and is fully assembled. It is recommended to transport the dry stove, in such packing condition, as close as the possible target location for installation, which will minimize the possibility of damage to the device housing.

All remaining parts of the packing should be removed in such a way that it will not pose any hazard for people and animals.

Appropriate lifts are to be used for lifting and lowering the dry stove. For transport, the dry stove is to be secured against moving and tilting on a vehicle's platform by means of belts, wedges and wooden blocks.

The dry stove is to be transported in a vertical position!

The stove is to be stored in a non-heated room, under a roof and with efficient ventilation.

Prior to installation, it should be determined if all parts have been delivered and if they are in good technical condition.

5.2. WORKING ENVIRONMENT

Dry stove should be installed in compliance with the requirements of the currently applicable standards and legal regulations and detailed regulations of the target country. In Poland, these conditions are regulated by the Regulation of the Minister of Infrastructure of 12 April 2002 on technical conditions which should be fulfilled by buildings and its location. (Journal of Laws no. 75 of 2002 item 690 as amended) and Polish Standard PN-EN 14785:2009 Residential space heating appliances fired by wood pellets. Requirements and test methods.

Dry stove should be installed in a suitable location allowing opening of the doors and carrying out regular maintenance works like cleaning of stove, connector and chimney. The environment should be:

- adapted to operating conditions,
- equipped with a power supply of 230 V/50Hz,
- equipped with a suitable flue gas exhaust system,
- equipped with an external ventilation system,
- equipped with an earthing system.

Correct setting of the stove is necessary to obtain the satisfactory heating level of the residential unit. Prior to assembly, it is necessary to select a suitable position for stove installation. Check minimum safe distances from materials susceptible to heat or inflammable materials such as load-bearing walls and other walls or wooden components, furniture etc.

Installation of the dry stove should observe the following safety rules:

- a minimum distance of 200 mm from side and rear of the medium inflammable materials,
- minimum distance 800 mm from front wall, where the medium inflammable materials cannot be located,
- objects made of highly inflammable materials should be located in a distance minimum of 2000 mm from the furnace.

If it is not possible to maintain the above-indicated distances then you should apply process and building measures to avoid fire hazards. In the case of contact with a wooden wall or wall made of other inflammable material, it is appropriate to insulate flue gas discharge pipe.

In the case of the floor made of inflammable materials it is appropriate to prepare a plane protecting the floor and execute protection in accordance with the standards applicable in the given country.

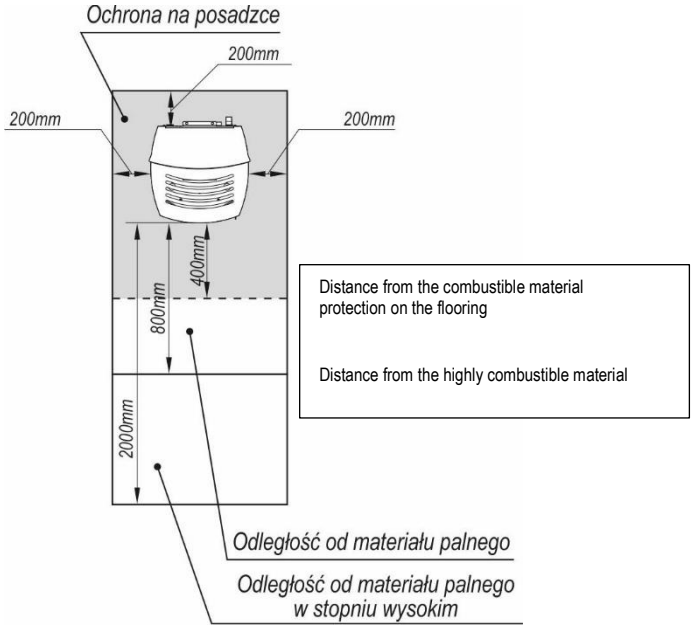


Figure 3.3 Minimum safe distances during setting of the dry stove.

Dry stove should be located on a substrate with a suitable load-bearing capacity. In accordance with the Polish Standards each square meter of the floor slab in the single-family building should transfer a load of 150 kg. If this condition is fulfilled the dry stove manufactured by DEFRO can be installed without needing to reinforce the floor slab.

Nonetheless, if you are not sure about the design of the floor slab, where the stove is to be installed, you should absolutely contact with the building designer to reinforce the floor slab or execute a special structure distributing the weight on a larger area.

The flooring in the room, where the dry stove is to be installed, should be properly dimensioned, to maintain the load.

To ensure the correct operation of the dry stove you should ensure the suitable inflow of air required for combustion (it is appropriate to ensure approx. 40 m^3/h) in accordance with the installation standards and standards applicable in the given country. Volume of the surrounding environment should not be less than 30 m^3. You should assume that the combustion of 1 kg of pellet requires ~8 m^3 of air.

Air should be supplied through fixed openings of minimum 100 cm^2 cross-section made in the walls (near the stove) and directed to outside. These openings should be made in a way ensuring that they cannot be plugged.

Air can be supplied from adjacent rooms, provided that they are equipped with external air supply and they are not intended for a bedroom and bathroom, and where fire hazard is not present, for example: garages, woodsheds, inflammable materials storage. You should absolutely observe the recommendations of the applicable standards.

STOP *It is forbidden to install the dry stove in bedrooms, bathrooms and other rooms where other heating equipment without independent air inflow is installed (fireplace, stove, etc.).*

It is also forbidden to set the dry stove in explosive atmospheres.

It is forbidden to cover circulation openings in the housing of the dry stove.

5.3. AIR INTAKE

The DEFRO HOME AQUAPELL stove intakes the air through the connector (air intake) located at the rear of the equipment. Air for combustion may be taken:

- From the same room, where the equipment is located,
- Using a duct connected to air intake that supplies the air from outside.

5.3.1. AIR INTAKE FROM THE ROOM

Room, where the dry stove is installed, should be equipped with the inflow of air in the minimum amount required for correct combustion process and for room ventilation. This can be done by executing fixed vents in the wall directed to the outside or through independent or common ventilation ducts.

In the case of the absence of the ventilation ducts in the room where the furnace is installed - it is required to execute near the furnace a through the opening with a free cross-section 150 cm^2 (opening with 14 cm in diameter or square 12 × 12 cm), protected with grille on the internal and external side, for this purpose. Furthermore, the air intake should be:

- directly connected with the room, where the stove is to be installed,
- protected with grille, metal net or suitable cover not restricting minimum cross-section,
- located in a way preventing plugging it,
- located with consideration of proper distances preventing swirling of air (e.g. with respect to the windows).

It is possible to supply using the air intake from the adjacent room if:

- the adjacent room has a suitable air inlet from the outside,
- the adjacent room is not a garage, flammable materials storage location and operations related to explosion risk are not performed inside,
- the adjacent room should not be a bathroom, bedroom or a common space of the building.

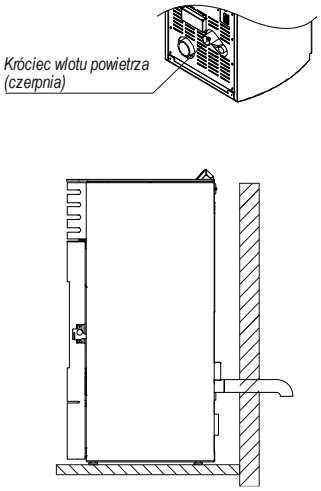
5.3.2. AIR INTAKE FROM OUTSIDE

Closed combustion chamber allows the installation of the DEFRO HOME AQUAPELL stove in the rooms equipped with heat recovery. In such a case the stove should be supplied only with the air supplied directly from outside (picture 8). Inlet pipe should have an elbow at its end directed downwards or protected against the wind. Grilles with small mesh should not be installed in such cases.

The suitable diameter of the duct supplying the air from outside should be selected depending on its length:

- Supplying with a straight section of length not exceeding 1 m can be implemented using a duct of 50 mm in diameter.
- The supply duct cannot have a diameter smaller than 100 mm in the other cases and the reducer of the duct diameter should be located on the air intake.

For connection to the external inlet of air and longer break in operation (over 2 weeks) it is necessary to empty the bin and pellet feeder.



Picture 4.4 Connection of the DEFRO HOME AQUAPELL heating stove to the external air intake.

5.4. INSTALLATION TO THE FLUE

Flue gas removal system from the DH AQUAPELL stove should be checked acc. to PN-EN 13384-1+A1:2019-07 – Chimneys - Thermal and fluid dynamic calculation methods - Part 1: Chimneys serving one heating appliance", that specifies in detail the methodology for dynamic calculations of thermal and flow properties for the chimneys serving one combustion appliance.

Each system should be considered on a case-by-case basis, and the below information is not exhaustive and they contain only guidelines for the execution of the most typical solution.

Dry stove should be connected to an individual flue. Chimney draught should be 12 ± 2 Pa.

During the execution of opening for flue gas discharge pipe you should consider the possible occurrence of inflammable materials. If the opening will pass through the wooden wall or wall made of material sensitive to heat then you should obligatorily maintain the minimum distance from flammable material (value given on the certification label of the pipe), with possible additional insulation using proper materials (thickness 1.3 - 5 cm, heat conductivity min. 0.07 W/m °K).

As an alternative it is recommended to use insulated industrial pipe, which can be also used outdoors, to avoid the occurrence of condensate.

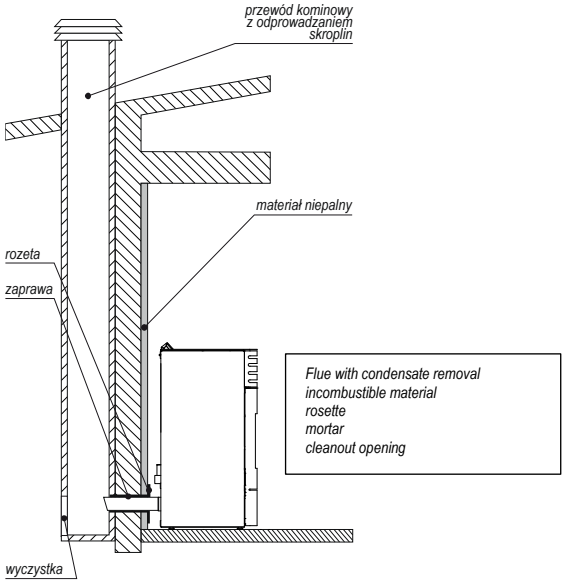
The correctly executed connector between the DEFRO HOME AQUAPELL stove and the flue or smoke duct should meet the following conditions:

- horizontal sections should have a minimum slope of 3%,
- length of the horizontal section should be minimum and should not exceed 3 meters,
- number of changes of directions, inclusive of the use of the "T" component, should not exceed 4.

A chimney or individual smoke duct should meet the following requirements:

- be resistant to combustion products, water-proof and suitably insulated, in compliance with conditions of use,
- be made of materials resistant to normal mechanical stresses, heat, the action of combustion products and possible condensate,
- be vertical with the change of axis direction not exceeding 45°,
- be adequately separated with void space or suitable insulation from combusted and inflammable materials,
- have preferably circular internal cross-section: square or rectangular cross-section should have rounded corners with a radius no smaller than 20 mm,
- internal cross-section should be constant, free and independent,
- have a rectangular cross-section with the maximum ratio between two sides equal to 1.5,
- have a chimney cap with a suitable cross-section (not smaller than the doubled cross-section of the chimney or flue duct), which protects against the ingress of rain and snow into the chimney system and ensures the discharge of flue gas also in the case of wind presence.

The DEFRO HOME AQUAPELL stove characterizes with a relatively low temperature of flue gas in comparison to fireplaces fired with wood. It results in high efficiency but also the possibility of condensation from flue gas. Therefore, it is recommended to connect the stove to the flue with the discharge of condensate to the sewage system or install a condensate discharge system e.g. in the form of a T-pipe with a condensate collector (example in picture 6).



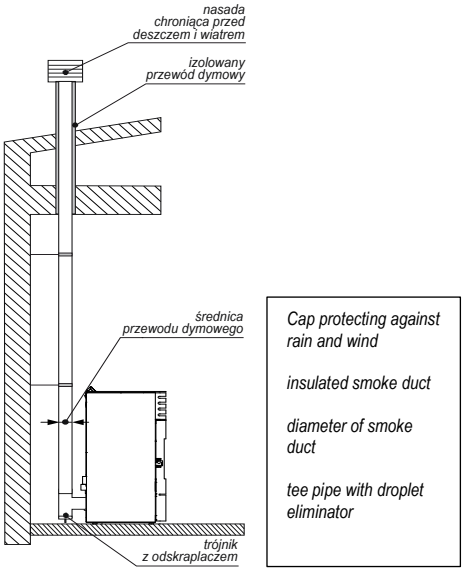
Picture 5 Example of connection of DEFRO HOME AQUAPELL stove to flue with condensate discharge.

Due to the emission of condensate also flue should be resistant to its action, therefore it is recommended to use ceramic system chimneys or chimneys with acid-resisting insert.

Flue gas discharge system from DEFRO HOME AQUAPELL stove should be tighter than in case of typical systems in stoves without active flue gas removal. Lack of proper tightness will result in penetration of flue gases to the room where the stove is located.

Despite the flue, gas discharge is supported by a fan unit the dry stove fired with pellet should be connected to the chimney of the medium, recommended draught.

Using the most typical connection consisting of a tee and vertical flue duct with a cap (picture 6) you should follow the information given in the below table.



Picture 6 The example of connection of the DEFRO HOME AQUAPELL stove to flue using a T-pipe with condensate discharge.

Table 3. List of minimum height of the chimney depending on its diameter.

Minimum chimney height	Chimney diameter
15.7 m	Ø100 mm
10.3 m	Ø120 mm
7.9 m	Ø150 mm
5.6 m	Ø180 mm

5.5. CONNECTION TO ELECTRICAL WIRING SYSTEM

Electrical installation of the DEFRO HOME AQUAPELL dry stove is intended for supply from mains with 230 V/50 Hz. Room, where the stove is installed, should be equipped with an electrical system 230V/50Hz executed as TN-C or TN-S systems (with the protective conductor or protective-neutral conductor) according to the regulations in force. The electric system (without regard for the type of installation made) should be ended with a plug-in socket equipped with protective conductor contact. Plug-in socket should be located at a safe distance from the heat emission source.

Use of the socket without a connected protective terminal may cause electrocution.

All connections to the electrical system should be made only by an electrician holding appropriate licenses.

The user is forbidden to take off the covers of the electronic controller or fan and to make any interventions or modifications to electrical connections.

5.6. INSTALLATION IN CENTRAL HEATING SYSTEM

Pellet stove is equipped with a water system allowing operation in the central heating system. Water system surrounds the combustion chamber from four sides: from the top, on both sides and from the back.

The combustion process is fully automated, what allows automatic stoppage of operation if the safe temperature of the water is exceeded. Dry stove is ready for operation in closed system because it is equipped with a diaphragm vessel installed inside. The stove is also equipped with a circulation pump, which is installed behind the connector for water returning from the central heating system.

The connection of stove's water system should be made in compliance with the applicable standards and regulations and in particular with the following documents:

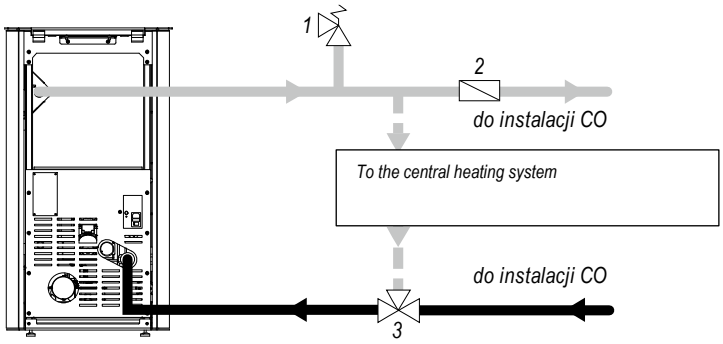
- *The Regulation of the Minister of Infrastructure of 12 March 2009 on technical conditions which should be fulfilled by buildings and its location.*
- Standard PN-EN 12828:2014 - Heating systems in buildings - Designing of water central heating systems;

The central heating system is to meet requirements specified by the Polish Standard PN-91/B-02413 on the protection of open system water heating devices and pressure vessels.

In case of installation of the stove in a country other than Poland it is obligatory to apply relevant requirements and standards of this country.

Before installation of the stove, you should make a test connection of the water system to the central heating system and then enter the working pressure in the system to check its tightness. Stoves should be installed when all leaks in the water systems have been excluded.

Picture 7presents an exemplary connection diagram for the water system of the stove in the heating system.



Picture 7. Diagram of exemplary connection of DEFRO HOME AQUAPELL stove to the heating system.

1 – safety valve, 2 – filter, 3 – mixing valve.

The stove's water system is equipped with one supply connection and one return connection.

It is required to install thermal protection in the system preventing the return of water with temperature below the dew point (50 °C). Lack of such protection leads to a dramatic decrease of heating efficiency and damage to the equipment. Failure to observe this recommendation may cause loss of the warranty.

Any type of thermal protection may be used. If the switching valve is installed it may be controlled by the controller of the stove. Valve and controller will be connected and configured by the fitter.

It is required to install a safety valve in the closed system. Its task is to protect the water system and installation against exceeding of maximum allowable working pressure. The valve should be factory set to 1.5 bar and should prevent exceeding of maximum operating pressure by not more than 10%.

The valve should be installed as close as possible to the heat source.

If the allowable pressure is exceeded the safety valve discharges excess of water and steam through the discharge pipe decreasing pressure in the system. Therefore, you should ensure safe water and steam outflow from a safety valve (e.g. to the sewage system).

The Pellet stove is also equipped with protection against water boiling in the water system (STB temperature limiter). If, despite the controller settings, water reaches or exceeds a temperature of 95ºC, the STB temperature limiter shuts down the supply of the whole stove to prevent further increase of temperature. Activation of STB results in permanent disconnection of supply, therefore recovery of the normal operation of the stove, after decreasing the temperature of the water below the alarm value, requires activation of STB. Press the button after removal of the cap from the STB.

It is recommended to use safety fittings, a so-called safety unit, which consists of safety valve, manometer and vent.

Connections of the water system with the central heating system should be made using threaded or flanged joints.

- *Installation of the water system of stove by welding results in loss of warranty!!!*
- *Stove installation should be carried out by a person or company with suitable qualifications and authorizations.*
- *It is in the user's interest to look after that installation is made in accordance with the regulations in force and that installing company gives a warranty for correctness and good quality of workmanship what should be confirmed by a stamp and sign on the warranty card of the stove.*
- *The hydraulic system of the water system of stove should be made in compliance with the currently applicable standards and regulations. All national and local provisions should be met!*

6. USAGE AND OPERATION

The combustion chamber should be closed during the operation of the stove. So, it is forbidden to open the doors when the flame is burning in the burner.

6.1. FILLING WATER SYSTEM WITH WATER

Make sure that the central heating (CO) system is correctly filled with water, which should be clean, clear and without any admixtures prior to start up. Filling a water system with water should be carried out only when it has been cooled down.

Water quality has an essential influence on the life of the water system and the whole central heating system Water should have the following parameters:

- pH reaction:
  - 8.0 ÷ 9.5 - in steel and cast iron systems;
  - 8.0 ÷ 9.0 – made of copper and mixed materials steel/copper;
  - 8.0 ÷ 8.5 - for systems with aluminum radiators;
- total hardness < 20 °f,
- free oxygen content <0.1 mg/l, recommended <0.05mg/l,
- chlorides content <60 mg/l.

Before connecting the stove with the water system to the old central heating system user should carry out flushing to remove sludge remaining in the radiators and pipes.

Fill the system with water prior to firing up of the fireplace. Filling with water should be carried out using installed fixtures for filling and emptying, which should be located in the lowest point of the heating system. This process should be carried out slowly in order to deaerate the system.

To check if the system has been filled with water, the straight-run valve located on the signaling pipe should be opened for a few seconds. Continuous water outflow means the system has been filled in correctly. Any water refills should take place during the stove's inactivity period.

- *It is unacceptable and strictly forbidden to refill water during the DEFRO HOME AQUAPELL stove's operation, especially when its temperature is high as it may lead to its damage or crack.*
- *Water can be refilled only due to its losses by evaporation. Other decrements such as system leakage are inadmissible as they may lead to the creation of boiler scale resulting in permanent damage of the water system.*

6.2. FIRST START-UP AND OPERATION

Start-up preparation

- check whether the regulations related to OHS and fire safety as well as the requirements included in this Operating Manual are met;
- perform an internal inspection of the heater;
- perform an inspection of the electric and electronic devices /stove controller, fan, motor reducer, etc./;
- check the tightness of the pellet furnace
- check the condition and quality of fuel in the container, refill if necessary;
- check flow capacity of air intake and openings supplying the air to the stove
- perform an inspection of system equipment;
- check whether the system is filled with water;
- check the tightness of the heating system and control the pressure in the system;
- check the condition of the chimney system and the correctness of the stove connection to the chimney;
- check the condition and flow capacity of the ventilation system;
- check the type of connection to the electric network.

6.2.1. STOVE START-UP

Absolutely, before each starting of ignition function in the controller the burner should be empty (no pellet may be located inside).

1) Turn on the power supply.
2) For start-up with an empty feeder (first start-up or start-up when whole fuel from the container has been used up) you should start up pellet feeder (endless screw):
   a) press the button SET,
   b) using ^ v buttons select *Settings menu → Zaladuj Slimak/Load the Endless Screw,*
   c) press again SET,
   d) using ^ v *buttons select* ***ON*** option and confirm by pressing SET.
3) Shutdown the endless screw using *OFF* option when you hear the pellet falling into the burner.
4) Return to the main menu with a button ESC.
5) Switch on *Rozpalanie/Firing up* with ON-OFF button. Successive stages of the combustion cycle will be carried out automatically.
6) Please inspect the size and brightness of the flame for 15-20 minutes during the combustion process, when the stove is in "**operation**" mode. It should have a length approx. 20-40 cm during operation with 100% rated power - depending on the size of the stove (burner).

More information concerning servicing the controller is included in the *NG01 HYDRO controller's operating manual.*

Housing components will be very hot during operation. You must exercise caution.

6.2.2. REFUELLING

Fuel should be refilled on regular basis to ensure that its level does not fall below 10-25% of maximum loading. Use caution during refueling, in particular when the stove is hot. After opening the cover of the container, the pellet should be added vigorously, with short breaks allowing for the proper setting of the fuel. Close the cover tightly as soon as the refueling is completed, in particular when the stove is in operation.

Avoid contact of pellet packaging (e.g. bags) with hot components of the stove. Take care to avoid getting other materials than pellet into the container. Pieces of fuel larger than the allowable size of the pellet may result in jamming or damage to the mechanism of the feeder.

It is forbidden to use any other type of fuel than pellet. Fuel should be stored at a safe distance from the stove (minimum 2 m from the stove).

6.2.3. DAMPING

Routine damping of the stove is based on the selection of the *Damping* function from the controller menu. The controller will lock fuel feeding and the stove will be damped after combustion of the current dose of the fuel in the burner. Power shutdown will also result in damping a stove after the fuel in the burner will be burnt.

If it is necessary to quickly damp a flame you should charge the furnace chamber with dry sand or ash after the power supply shutdown. It is not allowed to damp a flame by pouring it with water because it may damage components of the equipment.

After a longer break in equipment's operation you should check the flow capacity of the flue.

6.2.4. POWER FAILURE DURING OPERATION

Fans and feeder will stop operation in the case of power failure during stove operation. Fuel dose in the burner should be burnt-out and flue gas removed by a chimney draught. This will ensure a safe shutdown of the stove. Apply a damping (chapter 6.2.3) if necessary (lack of suitable draught).

6.2.5. LACK OF WATER SUPPLY DURING OPERATION

If a user of the stove notifies of water deficiency in the heating system then it is absolutely necessary to disconnect the stove from the electric supply. The stove can be restarted when the fault is removed from the heating system and the controller is operating normally and there is no error message.

If there is considerable water loss from the heating system (or the user does not respond to such loss) then the operation of the correctly working stove will be stopped by the controller. Stop occurs after exceeding one of the limiting temperatures:

- water temperature in boiler,
- flue gases temperature.

The controller will switch to automatic damping and will not allow further use of the stove and will display an error message. Recovery of the normal operation of the stove is possible after restarting of the controller by authorized service after the fault is removed.

In case of failure of the controller, sensors or another event, which may cause the stove is continuously heating the system, causing water losses, the increasing temperature will activate the STB limiter, which will disconnect the supply from the stove and will prevent damage to the stove and central heating system.

7. CLEANING AND MAINTENANCE

All operations related to the cleaning of all components should be carried out when the stove is completely cold. It is required to use protective gloves.

It is a good practice to ensure good ventilation of the room during the cleaning of the fireplace.

7.1.1. WATER SYSTEM

At least twice a year you should carry out inspection and maintenance of all components ensuring safe operation of the water unit and central heating system, including safety valve and thermal safety valve. If longer break in operation of stove is planned and if it is possible that temperature will fall below 0°C then you should discharge water from the central heating system to prevent freezing of water in the system and its damage. Check filling of the central heating system with water prior to each start up after longer break in operation of the stove.

- *At least twice a year you should carry out inspection and maintenance of safety valve, thermal safety valve and other components ensuring safe operation of the water system and whole central heating system.*
- *Check the level of water in the central heating system after each longer break in operation of the DEFRO HOME AQUAPELL stove.*

7.2. BASIC OPERATIONS AND CLEANING BY THE USER.

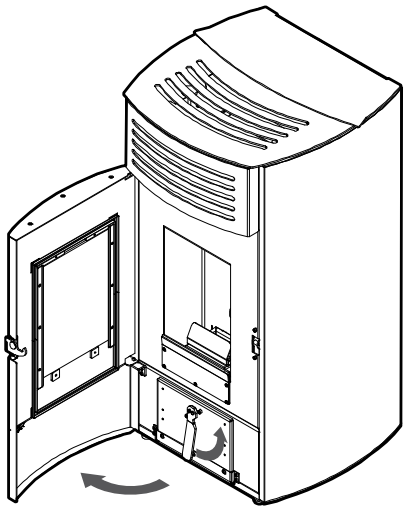
Any service and maintenance works are to be carried out with meticulous care and only by adults familiarized with this manual. The dry stove should not be cleaned in the presence of children.

STOP

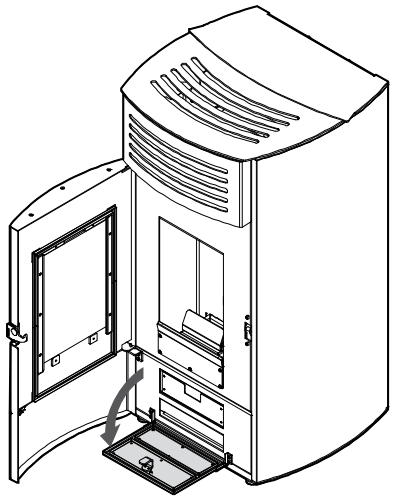
Any service and maintenance works are to be carried out with meticulous care and only by adults familiarized with this manual. The dry stove should not be cleaned in the presence of children.

7.2.1. CLEANING BEFORE EACH STARTING

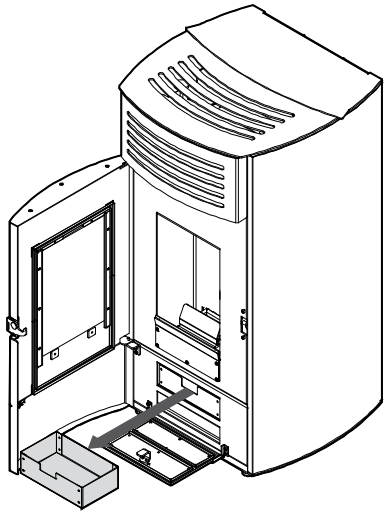
Prior to every successive start-up of the equipment, the ash container should be cleaned and emptied, handling the ash with due care. Remove ash-pan for this purpose and remove the remaining dust. Dust can be removed using a vacuum cleaner only if it is completely cold. Use a vacuum cleaner adapted to remove the particles of specified size for this purpose.



- Open the doors, then tighten the handle of ash-pan cover counterclockwise.



- Deflect cover of ash-pan downwards

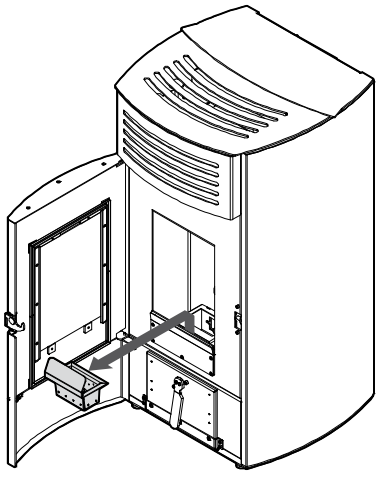


- Take out ash-pan drawer and remove the dust.

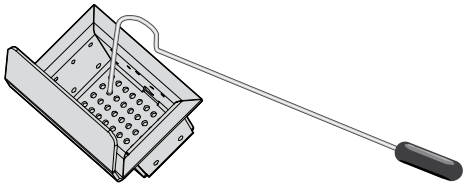
Re-install the ash container below the grate after the cleaning and clean ash-pan cover.

7.2.2. EVERY DAY SERVICE

1. Burner inspection - check whether the openings in the burner bottom have proper flow capacity. If they are blocked then you should remove the burner from the recess and clean the openings using a poker, then remove ash using a vacuum cleaner;

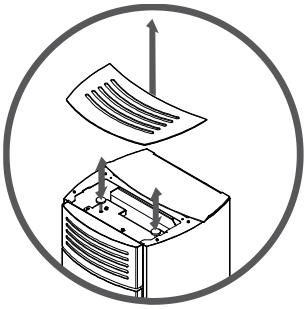


- Lift the burner and then take it out.



- Clean opening on bottom and sides of the burner using a poker.

2. Inspection of fuel level - check whether pellet level in the container is not lower than the minimum level of 25% of container capacity and refill if it is lower. Close the container flap tightly when after fuel refiling.
3. Cleaning of stove pipes - lift from the top and lower two buttons located under the removed cover (figure below) after removal of the upper cover. They are responsible for the cleaning of stove pipe by turbulizers moving inside.



7.2.3. EVERY WEEK SERVICE

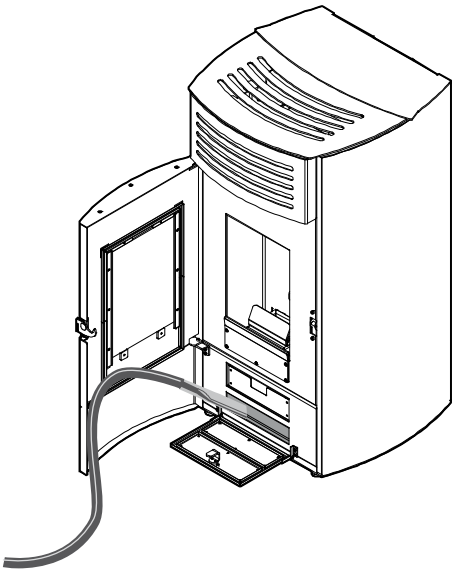
1. Ash-pan cleaning (chapter7.2.1) - remove ash using e.g. proper vacuum cleaner if necessary.
2. Removal of dust from heat exchanger chamber - if ash has been accumulated in the chamber it should be removed.

7.2.4. EVERY MONTH SERVICE

If the stove is used extensively then you should remove the soot from the chamber of the heat exchanger at least once a month (or more often - every two weeks). Soot removal from the heat exchanger walls improves flow of smoke and the quality of stove performance.

Clean also chamber under the ash-pan, where the dirt is accumulating during the movement of turbilizers.

1. Open the doors and open ash-pan cover (chapter 7.2.1).



2. Clean chamber under the ash-pan drawer.

7.2.5. WINDOW PANEL CLEANING

The window panel may be cleaned only and exclusively when the fireplace does not operate and is at room temperature.

The window panel may be cleaned only using moist paper or cloth (each time it is required to protect the painted components and surfaces, and gaskets against flooding, because it has an impact on quicker wear and tear of the components).

It is forbidden to use abrasive agents or materials, because they may scratch the glass surface.

It is forbidden to use the chemical cleaning agents, because, in the case of contact with such agents they may cause damage to the components of the fireplace insert, that is printed on the glass pane, glass pane, gaskets, and painted surfaces.

STOP

Do not open doors to clean the window panel during the operation of the fireplace. Cleaning of window panel is possible only when the equipment is cold.

7.2.6. DOORS/GASKETS

Abrasive surfaces of doors and closing mechanisms should be occasionally lubricated with graphite grease. Carry out inspection and cleaning of the whole stove prior to each heating season. Pay special attention to the condition of gaskets, and replace them if necessary.

7.2.7. FURNACE CHAMBER

Clean the furnace chamber of the stove periodically, depending on moisture content and type of pellet used.

7.2.8. FLUE

In compliance with applicable regulations, you should clean the flue twice (2) a year. The flue should be cleaned by a chimnysweep company and this fact should be documented in this manual.

STOP

Flue gases coming out of the blocked chimney are dangerous. Chimney and connector should be kept clean. They should be cleaned before each heating season.

After a longer break in equipment's operation, you should check the flow capacity of the flue.

7.3. PERIODIC INSPECTION BY AUTHORIZED SERVICE

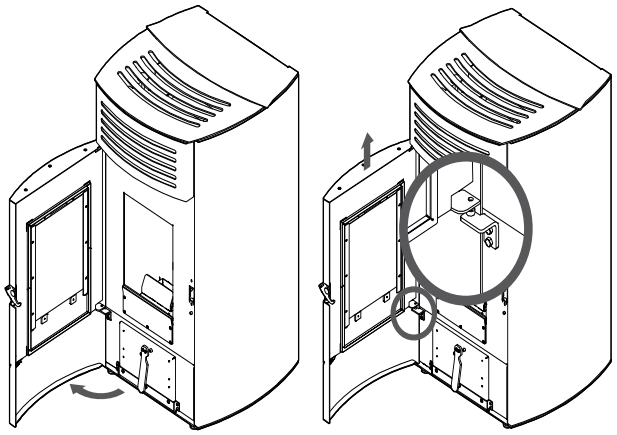
After the heating season it is necessary to clean several components of the stove (combustion chamber, fan, container), including the components where the flue gas flows through. This cleaning is obligatory and is intended to remove all combustion residues. Because the inspection requires disassembly of the stove parts it should be carried out only by qualified service.

The annual inspection (before or after each heating season) performed by the authorized company's service is obligatory within the warranty period.

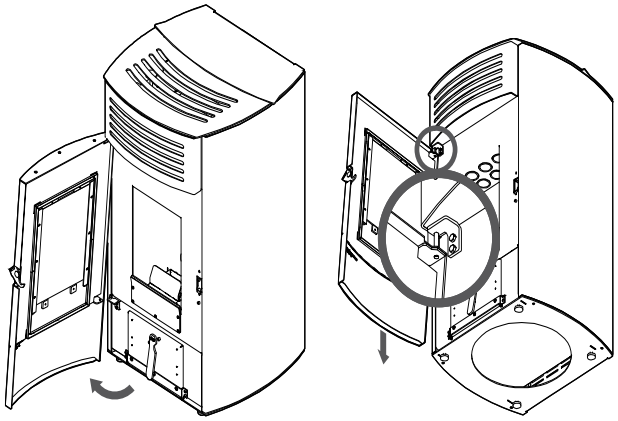
Periodic inspection of the equipment should be carried out only by a qualified manufacturer's service.

7.4. DISMANTLING OF COMPONENTS

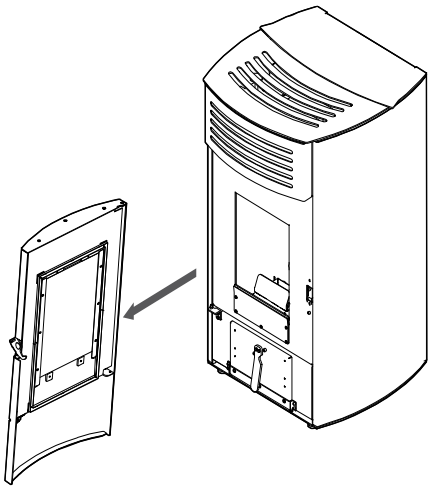
7.4.1. DOORS DISASSEMBLY



1. Open the doors and lift them up to free the bottom pin from the hinge opening.



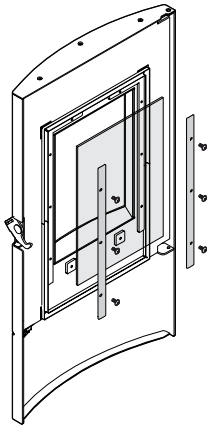
2. Tilt the doors, sliding the bottom part of the doors to the outside of the furnace, in such a way that a bottom pin is located outside the door frame, then lower the door leaf to eject the top pin from the hinge opening.



3. Remove doors in such position.

7.4.2. WINDOW PANEL DISMANTLING

It is possible to disassemble the window panel after the doors have been disassembled. The best way is to disassemble the window panel when the doors are in a horizontal position (e.g. when such doors lie on the table).



Picture 8. Removal of glass pane from the DEFRO HOME AQUAPELL stove.

7.5. SHUTTING THE STOVE DOWN

It is recommended completely shutdown the stove and clean the equipment when each heating season is finished.

8. TROUBLESHOOTING

Some anomalies indicating irregularities in operation can occur during the operation of the equipment. It can be caused by incorrect installation of the equipment without observation of the applicable building regulations or provisions of this manual or by external causes e.g. natural environment.

Below you will find the most frequent causes of incorrect operation of equipment with their solutions.

No ignition in operating igniter:

- Too much pellet in the burner,
- No pellet in the container.

The stove does not start:

- Igniter does not heat up as due to power failure or damage,
- No pellet in a container,
- Lack of doors tightness.

Stove blockade:

- Too high contamination, you should clean the burner, ashpan, combustion chamber,
- No pellet in a container,
- Controller blockade.

Correct operation can be disturbed by atmospheric conditions (air moisture content, fog, wind, atmospheric pressure) and sometimes by closely located high facilities.

In case of repeated problems, you should turn to a chimney sweep company to confirm the reason for such a condition and to indicate the best solution for the problem.

9. MEASURES IN THE CASE OF FIRE IN THE FLUE /SOOT IGNITION/.

Systematic cleaning of smoke ducts should be performed to prevent soot ignition in the chimney.

Soot ignition in the chimney is the burning of particles deposited inside the chimney (flue) channels; the deposits are formed in the course of heating equipment's operation and were not cleaned by chimney sweeps. In a case of soot fire in a chimney the following recommendations should be observed:

- call Fire Brigade at 998 or 112, give information about what is happening and give detailed directions what is happening and how to get to the given building;
- disconnect the stove from the electrical supply;
- damp a fire in the chimney by the closing inflow of cold air to the furnace chamber;
- close stove's door and cleaning holes tightly to cut off air supply (due to lack of air the fire will eventually stop);
- check the whole chimney channel for any cracks which might result in fire spreading to the rooms;
- prepare fire quenching means, e.g. a fire extinguisher, a fire blanket, a hose connected to the water system, water in a container;
- make rooms and necessary information available to the Fire Brigade.

It is strictly forbidden to pour water into the chimney - the risk of blowout.

Untight chimney channels can be a source of burning sparks or very hot flue gas, including insensible carbon monoxide.

Chimneysweep should be called after soot fire in the chimney to perform cleaning of ducts and to inspect their technical condition.

10. REMOVAL DUE TO WEAR-OUT

Before scrapping of stove you should disconnect all components that are subject to selective collection of waste electrical and electronic equipment for disposal purposes. These components include an electronic controller, feeder drive, fans motors and other electrical and electronic components with conductors. The collection place should be specified by the municipal or commune services.

The other elements of a stove have been made of materials neutral for the environment and are subject to standard waste disposal, mostly as steel scrap. After worn out of the stove parts connected with screws should be disassembled by unscrewing and welded parts must be cut. Take safety precautions during disassembly of the equipment by using appropriate hand-held and mechanical devices as well as personal protective equipment (gloves, clothes, apron, glasses, etc.).

11. REMARKS ON DRY STOVE USAGE.

The following rules for safe operation of the dry stoves should be strictly observed and introduced.

1) The dry stove can be used only by adults, who have familiarised themselves with this operating manual and have been trained in the scope of usage.
2) It is forbidden for children to be in the neighborhood of the stove without adults.
3) Flammable liquids must not be used for torching the fuel; only solid fuel (e.g. tourist), paper can be used etc.
4) Flammable materials must not be placed on the stove and in its vicinity.
5) Power conductor should be led far from heat sources (doors, flue).
6) It is forbidden to damp a fire in a furnace with water.
7) It is forbidden to use a stove with a cracked window panel.
8) You should use the fuel recommended by the manufacturer.
9) Never stand in front of the stove door while opening it. Burn risk.
10) While removing ash from the stove, flammable materials cannot be located closer than 1500 mm from the stove. Ash is to be put into heat-resistant containers with a lid.
11) After the heating season has finished, the stove and smoke channel are to be precisely cleaned.

12) For connection to the external inlet of air and longer break in operation (over 2 weeks), it is necessary to empty the bin and pellet feeder.
13) Point corrosion spots are allowed because they do not impact the correct operation of the equipment and do not reduce its performance. They may occur as a result of incorrect storage of equipment (e.g. in rooms of high moisture content).
14) A phenomenon of condensation of water steam - condensate, may occur during operation.

12. PRODUCT WARRANTY TERMS AND CONDITIONS

1) Placing warranty statement, which contents correspond to the provisions of this document, the Guarantor - manufacturer of the product - DEFRO R. Dziubeła spółka komandytowa, Ruda Strawczyńska 103 A, 26-067 Strawczyn, entered in the Register of Entrepreneurs of the National Court Register by the District Court for the capital city of Warsaw XII Commercial Division of the National Court Register, under the number KRS 0000620901, NIP: 9591968493, National Business Registry Number [REGON]: 363378898, gives the Purchaser a warranty for the sold product on the terms and conditions specified below.
2) The guarantee refers to a dry stove type ..... with serial number ..... (subject of agreement - dry stove) under the condition that the product has been fully paid. Due to suitable, proven and unified standards of sales the warranty covers only products purchased at authorized points of sales of the Guarantor or from authorized distributors. A full list of authorized companies is available on the website www.defro.pl.
3) When the whole price will be paid and the product will be issued to the user also the warranty card will be issued. In the warranty card is missing the Purchaser should immediately contact the Seller to obtain this document, while its lack has no influence on the validity and period of the warranty given based on this statement, but it can have an influence on the correct, timely processing of obligations resulting from this warranty by the Guarantor.
4) To allow Guarantor efficient operation the Purchaser should immediately after issuance of the product, send back a copy of a correctly completed Warranty Card to the address of the Guarantor (Ruda Strawczyńska 103a, 26-067 Strawczyn). The correctly filled Warranty Card has date, stamp and signatures in designated locations.
5) The Purchaser receives Warranty Terms and Conditions, Warranty Card as well as Operating Manual containing conditions for boiler's usage, installation guide and parameters regarding the chimney, fuel and boiler water.
6) The Guarantor guarantees that the equipment works correctly provided that all conditions specified in the Operating Manual have been met, especially with respect to parameters applying to fuel, and connection to the chimney system. The warranty covers the product used in compliance with its intended use and information provided in the service manual. A guarantor is not responsible for the effect of normal wear and tear of the product which is connected with operation.
7) The warranty authorizations period commences on the date of issuance of the product to the Purchaser and equals:
   a) 2 years for the correct operation of the equipment,
   b) 2 years for claddings made of heat-resisting concrete - Ceramiton, while the warranty does not cover discolorations, change of cladding color, or degradation of top layer of the coating.
   c) 1 year for the grate, deflector and gaskets of the fireplace,
   d) elements subject to wear-out are not covered by the Warranty; these include: ceramic hardened glass, screws, nuts, handles etc.
8) The Warranty is valid in the Republic of Poland.
9) During the warranty period, the Guarantor ensures free-of-charge repairs of any physical defects of the product within the period of:
   a) 14 days after the fault report, unless the repair requires replacement of constructions elements of the product;
   b) 30 days after the fault report, if the repair requires replacement of constructions elements of the product;
   c) subject to points 3 and 4 of these warranty conditions.

   If, as a result of considering the warranty claim the defective product has been replaced with new one or the significant repairs have been made, then a new warranty period is applied counting from the date of delivery of the replaced or repaired product. In case when only part, belonging to the claimed product, is replaced then new warranty period is applied only for this part. In the other cases, the warranty period is prolonged by a period when the operation of the product was impossible due to filed claim.
10) Registration of any physical fault to be repaired during the warranty period (fault registration) should be made by the Purchaser immediately after a fault has been found and no later than after 14 days.
11) Any fault is to be registered with the Guarantor (Ruda Strawczyńska 103a, 26-067 Strawczyn) by sending a complaint sheet contained in this operating manual, filled in and stamped by an authorized point of sale or authorized distributor. The fault registration should contain:
   a) type, capacity, serial number, manufacturer number (the information is located on the rating plate),
   b) date and place of purchase,
   c) brief description of the fault,
   d) detailed address and phone number of the Purchaser.
12) If the following cases are complained about: incorrect combustion in the device, tar deposits, smoking through the door; the fault registration should be supplemented with a copy of a chimney sweep expertise certifying that the flue meets all requirements specified in the operating manual for a given boiler's capacity.
13) The Guarantor shall not be responsible for exceeding of the periods mentioned in point 9 above or the Guarantor or its representatives will be ready to remove the defect within the date agreed with the Purchaser and will not be able to carry it out due to reasons not attributable to the Guarantor (e.g. lack of proper access to devices, lack of energy or water, force majeure, Purchaser is not present etc.).
14) If the Guarantor, despite being ready to carry out the repair, will not be able to carry out the warranty repair twice because of the reasons attributable to the Purchaser then it is assumed that Purchaser had resigned from the claim included in the guarantee claim. Notification about the same defect in this mode is not possible.
15) The product can be replaced if the Guarantor decides it cannot be repaired.
16) The Guarantor does not accept liability for inappropriate choice of product with respect to the heated area (e.g. device of too low or too high power with respect to requirements). It is recommended to choose a device with cooperation with a design office or the Guarantor. The Guarantor is not liable for loss of data saved in the equipment and for economical losses and lost profits.
17) The Guarantor will refuse realization of Purchaser's claims resulting from this document in the case when:
   a) will state damage or ripping of leaden seals,
   b) identification of product will be impossible (that is conformity of the presented product with a document describing the equipment, replaced or illegible documents),
   c) damages resulting from incorrect transport carried out or ordered by Purchaser,
   d) particular components of the equipment were willfully replaced with non-genuine, used etc., repairs outside the authorized service of the Guarantor etc.
   e) damages are mechanical, chemical, and thermal and they are not resulting from causes in the sold product.
   f) damages concerns wearing parts, especially: screws, nuts, handles, ceramic and sealing elements,
   g) damages resulting from product usage inconsistently with the operating manual, that is especially when incorrect equipment operation resulting from lack of chimney draught or inappropriate power of the equipment,
   h) Faults are not significant and do not have an impact on the use value of the product.

18) This warranty does not cover:
    a) products used for business purposes or industrial uses;
    b) components of electrical equipment;
    c) damages caused by the other connected equipment, devices or accessories other than those recommended by the Guarantor.
    d) damages occurred as a result of the action of external impacts, among other: by the action of force majeure;
    e) damages caused by the animals,
    f) damages resulting from overheating of the equipment that is: discoloration of glass pane, "milky discolorations", discoloration of metal components, "rainbow steel", blue discolorations, chipping of paint, gasket discolorations, deformation of steel components.
19) Warranty repairs accepted by the Guarantor are carried out free of charge. The guarantor can charge the costs connected with the warranty claim only in the case when claim is not accepted as a result of stating circumstances which are listed in points 17 and 18 mentioned above.
20) Notification of complaint can be considered positively only in the case of:
    a) keeping the time-limits mentioned in this document;
    b) fulfilling the other terms and the conditions of the warranty;
    c) presentation of product proof of purchase - that is invoice or fiscal receipt, the other proof of purchase, in compliance with the regulations;
21) Device installation can be carried out by a person holding general installation qualifications but an entry and stamp in the Warranty Card are required.
22) Device's first start-up, any repairs and other activities, which are not supposed to be carried out by the User according to the operating manual, can be carried out only by an authorized service trained by the Guarantor. The device's first start-up is payable by the Purchaser.
23) Warranty repair is made in the location when the product is operated. If the claim applies to part of the product, including electronic equipment /electronic controller, fan etc. then the given part should be sent to the Guarantor at his expense. Returning faulty equipment is a condition to accept the claim and replace this equipment for free. Not returning the above-mentioned part within seven (7) working days will be subject to not accepting the claim and charging its costs to the purchaser.
24) Provisions of this document do not limit in any way authorizations resulting from the claim submitted on the basis of statutory warranty. The warranty also had no influence on the other clamps of the Purchaser, according to the provisions of law - including these concerning non-conformity of the goods with the contract. The purchaser can exercise powers from the statutory warranty regardless of powers resulting from the guarantee. If the purchaser exercises his powers resulting from the warranty, the period for execution of powers resulting from the warranty will be suspended from the date of notice about the defect. This period will be continued from the date of refusal by the Guarantor about the execution of obligations resulting from the warranty or ineffective lapse of time for their execution.
25) To all matters not settled in this Warranty Card and document the provisions of the Civil Code Art. 577 - 581 shall apply.

12.1. WARRANTY CONDITIONS "48H SERVICE"

1) The "48h Service" program covers the heating equipment manufactured by DEFRO R. Dziubeła sp. k.
2) Any complaints are to be made at a retail outlet, directly at the Company's e-mail: serwis@defro.pl, or by a letter to the company's address.
3) Fault registration can be completed if the Purchaser has a purchase confirmation and has filled in the Warranty Card correctly including a complaint sheet.
4) The "48h service" ensures that DEFRO R. Dziubeła sp. k. does its best to remove any faults which make it impossible/difficult for the equipment to operate within the period of two business days from the day of fault registration.
5) Fault removal time may be prolonged for reasons not dependent on DEFRO R. Dziubeła sp. k., such as the necessity of replacement of construction elements, lack of spare parts at the supplier, adverse weather conditions /force majeure/.
6) Failure to carry out repairs within this period cannot constitute a ground for any claims against DEFRO R. Dziubeła sp. k. and Authorized Service Partner.
7) To facilitate contact with service, a service hotline for Customers has been set up: 509 702 720 and 509 577 900. If you call on these numbers, you will receive the necessary information and help with any service issue.

We kindly inform you that the possible replacement of the equipment component, with the working one, claimed by the user is not unambiguous with the admission of the equipment user's warranty claims and does not end the complaint processing procedure. DEFRO reserves the right to charge the equipment's user with component replacement/repair costs, which after expertise/repair was stated as damaged by the factors independent of the boiler's manufacturer (e.g. short-circuit in the electric system, overvoltage, flooding, mechanical damages not visible to the naked eye etc.) and which damages were not able to stated during repairing in the location of equipment operation by the service, within 60 days from date of carrying out the repair. DEFRO will issue an appropriate invoice for replacement/repair of the subject component with the enclosed expertise protocol. At the same time we inform you, that lack of payment for the invoice including the above-mentioned costs within 14 days from its issuance results in irrevocable loss of warranty for the used equipment and this information will be entered into our computer supervision system for equipment within the warranty period. The date when the due amount is credited to the bank account given in the mentioned invoice is treated as payment date.

WARRANTY CARD

Confirmation of equipment's quality and completeness

In accordance with the conditions stated herein, warranty for a heating stove of DEFRO HOME AQUAPELL series type ..... operated in compliance with the operating manual has been issued.

Equipment manufacturing number* .....

Equipment power* ..... kW

User (name and surname)** .....

Address /street, city, postal code/** .....

.....

tel./fax** ..... e-mail**

Sale date	Installation date	Start-up date
.....	.....	.....
(stamp and signature of salesperson)	(stamp and signature of salesperson)	(stamp and signature of company starting up the stove)

The user confirms that:

- the equipment has been delivered as complete;
- the device showed no failure during the first start-up carried out by a service company,
- has received the Operating Manual and equipment's installation manual with this Warranty Card filled in;
- has been familiarised with equipment's operation and maintenance.

....

city and data user signature

* filled by the manufacturer

** filled by the user

The Customer and the installation and service company confirm by their own signature that their personal data can be processed for service register purposes according to the art. 6 section 1, letter a of the General Data Protection Regulation of 27 April 2016 (OJ EU L 119, 04.05.2016).

DEFRO R. Dziubeła spółka komandytowa
• 26-067 Strawczyn, Ruda Strawczyńska 103A • tel. 041 303 80 85 • biuro@defro.pl • www.defro.pl •

14. CARRIED OUT WARRANTY REPAIRS AND MAINTENANCE.

No.	date	fault description, repaired element, description of repairs	comments	Stamp and signature of Service
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				

copy to send back

DEFRO home

WARRANTY CARD

Confirmation of equipment's quality and completeness

In accordance with the conditions stated herein, warranty for a heating stove of DEFRO HOME AQUAPELL series type …… operated in compliance with the operating manual has been issued.

Equipment manufacturing number* .....

Equipment power* ..... kW

User (name and surname)** .....

Address /street, city, postal code/** .....

.....

tel./fax** ..... e-mail**

Sale date	Installation date	Start-up date
.....	.....	.....
(stamp and signature of salesperson)	(stamp and signature of salesperson)	(stamp and signature of company starting up the stove)

The user confirms that:

- the equipment has been delivered as complete;
- the device showed no failure during the first start-up carried out by a service company,
- has received the Operating Manual and equipment's installation manual with this Warranty Card filled in;
- has been familiarised with equipment's operation and maintenance.

....

city and data user signature

* filled by the manufacturer

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The Customer and the installation and service company confirm by their own signature that their personal data can be processed for service register purposes according to the art. 6 section 1, letter a of the General Data Protection Regulation of 27 April 2016 (OJ EU L 119, 04.05.2016).

DEFRO R. Dziubeła spółka komandytowa
• 26-067 Strawczyn, Ruda Strawczyńska 103A • tel. 041 303 80 85 • biuro@defro.pl • www.defro.pl •

COMPLAINT FORM

made on ..... in connection with complaint no.....

SUBJECT OF COMPLAINT

EQUIPMENT TYPE: ..... Equipment manufacturing date:

Equipment serial no.: ..... Equipment purchase date: .....

CLAIMANT

Name and surname: .....

Detailed address: .....

.....

Phone number .....

DETAILED DESCRIPTION OF QUALITY FAULTS OR FAULTS RESULTING FROM THE MANUFACTURER'S FAULT

.....

.....

.....

.....

.....

OTHER FAULTS .....

.....

CLAIMANT LODGES WARRANTY CLAIM FOR (SELECT APPROPRIATE):

Warranty repair Paid repair Post-warranty paid repair

CLAIMANT REQUESTS.....

In the case when a claim is not taken into consideration because circumstances, mentioned in p. 17 and 18 of the Warranty Terms are discovered, the CLAIMANT agrees to cover the costs incurred by the manufacturer's service.

....

(city and data) (sign of claimant) (signature of serviceman)

FAULT REMOVAL - to be filled by service

Date of informing the service technician about fault .....hour .....

Name and surname of service technician .....

Way of fault removal .....

.....

.....

Advice (DESCRIPTION) .....

.....

END OF COMPLAINT

Name and surname of service technician: ..... Fault removal date:.....

Justness of complaint: ..... Duration of repair: .....

Fault (defect) has been removed, the equipment operates correctly. I hereby confirm the removal of the fault. I declare that I have familiarised myself with the conditions of the warranty on the basis of which I wish to register my complaint.
The Customer and the installation and service company confirm by their own signature that their personal data can be processed for service register purposes according to the art. 6 section 1, letter a of the General Data Protection Regulation of 27 April 2016 (OJ EU L 119, 04.05.2016).

....

(city and data) (sign of claimant) (signature of serviceman)

ATTENTION! In the case when a claim is not taken into consideration because circumstances, mentioned in p. 17 and 18 of the Warranty Terms are discovered, the CLAIMANT agrees to cover the costs incurred by the manufacturer's service.*
*cost per man-hour and travelling expenses are calculated according to the current price list available at www.defro.pl.

COMPLAINT FORM

made on..... in connection with complaint no. .....

SUBJECT OF COMPLAINT

EQUIPMENT TYPE: ..... Equipment manufacturing date:

Equipment serial no.: ..... Equipment purchase date: .....

CLAIMANT

Name and surname: .....

Detailed address: .....

.....

Phone number .....

DETAILED DESCRIPTION OF QUALITY FAULTS OR FAULTS RESULTING FROM THE MANUFACTURER'S FAULT

.....

.....

.....

.....

.....

OTHER FAULTS .....

.....

CLAIMANT LODGES WARRANTY CLAIM FOR (SELECT APPROPRIATE):

Warranty repair Paid repair Post-warranty paid repair

CLAIMANT REQUESTS.....

In the case when a claim is not taken into consideration because circumstances, mentioned in p. 17 and 18 of the Warranty Terms are discovered, the CLAIMANT agrees to cover the costs incurred by the manufacturer's service.

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(city and data) (sign of claimant) (signature of serviceman)

FAULT REMOVAL - to be filled by service

Date of informing the service technician about fault .....hour .....

Name and surname of service technician .....

Way of fault removal .....

.....

.....

Advice (DESCRIPTION) .....

.....

END OF COMPLAINT

Name and surname of service technician: ..... Fault removal date:.....

Justness of complaint: ..... Duration of repair: .....

Fault (defect) has been removed, the equipment operates correctly. I hereby confirm the removal of the fault. I declare that I have familiarised myself with the conditions of the warranty on the basis of which I wish to register my complaint.
The Customer and the installation and service company confirm by their own signature that their personal data can be processed for service register purposes according to the art. 6 section 1, letter a of the General Data Protection Regulation of 27 April 2016 (OJ EU L 119, 04.05.2016).

....

(city and data) (sign of claimant) (signature of serviceman)

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*cost per man-hour and travelling expenses are calculated according to the current price list available at www.defro.pl.

COMPLAINT FORM

made on ..... in connection with complaint no.....

SUBJECT OF COMPLAINT

EQUIPMENT TYPE: ..... Equipment manufacturing date: .....

Equipment serial no.: ..... Equipment purchase date: .....

CLAIMANT

Name and surname: .....

Detailed address: .....

.....

Phone number .....

DETAILED DESCRIPTION OF QUALITY FAULTS OR FAULTS RESULTING FROM THE MANUFACTURER'S FAULT

.....

.....

.....

.....

.....

OTHER FAULTS .....

.....

CLAIMANT LODGES WARRANTY CLAIM FOR (SELECT APPROPRIATE):

Warranty repair Paid repair Post-warranty paid repair

CLAIMANT REQUESTS.....

In the case when a claim is not taken into consideration because circumstances, mentioned in p. 17 and 18 of the Warranty Terms are discovered, the CLAIMANT agrees to cover the costs incurred by the manufacturer's service.

....

(city and data) (sign of claimant) (signature of serviceman)

FAULT REMOVAL - to be filled by service

Date of informing the service technician about fault .....hour .....

Name and surname of service technician .....

Way of fault removal .....

.....

.....

Advice (DESCRIPTION) .....

.....

END OF COMPLAINT

Name and surname of service technician: ..... Fault removal date:.....

Justness of complaint: ..... Duration of repair: .....

Fault (defect) has been removed, the equipment operates correctly. I hereby confirm the removal of the fault. I declare that I have familiarised myself with the conditions of the warranty on the basis of which I wish to register my complaint.
The Customer and the installation and service company confirm by their own signature that their personal data can be processed for service register purposes according to the art. 6 section 1, letter a of the General Data Protection Regulation of 27 April 2016 (OJ EU L 119, 04.05.2016).

....

(city and data) (sign of claimant) (signature of serviceman)

ATTENTION! In the case when a claim is not taken into consideration because circumstances, mentioned in p. 17 and 18 of the Warranty Terms are discovered, the CLAIMANT agrees to cover the costs incurred by the manufacturer's service.*
*cost per man-hour and traveling expenses are calculated according to the current price list available at www.defro.pl.

19. REGISTER OF INSPECTIONS OF SMOKE DUCT

date	stamp and signature of chimneysweep	date	stamp and signature of chimneysweep

DEFRO home	PRODUCT SHEET IN ACCORDANCE WITH THE EU REGULATION 2015/1186 SUPPLEMENTING DIRECTIVE 2010/30/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL
Name and address of the equipment supplier	DEFRO R. Dziubeła spółka komandytowa 26-067 Strawczyn Ruda Strawczyńska 103A

EQUIPMENT PARAMETERS	UNIT	MODEL IDENTIFIER
		DEFRO HOME AQUAPELL
Energy efficiency class	-	A++
Direct thermal power	kW	2.9
Indirect thermal power	kW	10.2
Energy efficiency Index EEI	-	134
Performance at rated thermal power	%	95.1
Efficiency at minimal thermal power	%	96.4
Special precautions during assembly, installation or maintenance of the equipment	-	Consider guidelines included in the Service Manual delivered by the manufacturer each time before assembly, start-up or maintenance of the equipment.

PRODUCT SHEET

in accordance with the Commission Regulation 2015/1185

on the execution of the Directive of the European Parliament and the Council 2009/125/EC

Equipment parameters

Model identifier(s): **DEFRO HOME AQUAPELL 13, DEFRO HOME AQUAPELL ME**

Indirect heating function: [yes/~~no~~]

Direct thermal output: 2.9 (kW)

Indirect thermal output: 10.2 (kW)

Fuel	Recommended fuel (only one):	Other suitable fuel(s):	η_s [%]:	Emission from local space heater at rated heat output				Emission from local space heaters at rated heat output			
				PM	OGC	CO	NO_x	PM	OGC	CO	NO_x
				mg/Nm^3 (13 % O_2)				mg/Nm^3 (13 % O_2)			
Chunks of wood of moisture content ≤ 25 %	no	no									
Pressed wood of moisture content ≤ 12 %	yes	no	91	20	60	300	200	20	60	300	200
Other wooden biomass	no	no									
Non-wooden biomass	no	no									
Hard coal and lean coal	no	no									
Metallurgic coke	no	no									
Semi-coke	no	no									
Hard coal	no	no									
Brown coal briquettes	no	no									
Peat briquettes	no	no									
Briquettes made of mixed fossil fuel	no	no									
Other fossil fuel	no	no									
Briquettes made of mix of biomass and fossil fuel	no	no									
Other mixture of biomass and solid fuel	no	no									

Properties in the case of operation only with recommended fuel

Parameter	Designation	Value	Unit
Thermal output			
Rated heat output	P_{nom}	13.1	kW
Minimum heat output (indicative)	P_{min}	6.0	kW
Auxiliary power consumption			
For rated heat output	el_{max}	0.145	kW
For minimum heat output	el_{min}	0.090	kW
In standby mode	el_{SB}	0.005	kW
Energy demand of the fixed ignition flame			
Energy demand of the ignition flame (if applicable)	P_{pilot}	-	kW

Parameter	Designation	Value	Unit
Performance (calorific value in operating condition)			
Performance at rated thermal power	$\eta_{th,nom}$	95.1	%
Performance at minimal thermal power (indicative)	$\eta_{th,min}$	96.4	%

Type of heat output/control of temperature in the room (choose one option)	
single-stage thermal power without temperature control in the room	~~yes~~/no
at least two manual stages without temperature control in the room	~~yes~~/no
mechanical control of temperature in the room using a thermostat	~~yes~~/no
electronic control of temperature in the room	~~yes~~/no
electronic control of temperature in the room and daily controller	~~yes~~/no
electronic control of temperature in the room and weekly controller	yes/~~no~~
Other control options (you may choose several options)	
temperature control in the room with presence detection	~~yes~~/no
temperature control in the room with open window detection	~~yes~~/no
remote control option	yes/~~no~~

Name/name and surname and address of the manufacturer or his/her authorized representative:

DEFRO R. Dziubeła spółka komandytowa
26-067 Strawczyn
Ruda Strawczyńska 103A

Robert Dziubeła – CEO

DEFRO
home

DEFRO R. Dziubeła spółka komandytowa

26-067 Strawczyn
Ruda Strawczyńska 103A
tel.: 41 303 80 85
biuro@defro.pl
www.defrohome.pl

Infolinia serwisowa
509 702 720
509 577 900