

# **BIOWIN 2** TOUCH

FOR USE IN CANADA / USA







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### **IMPORTANT INFORMATION**

This manual contains data with US units. The units in the original manual are European units. If there is a data conflict between these units, the data with European units is always valid.

The original manual is written in German – this is an English translation. In case of conflicts, the German version is always valid.

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### 1. General information

As required by the United States Department of Environmental Protection the following information is given for the: BioWIN 2 Touch wood pellet fired central heating boilers. Manufactured by Windhager Zentralheizung Technik Gmbh, Anton Windhager Strasse 20, Seekirchen 5201, Austria

The BioWIN 2 Touch boilers have the following nominal output levels and comply with EPA 2020 requirements:

- BioWIN 152 51.2 kBTU/hr (15 kW)
- BioWIN 212 71.7 kBTU/hr (21kW)
- BioWIN 262 88.4 kBTU/hr (25.9 kW)
- BioWIN 332 110.9 kBTU/hr (32.5 kW)

The BioWIN 2 Touch system efficiency and the nominal output was measured by a test laboratory using the HHV of the fuel.

- BioWIN 152: 64.7 % (119 gal thermal storage included)
- BioWIN 212: 57.6 % (238 gal thermal storage included)
- BioWIN 262: 70.7 % (238 gal thermal storage included)
- BioWIN 332: 70.6 % (238 gal thermal storage included)

The system efficiency was determined during performance testing using the IDC protocol. Further technical data can be found in the Installation manual.

Your BioWIN2 Touch boiler has a manufacturer-set minimum low burn rate that must not be altered. It is against federal regulations to alter this setting or otherwise operate this wood heater in a manner inconsistent with operating instructions in this manual.

Your BioWIN 2 Touch boiler is equipped with automatic fuel loading. There are no further loading instructions. Solely PFI Premium 100% wood pellets shall be used.

Materials such as trash, plastics, gasoline, rubber, naphtha, household garbage, material treated with petroleum products such as particleboard, railroad ties, and pressure treated wood.

Burning these materials may result in release of toxic fumes or render the heater ineffective and cause smoke.

Your BioWIN 2 Touch is equipped with an automatic ignition and starts itself when required by building load. Thus, no further ignition procedures are to be followed.

There are no user adjustments for the air controls required.

It is important to have BioWIN 2 TouchNA boiler serviced by a trained professional who is aware of the importance to ensure that:

- there are no inlet air restrictions in or around your boiler's combustion blower
- the air passages within your boiler are free of debris(ash, creosote, etc.)
- the Flue pipe and chimney are clean and free of debris / restrictions
- combustion chamber door (when closed and secured) and the ash box seal are airtight.

Ash removal is completely automatic. Ashes should be placed in a metal container with a tight-fitting lid. The closed container of ashes should be placed on a non-combustible floor or on the ground, away from all combustible materials, pending final disposal. The ashes should be retained in the closed container until all cinders have thoroughly cooled.

A person or persons responsible for the operation of a hydronic heater must comply with all applicable laws or requirements, such as State laws or regulations as well as local ordinances.

#### Important information

A person or persons operating a hydronic heater should be aware that they are responsible for operation in such a manner that does not create a public or private nuisance condition.

The manufacturer's distance and stack height recommendations and the requirements in any applicable laws or other requirements may not always be adequate to prevent nuisance conditions due to terrain or other factors.

Your BioWIN 2 Touch should be installed with a minimum stack height of 16 feet. Providing correct draft as given in the Installation manual.

Draft is the force, which moves air from the appliance up through the chimney. The amount of draft depends on the length of the chimney, local geography nearby obstructions and other factors.

Too much draft may cause excessive temperatures in the appliance and may damage parts in the catalytic combustor. Inadequate draft may cause backpuffing into the room and 'plugging' of the chimney, or the catalyst.

Inadequate draft will cause the appliance to leak smoke into the room through appliance and chimney connector joints.

Your BioWIN 2 Touch is not a catalytic type burner.

You should never use a combustion appliance in your home without an installed smoke and CO detector. Your local fire department usually has good advice on placement of these detectors and how many your home needs for complete coverage.

Complete important installation information is found in the installation manual.



Note.

This wood heating appliance needs periodic inspection and repair for proper operation. It is against federal law to operate this wood heating appliance in a manner inconsistent with operating instructions in the manual.

#### 1.1 Relevant documents

- Operating manual and installation instructions BioWIN 2 Touch
- Operating and installation instructions for system components

### **1.2** Safety instructions and other symbols in this documentation

#### 1.2.1 Structure of safety instructions



#### **KEYWORD** Type of risk

Here, possible consequences are listed that may result from failure to observe the safety instructions.
▶ Steps to prevent the risk are listed.

#### 1.2.2 Symbols, type of risk or meaning

Symbol	Type of risk or meaning	Symbol	Type of risk or meaning
	Injury		Risk of burns
A	Electrocution		Risk of crushing
(!)	Material losses (appliance damage, consequential losses and environmental pollution)		Appliance disposal This symbol means that the parts indica- ted must not be disposed of with domestic waste.
	Information or tips	•	This symbol indicates that you have to do something. The action you need to take is described step by step.

#### 1.2.3 Keywords

KEYWORD	Meaning
DANGER	Ignoring the warnings identified by this symbol can lead to serious injuries or death.
WARNING	Ignoring the warnings identified by this symbol can lead to <b>injury</b> .
CAUTION	Ignoring the warnings identified by this symbol can lead to <b>malfunction of or damage to the boiler or heating system</b> .
Information or tips	The blocks of text identified by this symbol provide <b>information and tips</b> for operation. ► Read these texts carefully.

### 2. Safety

The boiler together with its accessories complies with the latest state of the art as well as the relevant safety regulations, and is operated with electric current (110 V AC). Improper installation or repair can pose the danger of life-threatening electric shock. Installation may be performed only by appropriately qualified technicians.

### 2.1 General safety information



#### DANGER Injury

Please follow the safety instructions (symbols) on the appliance!

Please refer to the instructions in chapter 2.3 Safety instructions on side 7!



#### **DANGER** Injury

The specified safety requirements are to be followed in accordance with nationally applicable regulations, standards, and guidelines.



#### DANGER Electrocution

Turning off the on/off button on the InfoWIN Touch does not mean the boiler and its accessories are completely without power.

► Therefore, you must de-energise the boiler (e.g. by unplugging the main power plug) when carrying out cleaning or repair work.



#### WARNING Risk of crushing from rotating auger

► If you have to touch these parts, always de-energise the boiler.



#### WARNING Risk of burns

▶ Before touching these surfaces, you must switch off the boiler and let it cool.



#### **DANGER Injury**

► Also read and observe the safety information in the operating manual.

### 2.2 Liability exclusion

All work should be performed exclusively by trained personnel. Local safety regulations must be complied with in all cases; in the event of a conflict and/or contradiction between these regulations and the working instructions in this document (e.g., impairment), then the local regulations should be adhered to in any event and the working instruction should not be carried out; WINDHAGER ZENTRALHEIZUNG GMBH, ÖSTERREICH and WINDHAGER ZENTRALHEIZUNG TECHNIK GmbH, ÖSTERREICH do not accept any liability for any injury to persons or damage to property caused by incorrectly following the instructions and/or violating the local safety regulations! Subject to modifications. No liability is accepted for errors in translation.

### 2.3 Safety instructions



DANGER Risk of fire or explosion.

Do not use chemicals or fluids to start the fire.



#### CAUTION Health and environmental hazard.

Do not burn garbage, gasoline, naphtha, engine oil, or other inappropriate materials.



#### WARNING Opening heating chamber door can crush and cut.

When opening door, never insert hands between the door and frame on the hinge side of the heating chamber.



#### WARNING Opening heating chamber door can crush and cut.

When closing door, never insert hands between the door and frame of the heating chamber. Be aware of other people, especially children.



#### WARNING Entanglement hazard.

Do not open cover of auger conveyor when heating. Handle with care when servicing charging screw.



#### WARNING Ash tray can crush and cut.

Never insert hands between ash tray and frame. Never insert hands into closing bracket. Never insert hands between ash tray and closing bracket.



#### WARNING Cover plate for pellet chamber can crush and cut.

Use caution when opening the cover plate. Only authorized personnel are allowed to open cover plate.



#### WARNING Closing pellet chamber door can crush and cut.

Never insert hands between door and frame, or between door and closing bracket of the pellet chamber when closing the door. Never insert hands into the hinge area when opening door.



#### WARNING Opening pellet chamber door can crush and cut.

Never insert hands between door and frame on the hinge side of the pellet chamber when opening door. Never insert hands between door and closing bracket.



#### WARNING Removing the ash tray can crush and cut.

Never insert hands between frame of boiler/heater and ash tray when removing the ash tray.



#### WARNING Mounting the ash tray can crush and cut.

Never insert hands between frame of boiler/heater and ash tray when removing the ash tray.



#### WARNING Displacing the ash tray can crush and cut.

When moving the ash tray, never insert hands between floor of the heating boiler and ash tray.



#### WARNING Pinch point hazard.

Never insert hands between the cover plate and housing of heating chamber when opening or closing.



#### DANGER Smoke gas.

Ensure adequate ventilation in the boiler room. Smoke gas may cause poisoning.



#### WARNING Hot water and hot steam. Injury hazard.

Safety devices (such as the relief valve) will open automatically and release hot water or hot steam. Keep away from safety devices. Do not operate safety devices manually when system water is hot or when device is in operation.



#### DANGER Attention. Risk of fire.

Lack of water can lead to fire in pellet hopper. Do not operate this device when water level in water container is below minimum! Do not use fluids other than pure water.

Monitor the water level monthly and refill to minimum level when necessary.

Always keep water container closed with original lid.- Art. no. 007073 - grip plug.

See BioWIN 2 Touch operating manual for monitoring and refill procedures.



#### DANGER Risk of fire or explosion.

Exposure may result in severe injury or death.

Do not fill with garbage, waste oil, gasoline, other flammable liquids, or any fuel other than those listed on the rating plate.

Do not use chemicals to ignite fuel.

Do not use chemicals, sprays, or flammable substances to clean combustion room or any other burner component.

Do not use boiler/heater cleaners.

Do not manually fill or light burner.

Do not smoke! Do not expose to open flame.

Do not expose to ignition sources.

Do not open combustion chamber door during operation, power failure, or alarms.



#### WARNING Fall hazard.

Do not sit, stand, or walk on machine. Keep children away.



#### DANGER Attention. Risk of fire.

Do not vacuum hot ash - may cause fire in vacuum cleaner. Prior to vacuuming ash or dirt, wait until unit has shut down completely and has cooled for at least 2 hours.

#### WARNING Machine starts automatically.



Moving parts can crush and cut. Do not remove guarding. Do not touch rotating parts. Keep children away. Keep pets away.



#### DANGER Hazardous voltage.

Do not remove cover. Keep away from electric components. Disconnect power before servicing or cleaning.



#### WARNING Burn hazard – hot surface.

Do not touch frame, cover, or inside of heating chamber during heating. Allow heating chamber to cool completely before cleaning and servicing. Keep children and pets away from heating chamber. Do not touch backside, chimney, or any other pipework during operation. Maximum draft marked on nameplate.



#### WARNING Injury hazard.

All components/surfaces remain hot for a long period of time after turning off unit!

Before cleaning or touching combustion chamber or any other components, turn off unit completely and allow to cool for at least 2 hours

Use heat-resistant gloves. Use tools provided.



#### WARNING Health hazard.

Combustion particulates may contain harmful substances. Use a fine-dust face mask during cleaning.



#### WARNING Rotating parts can crush and dismember.

Keep hands out of feed opening. Do not remove cover during normal operation.



#### WARNING Hand crush hazard.

Automatic start-up if safety switch is activated. Do not push safety switch. Moving parts behind the combustion chamber do

Moving parts behind the combustion chamber door may start automatically, which can lead to loss of fingers or other serious bodily injury.

Disconnect power before opening the combustion chamber door.



#### WARNING Risk of health hazard.

Do not connect to an existing boiler/heater system.



#### WARNING Crush hazard.

Open the cover of the electronic unit until it is secured in the open position. If not secured, it may fall unexpectedly.



#### WARNING Risk of hand injury

Use caution when opening the cleaning flap, as it can open suddenly. When opening the cleaning flap, use the tool provided and wear protective gloves.



#### WARNING Pinch point hazard.

Use caution when closing the cover of the smoke funnel chamber.



#### WARNING Crush hazard.

Remain alert and aware of surroundings when moving the machine with crane or fork lift.



#### DANGER Smoke gas.

Mount a warning plate against smoke gas on the boiler room door.



#### WARNING Health hazard.

In case of an unexpected fire or if flue pipe turns red, disconnect power if the plug, main switch, or main circuit breaker is safe to reach. Call the fire department (911) and evacuate the building. Do not enter smoke-filled rooms to disconnect power.



#### WARNING Injury hazard by hot water or steam.

Safety devices (such as relief or drain valve) will open automatically and relieve hot water or steam. Keep away from safety devices. Do not manually operate safety devices when the system is hot.



#### WARNING Health hazard from chemical substances.

Some states list chemical substances known to cause cancer, birth defects, death, serious illness, or other reproductive harm in propositions. This product may contain such substances, either from the fuel, fuel combustion, or in components of the product itself.



#### WARNING Necessary tasks.

The heat exchanger, flue pipe, and chimney must be cleaned regularly to remove accumulated creosote and ash. Ensure that the heat exchanger, flue pipe, and chimney are cleaned at the end of each heating season to minimize corrosion during the summer months. The appliance, flue pipe, and chimney must be in good condition. These instructions also apply to a draft inducer, if used.



#### WARNING Pellet feed system: service, maintenance and rules

The pellet feed system operates automatically. All service and maintenance must be completed by trained specialists only. Do not alter the equipment or accessories in any way.

For use in combination with Windhager BioWIN 2 Touch pellet-fueled central heating boiler/furnace only. Do not use to transport any material other than wood pellet fuel listed on the boiler nameplate or in the boiler manuals.

Do not use for vacuum cleaning.

The pellet feed system starts automatically and will make noise. People who are easily startled or have cardiac problems should keep away.



#### DANGER Pellet feed unit: Risk of fire or explosion.

Can lead to serious injury/death! Ground suction hoses must be installed as described in the installation manual at every connection to avoid static sparking/dust ignition. The pellet feed unit is for use with the day hopper only. The feed unit must be braced, anchored, or strapped to avoid falling/shifting during an earthquake. Instructions can be obtained from your local Windhager dealer or wholesaler.



Pellet feed automatic changeover unit: Risk of fire or explosion.

Risk of fire or explosion. can lead to serious injury or death.

Do not use the pellet feed automatic changeover unit inside pellet storage room or where there is a lot of dust present. Connect delivery hoses to pellet feed automatic changeover unit as described in the installation manual to avoid static sparking or dust ignition.



## WARNING Pellet feed automatic changeover unit: injury hazard by moving parts and electricity

Can l Devid

Can lead to serious injury or death.

Device starts automatically. Device restarts automatically after power failure.

Do not remove cover. This part should be serviced by trained personnel only.

#### WARNING Clearances and installation instructions



Minimum clearances from combustible or noncombustible construction:

2 inches left, 12 inches back, 24 inches top (right),

6 inches right side, 22 inches front.

Access to the back side is required to allow the service of parts such as the drain valve, relief valve, and inspection fittings.

This unit is for dry indoor installation only. Not for installation on combustible flooring. Not for installation in manufactured homes or mobile homes.



#### DANGER Risk of serious bodily injury or death.

This boiler/heater is equipped for one type of wood pellet only. Read the nameplate behind top lid for the correct type of pellet. Do not use this boiler/heater with any fuel other than the one listed on the name plate. Failure to use the correct fuel may cause problems resulting in death, serious bodily injury or property damage.



#### DANGER Attention. Risk of fire.

Do not operate with incorrect draft. Check nameplate behind top lid for correct draft. Do not operate while refilling the bulk hopper. Do not operate with door or ash removal covering open or when the ash box is removed. Do not store fuel or other combustible material in the boiler room. Regularly inspect and clean flues and chimney. Have a trained professional regularly inspect safety devices, such as the relief and drain valves.



#### WARNING

For supply connections, only use 10 AWG or larger wires acceptable for at least 176 °F (80 °C) on a GFCI circuit!

### 3. Flue

A properly dimensioned flue is required for the optimal and safe function of this device.

The design of the entire flue system must meet local building codes, and all components must meet

UL 2523 / UL 103. All relevant data to size a flue properly is listed under "technical data for flue gas calculations."

Because of the device's low minimum flue gas temperature, a moisture and water resistant flue gas system is required. The use of a double wall stainless steel system is required.

A brick chimney may be used if it is damp and water resistant (e.g., refractory brick), properly insulated, and fulfills the requirements of technical calculations. In the case of an existing chimney that is non-damp and water resistant, a single wall stainless steel pipe that is properly designed and insulated may be used. In either case, ask a local building inspector or flue expert for the correct design and flue sizing.

For directions on installing and supporting your chimney, follow instructions provided by your flue system's manufacturer.

A pressure relief valve needs to be installed in the flue gas system. Whenever possible, a barometric damper should be installed according to local building codes. DO NOT install a barometric damper in sleeping or living areas!



#### DANGER Injury

The use of galvanized flue gas pipes is at your own risk - this may cause condensation and consequently damage the pipes.



#### DANGER Injury

Draft regulators which open inwards and outwards can release fumes which can lead to asphyxiation.

The minimum draft required at the flue gas collar is -0.02 in  $H_2O$  (-0.05 mbar).

The maximum draft allowed at the flue gas collar is -0.08 in  $H_2^{-0}$  (-0.2 mbar).

The minimum flue pipe diameter required is 5.1 inches / 130 mm. The use of a flue pipe diameter greater than 5.9 inches / 150 mm first requires a calculation from your local building inspector or flue expert.



#### **CAUTION Material losses**

Frequently, overhaul of existing systems involves oversized flue cross-sections or flues not designed for lowtemperature operation. We suggest an evaluation by the local building inspector before installing the boiler system. In this way appropriate modifications can be made to the flue before system installation (see technical data for flue calculation values).

### 3.1 Adjusting the barometric damper

Adjust barometric damper according to the manufacturer's instructions. To access the measurement opening, remove the back lid and plug at the flue gas collar. Measure the draft with an appropriate analyzer. Adjust for the flue draft listed on the boiler/heater name plate. Replace the plug and close the lid after measuring the draft.



#### **CAUTION Material losses**

Do not alter for increased firing for any reason!

READ and FOLLOW installation instructions for proper flue sizing and flue design! All flue systems must meet UL103. All flue systems must be water resistant (st ainless steel) and insulated (double wall system). DO NOT INSTALL BAROMETRIC DAMPER OR PRESSURE RELIEF VALVE IN LIVING OR SLEEPING AREA!

### 4. Boiler room/installation room

Important information for the design of the boiler house, fuel store.

#### DANGER Injury



The configuration of the entire system must comply with the requirements of regional legislation, local planning, applicable regulations, standards and guidelines.

- The minimum clearances for connections, cleaning and full service must be complied with see section 11.5 Minimum clearances for fire protection, cleaning and full service on side 25.
- Sufficient ventilation of the set-up area must be provided. See section 10. Combustion air on side 19.
- The boiler may only be installed in a dry location.
- The boiler may not be installed in rooms that are dusty or humid.

Permissible limit values:Humidity: max. 85 % at room temperature of 77 °F / 25 °C (non-condensing)<br/>Room temperature: 35.6 °F to 104 °F / +2 to +40 °C

- Do not allow pets or other animals to enter the boiler room or installation room. Install appropriate barriers across openings.
- In the event of floodwater, switch off the boiler in good time and disconnect it from the mains before water enters the boiling room or installation room. You must remember to replace all components that come into contact with water before you put the boiler back into operation.
- Sufficient lighting must be provided for service and full service.

### 5. Fuel storage

The pellets must be stored in a dry location in order to achieve trouble-free operation with optimum combustion at maximum efficiency. The pellets can be stored in bulk in a storage room, sheet steel tank, fabric tank or buried tank. The requirements for pellet storage are defined in ÖNORM M7137 for Austria, the VDI 3464 for Germany, or the Pellets Fuel Institute (PFI) Standard for the USA/Canada.

See the separate planning documents for planning information about pellet storage.

#### Maximum transport length and height for pellet feed system:

These maximum values require a stable electricity supply (minimum 110 V AC under load!).

max. 82 ft / 25 m distance<sup>1</sup> at max. 5.9 ft / 1.8 m height difference<sup>2</sup> max. 50 ft / 15 m distance<sup>1</sup> at max. 9.2 ft / 2.8 m height difference<sup>2</sup>

max. 33 ft / 10 m distance<sup>1</sup> at max. 14.8 ft / 4.5 m height difference<sup>2</sup>

<sup>1</sup> From the furthest probe to the pellet boiler

<sup>2</sup> Height difference: sum of lengths of all rising pipes belonging to the feed hose



#### CAUTION Material losses

The pellets must be transported carefully in and out of the storage room in order to maintain good pellet quality.

#### BioWIN 2 Touch (3 probes):



Fig. 2 Storage room, boiler room – plan view

### 6. Initial commissioning and operating instructions

A Windhager representative or one of its partners must commission your new Windhager boiler system. Our representatives will ensure that all systems are thoroughly checked and can provide additional information at the time of commissioning. Installation and routine maintenance performed by a qualified Windhager representative will ensure the optimal performance and service life of your boiler system. This will also ensure that this technologically advanced system provides the benefits of safe, environmentally friendly, and energy-saving operation.

#### The following preconditions must be met before scheduling the boiler commissioning:

- ► Boiler installed correctly.
- ► System fully wired up electrically.
- ▶ System flushed, filled and vented heat load must be available (e.g. functioning heating system connected).
- ► Sufficient quantity of fuel available.
- ▶ The customer must be present during commissioning.

The commissioning cannot be carried out if any of these points are not complete. The customer will be charged for any unnecessary costs arising as a result of incorrect commissioning.

Commissioning and maintenance by Windhager Customer Service or a customer service partner are part of the guarantee requirements of the enclosed "guarantee limitations".

### 7. Disposal/recycling

#### Disposing of the packaging

The packaging material (wooden crate, cardboard boxes, inserts, plastic films and plastic bags, etc.) must be disposed of correctly in line with the local legal provisions and regulations.

#### Disposing of components or the boiler

To dispose of defective components or the heating system (e.g. boiler or control system) after the product life has expired, please observe the following information:

- ▶ Dispose of the items correctly, i.e. separate the parts to be disposed of into material groups.
- Do not simply dispose of electrical or electronic waste with the general waste under any circumstances; instead, use the public collection points provided for this purpose.
- ► As a matter of principle, dispose of items in a way that is as sustainable as possible and that is in line with the current environmental protection, reprocessing and disposal technology.

### FOR THE INSTALLER

### 8. Scope of supply, packaging

#### DANGER Risk of suffocation from plastic films.

Plastic films, bags and so on can become dangerous 'toys' in a child's hands. Therefore, never leave packaging material unattended or allow children to get hold of it.

3

1615 mm 63.6 in

When delivered, the boiler and integral fuel hopper are covered in a plastic bag and packed inside a stable crate. Cladding and installation parts are in separate boxes. Cleaning devices are packed inside the boiler.

63.4 in





Fig. 3 BioWIN 2 Touch scope of supply

		Transport weight including crate/packaging								
		Klassik		Premium		Exklusiv		Exklusiv-S		
В	BioWIN 2 Touch		BioWIN 152	BioWIN 212/ 262/332	BioWIN 152	BioWIN 212/ 262/332	BioWIN 152T	BioWIN 212/ 262/332	BioWIN 152	BioWIN 212/ 262/332
	Boiler incl. transport crate		450 (204)	496 (225)	450 (204)	496 (225)	481 (218)	527 (239)	481 (218)	527 (239)
	Net boiler weight	lb	410 (186)	456 (207)	410 (186)	456 (207)	441 (200)	487 (221)	441 (200)	487 (221)
1	Smallest boiler weight (excl. heating door, cleaning cover, cone/ pin, coating surface cover)	(kg)	344 (156)	390 (177)	344 (156)	390 (177)	375 (170)	421 (191)	375 (170)	421 (191)
	Boiler 236 lb / 107 kg pellet hopper incl. transport crate	lb	93 (42)		123	(56)	123	(56)	93 (	(42)
2	Net boiler 236 lb / 107 kg pellet hopper	(kg)	62 (	(28)	93	(42)	93 (	(42)	62 (	(28)
2	Boiler 441 lb / 200 kg pellet hopper incl. transport crate lb		236 (107)		_		-		236 (107)	
3	Net boiler 441 lb / 200 kg pellet hopper	(kg)	179 (81)		-		-		179 (81)	
4	Cladding	lb (kg)			73		(33)			
5	Ash box	lb (kg)			-		26 (12)			

For diverse accessories for boiler and storage room, see price list.

### 9. System

#### 9.1 Area of use

These boilers/heaters are designed and approved as heat generators for hot water heating systems with permissible flow temperatures of up to 194 °F / 90 °C. The max. boiler temperature is limited in the factory to 167 °F / 75°C. In the service level, the max. boiler temperature can be increased to 185 °F / 85 °C. To do this, a buffer has to be installed, which is loaded by the BioWIN 2 Touch.

#### 9.2 Standards

The following UL listed components must be completely unobstructed on the boiler/heater:

- Pressure Relief Valve with 30 psi opening pressure Article no.: 003493
- Low Water Cut-Off with Manual Reset for 110-120 V 15 A Article no.: 003495
- Pressure Gauge Article no.: 003494
- Expansion Tank with at least 15% total system water volume capacity Article no.: 003496, 003497, 003498
- Automatic Air Vent Article no.: 003499

READ and FOLLOW installation instructions for proper flue sizing and flue design!

All flue systems must meet UL103. All flue systems must be water resistant (stainless steel) and insulated (double wall system).

DO NOT INSTALL BAROMETRIC DAMPER OR PRESSURE RELIEF VALVE IN LIVING OR SLEEPING AREA!

#### 9.3 Return temperature

The standard return flow temperature increase allows the BioWIN2 Touch to operate with a return temperature down to a minimum of 68 °F / 20 °C. No external return flow temperature increase is required.

Exception: Systems with a buffer, in which the buffer is loaded directly from BioWIN 2 Touch with a return hold-up group. The minimum reuired return temperatur is 113 °F (45 °C).

### 9.4 Thermal storage (buffer tank)

Only commercially available vessels designed as thermal storage tanks may be used. Additionally, all thermal storage pressure vessels greater than 119 gallons must have American Society of Mechanical Engineering certification.

Boiler model	Minimum required thermal storage
BioWIN 2 Touch 152 NA	≥ 119 gal
BioWIN 2 Touch 212 NA	≥ 238 gal
BioWIN 2 Touch 262 NA	≥ 238 gal
BioWIN 2 Touch 332 NA	≥ 238 gal

The BioWIN 2 Touch central heater shall be installed with a minimum thermal storage (buffer):



#### **CAUTION Material losses**

If using a buffer or accumulator tank, the BioWIN 2 Touch return flow temperature must be maintained – see hydraulic diagram in the planning documents.

### 9.5 Operation by control

This is only possible with the **function module INF FO5 W** (fitted as standard); the control must fulfil the following demands:

- Minimum boiler temperature and start-up relief:
   The consumer pumps (heating circuit and domestic hot water pumps) may only be switched on at a boiler temperature of more than 122 °F / 50 °C if the burner is on, and will be switched off when the boiler temperature is less than
- 113 °F / 45 °C. - Pump over run:

A over run of at least 10 minutes will be observed for all consumer pumps and a minimum heat load must be ensured during the burnout phase.

The system specific control settings must be set so that the boiler runs on average for at least 1.5 hours (shorter operating times cause more contamination of the boiler and greater wear and tear).

#### 9.6 System water



#### CAUTION Material losses

The chemical composition of the heating water must conform with local legislation and meet the directives, guidelines and standards.

Applicable for Austria (excerpt from ÖNORM H 5195):

- a) According to ÖNORM H 5195, the condition of the heating water must be checked every 2 years by a heating technician in order to avoid corrosion and sediment accumulation in the heating system.
- b) The pipe lines and heating appliances should be thoroughly rinsed before the boiler is connected.
- c) To protect the boiler from contamination from the heating system, **installation of a dirt trap** is required in old or existing systems with maintenance cocks installed in the return line.
- d) If oxygen diffusion or sludge build-up cannot be prevented, the system must be segregated using a heat exchanger.
- e) If antifreeze is used, a minimum volume of 25 % antifreeze is required, otherwise corrosion prevention is not guaranteed.

The heating system must only be filled with fresh, untreated drinking water (pH between 8.2 and 10.0). Observe the information in the table to avoid any problems with the boiler or system. If one or more of the conditions cannot be met, it is recommended to treat the heating water. In cases of improperly cleaned systems or poor water quality, the guarantee and warranty are void.

#### Heating water quality

Acidity	8.2 – 10.0 pH
Electrical conductivity	≤ 800 µS/cm at 25 °C
Chloride	≤ 30 mg/l
Other substances	< 1 mg/l

#### Water hardness according to ÖNORM H5195-1 (2010 edition)

Highest permissible hardness of filling water for heating systems, heat generator with a water content of > 0.3 l/kW: Specific water volume of the system < 1.55 gal/kBTU (20 l/kW): \*

Overall performance of heat output	Total alkaline earth	°dH	٥fH
≤ 170.6 kBTU/hr	up to 3.0 mmol/l	up to 16.8	30
> 170.6 kBTU/hr to ≤ 682.4 kBTU/hr	up to 2.0 mmol/l	up to 11.2	20

Specific water volume of the system ≥ 1.55 gal/kBTU (20 l/kW) but < 3.87 gal/kBTU (50 l/kW) : \*

Overall performance of heat output	Total alkaline earth	°dH	٥fH
≤ 170.6 kBTU/hr	up to 2.0 mmol/l	up to 11.2	20
> 170.6 kBTU/hr to ≤ 682.4 kBTU/hr	up to 1.0 mmol/l	up to 5.6	10

#### For the installer

Specific water volume of the system ≥ 3.87 gal/kBTU (50 l/kW) : \*

Overall performance of heat output	Total alkaline earth	°dH	٥fH
≤ 170.6 kBTU/hr	up to 1.0 mmol/l	up to 5.6	10
> 170.6 kBTU/hr to ≤ 682.4 kBTU/hr	up to 0.5 mmol/l	up to 2.8	5

\* At an annual replenishment of maximum 5% of the system's water content; additionally, we comply with ÖNORM H5195 part 1 and VDI 2035 T1.

#### Important general comments on water quality

The boilers are intended for operation with clean, good quality tap or drinking water. The water should be clear and free from visible impurities and suspended matter.

Most heating systems are comprised of different materials. Therefore, a water treatment is recommended to prevent or limit problems (metal corrosion, calcification and sludge formation, microbiological contamination, chemical changes in unprepared system water).

Reduce the oxygen volume in the heating circuit as much as possible.

Annually refill a maximum of 5 % of the system's water capacity.

#### Important general comments on water quality for new systems

New systems must be fully cleaned from any residue (plastic waste, lubricants, etc.) by means of a universal cleaning agent. Rinse with a minimum of three times the installation volume of the central heating system. Cleaning with chemical products must be done by a professional. Carefully rinse the system until the rinse water is clear and free from any impurities.

The water must not be softened to less than O.5°dH, as water any softer harms the system. An inhibitor must be used in combination with a water softener.

#### Important general comments on water quality for existing systems

- De-sludge the system.
- Rinse the system.
- Clean the system with a universal cleaning agent to remove waste material (copper, fiber mass, welding paste).
- Carefully rinse the system until the water is clean and free of any impurities. Check the connection tightness of the combustion air supply and extraction.

The thorough cleaning of the system must be performed by a professional. A sufficient and controlled flow is required to remove all impurities and residues from the heating circuit. In the case of cleaning with chemical products, the above points are especially important for avoiding any residues from corrosive products.

In the event of considerable impurities/clogging (deposits of lime), the boiler must be cleaned by a professional with appropriate tools.

#### Circulation filter/dirt trap

The installation of a dirt trap is recommended. In accordance with ONORM H5195, a filter size of  $\leq$  25  $\mu$ m is required.

#### Water treatment

The compatibility of the product with all system materials must be checked when using a water treatment system. Observe the manufacturer's instructions.

The water must be regularly checked, and if necessary, changed.

#### Practical advice:

The system's water quality must be regularly checked by a professional (at least every two years), especially after filling or refilling the water. Record all treatment measures in a report to document the maintenance work on the boiler and system.



#### CAUTION Material losses

If using a buffer, the BioWIN 2 Touch return flow temperature must be increased – see hydraulic diagram in the planning documents.



#### 9.7 Water-side resistance (pressure loss)

Diagram 1 Water-side resistance - BioWIN 2 Touch 152-332

### 10. Combustion air



#### DANGER Injury

The configuration of the entire system must comply with the requirements of regional legislation, applicable regulations, standards and guidelines.

An adequate supply of combustion air is essential for the appliance's safe and efficient operation. The combustion air must be free from pollutants (gases, vapours and dusts).



#### **CAUTION Material losses**

Malfunctions or complaints occasioned by inadequate combustion air will not be covered by the warranty.

### 10.1 Combustion air supply directly from the installation room

If combustion air is drawn directly by the system from the boiler/heater room, the room must be adequately ventilated. The combustion air should be directed near the boiler.

The area of the free minimum cross-section must be 0.39 in2 / 2.5 cm<sup>2</sup> per kW of the boiler's nominal total output1.

The opening to the outdoors for combustion air should be designed as follows:

- the flow of air must not be restricted in any way by the weather (e.g., snow, leaves),
- the free cross-section area remains the same when taking the cover grille, discs etc. into consideration.

The installation must comply with the requirements of the Authority having jurisdiction over the installation.

### 10.2 External combustion air supply

See the planning documents or "Adapter for external combustion air supply BIO 060", "Shut-off unit BIO 0602" and "Switch for integral fuel hopper cover BIO 0601" instructions.

### 11. Installation sequence

### 11.1 Parts designations for installation



<sup>1</sup> located in the pellet boiler ash chamber

<sup>2</sup> Pellet chute for temporary use only or when manually filling the integral fuel hopper, if feed is not complete.

Fig. 4 Parts for installation

### 11.2 Positioning and installation

It is recommended to **transport the boiler and integral fuel hopper to the place of installation** inside the crate and **by lift truck**. If transporting via stairs or similar, the boiler should be secured appropriately. For installation dimensions and weights, see Fig. 5, Fig. 6 and Section 5 of the technical data.

If it is not possible to take it in with the transport crate, we recommend transporting the boiler with a sack truck and ratchet strap – see Fig. 11, Fig. 12.

#### 11.2.1 Removing the crate



#### AUTION Material losses

The base of the boiler is secured to the floor plate by 2 screws positioned on either side – Fig. 5.

#### Boiler and integral fuel hopper in crate



Integral fuel hopper with/without suction feed



Integral fuel hopper L 441 lb / 200 kg

Fig. 5

#### Boiler and integral fuel hopper without crate



Boiler

Boiler



Integral fuel hopper with suction feed

Integral fuel hopper 236 lb / 107 kg without suction feed

Integral fuel hopper L 441 lb / 200 kg

#### For the installer

### 11.2.2 Taking the boiler off the installation pallet and transporting it to where it is to be installed

- a) By hand Fig. 7-Fig. 10.
- b) With a suitable sack truck and ratchet strap Fig. 11–Fig. 12.
- c) with eyelet and crane (not included) Fig. 13, Fig. 14.

#### a) By hand



Fig. 7 Remove side pieces of wooden frame



Fig. 9 Grip position for auger tube and flue outlets

#### b) With sack truck and ratchet strap



Fig. 11 Secure boiler to sack truck with ratchet strap



Fig. 8 Use planks from crate as ramp



Fig. 10 Move boiler off pallet



Fig. 12 Lift boiler off pallet with sack truck

#### c) with eyelet and crane (not included)

Screw eyelet M12 for the crane hook to the screw connection of the threaded bolt on the heat excanger cover and lift the boiler off the pallet with the crane.



#### **DANGER Injury**

Before using the eye to lift the boiler, remove the integral fuel hopper and the cladding.



Fig. 13 Mount the eyelet (not included) for the crane hook



Fig. 14 Lift the boiler off the pallet

#### 11.3 Remove the desiccant bags

Remove the desiccant bags from the pellet hopper, the switch board, and the burner - Fig. 15 to Fig. 18.



Fig. 15 Remove from the pellet hopper



Fig. 17 Remove from the switch board



Fig. 16 Remove from the pellet hopper



Fig. 18 Remove from the burner



#### 11.4 Installation (observe minimum clearances – Section11.5)

The boiler can be installed flush to the wall. Before installation, the rear panel has to be removed. You also have to cut into the insulation and seal the flow and return connections – Fig. 19.

### Note.

Care must be taken with regard to wall-flush installation to ensure that the piping is sealed completely before actually installing the boiler. If necessary test under pressure by using the drain cock – see section 11.6.

The boiler may be installed directly onto a non-combustible surface and does not require special plinth or superimposed hearth, however if a plinth or hearth is not used the area around the appliance should be identified with paint or change in surface finish as required in Approved Document J (ADJ). If a plinth or hearth is provided, its size must comply with ADJ and be solid enough and large enough to ensure that the four set screws used to adjust and get the boiler level in all plains make contact properly.

#### Connection options for flow and return pipes



Fig. 19 Connection options for flow and return pipes - view from behind without rear panel

### 11.5 Minimum clearances for fire protection, cleaning and full service

The following minimum clearances from flammable materials and for connections, cleaning and full service must be complied with.



#### **DANGER** Injury

Follow the installation guidelines for plant rooms. The configuration of the flue must comply with technical fire protection requirements in accordance with the applicable regulations, standards and guidelines.

Minimum clearances between flue pipe (piece connecting to flue) and combustible components			
15.7 <sup>1</sup> in / 400 <sup>1</sup> mm	for an uninsulated exhaust pipe		
3.9 <sup>1</sup> in / 100 <sup>1</sup> mm	for an insulated flue pipe (min. 0.79 in / 2 cm insulation thickness)		
1.97 <sup>1</sup> in / 50 <sup>2</sup> mm	for tested, double-walled flue system		

<sup>1</sup> DIN V 18 160-1

<sup>2</sup> in accordance with approval/identification of system flue

#### Flue connection top



Fig. 20 BioWIN 2 Touch Exklusiv/Premium/Exklusiv-S/Klassik – view from top



Fig. 21 BioWIN 2 Touch Exklusiv-SL/Klassik-L – view from top

#### Flue connection rear







Fig. 23 BioWIN 2 Touch Exklusiv-SL/Klassik-L – view from top

### 11.6 Installing the drain cock

- ▶ Remove the handle from the drain cock Fig. 24.
- Screw the drain cock into the base of the boiler on the left-hand side. The handle must be positioned on the right. Re-attach the handle – Fig. 25.



Fig. 24 Remove the handle from the drain cock



Fig. 25 Screw the drain cock (handle positioned on right) into place and re-attach the handle

### 11.7 Moving the flue connection to the rear

On delivery, the flue connection is at the top. The flue connection can be moved to the rear by reassembling induced draught fan.

- ► Take the insulation off the heat exchanger cover Fig. 26.
- ▶ Unscrew the screw connection on the cover and lift the cover out Fig. 27, Fig. 28.
- ▶ Punch out the cut-out on the back panel Fig. 29.



Fig. 26 Remove the insulation



Fig. 28 Remove the cover

- ▶ Remove insulation from all around the induced draught fan Fig. 30.
- ► Cut open the cable ties around the induced draught fan cable Fig. 31.



Fig. 30 Remove insulation around the induced draught fan



Fig. 27 Remove the screw connection



Fig. 29 Punch out the cut-out



Fig. 31 Cut open the cable ties

#### For the installer

▶ Remove the 4 bolts from the inside of the heat exchanger – Fig. 32. Carefully remove the induced draught fan.

**CAUTION Material losses** 

Do not damage the seal between the induced draught fan and the boiler.

- ▶ Re-screw the induced draught fan into place adjusted by 90° Fig. 33.
- ▶ Insert insulation (included, on side at base of induced draught fan) at the top around the flue outlet Fig. 34.



Fig. 32 Remove 4 bolts



Bundle cables together, and secured away from the induced draught fan.

Fig. 33 Re-screw the induced draught fan into place adjusted by 90°



Fig. 34 Attach the insulation (included, on side at base of induced draught fan)

### 11.8 Installing the integral fuel hopper

#### only for 441 lb / 200 kg integral fuel hopper

#### Removing the integral fuel hopper crate 441 lb / 200 kg

- ▶ Remove both fastening straps Fig. 35.
- ▶ Remove wooden crate. **Caution:** The cladding door is loose inside the crate.
- Dismount the side panel from the integral fuel hopper: Remove both cross-headed screws from the top (Fig. 36) and take off the side panel Fig. 37.
- ▶ Remove the foot: Remove 3 screws from each side (Fig. 38) and take off the foot –Fig. 39.

#### **CAUTION Material losses**

The foot **must** be dismantled. Otherwise, it is not possible to install the tank correctly on the boiler; leaks or inleaked air would result.

▶ Lift the integral fuel hopper off the pallet and rotate it by 180° – Fig. 40.





Fig. 35 Remove the fastening straps



Fig. 37 Take off the side panel



Fig. 39 Remove the foot



Fig. 36 Remove 1 cross-headed screw in each case



Fig. 38 Remove 6 screws



Fig. 40 Turn the integral fuel hopper to the correct position

#### for all integral fuel hopper

Together with the auger, insert the integral fuel hopper into the auger tube (Fig. 41). Hook into place with the2 hooks (marked yellow) – Fig. 42.



Fig. 41 Insert the auger conveyor into bottom of the auger tube



Fig. 42 Suspend the integral fuel hopper from 2 hooks, marked

- ► Tighten the M8 bolt at the top as firmly as possible (as marked) Fig. 43.
- Secure the integral fuel hopper at the bottom next to the auger tube with an M8x25 hexagon bolt (provided in plastic bag attached to integral fuel hopper) Fig. 44. Ensure mount is flush with auger tube before fully tightening. (Do not tighten if above action as described in Fig. 43 has been fully undertaken).



Fig. 43 Tighten the fastening at the top as firmly as possible (as marked)



Fig. 44 Secure the integral fuel hopper at the bottom with M8x25

#### only for 236 lb / 107 kg or with automatic pellet feed integral fuel hopper

Dismount the cover from the integral fuel hopper by removing the screw at the bottom (Fig. 45), then pushing the cover down and taking it off (it is hooked on with a bayonet lock) – Fig. 46.





Fig. 45 Dismount the cover, removing 1 screw



Fig. 46 Push down the cover and remove (bayonet lock)

#### only for 441 lb / 200 kg integral fuel hopper

Remove cover from integral fuel hopper by just loosening the 3 screws on each side and then taking out and removing the cover – Fig. 47.



Fig. 47 Loosen the 3 screws on each side and take off cover.

#### for all integral fuel hopper

▶ Insert the sensor for the safety thermostat auger tube into the holder completely – Fig. 48



CAUTION Material losses The capillary tube must not be bent.

- Suspend the auger motor (located in the pellet boiler combustion chamber) at the rear via the lug and at the front with the locator pin Fig. 49.
- ▶ Secure the auger motor at the front with 2 M8x16 screws Fig. 50.
- Screw the gear to the auger at the bottom of the integral fuel hopper with M6x12 bolts and a U-washer Fig. 51.
- ► Connect the plug for the auger motor and the proximity switch Fig. 52.







Fig. 48 Insert the sensor for the safety thermostat auger tube Fig. 49 Hook the auger motor into place as far as it will go





Fig. 50 Screw the auger motor into place

Fig. 51 Mount the gear



Fig. 52 Connect the plug for the auger motor and the proximity switch

#### only for 236 lb / 107 kg or with automatic pellet feed integral fuel hopper

▶ Reattach the cover to the integral fuel hopper and secure with 1 self-tapping screw – Fig. 53.





Fig. 53 Attach the cover and secure with 1 self-tapping screw

#### only for 441 lb / 200 kg integral fuel hopper

- ► Hook the cover back into place and secure by tightening the screws Fig. 54, Fig. 55.
- ▶ Mount pedestal by screwing 3 screws into each side of the base Fig. 56, Fig. 57.



Fig. 54 Hook cover into place



Fig. 56 Secure pedestal with 3 screws at each side



Fig. 55 Tighten screws



3 x

M5x10

Fig. 57 Secure pedestal with 3 screws at each side

#### for BioWIN 212 / BioWIN 262 / BioWIN 332 only

Attach the supplied elongated sleeve to the intake pipe at the burner. The recess must be at the back – Fig. 58, Fig. 59.



Fig. 58 Elongated sleeve with recess at the back



Fig. 59 Elongated sleeve attached to intake pipe at burner.

#### only for BioWIN 2 Touch Premium/Exklusiv or with automatic pellet feed

- ► Connect the suction turbine main power plug Fig. 60.
- ▶ Open the cover on the control panel Fig. 61.
- Route the cable with plug for the upper proximity switch from the integral fuel hopper into the control panel and connect it to plug Y18 Fig. 62.





Fig. 60 Connect the suction turbine main power plug

Fig. 61 Open the cover



Fig. 62 Connect the proximity switch (plug Y18)

### 11.9 Integral fuel hopper cladding

#### only for 236 lb / 107 kg or with automatic pellet feed integral fuel hopper

▶ Hook the cladding at the rear left into the bayonet locks – Fig. 63, Fig. 64.



Fig. 63 Bayonet lock



Fig. 64 Remove the adhesive tape from the water tank and hook on the cladding

▶ If the flue connection is at the top, punch out the cut-out on the cladding at top left – Fig. 65. If the flue connection is at the rear, do not punch out.

Punch out the cladding = top flue connection Do not punch out cladding = rear flue connection

#### **CAUTION Material losses**

Carefully insert or position the cladding, top left, to ensure that the integral fuel hopper is not scratched at the front – Fig. 66.



Fig. 65 Punch out the cut-out only if the flue connection is at the top



Fig. 66 Position the cladding carefully at the top left

#### For the installer

Carefully insert the cladding, top left, lay the cable from the suction turbine main power plug into the notch and secure cladding with 6 self-tapping screws – Fig. 67.



Fig. 67 Secure the cladding with 6 self-tapping screws

Hook the cladding into place at the front, left and right (3 bayonet locks) – Fig. 68. Secure with 3 self-tapping screws
 – Fig. 69. First remove the cleaning brush stuck on the inside.



Fig. 68 Insert the front cladding



Fig. 69 Secure the front cladding with screws

#### only for 441 lb / 200 kg integral fuel hopper

- Cut through the web at the bottom and the top on the rear left cladding (Fig. 70) and bend the cladding slightly Fig. 71.
- ▶ Hook the rear left cladding into the bayonet locks Fig. 72, Fig. 73.



Fig. 70 Cut through web at top and bottom



Fig. 72 Bayonet lock

▶ Pinch off the corner at the top left cladding cut-out – Fig. 74.



Fig. 71 Bend the cladding slightly



Fig. 73 Hook up cladding

- ▶ If the flue connection is at the top, punch out the cut-out on the cladding at top left Fig. 75. If the flue connection is at the rear, do not punch out.
  - Punch out the cladding = top flue connection Do not punch out cladding = rear flue connection



Fig. 74 Pinch off the corner of the cladding at top left



Fig. 75 Punch out the cut-out only if the flue connection is at the top



#### CAUTION Material losses

Carefully insert or position the cladding, top left, to ensure that the integral fuel hopper is not scratched at the front – Fig. 76.

► Carefully insert the cladding at top left and secure it with 6 self-tapping screws – Fig. 77.



Fig. 76 Position the cladding carefully at the top left



Fig. 77 Secure the cladding with 6 self-tapping screws

Hook the cladding into place at the front, left and right (3 bayonet locks) – Fig. 78. Secure with 3 self-tapping screws – Fig. 79.



Fig. 78 Insert the front cladding

► Fasten the bottom front cover with 2 screws – Fig. 80.



-

Fig. 79 Secure the front cladding with screws



Fig. 80 Install the cover

#### For the installer

► Hook the side panel into position at bottom left (Fig. 81) and secure on the inside of the weekly use container with 2 screws – Fig. 82.



Fig. 81 Hook bottom left side panel into position



Fig. 82 Secure the top left side panel on the inside of the weekly use container with 2 screws

- ► Hook the cladding door into the hinges at the bottom Fig. 83.
- Secure door hinge at top together with fitted cladding door with 3 self-tapping screws Fig. 84.



Fig. 83 Hook in the cladding door at the bottom



Fig. 84 Screw the door hinge and fitted cladding door into position

### 11.10 Aligning the boiler horizontally

Move the boiler into position and use the 4 adjustable feet to level the boiler. To level the boiler, place the spirit level on top of the door frame or seal steel sheet at the front – Fig. 85.



If access is restricted to the right hand side of the boiler set the right rear foot to its mid position before positioning.



Fig. 85 Align the boiler with a spirit level

### 11.11 Cladding door and side panel

- ► Secure the bottom of the door hinge with 4 self-threading M5x10 TT screws Fig. 86.
- ► Leave the door hinge loose at the top as it should be allowed to move and screw on with 2 self-tapping screws Fig. 87.



Fig. 86 Screw on the bottom door hinge



2 x







Fig. 88 Bayonet lock

Fig. 89 Hook in the side panel

Attach the top part of the cladding to the side panel on the right and secure with 2 self-tapping screws – Fig. 90.



Fig. 90 Attach and screw on the top part of the cladding

#### For the installer

- ► Hook the top and bottom of the cladding door into the hinges (Fig. 91) and tighten the top door hinge Fig. 92.
- ► Screw the side panel to the door hinge with 4 self-tapping screws Fig. 92.



Fig. 91 Fit the cladding door at the top and bottom



Fig. 92 Tighten the top door hinge and screw the side panel into place with 4 self-tapping screws

### 11.12 InfoWIN Touch and operating panel

- Insert the connecting cable for the InfoWIN Touch through the opening on the operating panel, hook on the operating panel and secure it to the rear of the cladding with 2 self-tapping screws Fig. 93.
- Connect the InfoWIN Touch connecting cable (Fig. 94) and insert InfoWIN Touch into the operating panel (with the connection plug at the top) Fig. 95.



Fig. 93 Insert the connecting cable, hook and screw on the operating panel



Fig. 94 Connect the InfoWIN Touch connecting cable and insert InfoWIN Touch into the operating panel (with the plug at the top)



Fig. 95 Insert InfoWIN Touch into the operating panel

### 11.13 Cladding cover and insulation

▶ If the **flue connection is at the top**, punch out the cut-out on the cladding cover – Fig. 96. If the flue connection is at the rear, do not punch out.

Punch out the cladding cover = flue connection at the top Do not punch out cladding cover = flue connection at the rear

- ▶ Place the insulation on the heat exchanger cover Fig. 97.
- ▶ Place the cladding cover on the boiler Fig. 98.





Fig. 96 Punch out the cut-out only if the flue connection is at the top

Fig. 97 Apply insulation



Fig. 98 Fit the cladding cover

### 11.14 Ash box and cover below the integral fuel hopper

If you have not already done so, move the boiler into its final position (observe minimum clearances, see section 11.5 and, using the four set screws, align horizontally or inclined slightly upwards towards the rear – see also section 11.10.

#### Ash box only for BioWIN 2 Touch Exklusiv/Exklusiv-S:

- Just hook on the ash box base underneath the integral fuel hopper and bend the front part down to the floor level – Fig. 99.
- Insert the ash box at a slight angle from the left and push in the ash box handle completely, leaving the openings on the side of the ash box open – Fig. 100.
- ► Close the bracket fastener Fig. 101.
- ► Adjust the ash-box foot (BioWIN 2 Touch Exklusiv/Exklusiv-S only) on the boiler Fig. 102.



Tip.

The floor underneath the ash box has to be level.



Fig. 99 Just hook on the ash box base.



Fig. 101 Close the ash box fastener



Fig. 100 Insert the ash box at a slight angle from the left and push in the ash box handle completely



Fig. 102 Adjust the foot

#### For the installer

#### Cover below the integral fuel hopper only for BioWIN 2 Touch Klassik/Premium:

Screw the bottom cover for the bottom integral fuel hopper into position with 4 self-tapping screws – Fig. 103.



Fig. 103 Install the bottom cover for the integral fuel hopper (BioWIN 2 Touch Klassik/Premium only)

#### 11.15 Installing the feed and return air hose (BioWIN 2 Touch Premium/ Exklusiv only)

- Expose approx. 1.97 in / 5 cm of the flexible earth leads on all hose ends and bend inwards into the hose Fig. 104. Important: See also the notes on installing the feed and return air hose in the instructions provided for storage room accessories (changeover unit).
- ▶ Remove the 4 screws for the integral fuel hopper cover and take off the cover Fig. 105.
- ▶ Attach the fastening clips to the hoses and connect Fig. 105.

Note.

If you have problems connecting, dampen connections with water (do not use lubricants).



Fig. 104 Expose the flexible earth leads, bend inwards



Fig. 105 Install the feed and return air hose



#### DANGER Pellet feed unit: Risk of fire or explosion.

Can lead to serious injury/death! Ground suction hoses must be installed as described in the installation manual at every connection to avoid static sparking/dust ignition. The pellet feed unit is for use with the day hopper only. The feed unit must be braced, anchored, or strapped to avoid falling/shifting during an earth-quake. Instructions can be obtained from your local Windhager dealer or wholesaler.

Pellet feed automatic changeover unit: Risk of fire or explosion.

Risk of fire or explosion. can lead to serious injury or death.

Do not use the pellet feed automatic changeover unit inside pellet storage room or where there is a lot of dust present. Connect delivery hoses to pellet feed automatic changeover unit as described in the installation manual to avoid static sparking or dust ignition.

### 11.16 Cleaning and operating implements



- 1..... Cleaning brush
- 2..... Spatula

- 3....... Allen key and sponge-rubber holder
  4....... Scraper (only with BioWIN 2 Touch Klassik, Klassik-L and Premium)
- 5..... Pellet chute<sup>1</sup> (accessory, not included for BioWIN 2 Touch Premium/Exklusiv only)

Fig. 106 Cleaning and operating implements

<sup>1</sup> Pellet chute for temporary use only or when manually filling the integral fuel hopper, if auto feed system is not complete.





Fig. 107 Cleaning brush and spatula on inside of cladding door

Fig. 108 Stick on the sponge-rubber holder

### 11.17 Installing the connecting flue pipe

Comply with the minimum clearances in Section 11.5.

a) Install the flue pipe upward to the flue (45° is the ideal angle). Maximum flue pipe length 9.84 ft / 3 m.



#### CAUTION Material losses

Any section of this exhaust line that is horizontal or inclined less than 30 degrees cannot be more than 3.28 ft / 1 m in length.

- b) Avoid 90° bends, 45° bends are better.
- c) Make the flue connection at 45° if possible.
- d) Do not push the flue pipe too far into the flue.
- e) **Do not seal the connecting flue pipe completely** into the flue. Connect the connecting flue pipe to the chimney system with a flexible seal. (The fan can cause sound transmissions that create noise pollution).
- f) Always fit flue pipes together with the sleeve pointing upwards (smaller diameter end of stainless steel flue accessory fits exactly onto flue outlet in the BioWIN 2 Touch), so that any condensation flowing back cannot leak out of the flue pipe.

The parts must be secured with pipe clamps to ensure adequate leak-tightness and stability. Pipelines must not sag.

- g) The entire flue line should be insulated to a minimum of 0.07 ft / 20 mm thickness in order to prevent or minimise condensation.
- h) The entire flue line has to be able to be cleaned, i.e. appropriate cleaning openings [1] must be included. The first cleaning opening has to be in the first bend of the flue pipe.
- i) Measuring opening for flue measurement: The measuring opening must be outside the boiler, so use a pipe with a measuring opening or use a stainless steel drill to make a hole in diameter in the stainless steel flue pipe.



#### **CAUTION Material losses**

Access must be enabled to the water tank (for checking and refilling) and to the induced draught fan (for service and full service work). Therefore do not lay the flue pipe directly over the top.



#### DANGER Injury

The configuration of the flue connection must comply with fire protection requirements in accordance with the applicable legislation, regulations, guidelines and standards – see also section 11.5 Minimum clearances for fire protection, cleaning and full service on side 25.



Fig. 109 Flue connection at rear - view from front



Fig. 110 Flue connection at top – view from front



Fig. 111 Flue connection at rear – view from top

- Cleaning opening in flue pipe
   Cleaning aperture in flue
- 3...... Energy-saving draft stabiliser/explosion flap 4...... Water tank level or filler pipe



Fig. 112 Flue connection at top – view from top

### FOR THE ELECTRICIAN

### 12. Electrical connections

Mains connection: 110 VAC, 60 Hz, fuse 25 A slow-blow

The boiler and related accessories are designed to be installed only in dry areas (protection type IP 2O). Installation of electrical components may only be performed by a qualified electrician and must fully comply with Approved Document P and all electrical standards in place at the time of the installation.



#### **DANGER Electrocution**

The phases of the 110 V electrical power supply must be connected correctly.

The mains connection must be protected against short circuit with a 25 A delayed-action fuse.

We recommend using fine-wire PVC sheathed cables, e.g. 3 x AWG 15 nominal cross-section.

Each boiler is pre-wired and internally fused with a T 6.3 A fine-wire fuse to protect against short circuit.

In areas with increased power surge risk (e.g. lightning strikes in regions prone to storms), we recommend installation of an appropriate surge protector.



Fig. 113 Control panel for BioWIN 2 Touch 152–332

#### **CAUTION Material losses**

Electrical cables must not touch heating and flue pipes, nor must they come in contact with non-insulated boiler components. They are to be sufficiently braced and provided with a protective conduit.

The Main power plug is located at the top rear of the heat exchanger cover – Fig. 120. The electrical connections are located in or behind the control panel. The motherboard is located inside the control panel and the connection terminals on the outside on the control panel cover (screwless cage-spring-type terminals).

#### Changeover unit (if present):

#### Two separate cables are needed to connect the changeover unit.

- For the limit switches, a 12 V DC cable: min. 3 x AWG 17 (no ground). We recommend using a shielded cable if the cable is longer than 16.4 ft / 5 m
- For the motor, a 110-230 V AC cable: 4 x AWG 15

#### To access the control panel:

- ▶ Remove the cladding cover Fig. 114.
- ► Take the insulation off the heat exchanger cover Fig. 115.
- Remove the operating panel by loosening the 4 screws at the back of it Fig. 116. Take the operating panel off from the top, pull out the InfoWIN Touch cable and hook the front of the operating panel into the door (service position) Fig. 117.
- ▶ Open the cover.

#### For the electrician



Fig. 114 Remove the cladding cover



Fig. 116 Loosen the 4 screws on the operating panel



Fig. 115 Remove the insulation



Fig. 117 Hook the operating panel into the door (service position), open the cover

The terminal block connection (screw less cage-spring-type terminals) should be established with fine-wire PVC-sheathed cables. The cables can be laid from the top, bottom, right and rear, through the pre-punched feed-throughs (Fig. 118).

For connection diagrams for the control system, see the separate function module instructions; for other connection diagrams, see Section 6.



Fig. 118 Cable feed-throughs in the cladding of the BioWIN 2 Touch - view from rear

### 13. Connecting the function modules

See the separate instructions for the respective function modules.

### 14. Operating with external control

This is only possible with the **special function external heating requirement function module INF FO5 W** (accessories) – see Section 9.5 Operation by control on side 17. For the connection diagram, see the separate instructions for the "special function" function module.

### 15. Installing covers

- Bend the cable feed-throughs inwards on the operating panel, attach the operating panel and secure it with 4 self-tapping screws – Fig. 119.
- Stick on the sponge-rubber holder for the Allen key Fig. 119.
- ▶ Insert or connect the main power plug Fig. 120.
- ▶ Place the insulation on the heat exchanger cover Fig. 121.
- ▶ Fit the cladding cover Fig. 122.



Fig. 119 Attach and screw on the operating panel



Fig. 120 Insert or connect the mains power plug



Fig. 121 Apply insulation



Fig. 122 Fit the cladding cover



#### CAUTION Material losses

After connecting the cables, remove all remaining assembly materials (e.g. wire strands) from the control panel.

### FOR THE SERVICE TECHNICIAN

### 16. Commissioning and operating instructions

The Windhager Customer Service or customer service partner will start the boiler/heater and familiarize the customer with the system operations and cleaning procedures. Start-up and maintenance are part of the guarantee requirements of the "Warranty conditions".

We recommend that you obtain a full service agreement.

### 17. Service and repair work

Service and repair may be performed only by appropriately qualified technicians.



#### **DANGER Electrocution**

**The ON/OFF Button does not turn OFF the power!** The boiler/heater and all accessories are still energized! To turn OFF the power (e.g., for repairs), disconnect the main power via the main circuit breaker.



#### DANGER Electrocution

After the emergency shut-off switch trips, the boiler and accessories are not completely without power.

When replacing system components (pumps, mixers, etc.), you must prevent all power input (e.g. by disconnecting the device power plug).

#### Please note:

- Disconnect the device power plug before opening the control panel for service or repair purposes. Remove the cladding cover (Fig. 123), followed by the insulation covering the heat exchanger cover.
- ▶ Disconnect the device power plug Fig. 124.



Fig. 123 Take off the cladding cover, remove the insulation



Fig. 124 Disconnect the device power plug

### **TECHNICAL DATA**

### 18. Technical data – function module INF F05 W/S/K

	Function module INF FO5 W/S/K
Operating voltage	230 V AC ±10 %
Power consumption – Operation max. – Stand-by max.	7 W 1.0 W
Ambient temperature – Operation – Storage/transport	0 °C - +50 °C -10 °C - +60 °C
Ambient humidity – Operation – Storage/transport	20 to 85 % rH (at 25 °C, non-condensing) Max. 50 % rH (at 60 °C, non-condensing)
Cable length sensor	Max. 100 m, min. 0.75 mm² (fine wire)
Cable length LON	Max. 1200 m, 0.6 mm <sup>2</sup> , twisted cable (bus topology), terminator on both sides 120 ohm
eBus cable length	Max. 50 m, min. 0.5 mm² (fine wire)
Relay breaking capacity	6.0 (2.0) A
Total breaking capacity	6.0 A
Weight	0.60 kg
CE conformity	2014/35/EU "Low Voltage Directive" 2014/30/EU "EMC Directive" 2011/65/EU "RoHS Directive"
Safety	EN 60730-1, EN 60730-2-9
Protection class	I acc. to EN 60730
Degree of protection	IP 20 (EN 60529) if installed correctly
Leakage path and clearance	Overvoltage category II Degree of pollution 2
EMC immunity	EN 61000-6-2
EMC emission	EN 61000-6-3

# 19. Technical data for calculating the flue gas system acc. to EN 13384-1

BioWIN 2 Touch pellet boiler	Formula symbols	Unit	BioWIN 152		BioWIN 212		BioWIN 262		BioWIN 332	
			Partial load	Nominal load	Partial load	Nominal load	Partial load	Nominal load	Partial load	Nominal load
Nominal thermal output	$Q_{min} / Q_N$	kBTU (kW)	14.7 (4.3)	51.2 (15.0)	21.5 (6.3)	71.7 (21.0)	25.9 (7.6)	88.4 (25.9)	33.4 (9.8)	110.9 (32.5)
Nominal heat load (firing thermal output)	Q <sub>B</sub>	kBTU (kW)	16.0 (4.7)	54.6 (16.0)	27.3 (6.8)	76.5 (22.4)	27.6 (8.1)	94.2 (27.6)	35.2 (10.3)	118.4 (34.7)
Volume concentration of CO <sub>2</sub>	σ (CO <sub>2</sub> )	%	10.1	14.2	11.3	14.2	12.1	14.2	12.3	14.6
Flue gas mass flow rate at nominal output	'n	kg/s	0.0034	0.0085	0.0044	0.0118	0.0049	0.0146	0.006	0.018
Flue gas temperature at nominal output <sup>1</sup>	Τ <sub>w</sub>	°F (°C)	179.6 (82)	246.2 (119)	188,6 (87)	260.6 (127)	194 (90)	273.2 (134)	197.6 (92)	280.4 (138)
Necessary feed pressure at the flue gas connection	P <sub>w</sub>	Pa	0	5	0	5	0	5	0	5
Flue gas connection diameter	Ø	in (mm)								

<sup>1</sup> Values in practical operation (average between two cleaning intervals)

#### 20. Technical data – General

BioWIN 2 Touch	Unit		BioWIN 152	BioWIN 212	BioWIN 262	BioWIN 332					
Boiler class according to EN 303-5				5							
Mode of operation of the boiler			Negative pressure boiler; non-condensing; induced draught fan								
Nominal thermal output	kBTU (kW)		51.2 (15)	71.7 (21)	88.4 (25.9)	110.9 32.5					
Nominal thermal output range	kBTU (kW)	158/122 °F (70/50 °C)	15.3–51.2 (4.5–15.0>)	21.5-71.7 (6.3-21.0)	26.6-88.4 (7.8-25.9)	33.4-110.9 (9.8-32.5>)					
Feed pressure at the flue gas connection	Pa	Partial load	-20 to 0 -20 to +5	-20 to 0 -20 to +5							
Boiler water volume	l	Nommartioad	39	47							
Water-side resistance	psi (mbar)	ΔT = 20 °K	0.0304579 (2.1)	0.,0565647 (3.9)	0.0841219 (5.8)	0.124732 (8.6)					
	psi (mbar)	ΔT = 10 °K	0.110229 (7.6)	0.207404 (14.3)	0.3118311 (21.5)	0.4510674 (31.1)					
Boiler temperature control range	°F (°C)		140-167 (185)² 60-75 (85)²								
Return temperature	°F (°C)	min.	68 <sup>3</sup> 20 <sup>3</sup>								
Electrical fuse, supply cable	А		25 (slow-blow)								
Medium sound pressure level $\rm L_{p,A}$ at distance of 3.28 ft (1 m)	dB	Nominal load of boiler	45.7	46.1	46.5	47.6					
Content of pellet fuel hopper	lb (kg)	Klassik/Exklusiv-S Klassik-L/Exklusiv-SL Premium/Exklusiv	236 (107) 441 (200) max. 157 (max. 71)								
Total net weight	lb (kg)	Klassik/Klassik-L Premium Exklusiv/Exklusiv-S/Exklusiv-SL	545/661 (247/300)         593/710 (269/322)           575 (261)         624 (283)           630/600/717         679/650/767           (286/272/325)         (308/295/348)			22)					
Dimensions W x D x H	in (mm)	Klassik/Exklusiv-S Premium/Exklusiv Klassik-L/Exklusiv-SL	42x28x57 (1075x710x1453) 42x28x67 (1075x710x1705) 56x28x58 (1422x710x1470)	42x31x57 (1075x780x1453) 42x31x67 (1075x780x1705) 56x31x58 (1422x780x1470)							
For further dimensions and weights	s, see s	ections 8 and 11.2									
Values for BioWIN 152, 212, 262 from type test; testing office TÜV SÜD Munich report no.: C1–C3 1358-00/13 from 15.11.2013 Values for BioWIN 332 from type test; testing office TÜV SÜD Munich report no.: C4 1358-00/16 from 04.08.2016											
$\begin{array}{llllllllllllllllllllllllllllllllllll$	%	Partial load/nominal load	97.0/95.9	97.1/95.4	97.2/95.1	97.3/95.3					
Boiler efficiency $\eta_{W}$	%	Nominal load	93.8	93.9	93.9	94.8					
Flue gas temperature	°F (°C)	Partial load/nominal load	144/210 (62/99)	153/235 (67/113)	158/237 (70/114)	153/239 (67/115)					
Electrical power consumption of pellet boiler:											
Maximum for igniting	W		1054								
Ignition process	Wh		128								
Auxiliary energy $Q_{min}/Q_N$	W	Partial load/nominal load	18 / 33	20 / 41	21 / 48	31 / 77					
Idle operation (standby)	W		6								

See operating manual, Fuels section
 Only with buffer operation
 In heating-up mode min. return temperature of 59 °F (15 °C) (setback mode/heating mode)

### 21. Dimensional drawings

#### BioWIN 2 Touch Exklusiv/Premium/Exklusiv-S/Klassik:



 $^1$  Height when the pellet integral fuel hopper filling cover is open: 70.9 in (1800 mm)

Fig. 125 BioWIN 2 Touch Exklusiv/Premium/Exklusiv-S/Klassik – view from rear



KV ...... Boiler flow (1" pipe)

- KR ...... Boiler return (1" pipe)
- E..... Discharge
- A ...... Pellet feed (Ø 1.97 in/50 mm pipe) B ...... Return air flow (Ø 1.97 in/50 mm pipe)
- KT ...... Boiler temperature sensor
- AO....... Flue connection top (Ø 5.12 in/130 mm)
- AH...... Flue connection rear (Ø 5.12 in/130 mm)
- EA ...... Electrical connections
- Z..... External combustion air (Ø 3.94 in/100 mm)

Fig. 126 BioWIN 2 Touch Exklusiv/Premium/Exklusiv-S/Klassik – view from top

#### BioWIN 2 Touch Exklusiv-SL/Klassik-L:



 $^{1}$  Height when the pellet integral fuel hopper filling cover is open: 72.8 in (1850 mm)

Fig. 127 BioWIN 2 Touch Exklusiv-SL/Klassik-L – view from rear



Fig. 128 BioWIN 2 Touch Exklusiv-SL/Klassik-L – view from top

- KV ...... Boiler flow (1" pipe)
- KR ...... Boiler return (1" pipe)
- E..... Discharge
- KT ...... Boiler temperature sensor
- AO...... Flue connection top (Ø 5.12 in/130 mm)
- AH...... Flue connection rear (Ø 5.12 in/130 mm)
- EA ...... Electrical connections
- Z..... External combustion air (Ø 3.94 in/100 mm)

### **ELECTRIC CIRCUIT DIAGRAMS**

### 22. Basic circuitry – BioWIN 2 Touch

### 22.1 Plan E1



#### 22.2 Plan E2



#### 22.3 Plan E3



### 22.4 Plan E4



### 23. Connection diagram – BioWIN 2 Touch

#### Two separate cables are needed to connect the changeover unit.

- For the limit switches, a 12 V DC cable: min. 3 x AWG 17 (no ground). We recommend using a shielded cable if the cable is longer than 16.4 ft / 5 m
- For the motor, a 110-230 V AC cable: 4 x AWG 15
- ► Operation with a pellet feed system must be set in the service level see the InfoWIN Touch operating manual; service level → settings → Type of fuel feed system.
- ►



# 24. Connection diagram for pellet feed with buried tank mixer

► Operation with a mixer must be set in the service level – see the InfoWIN Touch operating manual; service level → settings → Type of fuel feed system → Suction turb. with mixer (for buried tank with mixer and for single probe).



### 25. Connection diagram function module INF F05 W



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### 26. Connection diagram function module INF F05 S



AUSTRIA Windhager Zentralheizung GmbH Anton-Windhager-Strasse 20 A-5201 Seekirchen near Salzburg T +43 6212 2341 0 F +43 6212 4228 info@at.windhager.com

windhager.com

IMPRESSUM

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