The burner:

This beautifully designed burner makes operation very easy when heating with logs and remnant wood, and it also allows an oil burner to be connected. Filling is done conveniently from the top, and the burn-out happens at the bottom. The re-incineration is carried out in optimum fashion in a patented combustion chamber made of refractory concrete. The supply of combustion air (primary and secondary airflow) is cleverly controlled as a function of the lambda sensor and the temperature of the exhaust gas. The surplus heat produced is conducted into the accumulators with precise stratification.

Equipped with an absolutely silent and long-lasting exhaust fan, the burner is of high quality and solidly constructed. Maximum burner efficiency rates along with clever usage of residual heat in the burner guarantee maximum convenience and minimum fuel requirements.

The burner group, the exhaust fan, incl. the exhaust gas sensor and the lambda sensor are all wired to the burner in plug-and-play fashion, making installation especially simple. The individual parts can be easily detached for service purposes later on.

Max. flow temperature:	100°C
Max. operating pressure:	3.0 bar
Test pressure:	5.0 bar
Safety heat exchanger:	Built-in & ready for use

Pre-installed burner group
The burner group is pre-installed on the connecting flange. It is made up of the burner pump, burner control valve, and the forward and return flow sensors, incl. fittings. The pump is built in between two shut-off devices.

The plug-and-play ECOTRONIC for a burner system with storage management:
The ECOTRONIC control system is a decentralised microprocessor system (CAN-bus). To regulate the burner system with storage management, the ECOTRONIC consists of a module integrated in the burner and the control module.

The control module (300 mm wide x 280 mm high x 100 mm deep) mounts on the wall where possible and is connected to the burner via a data transmission line in plug-and-play fashion.

Functions:
- Output control system with storage management provided by continuously adjusting air vents, optimising heat-ups and burn-outs
- Nominal load: during accumulator loading phase
- Partial load: at the end of the accumulator loading phase
- An additional control circuit with a lambda sensor provides for perfect incineration and maximum efficiency rates.
- Keeping up the return temperature by means of the burner control valve provides for a long service life of the burner.
- During the start-up phase the entire output of heat is made available to the consumers (no diversion of heat to the accumulators via the return flow)
- The exact temperature stratification of the accumulator along with the storage control valve make it possible to provide heat lasting over long periods of time.
- The primary air vent closes while wood is being reloaded to provide for safe reloading of wood
- Total usage of residual heat in the burner after the burn-out
- Help and service functions provide support
- Control of an additional oil burner on the PYROMAT
- The best possible protection against overheating is guaranteed by diverting heat to accumulators, disconnecting the exhaust gas fan and closing the air vents.

Includes:
- Burner with integrated electronic module, incl. temperature-limiting safety switch; plug-and-play exhaust gas fan with exhaust gas sensor and lambda sensor; ash drawers; stoking and cleaning device
- Flanged on burner group with burner pump, burner control valve, forward and return flow sensors
- Storage control valve (uninstalled)
- Control module (300 mm wide, 280 mm high x 100 mm deep): display with background lighting and comprehensive display of text; simple, clearly laid out pushbutton operation for PYROMAT-ECO burner system
- Five pushbuttons for operating external controllers
- Three KTY heat storage sensors, incl. dipping shell (1/2" x 280 mm long) wired together to plug

Note:
- *Regarding data cable for connection to the control module (separate price item), see Spec Sheet 4020.*

Schematic diagram with ECOTRONIC

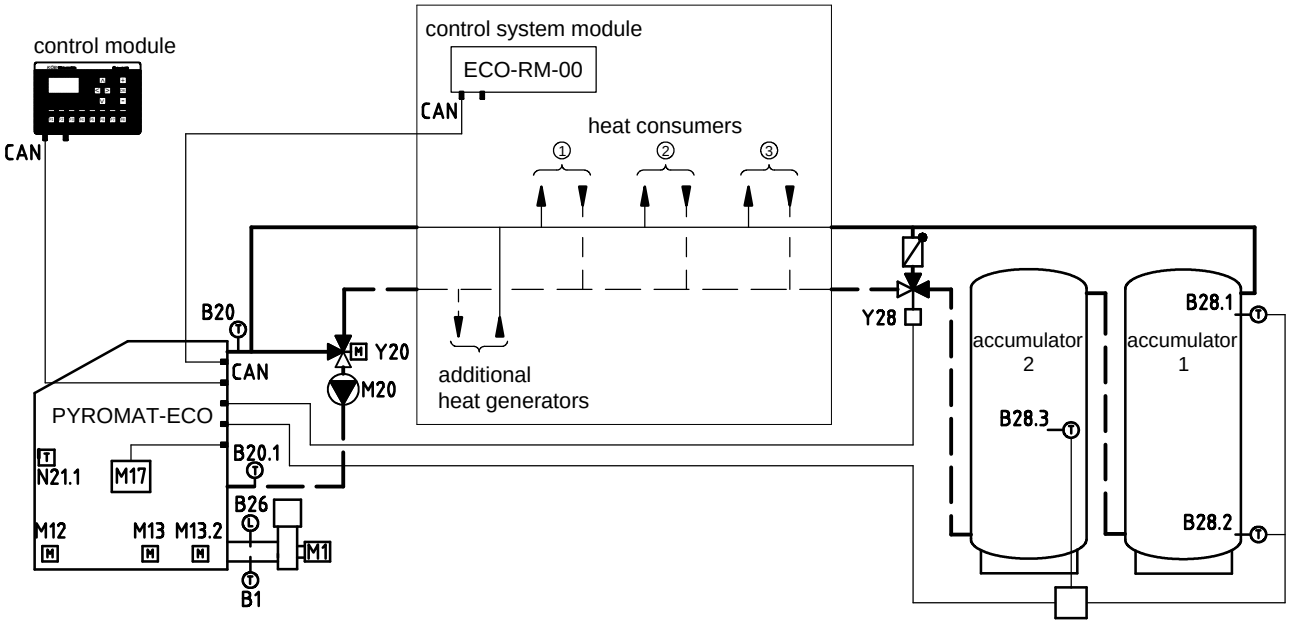
ECOTRONIC with heating regulator units:
The ECOTRONIC can be expanded with a great number of heating regulator units (heat consumers, additional heat generators, solar energy). (See spec sheets, Category 4)

The operation of the external controllers is all carried out in the control module for the burner system. Each controller is operated by a separate pushbutton.

The ECOTRONIC can be extended as follows:

1) *Economical solution for small-scale systems with:*
   Control module for external controller [art. no. ECO-BM-00]
   Maximum of three controllers (see spec sheets, Category 4)

2) *Ready-made solution for complex systems with*
   Control system module (art. no. ECO-RM-00)
   With additional control system modules, up to 13 controllers can be integrated in the in ECOTRONIC.
   (see spec sheets, Category 4)



Heat accumulators: *Refer to Spec Sheets 4700*
Domestic water heaters: *Refer to Spec Sheets 4750*

PYROMAT-ECO with integrated manifold
One manifold with two or three consumer groups can be integrated with the PYROMAT-ECO burner. In this design with the manifold attached, the burner forms a compact overall system (refer to Spec Sheets 4600).

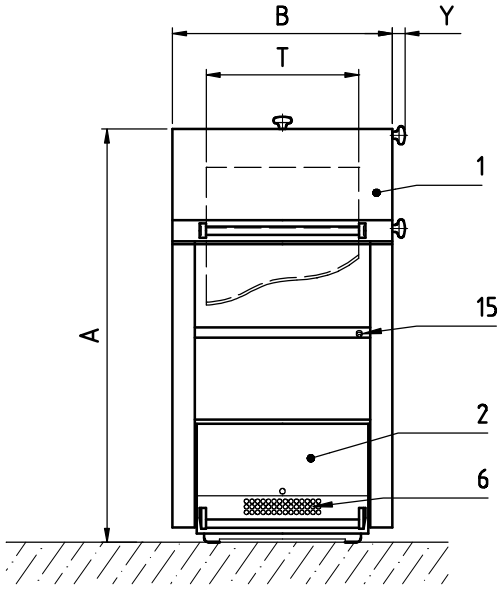
Technical data:

PYROMAT-ECO [Art. No.]	**KPM-ECO-35**	**KPM-ECO-45**	**KPM-ECO-55**	**KPM-ECO-65**	**KPM-ECO-75**	**KPM-ECO-85**	**KPM-ECO-61**	**KPM-ECO-81**	**KPM-ECO-101**	**KPM-ECO-151**
Nominal heat output [kW]	40	50	60	75	80	95	85	100	120	170
Minimum heat consumption, wood [kW]	35	38	45	55	60	75	60	75	90	110
Max. log length [m]	1/2	1/2	1/2	1/2	1/2	1/2	1	1	1	1
Firebox volume [l]	185	185	255	255	255	255	375	375	500	500
Boiler water volume [l]	130	130	170	170	210	210	230	230	300	300
Boiler weight without water [kg]	750	760	920	935	1040	1065	1300	1320	1680	1720
Test pressure [bar]	6	6	6	6	6	6	6	6	6	6
Max. operating pressure [bar]	3	3	3	3	3	3	3	3	3	3
Max. boiler temperature, wood [°C]	100	100	100	100	100	100	100	100	100	100
Min. return temperature [°C]	70	70	70	70	70	70	70	70	70	70
Resistance on water-bearing side (difference of 10 K) [mbar]	32	32	62	62	98	98	56	56	112	112
Resistance on water-bearing side (Difference of 20 K) [mbar]	8	8	16	16	25	25	14	14	28	28
Thermal run-off safety valve: min. flow rate at 2.5 bar [kg/h]	2000	2000	2800	2800	3500	3500	3500	3500	5500	5500
Boiler efficiency, nominal heat output, wood [%]	87-92	87-92	87-92	87-92	87-92	97-92	87-92	87-92	87-92	87-92
Exhaust gas temperature, nominal heat output, wood [°C]	180	180	180	180	180	180	180	180	180	180
Exhaust gas mass flow nominal heat output, wood [g/s]	30.4	35.2	44	56	60	68	58.4	72	88	108
Max. flue draught, wood [Pa] 1)	25	25	25	25	25	25	25	25	25	25
Nominal heat output, oil [kW]	35	38	45	55	60	75	60	75	90	110
Boiler efficiency Nominal heat output, oil [%]	87-92	87-92	87-92	87-92	87-92	97-92	87-92	87-92	87-92	87-92
Exhaust gas temperature Nominal heat output, oil [°C]	168	168	168	168	170	170	172	172	168	168
Chimney draught required [Pa] 2)	+-0	+-0	+-0	+-0	+-0	+-0	+-0	+-0	+-0	+-0
Electrical power for exhaust fan [kW]	0.08	0.08	0.08	0.08	0.15	0.15	0.15	015	0.25	0.25
Burner group										
Burner pump, Grundfos model	UPS 32-60		UPS 32-55		UPS 32-80				UPS 40-60	
Electrical power for pump	90		140		245				340	
Pump output m³/h at MWC	3.1 at 2.5		6.0 at 2.5		6.0 at 4.3				12 at 3.1	
Burner control valve, Siemens model	VXG 48.32		VXG 48.32		VXG 48.40				VXG 48.40	
Drive for burner control valve, Siemens	SQS 35.00		SQS 35.00		SQS 35.00				SQS 35.00	
Weight of burner group [kg]	14		16		20				40	
Storage control valve, Siemens model	VXG 48.40		VXG 48.40		VXG 48.40				VBF 21.50	
Drive for storage control valve	SQS 35.00		SQS 35.00		SQS 35.00				SQK 33	
Weight of storage control valve [kg]	2.5		2.5		2.5				6.9	

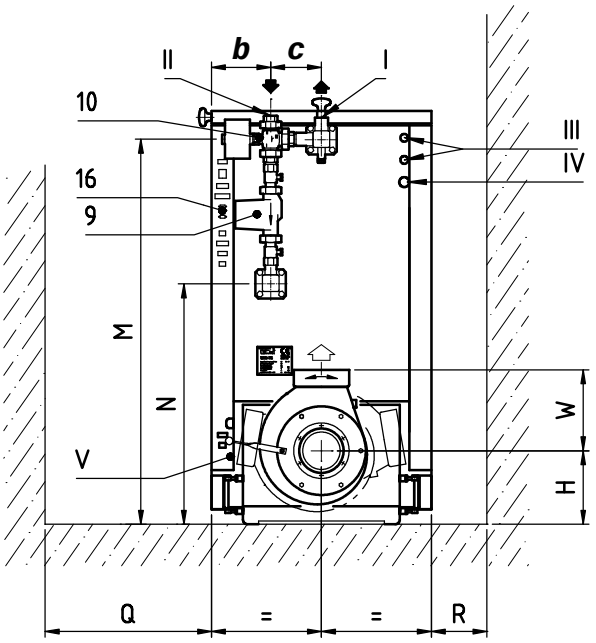
1) Maximum overpressure during the start-up phase (chimney cold) in the exhaust pipe after the exhaust fan
2) Do not install a chimney draught controller!

Dimensional drawing:

front view



rear view



side view

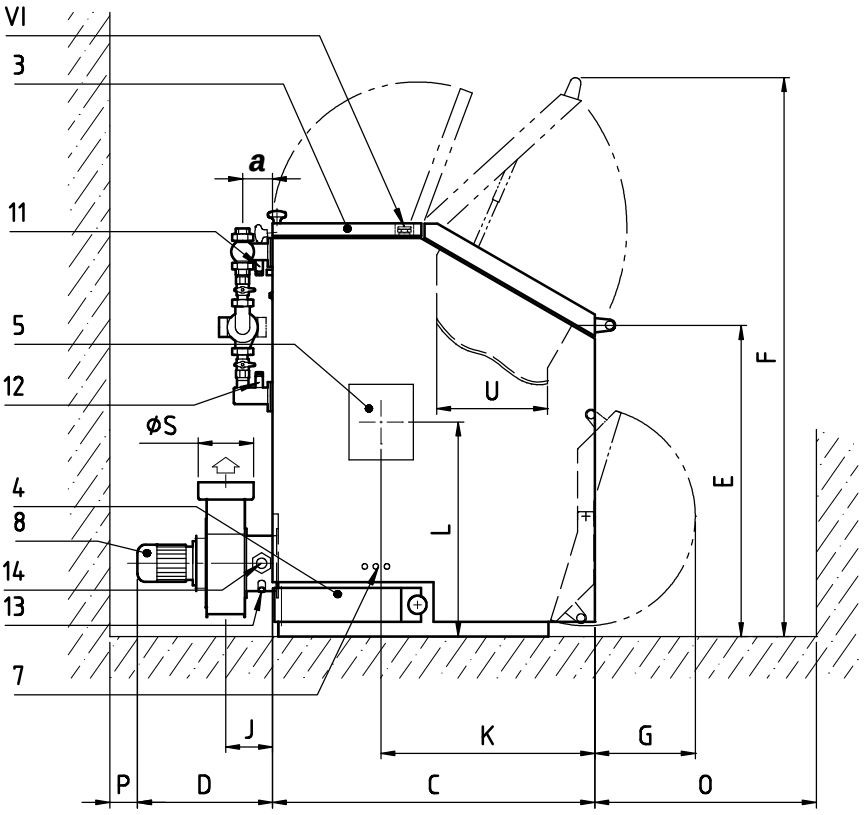


Table of dimensions:

PYROMAT-ECO [Art. No.]		**KPM-ECO-35**	**KPM-ECO-45**	**KPM-ECO-55**	**KPM-ECO-65**	**KPM-ECO-75**	**KPM-ECO-85**	**KPM-ECO-61**	**KPM-ECO-81**	**KPM-ECO-101**	**KPM-ECO-151**
Connections:											
I	Forward flow, Bsp connection	R 1¼“	R 1¼“	R 1¼“	R 1¼“	R 1½“	R 1½“	R 1½“	R 1½“	R 1½“	R 1½“
II	Return flow, Bsp connection	R 1¼“	R 1¼“	R 1¼“	R 1¼“	R 1½“	R 1½“	R 1½“	R 1½“	R 1½“	R 1½“
III	Safety valve Bsp connection	R ½“	R ½“	R ½“	R ½“	R ½“	R ½“	R ½“	R ½“	R ½“	R ½“
IV	Sensor for run-off safety valve Bsp connection	R ½“	R ½“	R ½“	R ½“	R ½“	R ½“	R ½“	R ½“	R ½“	R ½“
V	Drain valve	R ½“	R ½“	R ½“	R ½“	R ½“	R ½“	R ½“	R ½“	R ½“	R ½“
VI	Inspection window (transport hook) Bsp connection	R 1“	R 1“	R 1“	R 1“	R 1“	R 1“	R 1“	R 1“	R 1“	R 1“
Dimensions [mm]:											
A	Height of casing	1433	1433	1490	1490	1490	1490	1433	1433	1490	1490
B	Width of casing (dismantled)	795 (686)	795 (686)	795 (686)	795 (686)	795 (686)	795 (686)	1324 (1246)	1324 (1246)	1324 (1246)	1324 (1246)
C	Length of casing	958	958	1163	1163	1313	1313	1018	1018	1353	1353
D	Length of exhaust fan	500	500	500	500	630	630	630	630	630	630
E	Filling height	1134	1134	1134	1134	1134	1134	1134	1134	1134	1134
F	Height of lid, open	1892	1892	2012	2012	2012	2012	1892	1892	2012	2012
G	Radius of ash door	365	365	365	365	365	365	365	365	365	365
H	Outlet, burner	265	265	265	265	265	265	265	265	265	265
J	Outlet, exhaust fan	175	175	175	175	300	300	300	300	300	300
K	Flange of oil burner	647	647	769	769	842	842	631	631	820	820
L	Flange of oil burner	770	770	773	773	813	813	770	770	876	876
M	Flange, forward flow, burner	1331	1331	1389	1389	1386	1386	1328	1328	1386	1386
N	Flange, return flow, burner	811	811	869	869	693	693	635	635	636	636
O	Space for operation	800	800	800	800	800	800	800	800	800	800
P	Min. distance to wall	100	100	100	100	100	100	100	100	100	100
Q	Space for cleaning	600	600	600	600	600	600	800	800	800	800
R	Min. distance to wall	200	200	200	200	200	200	400	400	400	400
S	Connection for exhaust fan. 1)	200	200	200	200	200	200	200	200	250	250
T	Width of firebox	550	550	550	550	550	550	1080	1080	1080	1080
U	Depth of firebox	300	300	400	400	475	475	300	300	400	400
W	Outlet, exhaust fan	293	293	293	293	293	293	293	293	293	293
Y	Width of handle	45	45	45	45	45	45	45	45	45	45
a	Connection, burner	108	108	108	108	108	108	108	108	108	108
b	Connection, burner	214	214	214	214	214	214	480	480	480	480
c	Connection, burner	183	183	183	183	183	183	183	183	183	183
Operation and maintenance											
1	Firebox door										
2	Ash pan door										
3	Cleaning door, top										
4	Cleaning door, bottom										
5	Flange for attaching the burner slide-out system, maintenance lid to combustion chamber (on both sides)										
Electric drives											
6	Primary air vent with servomotor										
7	Secondary air vent with servomotor										
8	Motor for exhaust fan										
9	Burner pump										
10	Burner control valve with servomotor										
Electric connections and sensors											
11	Burner sensor										
12	Return flow sensor										
13	Exhaust gas sensor										
14	Lambda sensor										
15	Burner control panel with temperature-limiting safety switch										
16	Sockets for electrical connection										

1) Reduction is possible to KPM-ECO-65 (160 mm or 180 mm)