



# KON

EVOLUTION IN THE CONDENSATION

**Unical**

# Try the Best



MODEL KON			24 R	24 C
Nominal Output min./max.	in condensation	kW	3,2÷23,6	3,2÷23,6
	tradizional	kW	2,9÷22,6	2,9÷22,6
Nominal Input		kW	23,4	23,4
$\eta$ in condensation at minimum capacity		%	107,2	107,2
Efficiency class (Dir. EEC 92/42)			★★★★	★★★★

KON the last generation of domestic condensing boilers of Unical, available in version:

- *combi instantaneous*
- *heating only for combination with DHW stainless steel storage tank DSP 110<sup>inox</sup>*

KON introduces all the “Quality Stars” to satisfy every type of demand:

- Exceptional actual modulation ratio **1:8**
- Efficiency **>107%**
- Ultrathin **primary heat exchanger** in **Al/Si/Mg**
- Electronic PCB with HWS function **“Hot Water Speed”** (C version)
- **Low NO<sub>x</sub>** (class 5 according to EN 297 and EN 483) thanks to the premix modulating burner
- **“Pit stop”** service
- Simple and intuitive panel board
- **Domestic Hot Water production** up to **13,3 l/min** with  $\Delta t$  25 K, with *special 12 plates stainless steel heat exchanger* (mod. 24 C)

And still



### **Management of 2 zones with 2 thermostats**

KON is also synonymous of flexibility of installation. Ideal for all the installations, thanks to the electronics that allows to manage 2 zones at different heating temperature (high for radiators and fan-coils, low for floor heating) checking them with on-off or modulating thermostats.



**Over-run circulation** of 15 seconds to avoid overheating: it checks in every condition the thermal equilibrium between flow and return, also after intense D.H.W. drawings, while, in heating mode, with a duration of 5 minutes, allows to dissipate the whole residual thermal inertia.



**Operation in sliding temperature** for the maximum economy of management..



**Multigas Operation (Natural Gas or LPG)**



**Antifreeze protection** that intervenes at 5°C and is activated both in DHW production and heating mode, increasing the boiler temperature at 15°C. This avoids the risk that KON can freeze if low temperatures persist where it is installed. If there is a lack of gas a lockout signalling will be shown on the display.



**Pump anti-jamming function** also after long inactivity periods. The electronics of KON put the pump in operation for 5 seconds every 24 hours of standstill, so avoiding that the oxidation could stop it.



**Chimney sweeper function** facilitates the operations of combustion adjustment. By depressing the reset button for more than 5 seconds, the operation of the boiler at minimum or at maximum capacity for 15 minutes can be obtained so that the combustion can be analyzed.



**Hydraulic connections hiding case (optional)** code 00362674



# The Details of KON

Strong of the factory constructive synergies, KON reassumes some aspects of the series of high range, such as the low water content primary heat exchanger in **Al/Si/Mg alloy** of “Unical School”, the original mechanism of rapid inspection of the vital parts of the combustion system, together with the widely tested, but up-to-dated, complex of electronics and premixing system with electro-pneumatic control, already in use on other boiler ranges.

A sober answer to tall technological content in perfect tuning with the moment that we are facing, ideal for the consumer to the first approach with the high energetic recovery technologies and with the technician that requires simple, but not banal, solutions in the installation substitution or in the new constructions with low environmental impact. KON is signed Unical.



## **Exclusive Heat Exchanger in Al/Si/Mg Alloy**

It is realized in a special Aluminium/Silicon/Magnesium alloy that assures efficiency and resistance. Thanks to the configuration of the internal heat exchanger, in regime of condensation **high efficiencies are obtained, higher than 107%**, that means, for the consumer, great economic saving and very low environmental impact.

## **Condensates Collecting Tray with “Quick Release”**



## **Constant Flow Rate Pump with Automatic Air Vent**

Strong, powerful and reliable with good characteristics of flow rate and manometric head.

## **Modulating Pump with Automatic Air Vent (Optional)**

It represents the state of the art in the standard of the high efficiency. In line with the ErP directive 2015, with less than 1 W of consumption in stand-by and only 45 W in operation at maximum speed, thanks to the wide modulation capacity, according to the room thermostat and to the temperatures detected by the temperature sensors placed in flow / return connections, automatically doses the power of the boiler to the demands of the heating system. Particularly silent and compact, it integrates with the safety valve, the bypass and the discharge valve.



### ***Fan and Electro-pneumatic Gas Valve***

The new premixing assembly composed by the modulating pneumatic solenoid gas valve and fan is characterized by its limited encumbrance.

#### *Advantages:*

- compactness and noiseless operation
- wide modulation range: 1:8
- absolute safety of operation thanks to the absence of turbulences
- low thermal and mechanical stresses, therefore long duration, thanks to the inalterability

The valve is designed to compensate the gas pressure fluctuations in the distribution nets as well as to stabilize the supply pressure independently from the suction produced by the premixing fan. Easily adjustable, it assures an accurate mixture of combustion air / gas to guarantee high CO<sub>2</sub> values and to favour the condensation with very low CO and NO<sub>x</sub> levels.

In synthesis the valve/fan block is of easy maintenance and accessibility.



### ***Modulating Premix Burner***

with electro-pneumatic control and constant combustion ratio.

The “Flat” type burner assures:

- long duration thanks to the low thermal and mechanical stresses and to the physical inalterability of the fibre in FeCr alloy
- ideal propagation of the radiation heat thanks to its chemical-physical structure able to develop a particularly soft and bright flame
- Low NO<sub>x</sub> emissions (class 5 according to EN 297 and EN 483)
- “Quick release” of the complete plate. The release allows the complete removal of the combustion system.

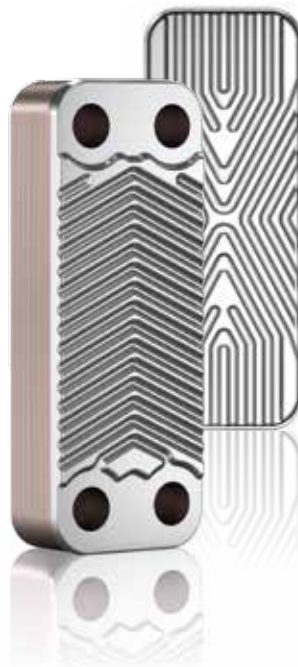
■ For the version **KON 24 C** (combi, with instantaneous DHW production)

### ***HWS “Hot Water Speed”***

The change-over from the heating to the DHW production mode normally takes around 6 and more seconds, depending on the commutation speed of the priority device that stops pump and burner.

It happens, in fact, that the consumer has to wait, under the shower, with discomfort, the reactivation of the system.

The **new electronics**, adopted in this boiler, performs, on the contrary, the change “in run”, with burner and pump always in operation, decidedly improving the comfort of the consumer.



### ***Secondary Heat Exchanger***

With 12 plates in stainless steel AISI 316L. The one fitted on the KON is different from the others for the low pressure losses, so optimizing the warm water circulation in the boiler. His “thermal length”, a particular physical expression that characterizes it, makes it particularly proper for the condensing boilers.

Its “ecological” design is characterized by a new shape of the plates that allows to transfer a greater quantity of heat, exploiting better the characteristics of the stainless steel.

# *KON: Cleaning the Heat Exchanger..*



1



Opening of the panel board.



Removal of condensates siphon

2



"Quick Release" opening system



Unloosing of the condensates tray

3



Removal of the fan harness



Removal of the fixing system to the pipeline

KON is fruit of the experience of the international Service and the suggestions of the market, from which the staff of Unical engineers has synthesized a formidable technological complex. Easily assemblable and quickly removable.

Thanks to the excellent performances, KON represents one the top in the sector of the actual and future domestic condensing boilers.

4



"Quick Release" removal of the combustion system



Opening of the complete combustion system

# ...in less than 2 Minutes



Removal of the stop screw of the smoke manifold



Removal of the smoke manifold

40''



Rotation on the hinge



Inspection of condensates tray

20''



Removal of the fixing system on the gas valve



Removal of the gas pipe

32''



Removal of the complete combustion system



Inspection burner and component system

14''



**RECORD TIMING:**  
**1 minute and 46 seconds!**

The time to turn the next pages of this brochure and KON is ready to be serviced!

The KON class will convince you by comparing it with the boiler that you possess.

Choose KON of Unical.

# Intuitive Controls

The electronic panel board will immediately result familiar. Not less important: all the wiring and intervention operations are facilitated by the frontwards rotating system.

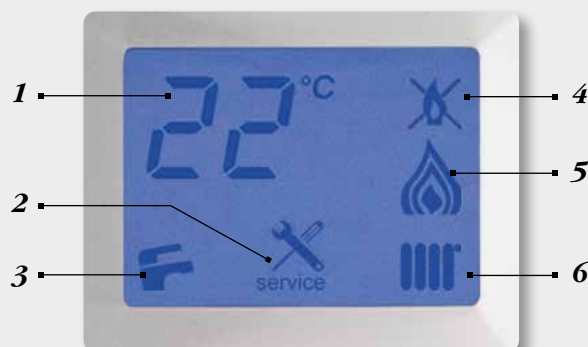
The multifunction LCD display, with time controlled back lighting, allows:

- Reading of the heating and DHW temperatures
- Visualization of the lockout due to lack of flame
- Visualization of the Operation/Stand-by State
- Diagnostic with signalling of 11 possible faults
- L.H. side knob: ON/OFF switch + S/W selector + heating temperature adjust. 30 to 85°C
- R.H. side knob: DHW temperature adjust. 38 to 60°C



On the wide display there are:

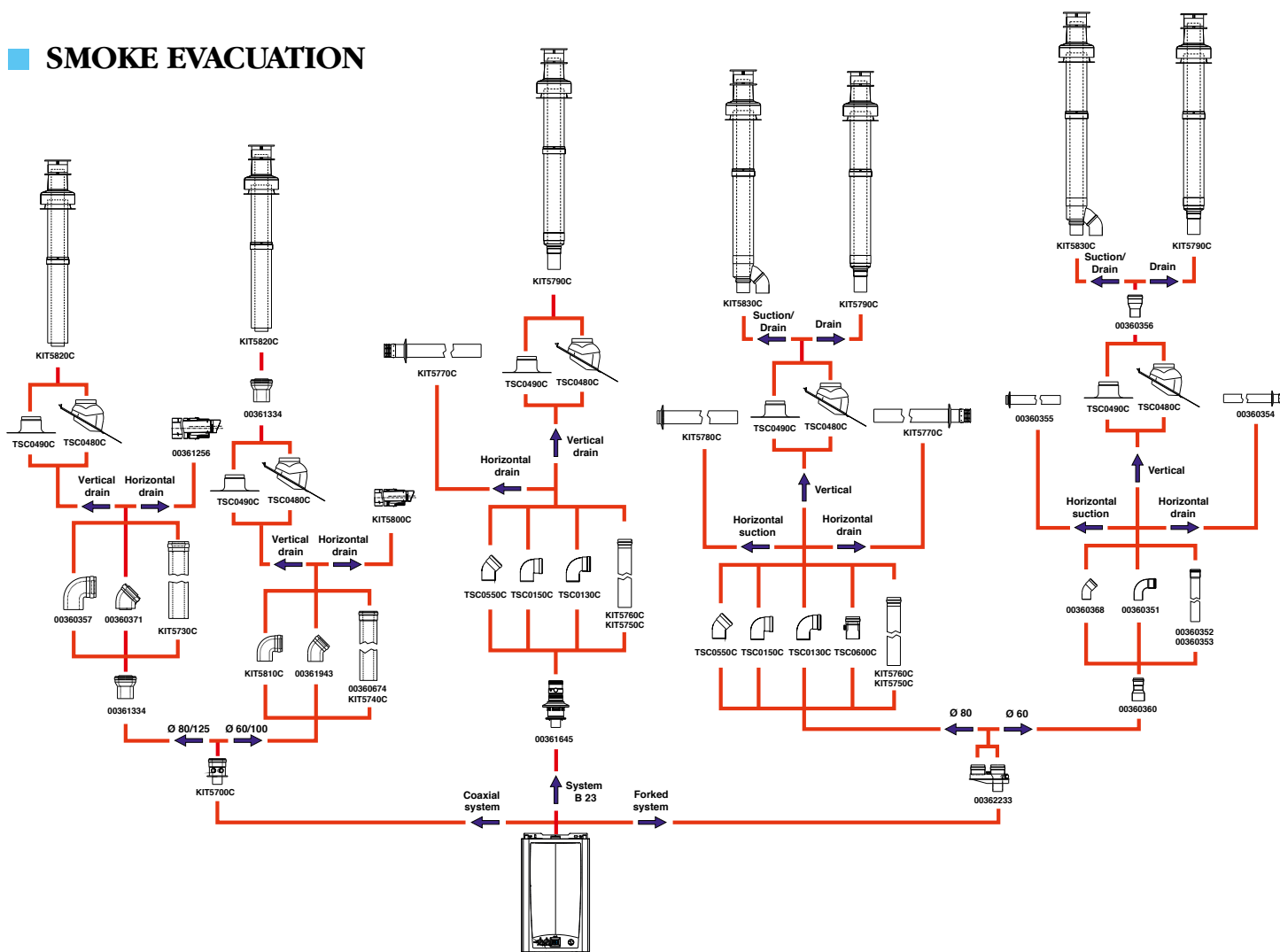
- 1** - the temperature indication or error code
- 2** - the signalling of fault or operation anomaly
- 3** - the indication of operation in DHW mode
- 4** - the lockout state
- 5** - the state of operation of the burner
- 6** - the indication of operation in Heating mode





# Accessories (Optional)

## SMOKE EVACUATION



## CONTROL ACCESSORIES



REMOTE CONTROL  
**REGOLAFACILE**  
weekly modulating  
Code 00361971



CHRONOTHERMOSTAT  
**REGOLAFACILE**  
**ON-OFF**  
Code 00262605



CHRONOTHERMOSTAT  
**GA 240**  
Code 00260737



REMOTE CONTROL  
**SIM-PLEX**  
controls without chrono-  
thermostat  
Code 00262077



REMOTE CONTROL  
**SIM-CRONO**  
weekly modulating  
Code 00262079



**OUTER TEMPERATURE**  
**SENSOR**  
Code 00362077

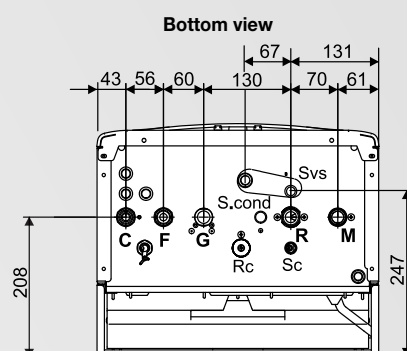
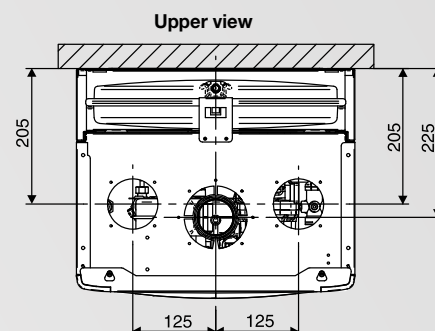
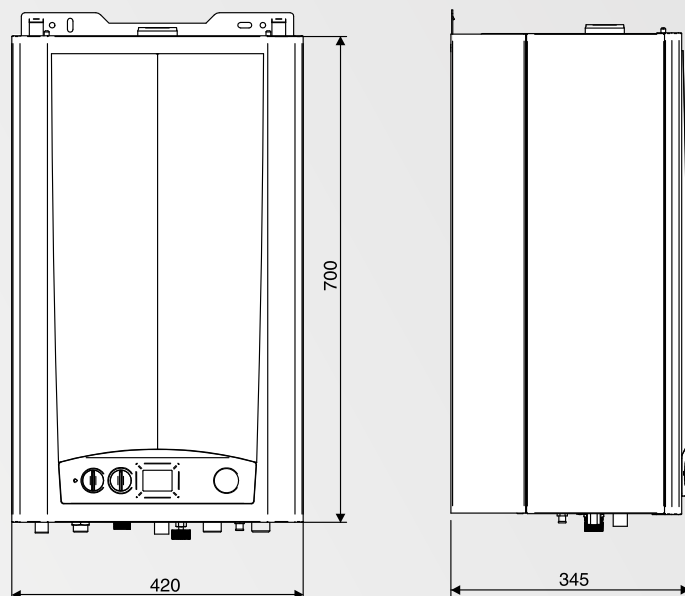
## DHW PRODUCTION ACCESSORIES

KON R 24 can be combined with the Unical DHW production tank, mod. DSP 110, with capacity of 110 liters in stainless steel AISI 316L

### • KIT FOR DHW PREPARATION THROUGH A GENERIC TANK

constituted by: NTC temperature sensor, Wiring harness, Three way diverting valve  
Code 00361849

# Dimensions - Technical Data



- |                           |       |                                   |       |
|---------------------------|-------|-----------------------------------|-------|
| <b>C</b> DHW outlet       | G 1/2 | <b>R</b> C.H. return              | G 3/4 |
| <b>G</b> Gas inlet        | G 3/4 | <b>Rc</b> Filling cock            |       |
| <b>F</b> Cold water inlet | G 1/2 | <b>Sc</b> Drain cock              |       |
| <b>M</b> C.H. flow        | G 3/4 | <b>Svs</b> Safety valve discharge |       |

Model		KON R 24	KON C 24
<b>Power</b>			
NOMINAL OUTPUT Min. / Max. in condensation	kW	3,2 ÷ 23,6	3,2 ÷ 23,6
NOMINAL OUTPUT Min. / Max. in std. mode			
NOMINAL INPUT Min. / Max.	kW	3,0 ÷ 23,4	3,0 ÷ 23,4
<b>Efficiency</b>			
EFFICIENCY CLASS (EEC directive 92/42)		★★★★	★★★★
Water efficiency at nominal output in condensation	%	100,9	100,9
Water efficiency at minimum output in condensation	%	107,2	107,2
Water efficiency at part load	%	100,1	100,1
Water efficiency at nominal output in std. mode	%	96,5	96,5
<b>Combustion and Hydraulic Performances</b>			
CO <sub>2</sub> (at min. / max. output)			
CO at 10% O <sub>2</sub> (at min. / max. output)			
NO <sub>x</sub> (weighted value according to EN 297/A3 and EN 483)			
PRODUCTION OF CONDENSATE max.	kg/h	3,7	3,7
NO <sub>x</sub> Class		5	5
<b>Heating</b>			
HEATING TEMPERATURE adjustable range min. / max	°C	30 - 85	30 - 85
D.H.W. TEMPERATURE adjustable range min. / max.			
D.H.W PRODUCTION with DT 25K (mixed)			
EXPANSION TANK CAPACITY			
<b>Electrical supply</b>			
TENSION / FREQUENCY	V-Hz	230/50	230/50
MAXIMUM ABSORBED POWER			
<b>Weight and Technical Features</b>			
DRY WEIGHT			
INSULATION PROTECTION DEGREE	IP	X5D	X5D
APPLIANCE CATEGORY		II 2H3P	II 2H3P



# Unical



AMI  
ABSOLUTELY MADE IN ITALY

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