Kroll®

The types BK 20 to BK 250 -

Type		BK 20	BK 30	BK 50
Nominal heating output	kW	15 – 21	22 – 30	30 – 49
Maximum operating pressure	bar	3	3	3
Boiler water capacity	Litres	50	60	95
Flue pipe, co-axial ID/OD	mm	80/125	80/125	80/125
Flue pipe (for exhaust only)	Ø mm	80	80	80
Flue gas temperature	max. C°	ca. 45	ca. 45	ca. 45
Flue gass loss	%	0,8	0,8	1,0
Boiler efficiency degree referring to Hi according to DIN EN 30 1/-2	%	98,7	98,7	98,5
Depth	mm	1123	1269	1860
Width	mm	544	580	645
Height	mm	1178	1178	1370
Weight	kg	220	250	300

Type		BK 70	BK 100	BK 250
Nominal heating output	kW	50 – 69	70 – 100	150 – 250
Maximum operating pressure	bar	3	3	3
Boiler water capacity	Litres	174	174	480
Flue pipe, co-axial ID/OD	mm	110/160	110/160	160
Flue pipe (for exhaust only)	Ø mm	110	110	160
Flue gas temperature	max. C°	ca. 45	ca. 45	ca. 45
Flue gass loss	%	1,0	1,0	1,0
Boiler efficiency degree referring to Hi according to DIN EN 30 1/-2	%	98,7	98,7	98,7
Depth	mm	2100	2100	3260
Width	mm	850	850	1170
Height	mm	1540	1540	2010
Weight	kg	510	510	1490

– convincing power

The highest efficiency plus environmental protection?

Yes, this exists.

Unused energy is a waste of money and this in times of continually rising energy costs. The incomplete burning of fuel and high flue gas temperatures damage and pollute our environment.
The Kroll condensing boiler unites the highest efficiency with high environmental considerations.
The residual energy of the flue gases will be utilised via heat recovery. Sulphur, created by the combustion process, is bound and neutralised, and thus not transmitted through the exhaust gases, saving the environment.
Heating technology for generations – a perfect heating system.
The technology is both ingenious and simple.

- **Extremely high efficiency**
  Through the recovery of the residual heat from the flue gas. By permanent condensation, the consumption of combustible is minimized and the flue gas temperature is reduced to a minimum (max. 45°C).

This leads to efficiency degrees (according to guideline 92/42 EWG) of about Hi 99 % and Hs 107 %.

- **Permanent condensing operation**
  Even at high temperatures of 80/60°C, the boiler is still permanently condensing.

- **Room sealed**
  The combustion air is taken in via the double-tube pipe system which makes the unit room sealed. So no additional combustion air is required. This contributes to a positive energy balance of the building

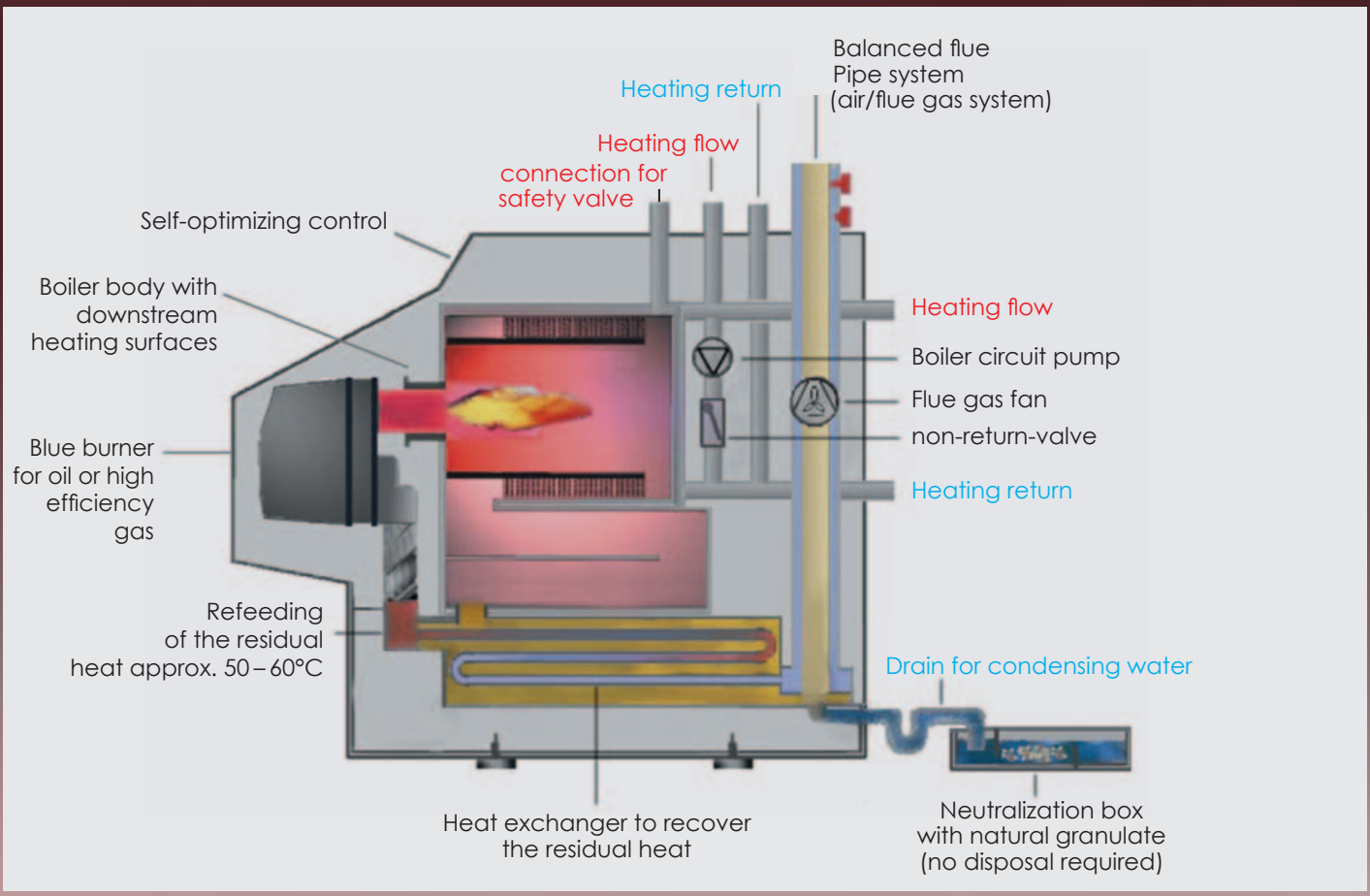
- **Flue pipe system**
  Due to the low flue gas temperatures, plastic flue pipes can be utilised, saving on installation costs.

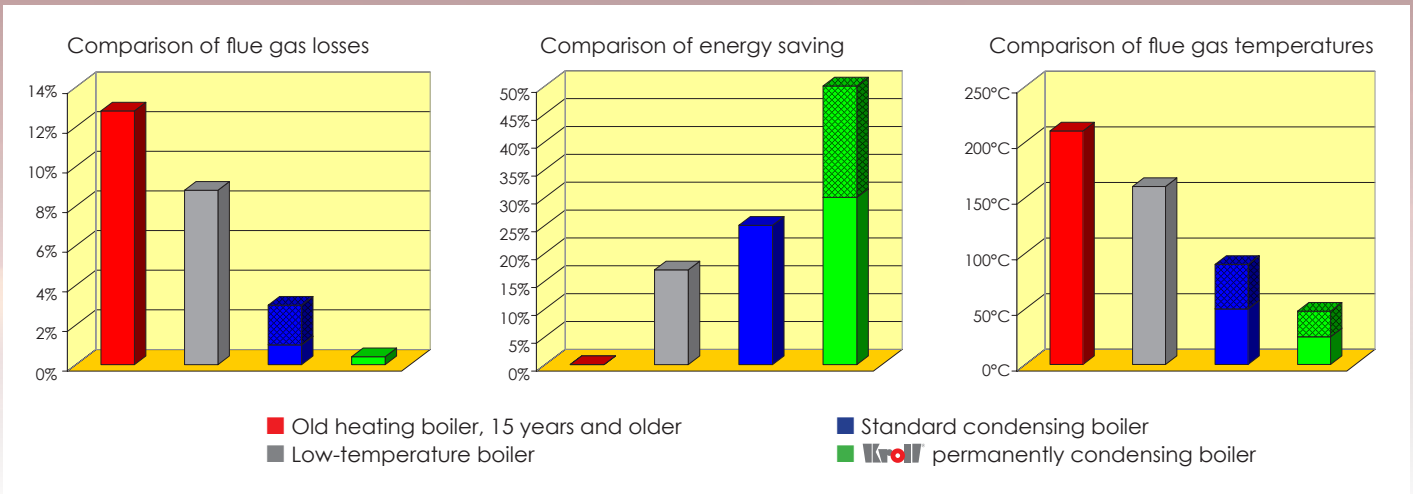
- **Combustibles**
  Standard combustibles (fuel oil and natural gas) can be utilised. By using a secondary heat exchanger for the recovery of the residual heat and by the neutralization box, there is no need to take sulphur-free heating oil, which saves costs again.

- **Control system Conform 6.0**
  A compact micro control to control two mixed heating circuits (2nd heating circuit optional), domestic hot water, circulation pump, burner control 1 or 2 stages, cascade control, heat manager, modulating flue gas fan and boiler circuit pump, automatic summer shutdown, pump blocking protection, operating hours counter, party mode, pavement heating mode, energy recovery via solar tank or buffer. Display with illuminated background, easy handling. Control is extendable to 16 heating circuits via additional controller, eBus, distance surveillance possible via GSM or internet (additional tool necessary).

- **Cascade control**
  (up to 8 boilers) via a master control!

The flue gas temperature is the important point – Operational description





Heating technoloy for genereations – a perfect heating system

The Kroll condensing boiler operates permanently, without any restrictions, in a condensing mode all year round.

- According to the condensing table for heating gases, vapour in waste gases of oil will condense below approximate 47°C, and in waste gases of natural gas the dew point is under approximate 57°C, relating to the water/CO_2 content in the respective fuel.
- As at the Kroll condensing boiler the flue gas temperature is, due to the cooling of the exhaust gases by the combustion fresh air, always under 47/57°C, a permanent condensation is obtained independently from the return temperature of your system.
- The burner is perfectly integrated into the nice-looking front cover, which gives an additional insulation and reduces operation noises.
- The combustion gases are led through two heat exchangers after they have passed the combustion chamber. This leads to maximum energy utilisation.
- The first heat exchanger is flowed by the water of the first heating circuit (boiler) and cools the waste gas down to about 70°C. The second, highly efficient tube heat exchanger made of a special plastic, is precision-manufactured and takes most of the energy contained in the exhaust gases by cooling them down under the relevant dew point. This condensing procedure is followed by an additional energy exploitation. The recovered energy is fed to the burner as pre-heated combustion air.
- This is why the degree of condensation does not depend on the return temperature, but predominantly on the outside temperature. That means, that the Kroll condensing boiler reaches its highest efficiency at that time, when highest efficiency is needed – in winter time – and heat is required most, under full load requirements.
- By the constantly high creation of condensate, a large part of sulphur content, contained in the fuel, is washed out and neutralised. This "de-sulphurisation" contributes to the protection of our environment and also helps to reduce the creation of acid rain.
- Up to eight Kroll condensing boilers can be run in a cascade via a master control. So you can run up to 2000 kW around the year under permanent condensation with a maximum flue gas temperature of 45 °C.

Further characteristics:

- Secondary heat exchanger for heat recovery made of special plastic material
- Neutralisation box
- Solar controller
- The standard controller can control 2 heating circuits, domestic hot water and the circulation pump.
  More heating circuits can be controlled with the addition of extra control items.
- Boiler circulation pump
- High-quality boiler insulation
- Boiler casing easy to install

Sophisticated condesing technology – Completely equipped

Without flue gas fan

With flue gas fan*

- The Kroll condensing boilers are equipped with oil or gas burners with the highest efficiency.
- The boiler and combustion chamber consist of high-quality steel. With the specific profiled flue gas baffles you arrive at an optimum of heat tranfer to the boiler water.
  The cleaning is simple and fast due to the pivoted combustion chamber and flue gas door.
- The burner is integrated and compact in the ergonomically designed front cover.
  The extra insulation ensures quiet operation of the boiler.

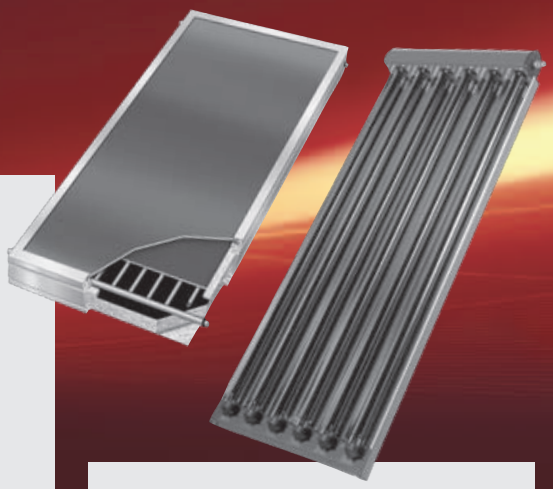
Further equipment

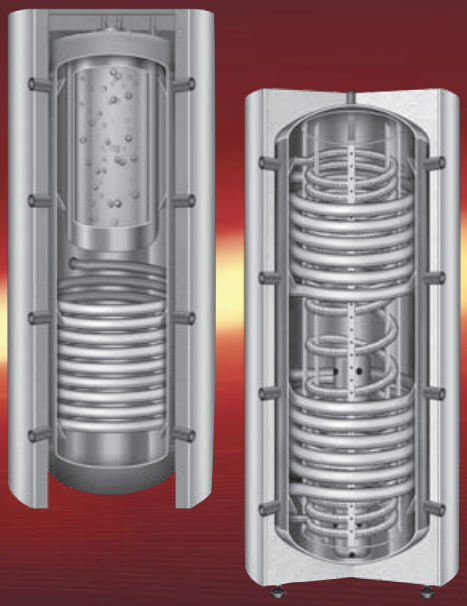
- Secondary heat exchanger for the recovery of the residual heat
- Neutralisation box
- With solar control
- For two controlled heating circuits, domestic water and circulation pump
- Boiler circulation pump
- High-quality boiler insulation
- Easy to handle housing/cover

Clear and easy to operate:
The control panel of the condensing boiler (type BK 20/30 shown)
Modular and compact construction:
The second, highly effective tube heat exchanger made of a special plastic, with fitted gap to enable easy flushing of the heat exchanger when servicing is carried out. Here, the bulk of the latent energy will be extracted from the flue gas. As the incoming combustion air enters the heat exchanger, the flue gas will cool down under approx. 47°C

* = for special requirements:
- to the length of the flue gas pipes
- to the intake of combustion air
- to the site (geodetical height)

Large solar and storage tank range





Kroll LUX tube collector VL 1006

- High-power tube collector with 360° absorption surface and CPC mirror for solar domestic water creation and heating assistance.
- The tube elements consist of 6 borosilicate glass tubes without metal-glass assemblies.
- All around absorber with black alumium nickel coating.
- Collecting pan with directly flowed-through heat transferring unit and dry tube connection.
- Complete pre-assembled unit.
- Packed in a box with additional sun-protection foil on the tubes.

Kroll SOL high-power flat collector VS 1001

- Frame collector with highly selective SUNSELECT coating onto a full-surface absorber with harp register. Nice-looking aluminium frame.
- 4 connections CU tube 18 mm for horizontal and vertical installation. You can mount 8 collectors in a row (from 6 pieces, you need a compensator – see connection accessories).

Possible ways to install:

on the roof
within the roof
for flat roofs
for free installation

Minimum angle of inclination 22°C
Maximum angle of inclination 65°C

Tested for hail-proofness up to 25 mm hailstones.

The range of storage - Domestic hot water for daily needs

Type		TSR 150	TSR 200
Storage capacity	Litres	150	200
Continuous performance 80/45/10°C	l/h – kW	610 – 25	610 – 25

Type		WSR 150	WSR 200	WSR 300	WSR 400	WSR 500
Storage capacity	Litres	150	200	300	400	500
Continuous performance 80/45/10°C	l/h – kW	610 – 25	830 – 34	830 – 34	1050 – 43	1050 – 43

Kroll UK Ltd.
UK & Ireland Subsidiary
BH 21 6SZ Wimborne-Dorset
Great Britain
Phone 0 12 02 82 22 21
Fax 0 12 02 82 22 22
e-mail sales@krolluk.com
web www.krolluk.com

Permanently condensing boiler 08/10
Technical data subject to change without notice

More information on the Kroll product range on: www.kroll.de