

The expert for oil.



# MIRA – the master energy saver.

**Meets the EC guideline 92/42/EEC on efficiency for condensing oil boilers!**

MIRA low-energy oil-fired boiler with the world's first modulating Perpetum burner

Nominal thermal output: 4.7 to 14 kW

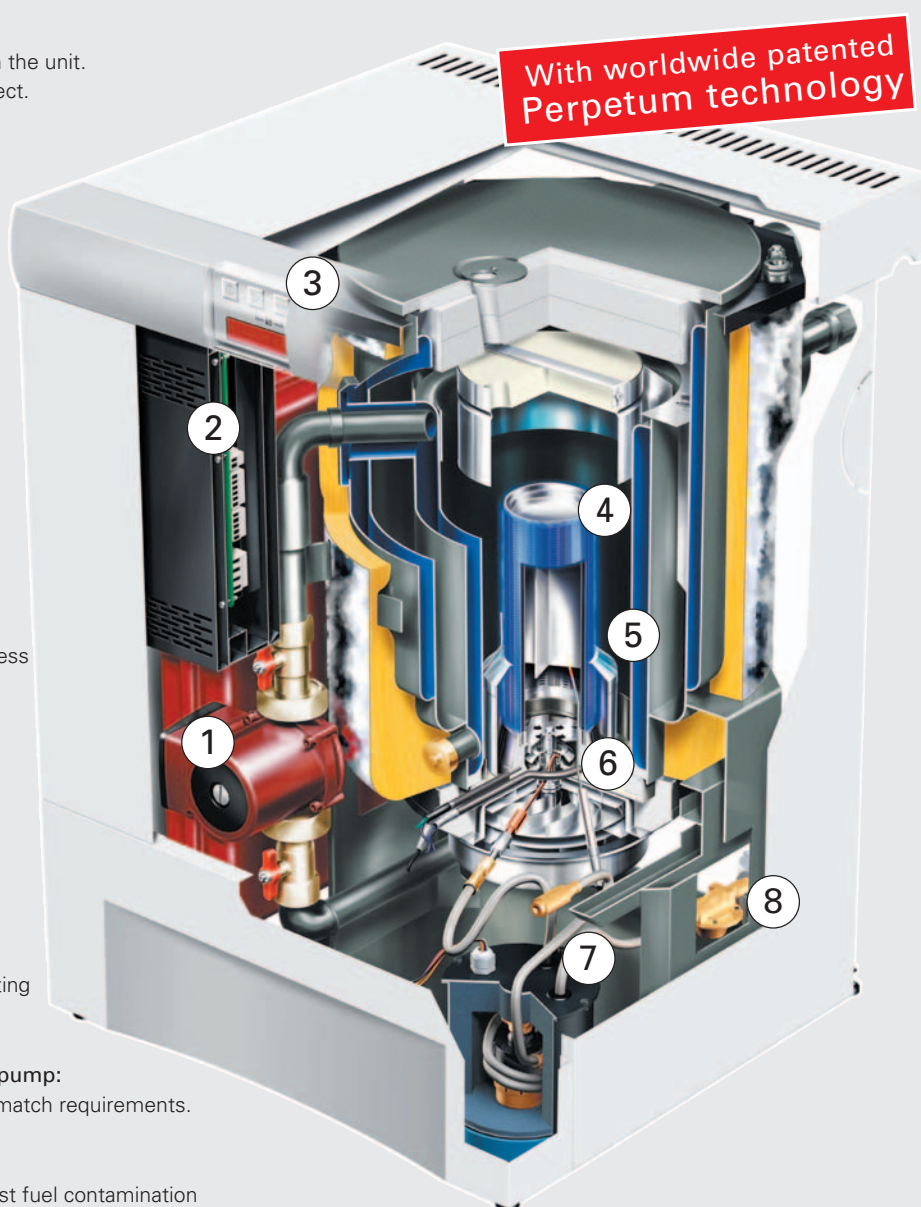


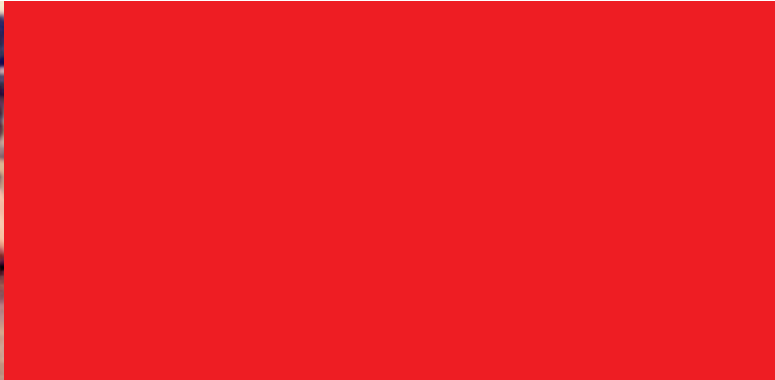
# Maximum efficiency at minimum size.

## MIRA – the world's first "modulating" oil-fired boiler.

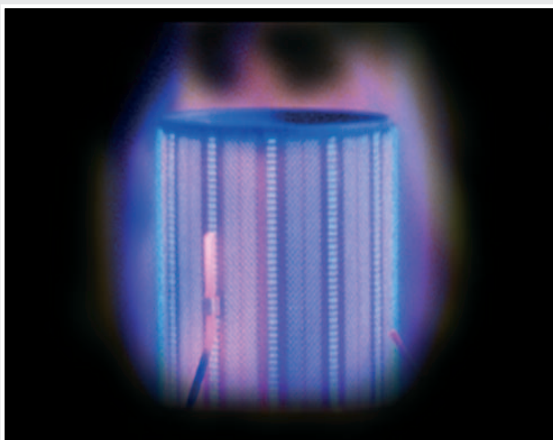
Building on decades of experience in designing and manufacturing boilers WINDHAGER ZENTRALHEIZUNG has now set a new standard by which heating with oil will be measured. Use of MIRA's worldwide patented "Perpetum burner" means a particularly environmentally-friendly and thrifty use of fuel. The quality technology of the "Thermocontrol" combustion regulation ensures that the best use is made of energy thanks to an infinitely variable (modulating) adjustment of output. The wide range of possible applications in virtually every room in the house is an entirely new feature too. Used as a stand-alone unit or as a heating centre, the MIRA is a new dimension in oil-fired heating.

- 1 **Heating fittings:**  
Where required, preassembled in the unit.  
Fully wired-up and ready to connect.
- 2 **Microprocessor-controlled combustion regulation "Thermocontrol":**  
This is continuously on duty to ensure that the quantity of energy required is supplied at all times. Optimum use of the oil and the cleanest combustion are thus guaranteed.  
The operating hours counter is fitted as standard.
- 3 **LED display:**  
Easy-to-read and with an automatic function check.
- 4 **Stainless steel flame tube:**  
High-temperature-resistant stainless steel, thus ensuring operational safety and long service life.
- 5 **Perpetum burner with "heat recycling":**  
The deflector collar means that energy can be recycled for oil vaporisation.
- 6 **Blower:**  
Makes infinitely variable, modulating output adjustment possible.
- 7 **Processor-controlled metering pump:**  
Continuously variable oil feed to match requirements.
- 8 **Easy-to-maintain filter system:**  
Provides reliable protection against fuel contamination for downstream components.





## The innovation: the Perpetum burner.



Perpetum burner with typical flame pattern

Ever since the 13th century attempts have been made to build a perpetual motion machine – a machine which works without any external energy supply. With the development of its "Perpetum burner" WINDHAGER ZENTRALHEIZUNG has come very close to this principle. With this combustion method part of the combustion energy is recycled so as to generate a perfectly prepared, gaseous mixture from the heating oil and air. The result is a kind of combustion which is unique to oil, with a carpet of steel-blue flames, a sign of environmentally friendly combustion.

### Conventional oil burners:

- ⊖ **Usually have excessive output**  
Oil burners are only available from 14 kW upwards, and this is often excessive to heat a modern single-family dwelling or apartment economically.
- ⊖ **Either "On" or "Off"**  
Oil burners based on pressure atomisation technology can only switch to "On" (full power) or "Off". This means start-up losses and a high environmental impact every time. And this happens up to 20,000 times every year!
- ⊖ **Sometimes really noisy**  
With older technologies oil and air are pulverised and burnt at relatively high pressures. The burner can often be heard throughout the entire house.
- ⊖ **High space requirements**  
Conventional oil heating systems are very large and often a space problem. This is because conventional oil burners need a combustion chamber large enough to ensure clean combustion.

### The innovative Perpetum burner

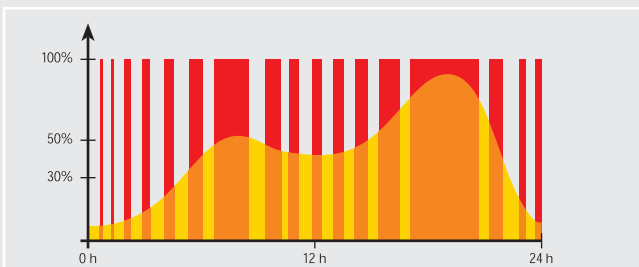
- + **The greatest for modest heating requirements**  
From as little as 4.7 kW the Perpetum burner puts out only the energy actually required, based on modulating operation (infinitely variable). Ideal for well-insulated apartments, single-family and low-energy houses.
- + **Modulating operation**  
The Perpetum burner offers modulated generation of only the energy actually required. In this way it cuts start-up losses and reduces environment impact to a tenth of the usual levels.
- + **Almost inaudible**  
Hard to believe. Thanks to its unique pressureless combustion, the Perpetum burner operates as quiet as a whisper.
- + **Small boiler – little space needed**  
The Perpetum burner is a short-flame flat-configuration burner. This makes the entire boiler very compact indeed, and thus installable anywhere.

# Heating well calculated.

## Energy to order.

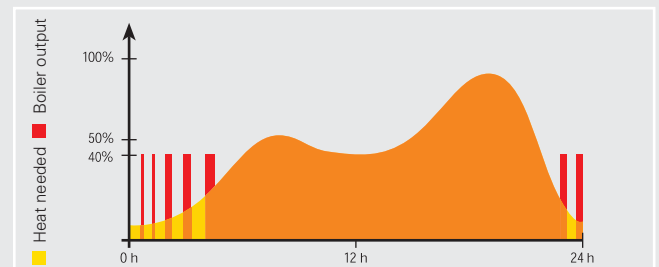
The MIRA is thriftier than conventional oil-fired boilers since the Perpetum burner offers modulated generation of only the energy actually required. The smart "Thermocontrol" combustion regulation monitors this efficient mode of operation, with infinitely variable output levels starting at 4.7 kW. This cuts start-up losses and reduces environment impact to a tenth of the usual levels. In addition, a standard efficiency of 94.8% is a very special factor behind the way MIRA keeps heating costs as low as possible.

### On-/off-type operation:



With conventional burners it is only possible to cover the actual heat requirements throughout the day by the use of on and off-phases – in other words, switching between full output and none at all. This way of operating causes additional down-time losses.

### Modulating operation:



The modulating pre-mix burner and the MES (**M**odular **E**nergy **S**ystem) or the REG control system in the MIRA make it possible from 40% of the nominal thermal output to have an infinitely variable, energy-saving output matched to actual heat requirements.

## Ideal for energy-saving designs

Modern housing design increasingly calls for heating boilers which offer low output coupled with the highest energy efficiency possible. With a performance range of 4.7 to 14 kW, the MIRA is the ideal heating solution not only for low-energy houses but also for well-insulated single-family houses and apartments.





## Fits in everywhere.

The modern heating solution MIRA is smaller than a dishwasher and almost silent in operation. In addition, this new generation of oil-fired heating units comes in a neutral design. This makes the MIRA flexible in what it does and how you use it. Above all, it convinces by the quality of its inimitable design in living room or boiler room. A new dimension in oil-based heat generation is thereby made possible.

**A chimney which is not sensitive to damp and an adequately dimensioned air feed are required** and this is one of the factors which needs to be taken into account in installation. The MIRA is available in white for the living room and in red for the boiler room.



The MIRA won't have any problem finding a place in any cellar or storage room (red version shown here).



The dimensions and design of the white MIRA allow its integration into any kitchen or living room. Quiet as a whisper in operation.

# A comfortable solution for apartment heating.

## The MIRA heating centre.

Heating and hot-water systems often have to be fitted into a very limited space in apartments. Here the MIRA, combined with a 120-litre indirect coil hot-water heater, offers the best solution for oil-fired operation.

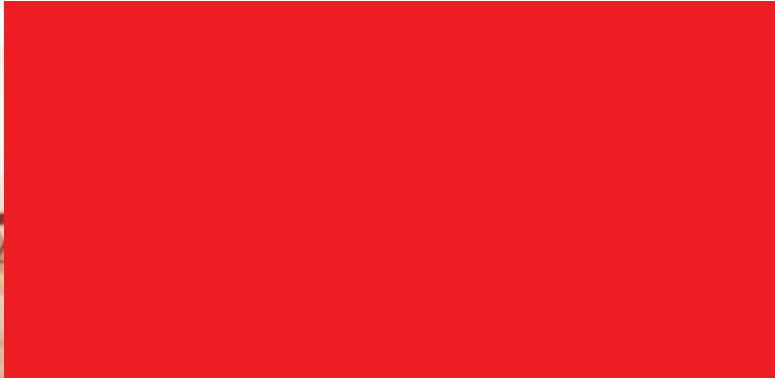
This MIRA heating centre is supplied preassembled, fully-wired and ready to connect up. As also in the stand-alone unit the MIRA heating centre convinces by its ultraquiet operation and neutral design. This makes the MIRA heating centre an environmentally friendly, thrifty alternative for apartment-dwellers who still have an older type of automatic oil-fired heating system and for proud owners of a space-optimised new apartment.



Due to its compact, sleek design the heating centre fits well even in an ultra-modern kitchen.

### All the advantages at a glance:

- ⊕ Convincing MIRA technology with all of the advantages of the patented Perpetum burner.
- ⊕ Optimised operation in combination with a 120-litre indirect coil heater.
- ⊕ Well thought-out space-saving design for optimum ease of use.
- ⊕ Equipment in and on the unit is particularly easy to service and maintain.
- ⊕ Includes fittings, piping, DHW-sensor and complete preassembly for one heating circuit.



## Everything under control.

**The measure of all things: the MES Modular Energy System**  
 The MES handles the entire thermal management of the heating system and thus represents the best exploitation of energy or, to put it another way, economic heating. It manages and optimises heat production and distribution matched precisely to requirements. Its modular design ensures the heating system can be expanded at any time. A second boiler and additional heating circuits can be subsequently installed simply, saving both time and costs.

### REG standard control units

A high level of control and user comfort for one heating and one boiler circuit is offered by the REG standard control units. These setpoint regulators can be used to respond to outside temperature or to room temperature. Subsequent expansion of the heating circuit or additional combinations are not possible.



MES digital user module



MES analogue user module



REG analogue user module

## Powerful combinations

**AquaWIN hot-water tanks:**  
 Available in different sizes with or without "solar equipment".

**SOLAR**

**Radiators, underfloor heating and other heat consumers**

**MES**  
 Modulares Energie-System

**MES - the Modular Energy System:** Regulates heat production and distribution matched to individual requirements.

**MIRA low-energy oil-fired boiler:**  
 It is a simple matter to combine the MIRA with other heat generators and consumers, such as an add-on solar heating system in low-energy houses. Many of the components needed for this are already fitted on the MIRA.

**Solar energy systems and other heat generators:**  
 Integrate smoothly into WINDHAGER ZENTRALHEIZUNG heating systems.

# To sum up, a smart solution.

## Accessories from a single supplier.

With your accessories too you can depend on quality from WINDHAGER ZENTRALHEIZUNG. Intercompatibility is assured at first installation and also any time the system is subsequently expanded.

### MIRA 041 oil supply system for single tank and buried-tank systems:



Immersion pump incl. 1.4 m hose for 2" oder 1 1/2" connection. The complete unit is screwed into the tank. A limit sensor (tank overflow protection) can be integrated into the supply system.

### MIRA 043 oil supply system for multiple tank systems:



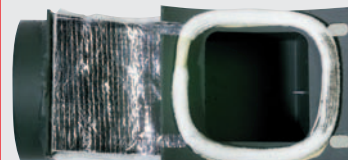
The set consists of a tank fitting, a venting device and an immersion pump for 1 1/2" or 2" connections. The complete unit is screwed into the tank. A limit sensor (tank overflow protection) can be integrated into the supply system.

### Heating distributor for boiler or wall mounting:



Can be used variably for one or more radiator and / or underfloor circuits and also for a DHW-circuit. The right heating distributor is available for every job. Can be expanded as desired due to modular design.

### 90° flue-gas elbow:



This means the MIRA can be connected on the left or right side of the chimney and still be flush with the wall.

### Top flue-gas elbow:



The ideal solution if short rearward or lateral chimney connection is not possible. Even in these cases the MIRA can be fitted flush with the wall.

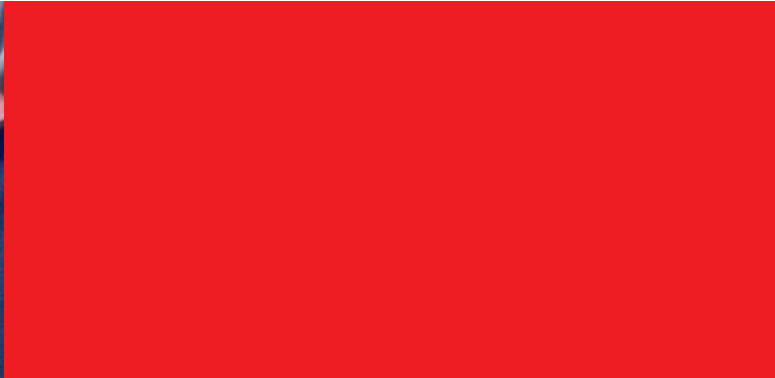
### Energy-saving draught regulator:



Performs two important functions: Firstly, it regulates the chimney draught, thereby ensuring clean and economical combustion; secondly, the chimney is ventilated and this prevents most dampness.

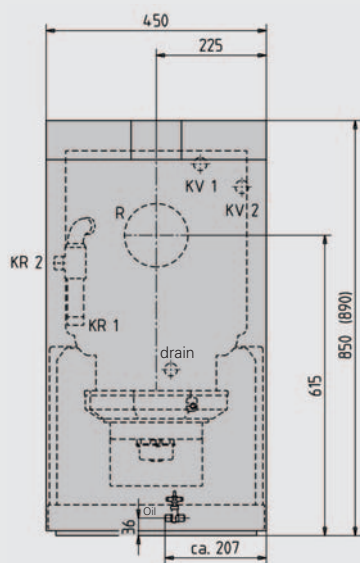
### Stainless steel flue accessory, dia. 130 mm: For connecting boiler and chimney



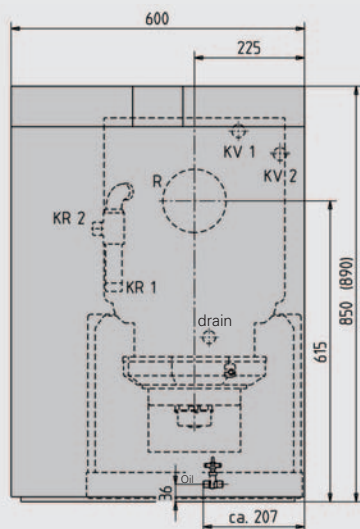


## Dimensioned sketches MIRA.

**Meets the EC guideline  
92/42/EEC on efficiency  
for condensing oil boilers!**

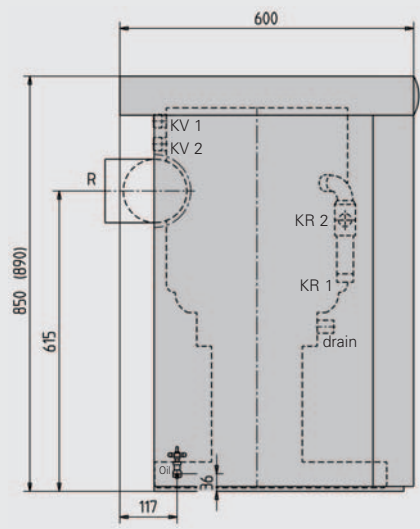


Front view MIRA 112/142

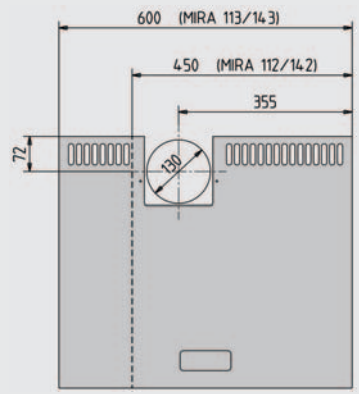


Front view MIRA 113/143

| Key MIRA 112-143 |       |                  |
|------------------|-------|------------------|
| Boiler flow 1    | KV 1  | 3/4" Male thread |
| Boiler flow 2    | KV 2  | 3/4" Male thread |
| Boiler return 1  | KR 1  | 3/4" Male thread |
| Boiler return 2  | KR 2  | 3/4" Male thread |
| Drain            | drain | 1/2" Ball valve  |
| Oil connection   | Oil   | 8 mm Copper pipe |
| Flue gas         | R     | Ø 130 outside    |



Side view MIRA 112 - 143



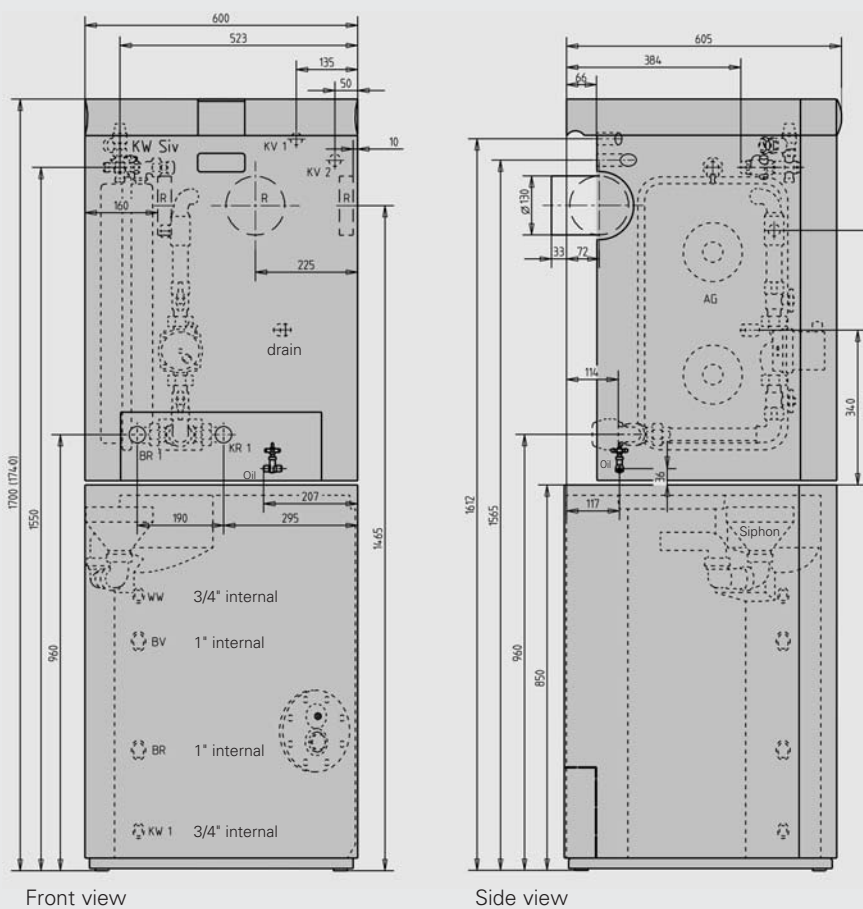
Side view MIRA 112 - 143  
(Flue gas connection on top)

## Technical data: MIRA low-energy oil-fired boiler

| Type   |      | MIRA 112   | MIRA 142   | MIRA 113   | MIRA 143   |
|--|------|------------|------------|------------|------------|
| Nominal thermal output range                 | kW   | 4,7 – 10,9 | 5,7 – 14,0 | 4,7 – 10,9 | 5,7 – 14,0 |
| Flue gas connection diameter                 | mm   | 130        | 130        | 130        | 130        |
| Water content                                | l    | 12         | 12         | 12         | 12         |
| Req. feed pressure (draught requirement) max | mbar | 0,09       | 0,14       | 0,09       | 0,14       |
| Net weight                                   | kg   | 119        | 119        | 133        | 133        |

# Convincing in size and performance.

## Dimensioned sketches MIRA Heating centre UAL.



Heating centre MIRA 117/147 UAL  
consisting of:

MIRA 113/143 with white cladding, circulation pump, expansion vessel 16,5 l, loading valve, safety valve and pressure gauge.

Kombi indirect coil hot-water heater  
AquaWIN AKE 120  
Interchange-, connecting- and outled pipe.

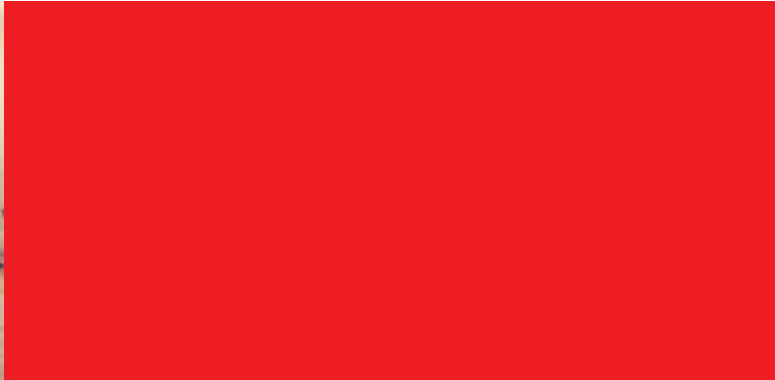
### Technical data: AKE 120

|  |                |                  |
|--|----------------|------------------|
| Type: AKE 120  |                |                  |
| Weighth gross/net                                    | kg             | 85/104           |
| max. working pressure hot water                      | bar            | 6                |
| max. working pressure heating water                  | bar            | 10               |
| max. temperature hot water                           | °C             | 95               |
| max. temperature heating water                       | °C             | 110              |
| Heat exchanger surface area                          | m <sup>2</sup> | 0,57             |
| Heating water content                                | l              | 3,7              |
| Storage capacity produced with:                      |                |                  |
| Boiler   | l              | 120              |
| Electrical immersion heater                          | l              | 90               |
| max. adjustable hot water temperature produced with: |                |                  |
| Boiler   | °C             | 70 <sup>1)</sup> |
| Electrical immersion heater                          | °C             | 85 <sup>1)</sup> |

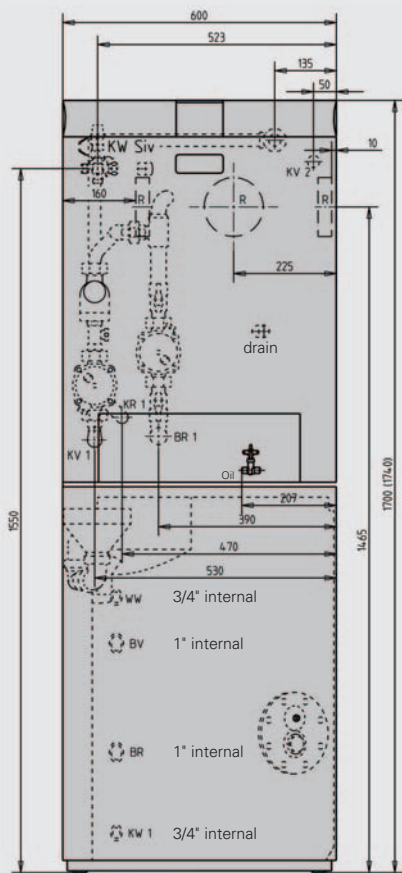
### Technical data: AKE 120

|                                 |                   |      |      |      |      |
|---------------------------------|-------------------|------|------|------|------|
| Type: AKE 120                   |                   |      |      |      |      |
| Continuous output <sup>2)</sup> | l/h               | 367  | 177  | 487  | 269  |
| Heat surface output             | kW                | 14,9 | 10,3 | 19,8 | 15,7 |
| Flow temperature                | °C                | 70   | 70   | 80   | 80   |
| Hot water temperature           | °C                | 45   | 60   | 45   | 60   |
| Hot water temperature           | °C                | 10   | 10   | 10   | 10   |
| Flow rate                       | m <sup>3</sup> /h | 3    | 3    | 3    | 3    |

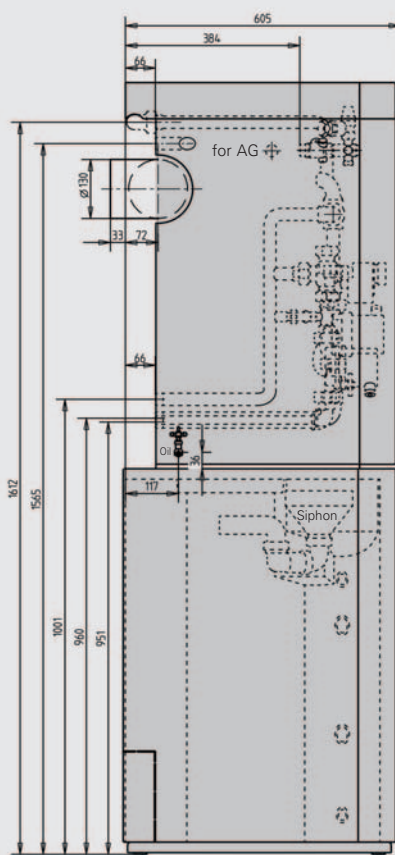
<sup>2)</sup> Values can only be reached, if boiler output is min. 10 % above the heat surface output.



## Dimensioned sketches MIRA Heating centre UML.



Front view



Side view

Heating centre MIRA 117/147 UML  
consisting of:

MIRA 113/143 with white cladding, circulation pump, motor mixing valve 3/4", loading pump, safety valve and pressure gauge.

Kombi indirect coil hot-water heater  
AquaWIN AKE 120

Interchange-, connecting- and outled pipe.

### Key MIRA WZ UAL

|                 |       |                      |
|-----------------|-------|----------------------|
| Boiler flow 1   | KV 1  | 3/4" Male thread     |
| Boiler flow 2   | KV 2  | 3/4" Male thread     |
| Boiler return 1 | KR 1  | 3/4" Internal thread |
| DHW flow        | BV    | 1" Internal thread   |
| DHW return      | BR    | 1" Internal thread   |
| DHW return 1    | BR 1  | 3/4" Male thread     |
| Hot water       | WW    | 3/4" Internal thread |
| Cold water      | KW    | 3/4" Male thread     |
| Drain           | drain | 1/2" Ball valve      |
| Oil connection  | Oil   | 8 mm Copper pipe     |
| Flue gas        | R     | Ø 130 outside        |

### Key MIRA WZ UML

|                 |       |                      |
|-----------------|-------|----------------------|
| Boiler flow 1   | KV 1  | 3/4" Male thread     |
| Boiler flow 2   | KV 2  | 3/4" Male thread     |
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| DHW return      | BR    | 1" Internal thread   |
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| Oil connection  | Oil   | 8 mm Copper pipe     |
| Flue gas        | R     | Ø 130 outside        |

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## Windhager provides more than first-class products:

### Quality consulting from our expert partners

You can obtain WINDHAGER ZENTRALHEIZUNG products from our expert PARTNERS. These are experienced heating specialists who work in close professional cooperation with WINDHAGER ZENTRALHEIZUNG to achieve best results for the customer.

### Professional customer service network

Perfect customer service is one of the mainstays of WINDHAGER's success. Our professional customer service network guarantees the best customer care every day. Our customer service technicians are experienced non-bureaucratic professionals who work quickly and reliably.



### Unique guarantees

Our full five-year guarantee provides you with optimal security. Because our unique full guarantee doesn't just cover material (excluding wear parts), it also includes the travel and labour costs of the customer service technician. Not only that, but we also guarantee to supply your device with spare parts for 15 years from the date of purchase.

### Guarantee conditions for full five-year guarantee as required by the guarantee certificate:

- Documented start-up
- Documented annual maintenance



Your expert partner:

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### Austria (Headquarters/Production):

Windhager Zentralheizung AG  
A-5201 Seekirchen near Salzburg  
Anton-Windhager-Straße 20  
Tel. +43 (0)6212/23 41-0  
Fax +43 (0)6212/4228

Windhager Zentralheizung AG

A-1230 Vienna  
Carlberggasse 39  
Tel. +43 (0)1/869 43 28  
Fax +43 (0)1/865 13 81

e-mail [info@windhager-ag.at](mailto:info@windhager-ag.at)

### Germany:

Windhager Zentralheizung AG  
D-86405 Meitingen near Augsburg  
Deutzring 2  
Tel. +49 (0)8271/80 56-0  
Fax +49 (0)8271/80 56-30

Windhager Zentralheizung GmbH

D-04509 Delitzsch near Leipzig  
Heinrich-Rudolf-Hertz-Straße 2  
Tel. +49 (0)34202/723-0  
Fax +49 (0)34202/723-30

e-mail [info@windhager-ag.de](mailto:info@windhager-ag.de)

### Switzerland:

Windhager Zentralheizung Schweiz AG  
CH-6203 Sempach-Station near Luzern  
Industriestrasse 13  
Tel. +41 (0)41/469 469-0  
Fax +41 (0)41/469 469-9  
e-mail [info@windhager-ag.ch](mailto:info@windhager-ag.ch)

Windhager Zentralheizung Schweiz AG

CH-1162 St.-Prex near Genf  
Z. I. Au Glapin

Tel. +41 (0)21/806 15 12  
Fax +41 (0)21/806 16 61

e-mail [bureau@windhager-chauffage.ch](mailto:bureau@windhager-chauffage.ch)