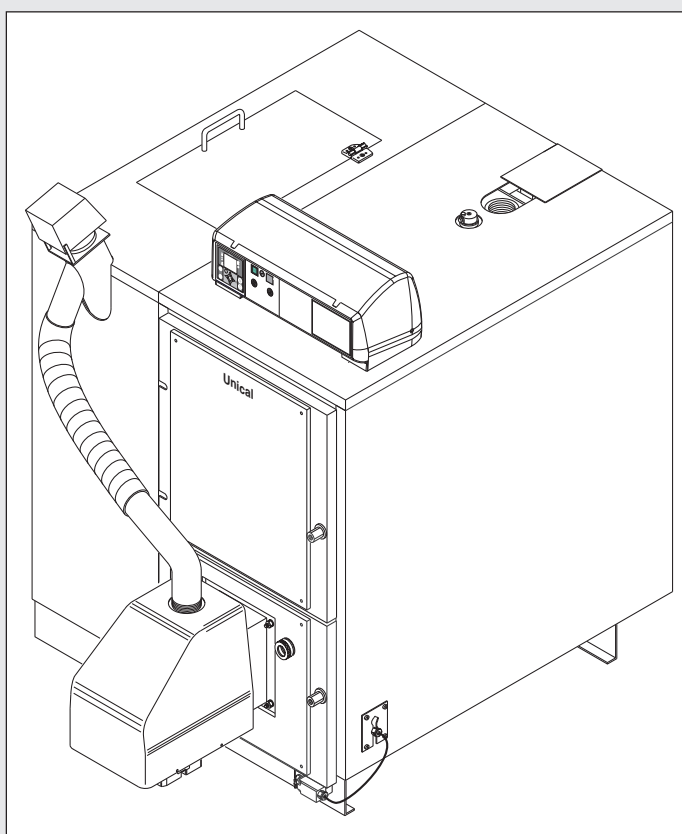


Unical[®]

PELLEXIA



TECHNICAL INFORMATION

GENERAL DESCRIPTION

The PELLEXIA boiler body has been obtained from the FO-KOLUS wood fired boiler, in which the wood store/combustion chamber has been divided in two horizontal parts by refractory tiles, where: the blown air burner works in horizontal (1st pass) in the lower room; the smokes climb in the upper room passing between the combustion chamber bottom and the last refractory tile (2nd pass), and, in the end, the smokes take the way of the fins (3rd pass) from which they go in the smoke chamber and, from here, to the chimney.

The burner is controlled by an UNICAL electronics.

The supply includes a hopper containing 150 kg of pellet.

The supply includes, besides a worm screw and a motor for the feeding of the pellet to the burner, an anti clogging pellet sensor, an automatic level control in the pellet hopper, a safety valve, a water pressure switch and an expansion vessel.

The main characteristic of the PELLEXIA boiler is the possibility to burn a natural fuel (the pellet) ecologically obtained from the waste of the wood industry (sawdust, dusts).

The sawdusts and the dusts coming from the working of the wood, after having been conveniently cleaned up and dried, are compacted at very high pressure, resulting in small cylinders of pure wood: the pellet.

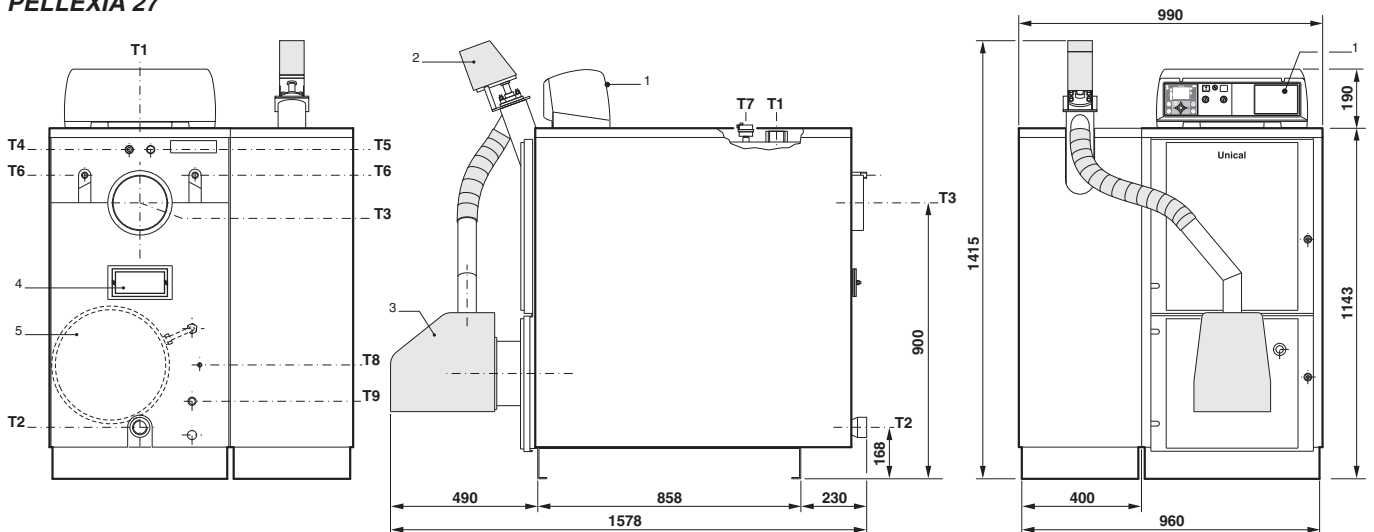
Every small cylinder can have varying lengths and thickness, respectively between 1 to 3 cm of length and 6 to 8 mm of diameter.

The principal characteristics of the pellet are the low humidity (lower than 12%), its high density (about 600 kg/m³), as well as its regularity and compactness that give to this type of fuel a high net calorific value (N.C.V. 4100 to 5000 kcal/kg = 4.7 to 5.8 kW/kg).

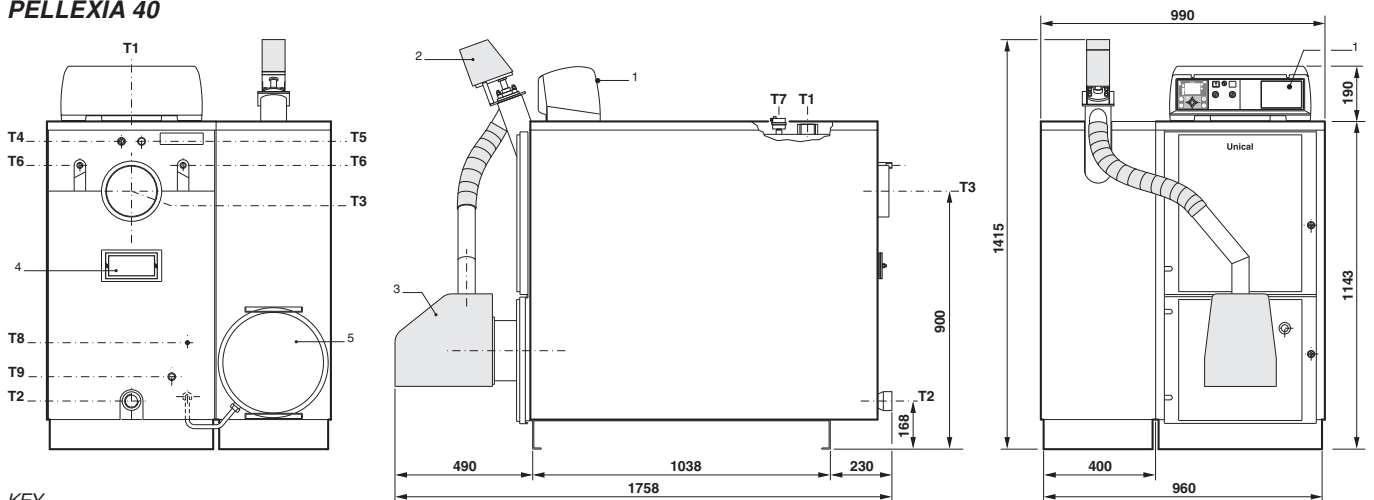
To the purpose to preserve as much as possible the life of the PELLEXIA, Unical recommends the use of good quality pellet, such as the one with DIN 51731 or ÖNORM M 7135 certification.

DIMENSIONS AND HYDRAULIC CONNECTIONS

PELLEXIA 27



PELLEXIA 40



KEY

1. Panel board
2. Pellet feeding screw
3. Burner
4. Smoke chamber cleaning door
5. Closed expansion vessel
- T1. C.H. flow (Rp 2)
- T2. C.H. return (Rp 2)

T3. Chimney connection: PELLEXIA 27 = øe 180 mm
PELLEXIA 40 = øe 200 mm

- T4. Bulb holder
- T5. Connection for bulb holder of the safety thermal discharge valve (Rp 1/2)
- T6. Connections of the safety heat exchanger (R 1/2)
- T7. Vent connection
- T8. Pressure switch connection
- T9. Pressure safety valve connection

TECHNICAL DATA

		PELLEXIA 27	PELLEXIA 40
NOMINAL OUTPUT	(kW)	27	40
ACTUAL NOMINAL OUTPUT	(kW)	27 / 8	39,7 / 13
NOMINAL INPUT	(kW)	30,33 / 9,66	44,29 / 15,29
ELECTRICAL CONSUMPTION	(W) at starting	826	826
	(W) steady state	226	226
ELECTRICAL SUPPLY		230V ~ 50Hz	230V ~ 50Hz
MAX WORKING PRESSURE	(bar)	3	3
PELLET HOPPER CAPACITY	(kg)	150	150
SMOKE TEMPERATURE	(°C)	max. 150°C - min. 111°C	max. 160°C - min. 108°C
SMOKE MASS FLOW RATE	(g/s)	15,37	21,92
CHIMNEY MINIMUM DRAUGHT	(Pa)	12	11
CO EMISSION @ MINIMUM OUTPUT (10% O ₂)	(%)	< 0,0206	< 0,0207
CO EMISSION @ NOMINAL OUTPUT (10% O ₂)	(%)	< 0,0195	< 0,0238
TOTAL EFFICIENCY	(%) @ min. output	82,8	85,0
	(%) @ max. output	89	90,3
PELLET CONSUMPTION	(kg/h) @ min. output	2,1	3,29
	(kg/h) @ max. output	6,44	9,47
AUTONOMY	(h) @ max. output	23	15,8
	(h) @ min. output	71	45,6
BOILER WATER CONTENT	(l)	67	82
WATER SIDE PRESSURE LOSSES*	(kPa)	0,4	0,5
MAX VOLUME THAT CAN BE WARMED UP**	(m ³)	774	1146
DUST EMISSIONS	(mg/Nm ³ al 10% O ₂)	8,8	21
CnHm EMISSIONS	(mg/Nm ³ al 10% O ₂)	7 / 18	1 / 6
CO EMISSIONS	(mg/Nm ³ al 10% O ₂)	194 / 258	206 / 290
EMPTY BOILER WEIGHT	(kg)	477	
BOILER WEIGHT FULL OF WATER AND PELLET	(kg)	694	

Pressure losses with a water flow rate corresponding to a Delta T of 15K.

** Values calculated for civil use houses with a thermal need of 30 kcal/hm³. These values are approximatives.

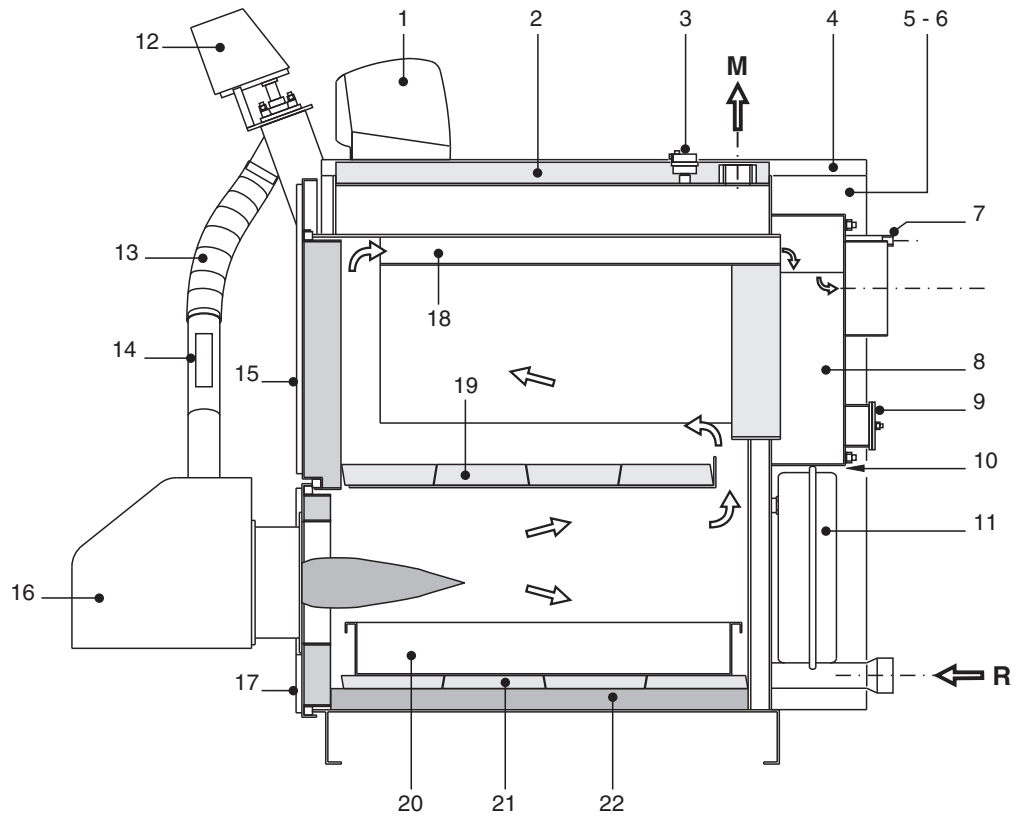
The data on this table are obtained by using a pellet with DIN 51731, DINplus or ÖNORM M 7135 certification.

Emissionis according to EN 303-5 Classe 3

Efficiency according to EN 303-5 Classe 3

MAIN COMPONENTS

1. Panel board
 2. Boiler body insulation in mineral wool
 3. Automatic air vent
 4. Casing upper panel
 5. Casing side panel
 6. Pellet store
 7. Safety heat exchanger
 8. Smoke chamber
 9. Smoke chamber cleaning door
 10. Pressure transducer
 11. Closed expansion vessel
 12. Pellet feeding screw
 13. Flexible hose for burner feeding
 14. Anticlogging pellet sensor
 15. Boiler upper door
 16. Burner with safety pressure switch
 17. Boiler lower door
 18. Heat exchange fins with turbulators
 19. Intermediate refractory tiles
 20. Ash tray
 21. Bottom refractory tiles
 22. Bottom insulation
- M C.H. flow
R C.H. return

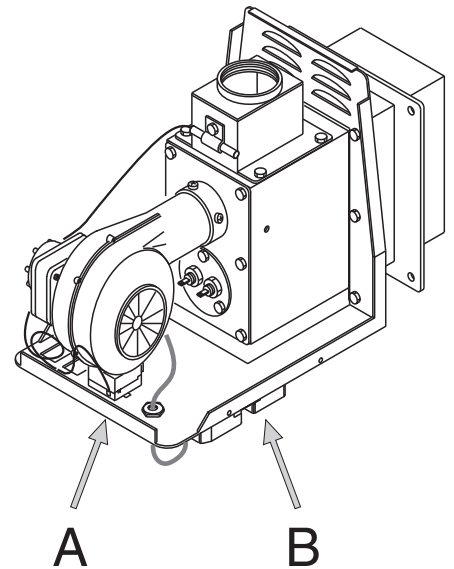
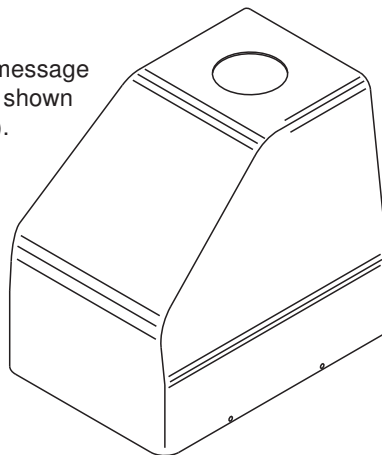


Pellet burner

The burner is provided with an antifire safety thermostat, that begins working in case the temperature inside the burner increases over the normal one. This thermostat is of manual reset type and the reset button is set under the burner (detail "A").

If the antifire safety thermostat intervenes, the message of alarm "PELLET ANTIFIRE THERMOSTAT" is shown on the display set under the burner (detail "A").

If the antifire safety thermostat intervenes, the message of alarm "PELLET ANTIFIRE THERMOSTAT" is shown on the display



EQUIPMENT

- | | |
|------------------------------------|-------------------|
| 1. C.H. system pressure transducer | standard supplied |
| 2. Closed expansion vessel | standard supplied |
| 3. Automatic air vent | standard supplied |
| 4. Pressure safety valve | standard supplied |
| 5. Weekly program | standard supplied |
| 6. Remote control | optional |

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