

INKAL.



Unical

INKAL: *the hidden heating*

BUILT-IN BOILER	Nominal output max/min KW	Input max/min kW
INKAL CTFS 24 C.A. <i>Forced draught</i> <i>Automatic water filling</i>	24 - 9,8	26,5 - 11,1
INKAL CTFS 24 C.M. <i>Forced draught</i> <i>Manual water filling</i>	24 - 9,8	26,5 - 11,1

INKAL: *the boiler that* *doesn't need space*

INKAL solves the boiler positioning problem with the minimum space using and the maximum safety. Its small box in galvanized steel allows high engineering freedom and make easier the installation thank to the original fitting system. For the INKAL box installation are just needed:

- *Depth: 215 mm*
- *Height: 1190 mm*
- *Width: 590 mm*

INKAL is available in the combi instantaneous version, with Domestic Hot Water production. Only in sealed room, forced draught version, can be used with natural gas or LPG; a double electronic ignition system with electrodes makes of INKAL a safe choice in every weather condition.

Equipped of simple controls and easy adjustments, it's studied in order to give very high reliability in the most critical operation conditions.

INKAL has obtained the approval with the Insulation Protection degree IP X5D, with very high waterproofing to direct water throws. It can operates also with extreme temperatures up to -15°C and +60°C.



Twelve good reasons ...



21 cm depth:
really a record in its category!



Primary heat exchanger with low depth and high efficiency



12 ramps burner with high quality and reduced dimensions.
Ignition with double electrode



Sanitary heat exchanger with 16 plates INOX AISI 316 L



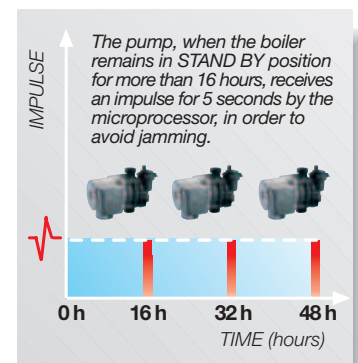
Single hydraulic group, detail of the motorized diverting valve and safety valve



Detail of 3 speeds pump



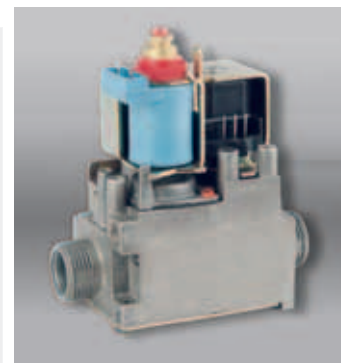
Detail of flow switch for sanitary priority and of the air relief device



Pump anti jamming timer



Double NTC temperature sensor for heating and sanitary circuits



Gas valve provided for outdoor use (down to -20°C)



3 solutions for the modulating control of the room temperature



Antifrost protection for high reliability



A record

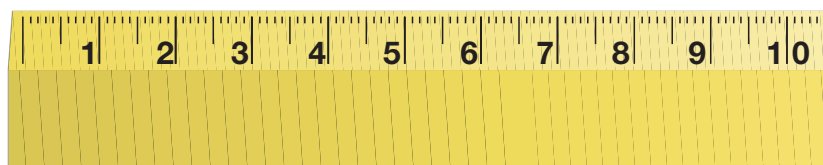
INKAL: the new reference point for the outdoor boilers

Ideal, both for new installations and substitutions, INKAL allows to exploit at the best the space inside the house. For no other built in boilers is necessary a so reduced wall niche:

- *Box depth: 215 mm*
- *Height: 1190 mm*
- *Width: 590 mm*

The compact galvanized steel box, to be built in, is already equipped of pre-cuttings necessary for the passage in all the directions of hydraulic connections, smoke duct, electric wiring and gas supply.

2
centim



depth.

*INKAL: practically is a boiler for
"space saving"*

The minimum galvanized steel box dimension, its extraordinary waterproofing, the minimum details attention, the operation silentness make a precise concept and establish the future standard for "outdoor" boilers, placing it at the top for functionality and beauty. Naturally, the front part that can be painted on the same wall tonality allows to this boiler to remain a protagonist behind the wings, by adding technologic and aesthetic value to the house for which is provided for.

*Stock and transport
with reduced costs*

Unical always careful also to the practical delivery has developed an original system for box "folding". when packed, it will encumber 70% less!

1

etres



Integrated aesthetic

Technology of value

With its compact and harmonious look, INKAL adds value to heating system where it's installed.

The possibility to realize different smoke and hydraulic configurations, like the 2 zones management, solves and makes easier the installer work.

The perfect integration with the support wall thank to its very reduced depth, makes of INKAL a valid aesthetic solution, with total respect of architectonic contest.

The user will live its own home in total quietness, feeling himself psychologically far from dangers from fire and gas.



3 solutions for “controlling” INKAL

Unical target is to simplify the life of all owners of INKAL by introducing a new collection of technological remote controls, in order to control the boiler with a few operations, everywhere it's placed.

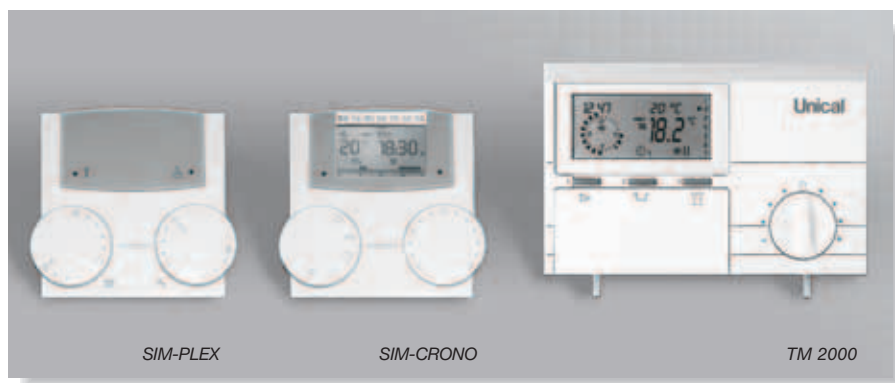
Always more refined models

- **SIM-PLEX**

like to have the boiler controls: Domestic Hot Water temperature adjusting, Central Heating temperature adjusting, boiler reset, water filling, lock-out led, leak of water led.

- **SIM-CRONO**

adds to the SIM-PLEX functions a weekly chronothermostat for the simplified setting of boiler ignition and switching off periods and for the room temperature control thanks to the integrated modulating adjusting. This logic allows to reduce, modulating, the boiler output and then consumptions, by the simultaneous comparison of two data: the boiler temperature and the output required for the room warming. In addition, a diagnostic



system with 16 anomalies shown with numeric codes is available, for a quicker technical intervention.

- **TM 2000**

offers the SIM-CRONO features, but thanks to its wide display gives the information in English and in other languages on adjusting, parameters setting and diagnostics.

Control panel

For easy use, constitutes a single vertical unit, that is a part of box containing the electronics.



Line led

Informes that the boiler is electrically supplied

Central Heating operation mode led

Informes a Central Heating request. It's switched off if there is a simultaneous Domestic Hot Water request.

Lock out led

Indicates the burner safety device intervention.

Burner led

Indicates the burner operation, both in Central Heating and Domestic Hot Water mode.

ON / OFF main switch

Thermomanometer

Chimneysweeper button

Forces the boiler to work at maximum capacity, and then and the minimum, in order to easily do the technical gas valve adjusting and the combustion controls.

Reset push button

Allows to reset the boiler into operation after the lock out intervention.

Vanguard components

Components accuracy

For INKAL the F.M.P. technology is used (Few Moving Parts), to guarantee high reliability. The engineering studies have obtained a precious target: the extraordinary dimensions. The depth of only 21 cm set INKAL at the top of the flat boilers, thank to:

■ *Monothermic primary heat exchanger*

with special threaded connections and a depth of only 145 mm: it guarantees all the necessary capacity and the ideal efficiency both at 24 and at 8,9 kW (max. and min).

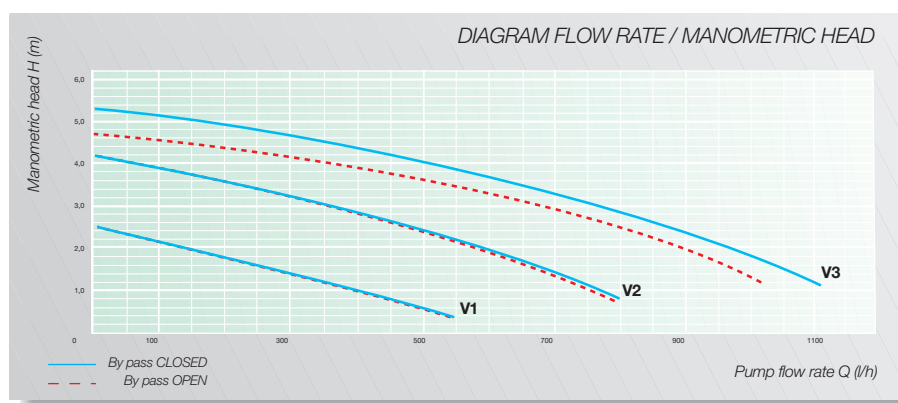
■ *DHW 16 plates inox AISI 316 L heat exchanger*

It's mounted a sanitary heat exchanger with 16 plates in stainless steel AISI 316 L, in order to rationally use the available space. It's oversized of 25% in comparison to the boiler output. This choice gives an higher exchange surface so, with the same water temperature and needed quantities, it's possible to let the boiler work with lower temperatures obtaining:

- *Reduction of limestone deposit phenomena*
- *More instantaneous Domestic Hot Water warming*
- *Constant water temperature during the drawings*
- *DHW production of 13,4 l/min with Δt 25° K.*

■ *Motorized diverting valve*

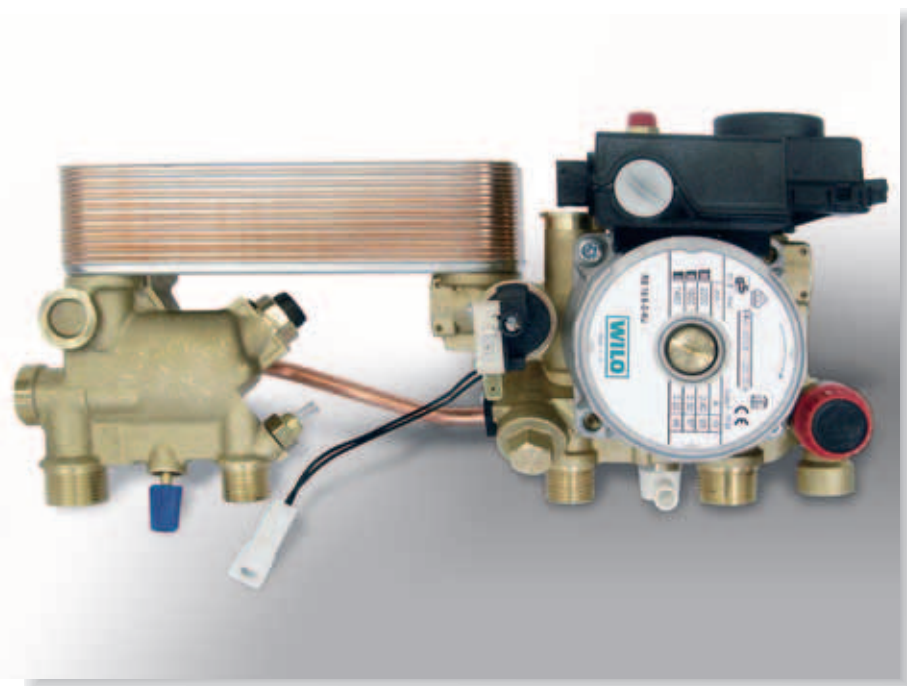
Of new conception, result of Unical technologic study, it's part of a brass hydraulic group very compact and, thanks to the powerful electric motor, allows quickly and safely to divert the hot water produced by the primary heat exchange to the sanitary heat exchanger or in loop to the heating circuit,



optimizing the operation in temperature modulation with the special modulating remote controls.

■ *The automatic by-pass*

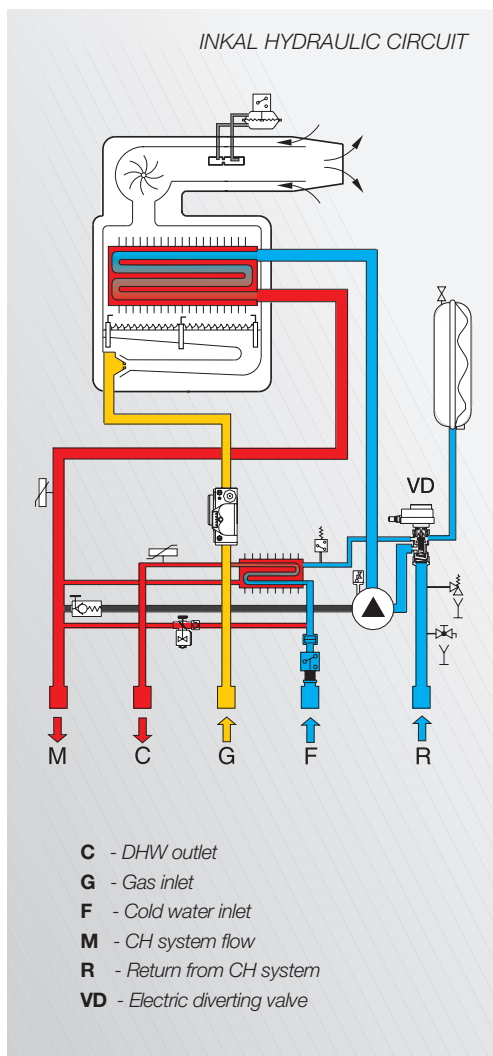
allows to optimize the water circulation into the boiler, avoiding in this way overheatings.



High performances in small spaces

The UNICAL components technology is the result of an accurate analysis realized mostly on three ways:

- *qualitative*
to guarantee in every weather condition operation reliability and high performances;
- *dimensional*
assuring a very reduced total depth that allows the installation everywhere and in harmoniously;



- *total accessibility*
to guarantee a rational disposition, immediate and simple for every technical intervention for regulation, control or maintenance.

Automatic or manual water filling...

The manual filling and drain valves allow rapid interventions, and the connections and interventions are simplified thanks to the vertically sliding control panel. For more exigent demands, the automatic water filling will do all itself: in case of "low pressure" signal, the boiler software, that continuously controls the system pressure, will provide to fill in the water. If this filling up will be not enough, the alarm led will inform the user of a possible heating system or boiler water leakage.

The combustion chamber is frontally accessible, so as the burner, the heat exchanger and the fan.

The combustion adjusting are also really rapid thanks to the provided for chimneysweeper function.

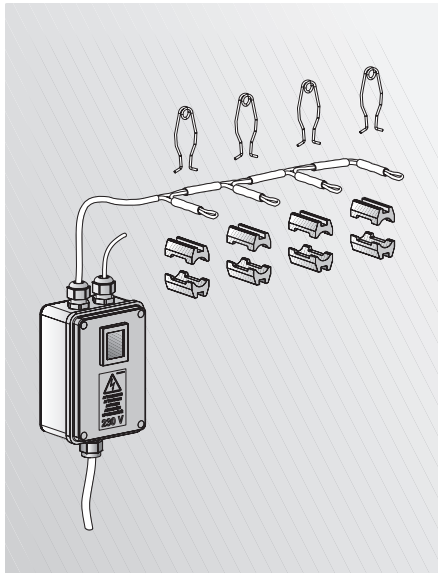
The electronic management by microprocessor controls constantly all

ESTRAL functions included the pump overrun anti overheating and the automatic detection of 15 anomalies visible on the display of TM 2000 and SIM-CRONO in order to quickly do the technical interventions.

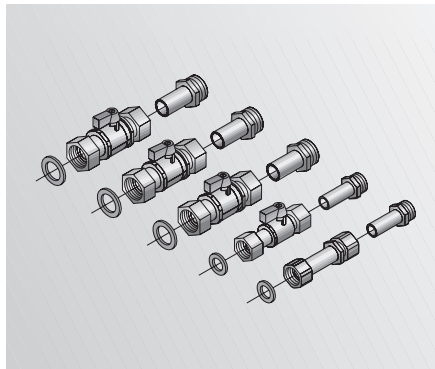
Furthermore the connection of a second ON/OFF thermostat allows the temperature management of a second zone.



Full of accessories and reliable



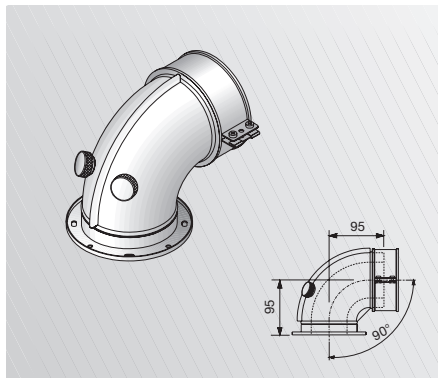
RESISTORS KIT FOR LOW TEMPERATURES (OPTIONAL)
Cod. 00360568



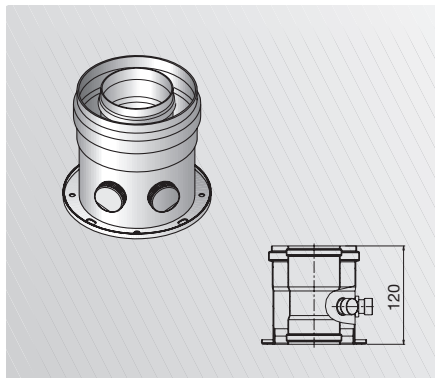
VALVES KIT (OPTIONAL)
Cod. SER 0100C

An “elevated service content” to save time and money is what INKAL offers to the installers and the user. The installation is quick without doubts. A metallic wall template is delivered for the rapid positioning. Smoke ducts for the different configurations both outdoor (B23) or indoor (C) and the complete available catalogue, with the high fan pressure head, will allow to solve every situation.

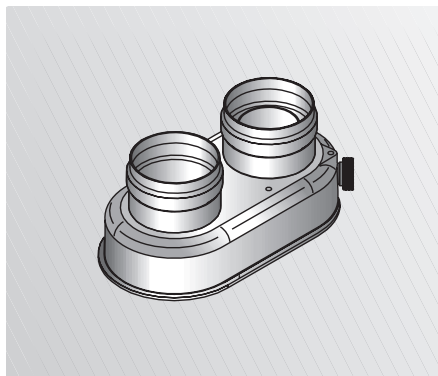
INKAL allows the M 3000 installation, an electro-hydraulic device for the simultaneous management of high temperature circuits (radiators) and low temperature installations (floor heating systems).



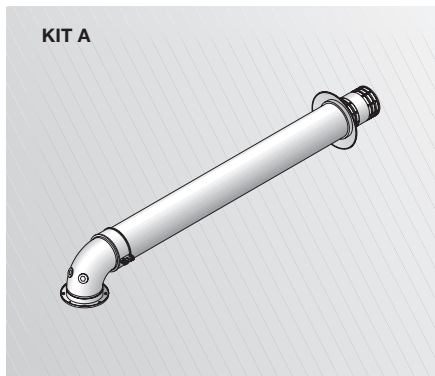
HORIZONTAL COAXIAL CONNECTION Ø 60/100
Cod. TSC0210C



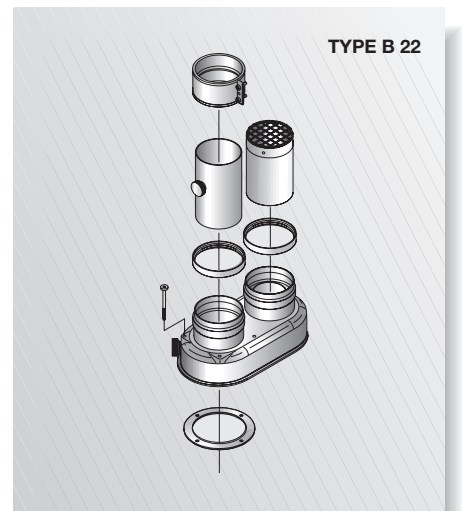
VERTICAL COAXIAL CONNECTION Ø 60/100
Cod. TSC0620C



AIR SUCTION / SMOKE OUTLET Ø 80 DOUBLE KIT
Cod. 00360350



KIT A (COAXIAL Ø 60/100)
Cod. KIT500C



TYPE B22 VERTICAL AIR SUCTION / SMOKE OUTLET Ø 80 DOUBLE KIT
Cod. 00361089

Box and boiler installation



Boiler positioning into the built-in box



Smoke outlet installation



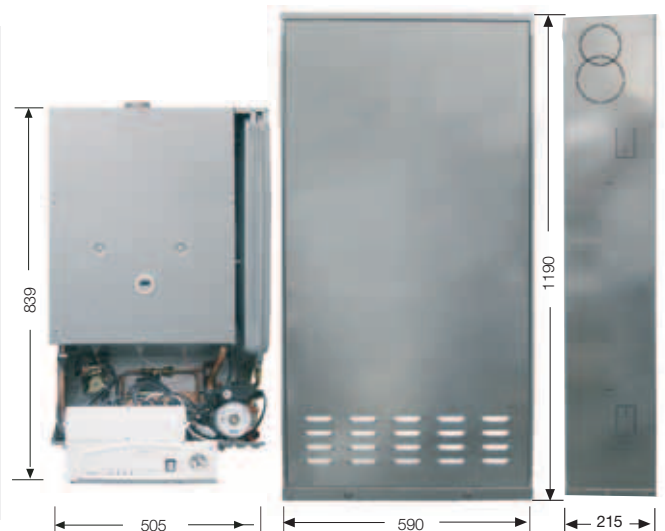
Hydraulic and electric connections



Box closing

Technical data

Model	CTFS 24	
NOMINAL OUTPUT max / min	kW	24 / 9,8
INPUT max / min	kW	26,5 / 11,1
EFFICIENCY at full load 100%	%	90,48
EFFICIENCY at part load 30%	%	87,81
MAX SMOKE TEMPERATURE	°C	113
APPLIANCE CATEGORY		II2H3P
HEATING SYSTEM PRESSURE min / max	bar	0,5/3
SANITARY CIRCUIT PRESSURE min / max	bar	0,5/6
DHW PRODUCTION in continuous with •f0 t 25K	l/min	13,4
ELECTRICAL SUPPLY Voltage / Frequency	V/Hz	230 / 50
MAX ABSORBED POWER	W	119
INSULATION PROTECTION DEGREE	IP	X5D
NET WEIGHT	kg	33,5



Unical



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