ENGLISH

GUNTAMATIC

Prize for Innovation 1999

Öst. und OÖ. Energiegenie 2002

Bavarian Prize for Innovation 2002

Engery Globe 2003

Environmental Award "Blue Angel"

Austrian and Upper Austrian Prize for Innovation 2005

French Prize for Innovation 2005

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4

1

BIOSTAR FLEX

LOW TEMPERATURE
PELLET SYSTEM
UP TO 23 KW

2

3

4

5

1- Biostar Flex
Vacuum pellet supply

2- Pellets - 100% wood

3- Operating panel

4- Ignition and drop shaft

5- Free standing pellet storage tank (up to 7 tonne)

Time to Live

Do you dream of a cosy warm house? Do you want to heat with biomass but still want to enjoy the highest level of convenience at the same time? Does your heating system have to be value for money and function for decades without complaint? Then a **BIOSTAR** is what you have been looking for.

Flexible

The best pellet heating system, for all home owners, is now available for your home. With a vacuum pellet supply system providing you with multiple pellet store location options, **Guntamatic** has shown with this model that it is at the forefront of in the area of design flexibility. Optimum flexibility · **BIOSTAR FLEX**.

- Energy-saving fully modulated output
- Reliable pellet discharge by means of integrated auger
- 100% burn-back protection with a durable rotary sluice valve
- Low maintenance with self cleaning mechanism and a high rate of dust removal

5

Superior Design

We have to admit that our new **BIOSTAR** is a real gem. From now on you can simply forget about having to worry about dealing with the heating. Our user-friendly technology takes care of it all.

- From 3 - 23 kW, infinitely variable bio-modular burning, providing the right amount of heat at the right time
- Fully automated from the wood to the ash, with automated self cleaning mechanism
- Patented: Low temperature combustion process without condensation
- All critical components specified with 200% safety margin
- Menu guided operation - simple, safe and easy to use
- O_2 guided process monitoring

6

1

POWERCORN / BIOCOM

ENERGY GRAIN
PELLETS
HEATING SYSTEM FROM 25 to 50 KW

2

3

4

5

6

1 - POWERCORN / BIOCOM

2 - Energy grains, wood pellets

3 - Burning chamber with step grate

4 - Reaction pipe and heat exchanger

5 - Ash container - automatic discharge of ash

6 - Menu-guided control panel

Perfect Burning

The hot air blower ignites quickly and efficiently by means of a sophisticated control program. Energy grains or pellets are burned at an ideal firebed temperature of approx. 650°C, so that cinders are prevented. A self-cleaning step grate provides the necessary movement needed in the firebed and also transports the ash. Any combustible gases that are present are converted cleanly into energy in a large burn-out zone with the aid of secondary air supply.

Reaction Tube and Heat Exchanger

The dust is separated in a specially developed reaction tube. Aggressive substances condense on the double-layered stainless steel surface, where they can cause no damage. The connecting pipe bundle heat exchanger is constantly cleaned by a moving spiral mechanism and makes use of every degree of temperature.

Highest Level of Covenience with ash removal

A slow-moving auger spreads the ashes which are sifted through the grate into a 60 litre, movable ash container. The dust removed in the automated cleaning of the heat exchanger is also continually discharged into a seperate easy to empty 12-litre container.

Simple and Efficient

The menu-guided control panel of the heating system, monitors the entire burning process by means of lambda probes and temperature sensors, to continually adjust the boiler output to the maximum possible efficiency.
The ability to regulate temperature means that heat can be ideally distributed and a cosy room can be achieved with the highest degree of heating comfort **and efficiency**.

1

POWERCHIP WOODCHIPS ENERGY GRAINS PELLETS

2

3

4

5

6

1 - POWERCHIP

2 - Wood chips (energy grains, pellets)

3 - Firebed

4 - Robust spring arm agitator

5 - Energy-saving drive technology

6 - Conveyor technology

Fuel Supply from the Store Room

The extremely robust auger used for the discharge from the store room, with its spring arm agitator, gently transports the wood chips, pellets or energy grains while using the lowest amount of energy possible. Durable gears and motors provide the highest level of operational safety. The unique modular construction enables easy transport and assembly of the installation.

The Stoker Unit

From the discharge auger, protected by means of a safety cover, wood chips, pellets or energy grains fall through a Burn-back-proof drop level into the stoker auger. A sophisticated lambda sensor constantly monitores that the optimum amount of fuel is delivered. Additional operational safety is ensured by a fill level indicator.

Highest Level of Safety

The built-in extractor-draft fan does not only ensure that the exact amount of air is used, it also provides constant suction in the burning chamber, which in conjunction with the drop level and fire damper guarantee absolute prevention from burn-back.
The built-in error diagnosis system with the added possiblity of monitoring via a mobile phone provides the highest level of operational safety.

10

1

SYNCHRO

WOOD CARBURETTOR
50 CM SPLIT LOGS
AND CHOPPED WOOD

2

3

4

5

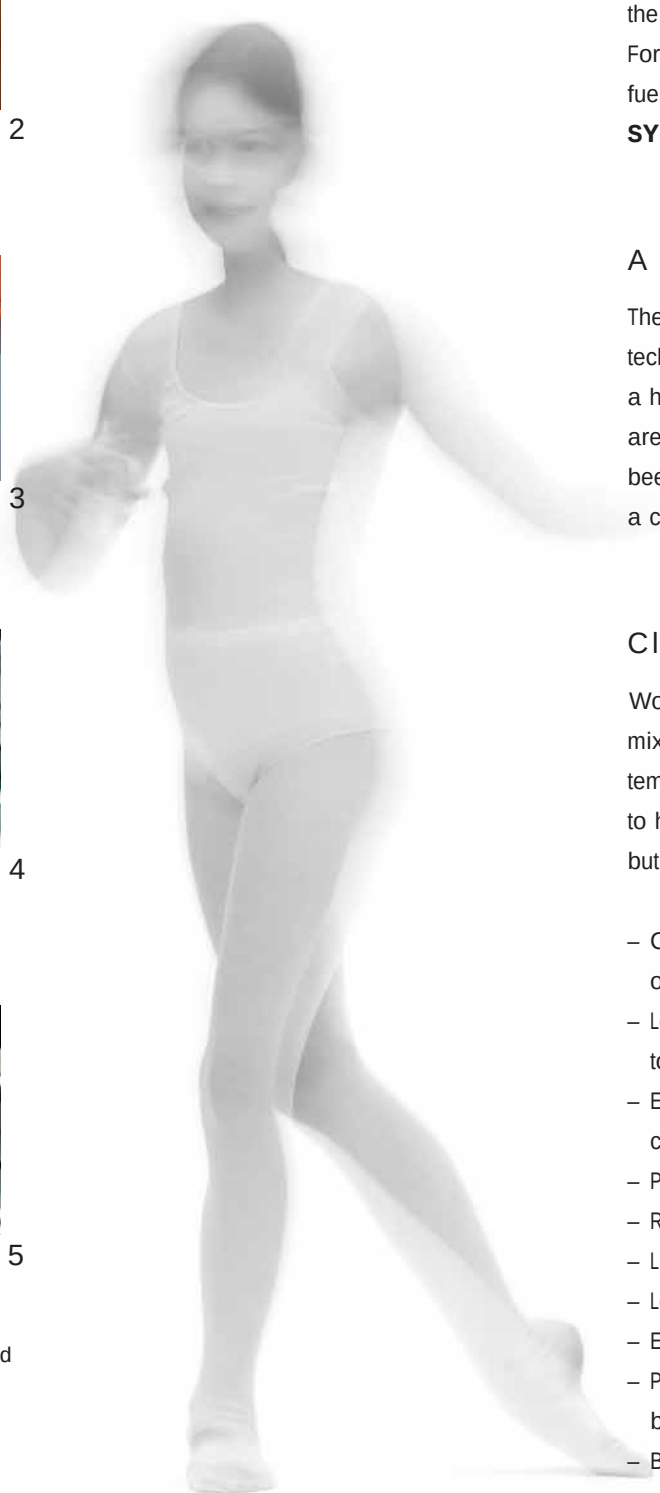
1- SYNCHRO

2- Split logs and chopped wood

3- Menu-guided operation

4- Combustion chamber / heat exchanger

5- Storage compartment for grate and ash



The Specialist

In our forests, a cycle has been taking place for millions of years. CO_2 is converted into THE fuel of the past, the present and the future - LOGS.
For Logs - and only for Logs - the perfect fuel burning unit is now available, the **SYNCHRO**.

A PhD in Engineering

The most modern wood combustion technology, a highly efficient heat exchanger, a huge filling chamber, reliable electronics, are all ingredients for a concept that has been proven a thousand times over, a concept for insiders - **SYNCHRO**.

Clear Ratios

Wood gases present in a hot fire-bed, mixed with pre-heated air, burn at a high temperature and the resulting heat is used to heat water. The task was difficult but the solution is simple:

- Can be filled with 170 litres of water from above
- Long operational life due to enclosed bodywork
- Easy to clean: Cast grate and compartment for ash
- Powerful pre-heating of combustion air
- Robust combustion chamber
- Large tubular heat exchanger
- Log length up to 70 cm
- Easy operation: Guided menu options
- Pumps and fans monitored by rotational speed
- Buffer storage and display indicating when more fuel is needed
- Synchronised, emission-guided control
- Level of combustion as high as 94%

1. Ash door
2. Grate cleaning plate
3. Primary air
4. Self-cleaning grate
5. Secondary air
6. Spiral jet
7. Backburn-proof drop shaft
8. Air release zone
9. Automatic cleaning of the heat exchanger
10. Cleaning motor
11. Ignition blower
12. Ceramic insulation
13. Full insulation
14. Cleaning Spiral
15. Tubular heat exchanger
16. Extraction draught fan
17. Flue gas sensor
18. Lambda probe
19. Control with user friendly operation panel
20. Sensor to indicate fill level
21. Motor
22. Drive
23. Suction fan
24. Hopper tank
25. Conveyor auger for pellets
26. Monitoring sensor
27. Rotary sluice valve

Bio-modular Combustion

The entire boiler system (Extraction draught fan, pellet feeder auger, rotary sluice valve, hot water circulating pump) is constantly and softly regulated to produce a wide range of variable output depending on energy needs. Uneconomical cold starts are kept to an absolute minimum.

Heat Exchanger

Tubular heat exchanger operating using countercurrent method with variable performance. The higher the speed of the combustion gases, the greater the effect of the heat exchanger. No build up of condensation even into the lower temperature range thanks to the patented injection system.

Vacuum Pellet Supply

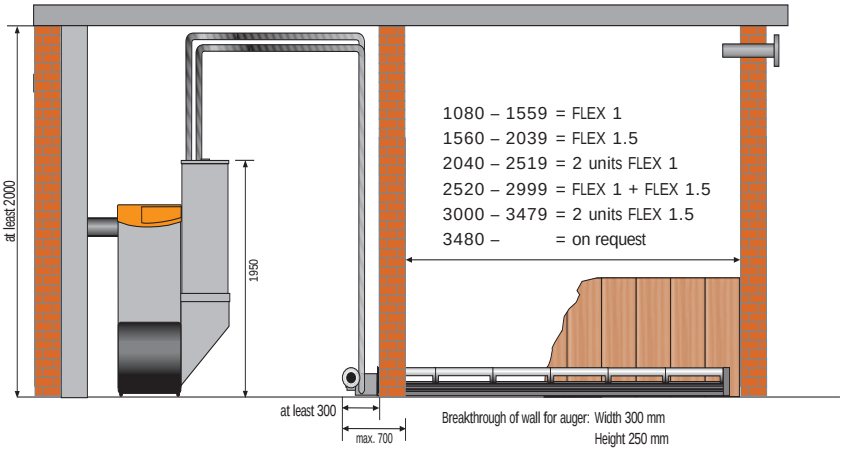
Internal turbine systems allows boiler and pellet store be placed apart providing the highest degree of installation flexability. Rotaty sluice valve positioned behind feed auger meens there is no cutting of the pellets and provides 100% burn-back safety.

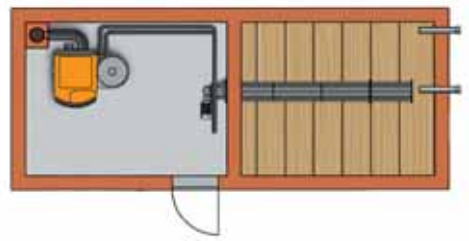
BIOSTAR: VACUUM PELLET SUPPLY SYSTEM

The suction system collects the pellets at the end of the discharge auger / free standing tank and transports then into the storage container on the boiler.

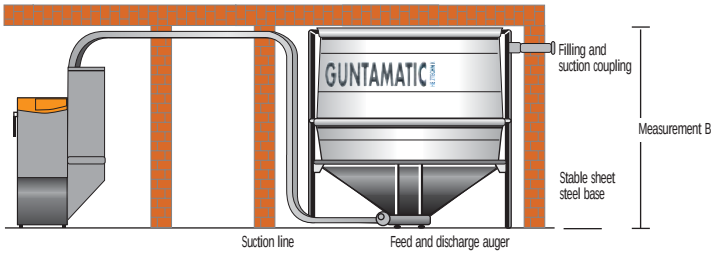
The store room does not have to be situated directly beside the boiler room. This “air bridge” can be used for distances with a tube length of up to 20 m.

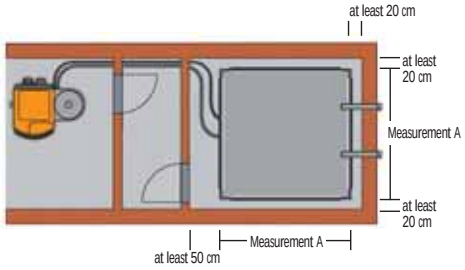
BIOSTAR FLEX: INCLUDES PELLET STORE ROOM AUGER





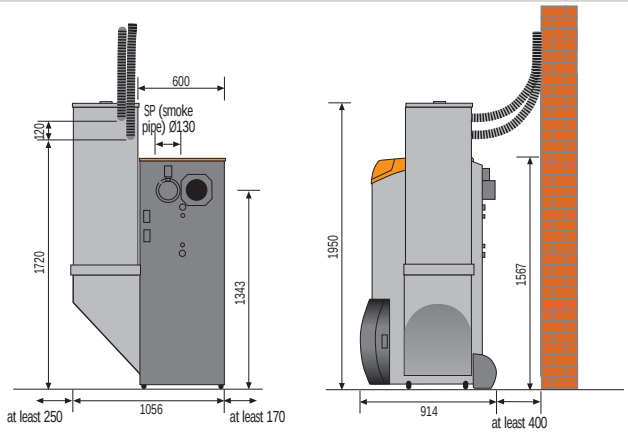
BIOSTAR BOX: INCLUDES FREE STANDING PELLET TANK



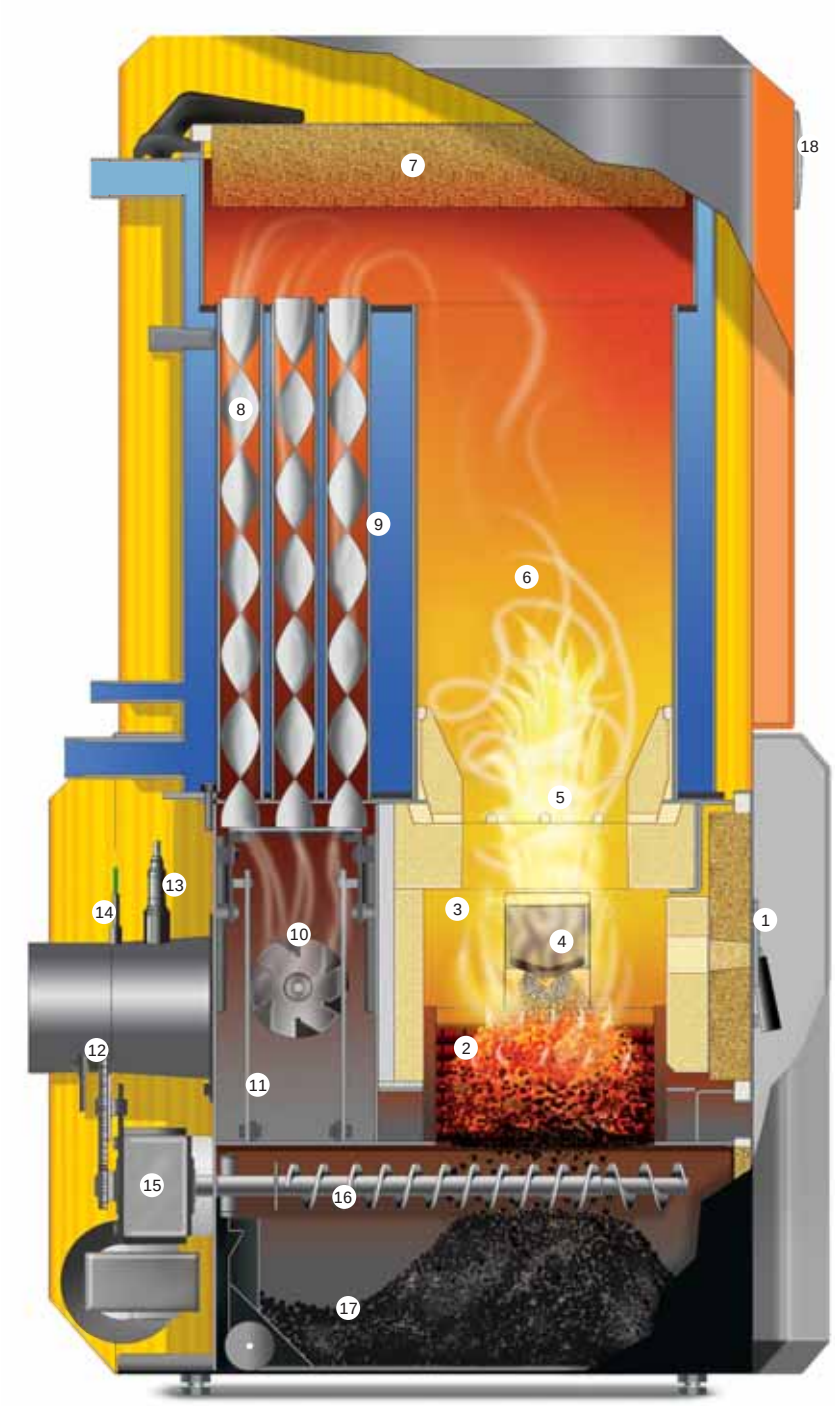


TECHNICAL DATA

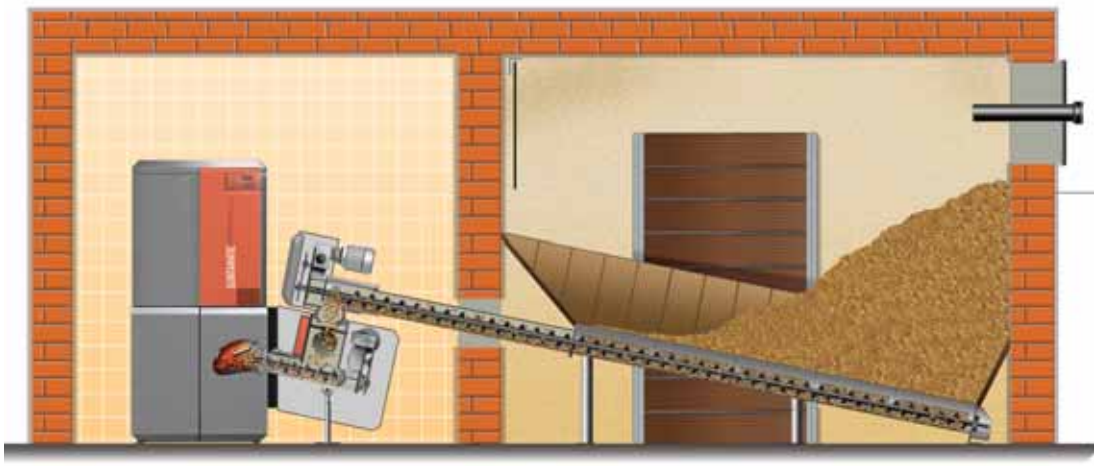
- Vacuum container on boiler: approx. 100 litres, 210 kWh
- Suction line: max. 20 m (25 m) (1st floor: max. 15 m)
- Refill period: approx. 8 · 10 min.
- Weight per metre of auger used to transport pellets from store room: approx. 40 kg

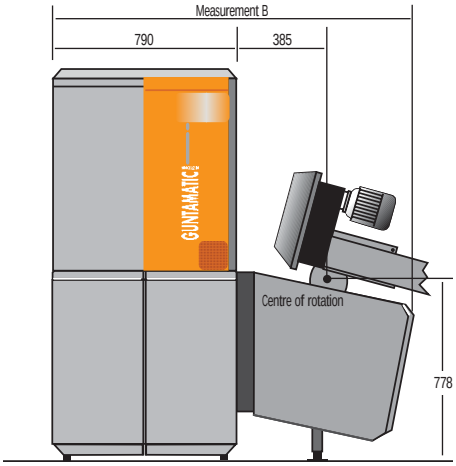


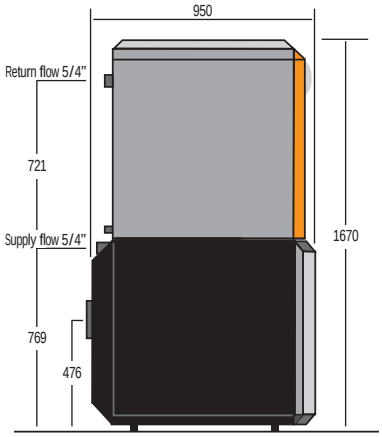
TYPE Technical Data	**12**	**15**	**23**	**Box** 7,5	**Box** 11	
Rated output	12	15	23			KW
Minimum output	3.3	3.5	6.9			KW
Draught requirement	0.1	0.1	0.15			mbar
Boiler temperature	38 – 80	38 – 80	38 – 80			°C
Boiler weight	298	300	305			kg
Minimum flow rate	600	600	600			l/h
Water resistance (at 10 K)	11.7	17.2	37.7			mbar
CO emission NL	46	31	29			Mg/MJ
Cleaning of heat exchanger	By hand · monthly	By hand · monthly	Automatic			
AUTO ash discharge	On request	On request	On request			
Degree of effectiveness of firing	– 94.7	– 94.8	– 94.7			m^3 = 650 kg
Width / Depth A				2.1	2.5	m
Height (adjustable) B				2.0 – 2.5	2.0 – 2.5	m
Tank capacity				5 – 7.5	8.3 – 11	m^3
				3.25 – 4.87	5.4 – 7.15	t

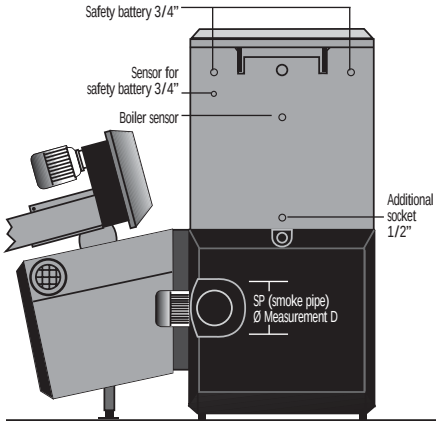


1. Furnace doors
2. Step grate - primary air
3. Combustion chamber
4. Fill level indicator
5. Spiral jet - secondary air
6. Reaction pipe
7. Cleaning cover
8. Vibrating mechanism
9. Tube bundle heat exchanger
10. Induced draught fan
11. Cleaning of heat exchanger
12. Smoke pipe
13. Lambda probe
14. Flue gas sensor
15. Cleaning/ grate drive
16. Ash auger
17. Removable ash container
18. Menu-guided control



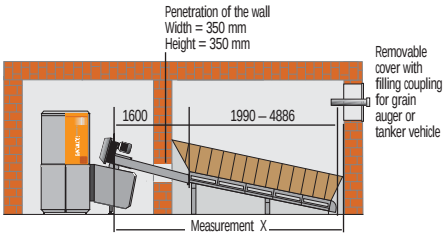




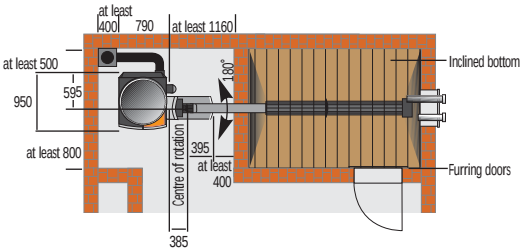


TYPE	POWERCORN 7-30	POWERCORN 12-50	BIOCOM 30	BIOCOM 40	BIOCOM 50	
Fuel	Energy grain (e.g. barley or triticale) max.13% moisture content	Energy grain (e.g. barley or triticale) max.13% moisture content	Wood pellets according to ÖNORM STANDARD M7135 HP1 D6			
	Wood pellets ÖNORM M7135					6mm
Boiler performance	Energy grain 7 - 25 Wood pellets 7 - 30	Energy grain 12 - 40 Wood pellets 12 - 50	7 - 30	9 - 40	12 - 50	kW kW
Required draught Boiler temperature Return flow temperature Elevation of return flow	0.15 70 - 80 >55 Pump (RA60 when buffered)		0.15 50 - 80 >40 Pump (RA60 when buffered)			mbar °C °C
Water content Operating pressure	128 max. 3	147 max. 3	128 max. 3	128 max. 3	147 max. 3	Litre bar
Ash storage volume - “grate” Ash storage volume - “heat exchanger”	60 12	80 12	60 12	60 12	60 12	Litre Litre
Width of installation measurement B Smoke pipe diameter measurement D	1574 150	1874 180	1574 150	1574 150	1574 150	mm mm
Total weight (without stoker unit) Weight bottom box Weight heat exchanger Weight stoker unit Weight drive unit Weight /m discharge auger	562 340 192 75 55 40	667 410 227 75 55 40	550 340 180 75 55 40	553 340 183 75 55 40	585 340 215 75 55 40	kg kg kg kg kg kg
Safety heat exchanger	yes	yes	yes	yes	yes	
Power connection	230 V / 16 A	230 V / 16 A	230 V / 16 A	230 V / 16 A	230 V / 16 A	

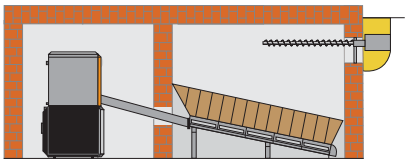
STORE ROOM RIGHT

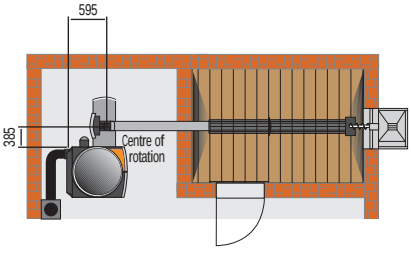


Measurement X: 3.5 = 3590 mm = 2x 1m auger
4 = 4073 mm = 1x 1m + 1x 1.5m vis
4.5 = 4557 mm = 2x 1.5m worm
5 = 5041 mm = 1x 2.5m + 1x 1m auger
5.5 = 5524 mm = 1x 2.5m + 1x 1.5m auger
6.5 = 6486 mm = 2x 2.5m auger

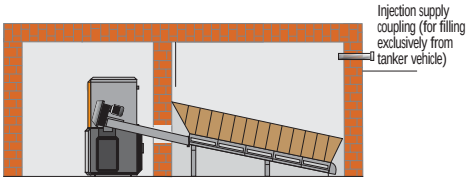


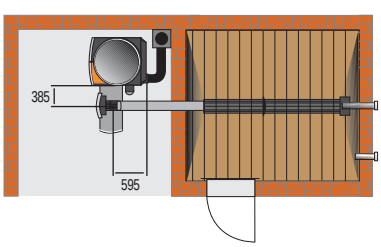
STORE ROOM FRONT

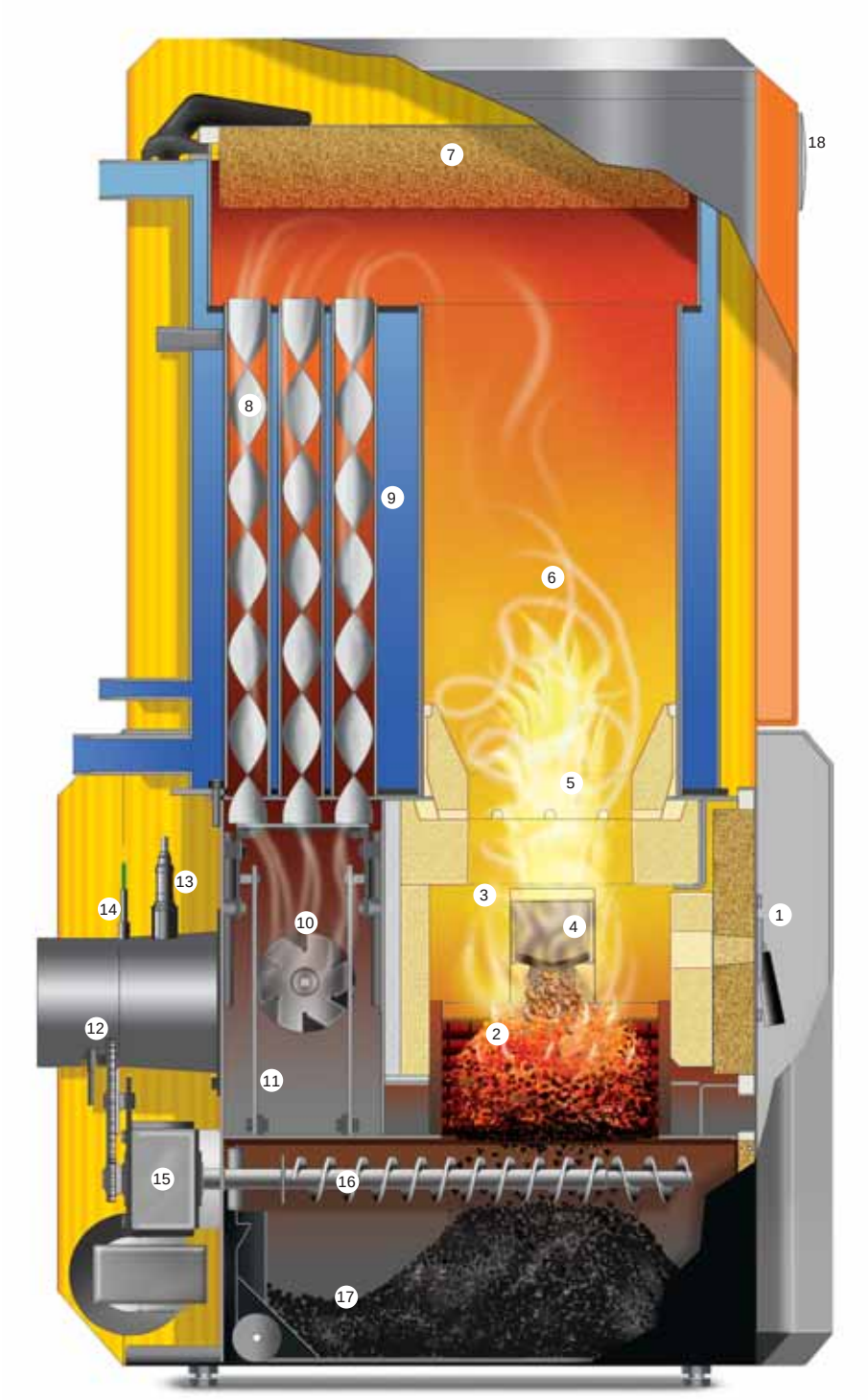




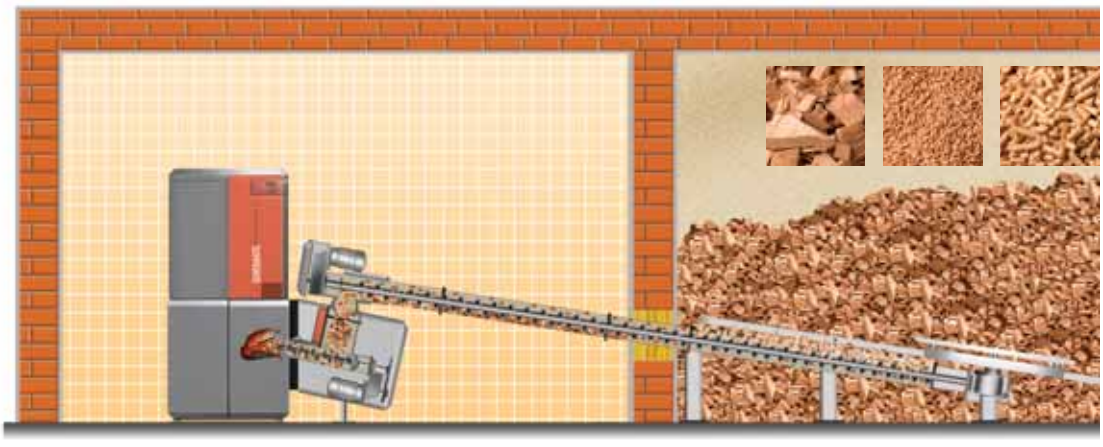
STORE ROOM BACK

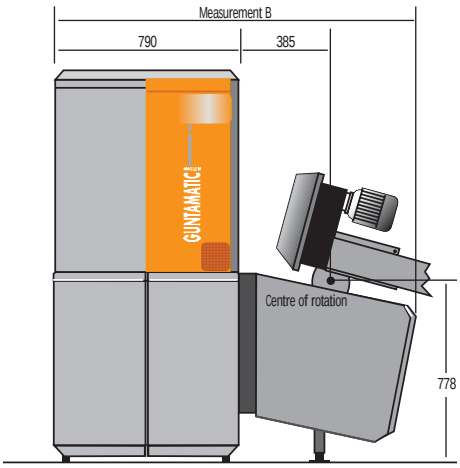


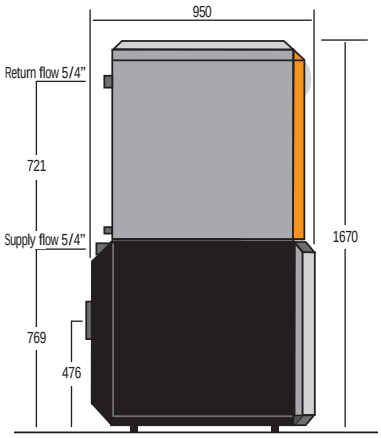


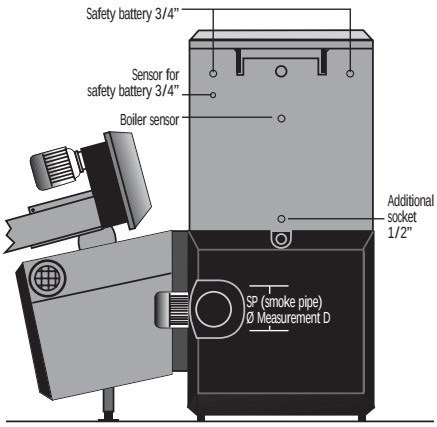


1. Furnace doors
2. Step grate - primary air
3. Combustion chamber
4. Fill level indicator
5. Spiral jet - secondary air
6. Reaction pipe
7. Cleaning cover
8. Vibrating mechanism
9. Tube bundle heat exchanger
10. Induced draught fan
11. Cleaning of heat exchanger
12. Smoke pipe
13. Lambda probe
14. Flue gas sensor
15. Cleaning/ grate drive
16. Ash auger
17. Removable ash container
18. Menu-guided control



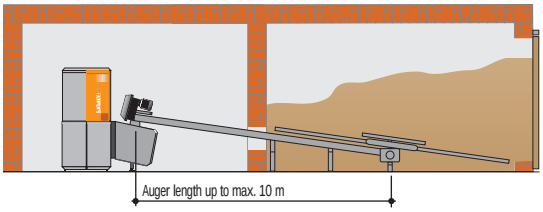


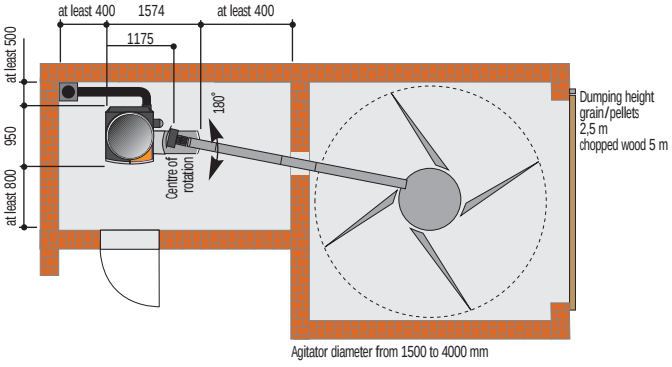




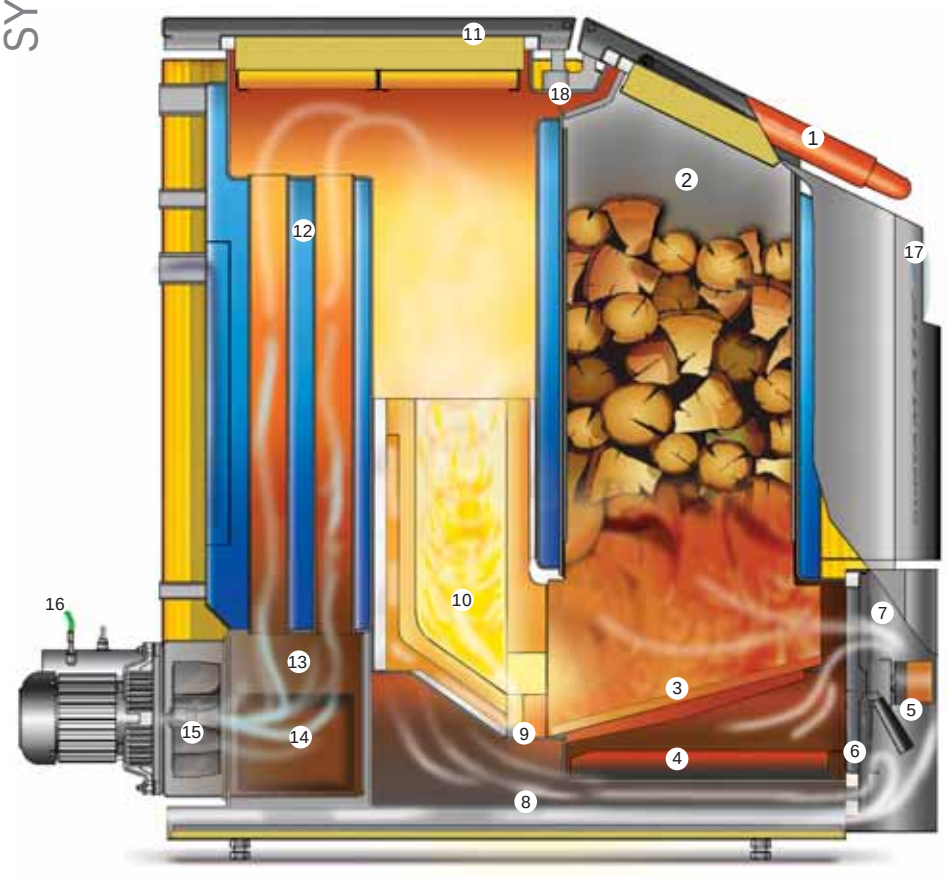
TYPE	POWERCHIP 20/30	POWERCHIP 40/50	
Fuel	Chopped wood G 30		
	Wood pellets ÖNORM M7135		6mm
	Energy grain (with additional equipment)		
Boiler performance	Chopped wood 7 - 30 Pellets 7 - 30 Energy grain 7 - 25	Chopped wood 12 - 50 Pellets 12 - 50 Energy grain 12 - 25	kW kW kW
Required draught Boiler temperature Return flow temperature Elevation of return flow	0.15 60 - 80 (70-grain) >40 (55-grain) Pump (RA60 when buffered)	0.15 60 - 80 (70-grain) >40 (55-grain) Pump (RA60 when buffered)	mbar °C °C
Water content Operating pressure	128 max. 3	147 max. 3	Litre bar
Ash storage volume - “grate” Ash storage volume - “heat exchanger”	60 12	60 12	Litre Litre
Width of installation measurement B Smoke pipe diameter measurement D	1574 150	1574 150	mm mm
Total weight (without stoker unit) Weight bottom box Weight heat exchanger Weight stoker unit	550 340 180 75	585 340 215 75	kg kg kg kg
Safety heat exchanger	yes	yes	
Power connection	400 V / 16 A	400 V / 16 A	

DISCHARGE FROM STORAGE ROOM





STORE ROOM POSSIBILITIES



Wood Carburettor Technology:

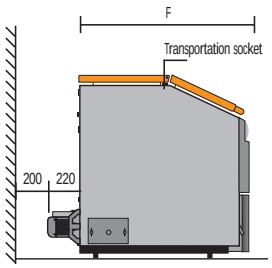
The firewood is degassed in the lower area of the filling chamber (embers zone). The resulting distillation gas is then burnt in a turbo combustion chamber positioned to the side. The remaining solid matter can be oxidized out unhindered as embers.
The ash can also easily be removed during operation using the ash storage compartment.

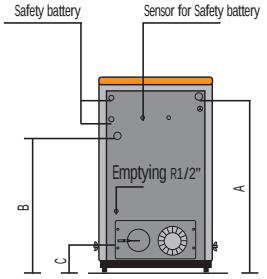
Rotational Combustion:

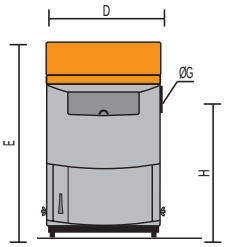
Through the interaction of centrifugal force, gravity and flow resistance, a vortex is created in the combustion chamber from which the gases can only leave after they have been completely oxidized.

1. Top filling cover with suction canal
2. Filling chamber with protective lining
3. Hot cast grate
4. Ash storage compartment
5. Primary and secondary air motor
6. Secondary air
7. Primary air
8. Pre-heating of ground air
9. Secondary air blast pipe
10. High temperature combustion chamber
11. Cleaning cover
12. Tubular heat exchanger
13. Dust removal zone
14. Cleaning opening
15. Induced draught fan
16. Flue gas sensor
17. Microprocessor control with menu-guided operation
18. Transportation hooks

		TYPE	SYNCHRO 31/34	SYNCHRO 44
Heating performance		KW Mcal/h	31/34 26.6/29	44 38
Boiler:	Width measurement D Height measurement E Depth measurement F	mm mm mm	745 1300 1195	745 1300 1195
Fuel volume Filling chamber width Depth of combustion chamber		litres mm mm	170 535 340	170 535 340
Water content Operating pressure max.		litres bar	125 3	125 3
Transportation weight approx.		kg	650	660
Supply and return flow Measurement A Measurement B		inch mm mm	RI I/4 1165 905	RI I/4 1165 905
Smoke pipe connection measurement C (without knee) Smoke pipe diameter		mm mm	215 150	215 150
Induced draught ventilator Draught necessary		kWh PA	0.12 20	0.12 20
Boiler size sans isolation	Width Height Depth	mm mm mm	695 1290 1140	695 1290 1140
Flange (alternative)	Inner diameter G Height H		110 880	110 880





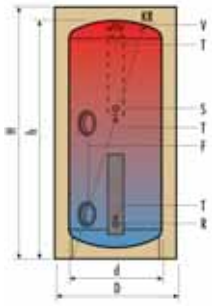


Picture: Design PS/PSB (Design ECO/ECOB without front cover)

Picture: Design boiler ECO

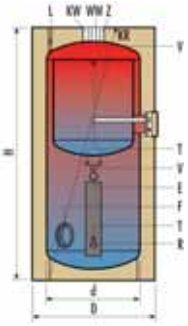
AKKUTHERM PS / ECO BUFFER STORAGE

TYPE	Volume (total litres)	d Ø without isolation (mm)	D Ø with isolation (mm)	h height without isolation (mm)	H height with insolation (mm)	KR Tilting radius without isolation (mm)	V/R Supply and return flow sockets	T Sensor sockets
850	826	790	1010	1800	1900	1890	5/4"	1/2"
1000	1000	790	1010	2200	2300	2250	5/4"	1/2"
1100	1069	900	1120	1800	1900	1900	5/4"	1/2"
1400	1370	900	1120	2300	2400	2370	5/4"	1/2"
1600	1572	1100	1320	1800	1900	1970	5/4"	1/2"
2000	2000	1100	1320	2300	2400	2400	5/4"	1/2"



AKKUTHERM PSB / ECOB BUFFER STORAGE WITH BUILT-IN DOMESTIC HOT WATER STORAGE

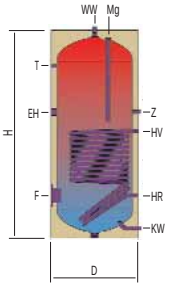
TYPE	Volume (total litres)	d Ø without isolation (mm)	D Ø with isolation (mm)	H height with isolation (mm)	KR tilting radius without isolation (mm)	V/R Supply and return flow sockets	T Sensor sockets	Litres	Heating surface (m^2)	Cold (KW) and warm water (WW) connections	Circulating socket
850	826	790	1010	1900	1960	5/4"	1/2"	250	1,8	5/4"	1"
1000	1000	790	1010	2300	2350	5/4"	1/2"	250	1,8	5/4"	1"
1100	1069	900	1120	1900	1980	5/4"	1/2"	350	2,1	5/4"	1"
1400	1370	900	1120	2400	2460	5/4"	1/2"	350	2,1	5/4"	1"

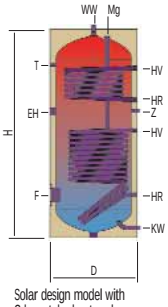


For Akkutherm: L = Ventilation 1/2", F = Equipment available on request 12 Hole flange, E = Equipment available on request 2" Socket for electric screw-in heating, S = Equipment available on request - layer charge distributor for supply flow

ECO DOMESTIC HOT WATER STORAGE

BOILER TYPE	Volume (total litres)	d Ø without isolation (mm)	D Ø with isolation (mm)	H height with isolation (mm)	Number of bare-tube heat exchangers	HV/HR Heating supply and return feed	T Sensor sockets	Mg Anode	Heating surfaces of the heat exchangers (m^2)	Cold (KW) and warm water (WW) connections	F Flange
ECO 305	300	–	605	1795	1	1"	1/2"	5/4"	1,4	1"	8 hole
ECO 505	500	–	755	1840	1	1"	1/2"	5/4"	2	1"	8 hole
ECO 505 Solar	500	–	755	1840	2	1"	1/2"	5/4"	2 + 1	1"	8 hole





Solar design model with 2 bare-tube heat exchangers

For boiler ECO: EH = 6/4" Socket for electric screw-in heating, Z = Circulation connection 1"

GUNTAMATIC HEIZTECHNIK

heating with future

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