



jaga

DBE CONVECTORS

Dynamic Boost Effect

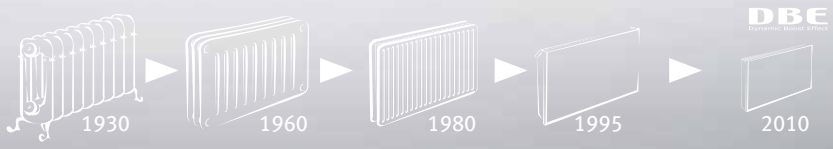
The smallest and most powerful convectors
for condensing boilers, heat pumps and
solar energy systems



ENTER THE AGE OF THE DBE CONVECTOR

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The evolution:
from cast iron to Low-H₂O element the weight and the water content has been reduced spectacularly, providing faster response and greater comfort.



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KNOCKONWOOD DBE
H 11" / L 39" / Type 11 / 2985 BTU/hr at 130/110/68°F

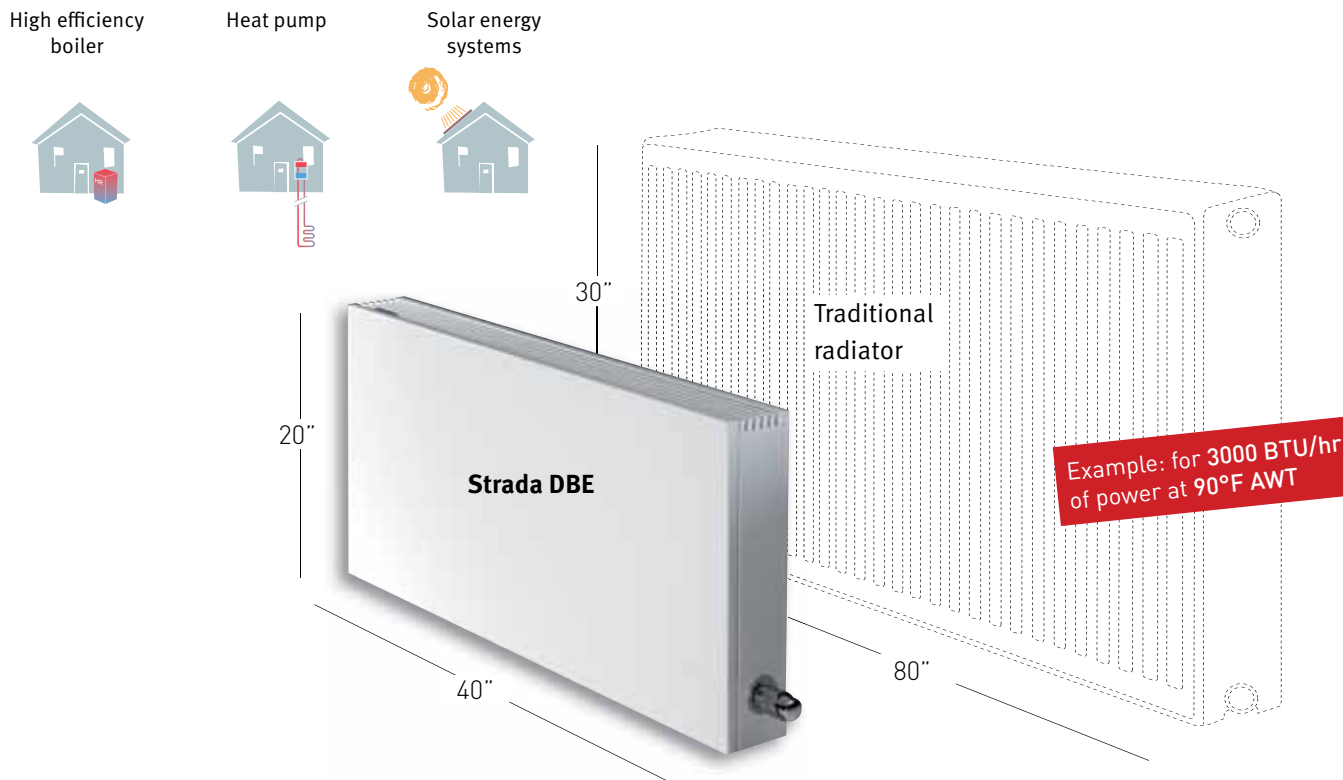
JAGA DBE GIVES UP TO 300% MORE OUTPUT

MAXIMUM EFFICIENCY WITH LOW WATER TEMPERATURE SYSTEMS

Heat pumps, solar energy systems and condensing boilers require much larger radiators because they operate best with a much lower water temperature.

Heat pumps reach their optimal efficiency at a water temperature of only 95°F. This is not a problem for DBE convectors.

The unique combination of the copper-aluminum heat exchanger – standard in every Low-H₂O unit – and the powerful DBE technology, that has been specially developed for these very low water temperatures, gives up to 3 times more heat output than a conventional radiator with the same dimensions.



THE MOST ENVIRONMENTALLY SUSTAINABLE CHOICE

Jaga DBE uses less energy. For the same output a Jaga DBE convector is much smaller than a standard radiator, which means that there is less raw material needed. On top of this, they have a long life time and 30 year guarantee, this results in a very energy efficient and sustainable product. At the end of its life cycle it is completely recyclable.



JAGA DBE: A CLEVER ECOSYSTEM

Lower energy consumption, lower CO₂ emissions. With DBE you save energy, and at the same time you also reduce CO₂ emissions. This way you can help to meet the internationally agreed targets. CO₂ emissions from domestic dwellings are an important cause of global warming. A dwelling with DBE emits as much as 220 Lbs less CO₂ per annum compared to a traditionally heated dwelling.



DBE SAVES ENERGY

FASTER HEATING

Due to their high mass, traditional radiators and underfloor heating consume a lot of energy just to heat up themselves. Only when heated up sufficiently, they begin to emit heat. Jaga Low-H₂O fin tube units with DBE, limit this warm-up time to an absolute minimum. The start-up time is much shorter, making heat delivery faster and more efficient. **This means that the night-time set back periods can be extended, saving money and energy.**

LESS OVERHEATING

What happens when: we've reached the desired room temp and there is sudden solar gain or electrical appliances heat up the room? Traditional radiators will overheat the room, wasting energy. A DBE will react much faster, and automatically balance the heat output when necessary. This means that the **comfort temperature is better controlled.**

UP TO 30% MORE EFFICIENT

Better temperature control and shorter operating periods result in significant energy savings*, making your heating system much more efficient. With DBE, you can easily switch to any new, energy efficient low water temperature systems. Prepare for the future!

* See www.heating-studies.org

JAGA DBE MAKES IT POSSIBLE TO REDUCE WATER TEMPERATURE UP TO 40%

DBE convectors are so effective that super-low water temperatures are possible without the need to install large radiators! This makes it an ideal combination with condensing boilers, solar thermal panels and heat pumps.



EXAMPLE WITH RADIANT FLOOR HEATING AND JAGA DBE

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Towel radiators in the bathroom

Strada DBE in the bedroom

Mini Canal DBE in front of the glass for a perfectly controlled comfort temperature

High efficiency boiler or heat pump

Radiant floor heating in the living room for basic background heating

Mini Canal DBE

DBE PRO FOR HEATING AND COOLING WITH CARE FOR THE ENVIRONMENT

Many heat pumps facilitate price conscious and environmentally friendly cooling during the summer months. These passive cooling systems do not have the same total power as an air-con system, but ensure a refreshing temperature in the house with a lower energy consumption. During the winter months the house is then heated by the warmth that is pumped up from within the ground. In the summer the same system gives the warmth back to the ground when cooling the house. In this way DBE Pro ensures a maximum heat recuperation and the circle is completed.

THE PERFECT PARTNER FOR RADIANT FLOOR HEATING

JAGA DBE CONVECTORS ENSURE OPTIMAL COMFORT

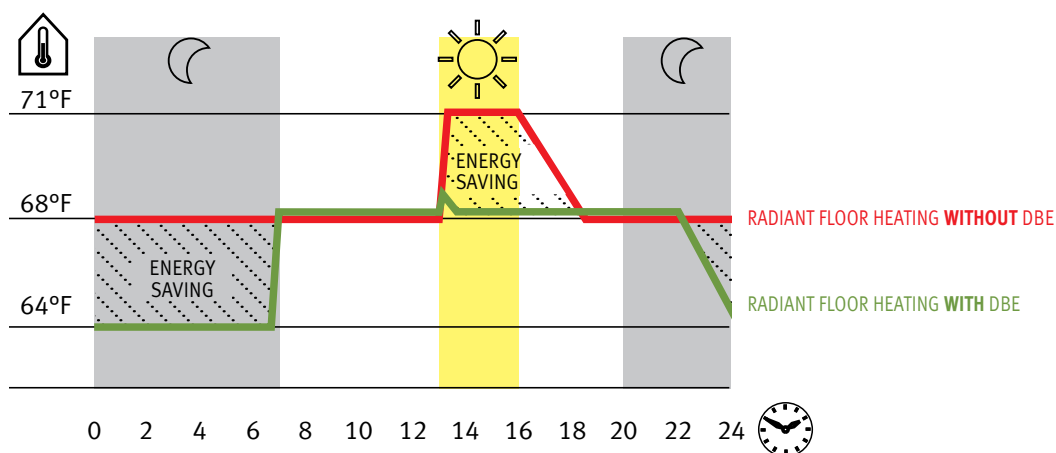
DBE reacts super-fast and is perfectly controllable. In contrast, to radiant floor heating which reacts slow to temperature fluctuations. The two systems can be combined for the ultimate heating comfort, where the radiant floor heating provides a constant core temperature and the responsive DBE convectors ensure a perfectly controlled comfort temperature. The combined system is much more efficient and adjusts perfectly to the actual heat requirement.

MAXIMUM EFFICIENCY DURING THE OFF SEASON

There are always large temperature differences in the off season. Oftenly it is too warm during the day to turn on the radiant floor heating. But it can be very cool in the evening. The Jaga DBE system is ideal for fast heating in the spring or autumn, as well as for poor weather in the summer. In all cases lower energy consumption is guaranteed with the high responsive DBE system.

TEMPERATURE DEVELOPMENT FOR RADIANT FLOOR HEATING WITH / WITHOUT DBE

COMFORT TEMPERATURE



— Underfloor heating: room temperature 68°F

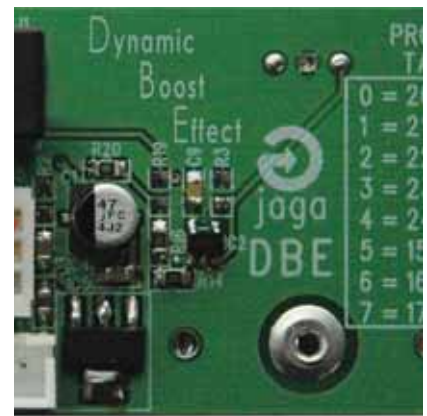
— DBE convectors in combination with radiant floor heating: the radiant floor heating provides a base temperature of 64°F, while the responsive DBE radiators ensure a perfectly regulated and stable comfort temperature of 68°F. With this combination, **energy savings of 33% are achieved!** Test conducted in the Jaga Experience Lab (www.heating-studies.org).

FULLY AUTOMATIC OPERATION

AN INGENIOUS AND CONVENIENT SYSTEM

A microprocessor measures and continuously processes the room and water temperatures. It even recognises the transition from the night to day programme. In comfort mode it will automatically modulate the fan speed depending on the differential between the room temperature and set point. If you press the boost button* the DBE will provide maximum heat emission for approx. 15 minutes. After 15 minutes it will set back to comfort mode. The DBE increases the power of the convector up to 300%, hereby a room can be heated up in no time at all.

* Except Mini Canal DBE



Standard delivery

Standard packaging with:

Code: DBES

Power supply 12 VDC

Code: DBEP.243

PCB control unit and operating panel

Code: DBEC.01

DBE unit (1 up to 6 pieces)

Code: DBEU.06/10/15



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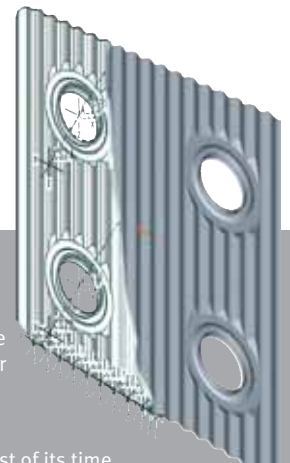
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 Power supply 12VDC 24 Watts: a maximum of 6 DBE units can be connected to this supply.



STATIC AND DYNAMIC: THE BEST OF BOTH WORLDS

Static

Even with DBE on stand-by (not operating), Low-H₂O convectors deliver exceptional performance. Independent studies from the UK BRE show that Low-H₂O convectors heat much faster, and are more economical and energy efficient. This is due to their lower inertia and better heat distribution.

Dynamic

DBE is not a ventilation or air-conditioning system that can only function with operating fans. The DBE convector will spend most of its time on stand-by. Only with extreme cold, at the transition from night to day mode, or whenever very fast heating is needed, the system automatically starts. It modulates according to the heat requirement and it is very silent.

Supplemented with the intelligence of DBE, the Low-H₂O convector is the system for the future!

DBE UNITS_TECHNICAL DETAILS

Air flow

Type	CFM	
	Comfort	Boost
DBEU.06	45	68
DBEU.10	60	90
DBEU.15	63	79

Speeds

Type	RPM	
	Comfort	Boost
DBEU.06	1150	1710
DBEU.10	1130	1670
DBEU.15	850	1050

Speeds mounted measured

DBEUo6



DBEU10



DBEU15



Noise level

Comfort-mode: sound pressure less than 29 dB(A) per DBE unit (internal sound).
Boost-mode: less than 35 dB(A) per DBE unit (internal sound).

Electrical characteristics

Maximum consumption per DBE unit in Boost-mode :
- type 06: 2.7 Watts
- type 10-11: 2.8 Watts
- type 15-16-20-21: 2.2 Watts
Power consumption of control unit: 0.0516 Watts.
Power supply 12VDC 24 Watts Class II, UL approved. The electronically controlled

power supply satisfies all international safety requirements. A maximum of 6 DBE units can be connected to this supply. The low voltage is very safe.

Life expectancy:

As a result of the use of high quality ball bearings, the life expectancy of the DBE units is 50.000 operating hours at a temperature of 104°F. The activators are protected against stalling through blockage. However, blockage should be avoided prevent damage of the activator blades.

Quality mark :

The appliance is CE tested and works according to the valid AMC standards EN55014, EN61000 and safety demands. The 110V/12V power supply is UL certified.



PRESSURE SOUND AND CORRECTION FACTORS

Type	dB(A)	
	Comfort	Boost
DBEU.06	27	34
DBEU.10	29	35
DBEU.15	27	31

Reverberation time T1 0,6 s
Room of reference V1 2825 ft³
Pressure of reference P0 2.10⁻⁵Pa

Other reverberation time

Reverberation time (s)	Correction dB(A)
T2	
2.5	+6.2
2.0	+5.2
1.5	+4.0
1.0	+2.2

$$P_2 = P_1 - 10 \log \frac{T_2}{T_1}$$

P1 = table of sound pressure
P2 = sound pressure to be calculated
T1 = reverberation time of room of reference (T1 = 0,6 sec)
T2 = other reverberation time of room

Other room volume

Content ft³	Correction dB(A)
2825	0
5300	-2.7
7000	-4.0
8800	-4.9
10600	-5.7
12300	-6.4
14125	-7.0
18650	-8.0
21200	-8.8

Calculation of sound pressure for other room volume

$$P_2 = P_1 - 10 \log \frac{V_2}{V_1}$$

P1 = table of sound level
P2 = sound level to be calculated
V1 = size of room of reference (80 m³)
V2 = other room size

Several appliances with an equal sound level in a room

Number dB(A)	Correction dB(A)
2	-3.0
3	-4.8

$$P_2 = P_1 + 10 \log n$$

P1 = sound level one appliance
P2 = sound level to be calculated
n = number of appliances

With the DBE-communication software (DBED) it is possible to set up other activator speeds. This way you can obtain other outputs and sound pressures. For more information: consult the manufacturer or the help function which explains the communication software.

JAGA DBE GIVES UP TO 300% MORE OUTPUT

What is DBE?

DBE Dynamic Boost Effect is an option especially developed for the Low-H₂O convectors to increase power 2 to 3 times.

Why use DBE?

The extra heating power is usable in 2 ways:

- to install a smaller cabinet: either because there is not much space or for aesthetic reasons
- to use a lower water temperature: conversion to a condensing boiler or heat pump without having to install larger radiators.
- Low-H₂O convectors operate with DBE in an effective way, even at water temperatures of 95°F!

How does DBE work?

DBE continuously measures the room temperature and water temperature and works entirely autonomously. For the larger part of the heating sea-

son the Low-H₂O fin tube element will be sufficient to keep you comfortably warm. But the system will automatically switch to comfort mode to provide heat much faster any time there is a big demand for heat. For example when switching from night to day mode, with sudden occupation of an unheated room or at times of extreme cold. The system modulates silent depending on the need for heating. With the Boost function for accelerated heating, the power is even higher, but the sound level also increases. The Boost function switches off automatically after approximately 15 minutes. DBE combines the best of static and dynamic heating.

How to install DBE?

The DBE set consists of:

- one or more activators (depending on the length of the set) that must be clicked to the heat exchanger

- a 220V to 12V power supply, not to be used if a Class II 12V supply is available.
- control unit that must be clicked to the end of the heat exchanger.
- control panel with on/off and boost function that must be mounted to the casing.

Content of DBE set

Every set includes the control panel, control unit, power supply and a clear manual. All components of the DBE set are easy to install. They are packed together, but separately from the fin tube element.

Heat output

The additional output should be handled in comfort-mode. This means smaller convectors that, at the same time, provide faster warm-up and greater comfort.

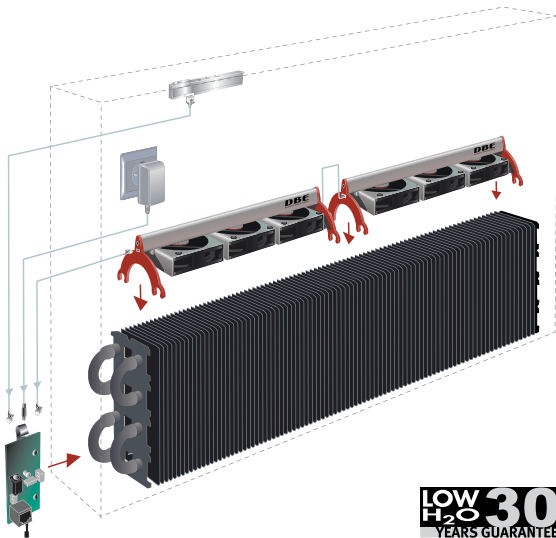
DBE on existing Low-H₂O convectors

DBE can be installed on almost any existing Low-H₂O convector. A 110 V power supply is required close to the radiator. With some radiators a \varnothing 0.4" hole must be drilled in a bracket to lead the power supply through. The rest is simply click together, plug & play.

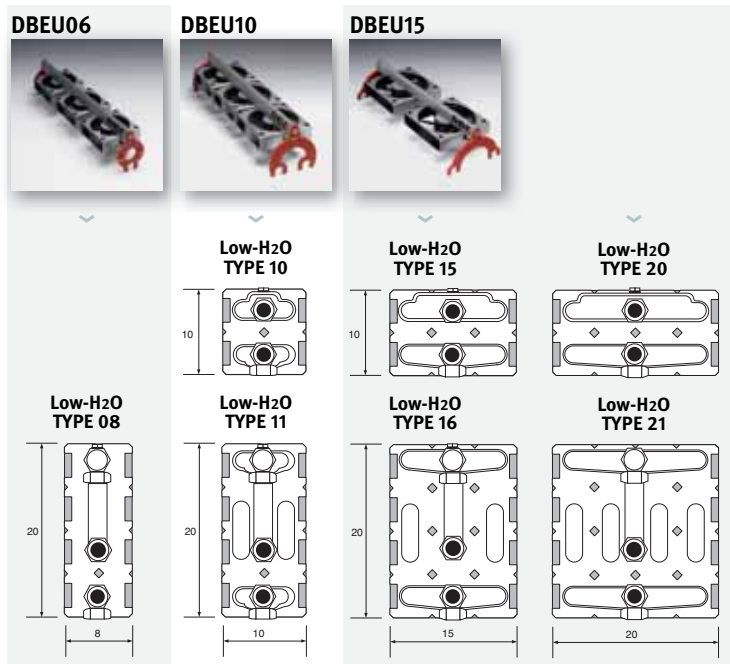
DBE and Low-H₂O temperature heating

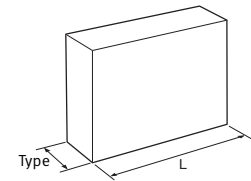
Thanks to the dynamic efficiency of DBE, the system actually starts to work even more efficient as the average water temperature gradually drops. This efficient use of energy at low temperatures and the increment in power make DBE easily the best solution for low-temperature heating systems.

What's more, it is easy by adding DBE to build up a low temperature system using existing Low-H₂O convectors.



LOW H₂O 30 YEARS GUARANTEE





NUMBER OF DBE UNITS PER SET

DBE units per set	1	2	3	4	5	6
Minimum lengths for this set						
Strada* , Basic + & Sentinel	23 3/8 > 31 1/2 (60 > 80)	35 7/16 > 55 1/8 (90 > 140)	-	62 63/64 > 86 39/64 (160 > 220)	-	94 31/64 > 110 15/64 (240 > 280)
Linea plus	23 3/8 > 31 1/2 (60 > 80)	35 7/16 > 55 1/8 (90 > 140)	-	62 63/64 > 86 39/64 (160 > 220)	-	94 31/64 > 110 15/64 (240 > 280)
Tempo & Cocoon	23 3/8 > 31 1/2 (60 > 80)	35 7/16 > 55 1/8 (90 > 140)	-	62 63/64 > 86 39/64 (160 > 220)	-	94 31/64 > 118 7/64 (240 > 300)
Knockonwood	23 3/8 > 31 1/2 (60 > 80)	39 3/8 > 55 1/8 (100 > 140)	-	70 55/64 > 86 39/64 (180 > 220)	-	-
Maxi	24 51/64 > 32 43/64 (63 > 83)	40 35/64 (103)	48 27/64 > 64 11/64 (123 > 163)	-	72 3/64 (183)	79 59/64 (203)
Mini height 28	23 3/8 > 31 1/2 (60 > 80)	35 7/16 > 47 1/4 (90 > 120)	55 1/8 (140)	62 63/64 > 86 39/64 (160 > 220)	78 47/64 (200)	86 39/64 > 118 7/64 (220 > 300)
Geo Horizontal - Type 10	39 3/8 (100)	47 1/4 (120)	55 1/8 > 62 63/64 (140 > 160)	70 55/64 (180)	-	-

*Except Type 06 height 20.

dimensions in "()" are shown in centimeters.

ADDITIONAL OUTPUT 120°F AWT/68°F RT

DBE units per set		1	2	3	4	5	6
Type 06	BTU/h comfort	276	553	829	1106	1382	1658
	BTU/h boost	461	921	1382	1843	2303	2764
Type 10	BTU/h comfort	307	614	921	1228	1535	1843
	BTU/h boost	512	1024	1535	2047	2559	3071
Type 11	BTU/h comfort	614	1228	1843	2457	3071	3685
	BTU/h boost	1024	2047	3071	4095	5119	6142
Type 15	BTU/h comfort	512	1024	1535	2047	2559	3071
	BTU/h boost	717	1433	2150	2866	3583	4299
Type 16	BTU/h comfort	983	1965	2948	3931	4913	5896
	BTU/h boost	1382	2764	4146	5528	6910	8292
Type 20	BTU/h comfort	512	1024	1535	2047	2559	3071
	BTU/h boost	717	1433	2150	2866	3583	4299
Type 21	BTU/h comfort	983	1965	2948	3931	4913	5896
	BTU/h boost	1382	2764	4146	5528	6910	8292

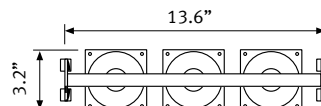
Ordering code

DBES.00(X)003(XX)

number of DBE units (1 up to 6)
type Low-H₂O element

Dimensions activators:

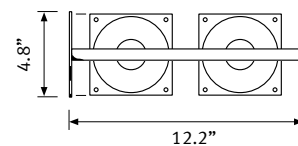
DBE type 06



DBE type 10



DBE type 15 / 20



DBE CORRECTION FACTORS

Average correction factors according - 140°F/120°F/68°F for comfort and Boost stand

T in	T room	T out	68°F	77°F	86°F	95°F	104°F	110°F	122°F	130°F	140°F	149°F	158°F	167°F	176°F	185°F
194°F	68		1.17	1.25	1.33	1.42	1.50	1.58	1.67	1.75	1.83	1.92	2.00	2.08	2.17	2.25
	75.2		1.03	1.12	1.20	1.28	1.37	1.45	1.53	1.62	1.70	1.78	1.87	1.95	2.03	2.20
185°F	68		1.08	1.17	1.25	1.33	1.42	1.50	1.58	1.67	1.75	1.83	1.92	2.00	2.08	
	75.2		0.95	1.03	1.12	1.20	1.28	1.37	1.45	1.53	1.62	1.70	1.78	1.87	1.95	
176°F	68		1.00	1.08	1.17	1.25	1.33	1.42	1.50	1.58	1.67	1.75	1.83	1.92		
	75.2		0.87	0.95	1.03	1.12	1.20	1.28	1.37	1.45	1.53	1.62	1.70	1.78		
167°F	68		0.92	1.00	1.08	1.17	1.25	1.33	1.42	1.50	1.58	1.67	1.75			
	75.2		0.78	0.87	0.95	1.03	1.12	1.20	1.28	1.37	1.45	1.53	1.58			
158°F	68		0.83	0.92	1.00	1.08	1.17	1.25	1.33	1.42	1.50	1.58				
	75.2		0.70	0.78	0.87	0.95	1.03	1.12	1.20	1.28	1.37	1.45				
149°F	68		0.75	0.83	0.92	1.00	1.08	1.17	1.25	1.33	1.42					
	75.2		0.62	0.70	0.78	0.87	0.95	1.03	1.12	1.20	1.28					
140°F	68		0.67	0.75	0.83	0.92	1.00	1.08	1.17	1.25						
	75.2		0.53	0.62	0.70	0.78	0.87	0.95	1.03	1.12						
130°F	68		0.58	0.67	0.75	0.83	0.92	1.00	1.08							
	75.2		0.45	0.53	0.62	0.70	0.78	0.87	0.95							
122°F	68		0.50	0.58	0.67	0.75	0.83	0.92								
	75.2		0.37	0.45	0.53	0.62	0.70	0.78								
110°F	68		0.42	0.50	0.58	0.67	0.75									
	75.2		0.28	0.37	0.45	0.53	0.62									
104°F	68		0.33	0.42	0.50	0.58										
	75.2		0.20	0.28	0.37	0.45										
95°F	68		0.25	0.33	0.42											
	75.2		0.12	0.20	0.28											
86°F	68		0.17	0.25												
	75.2		0.03	0.12												

The indicated outputs at 120°F AWT/68°F RT are the exact outputs. An average correction factor is given in the table above for all other ΔT outputs, applicable for all dimensions.

T_{in} = flow temperature
 T_{out} = return temperature
 T_{room} = desired air temperature

- Select a unit of 2000 BTU/h at 130 °F AWT/68°F RT
 When you want to know the output at 110°F SWT/95°F RWT/75°F RT
 In the table you'll find factor 0,53 → The output for this unit is 1060 BTU/h at 110°F/95°F/75°F
- You need a unit of 2000 BTU/h at 110°F/95°F/68°F → in the table you can find factor 0,67
 You need a radiator based on 120°F AWT (130/110) that delivers 2000/0,67= 2985 BTU/h

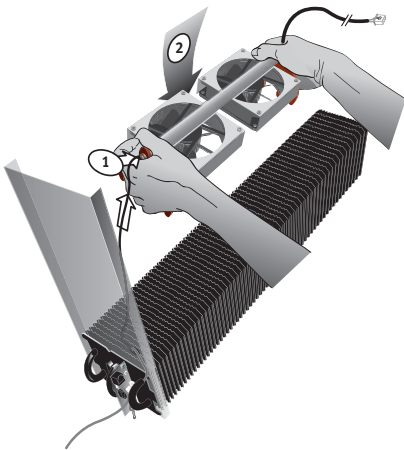
For exact calculations use the free JPS (Jaga Product Selection) Software:
 Download at www.jaga.be/drivers/JAGA_DBE_GPS.exe

AWT = Average Water Temp
 SWT = Supply Water Temp
 RWT = Return Water Temp
 RT = Room Temp

DBE INSTALLATION

The components of the DBE system easily click onto the Low-H2O fin tube element using tension springs. This causes no hydraulic changes in the heating installation. Furthermore, only a single 115 VAC supply needs to be provided locally. This system can be located hidden in the cabinet.

The number of DBE units per convector depends on the length of the Low-H2O fin tube element, with a maximum of 6 DBE units coupled in series. The type of cabinet has an effect on the possible number of DBE units. For more info, see the configurator or JPS



⚠ Connection 12 VDC

Take into account the + and - when using your own power supply. If not, the Control unit will be damaged.

DC-plug



Low-temperature heating

The extreme high efficiency and power output at low temperatures, even with small radiators, make the DBE system an ideal product for low- temperature heating.

Heating / Cooling

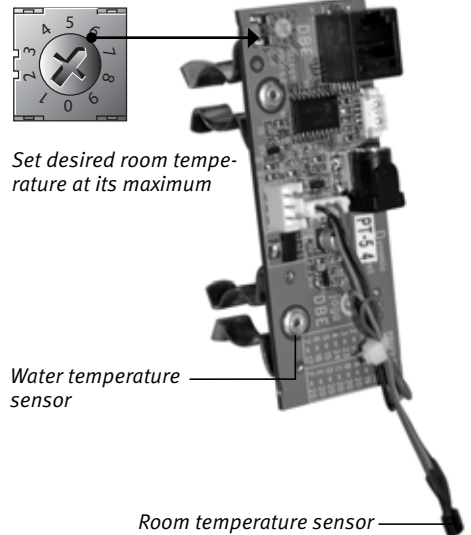
The DBE Pro can be used for heating and passive cooling. Simply press the button for 3 seconds to switch from heating to passive cooling mode. The LED's will change from red to blue.

⚠ In cooling mode: There is no dew point control! This should be installed on site to prevent condensation in the low-H2O unit

Temperature setting

no.	°F	no.	°F
0	60.8°	5	69.8°
1	62.6°	6	71.6°
2	64.4°	7	73.4°
3	66.2°	8	75.2°
4	68°	9	Prog.

→ factory setting



Set desired room temperature at its maximum

Water temperature sensor

Room temperature sensor

Programming own user profile

Want to create your own user profile? The DBE microprocessor has a communication port.

The DBE system can be reconfigured via this port: water temperature, rpm, duration of boost, etc, can be changed.

This involves a modification of the standard parameters. Optional analog inputs allow a custom interface with your BMS. In order to do this you need a PC with DBE communication software.

The operation of the software is explained via a help function. A CD-ROM and connecting cable are available, as well for RS 232 - as USB connection.

Future upgrades of this communication software can be downloaded free from the Jaga website.

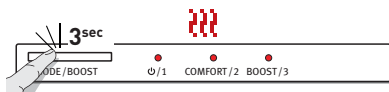
URL: http://www.jaga.be/drivers/JAGA_DBE_CUSTOMERS.zip

CODE	Description
DBED.C01	DBE communication software and cable
DBED.C02	DBE communication software + USB

DBE CONTROL PANEL

Select mode

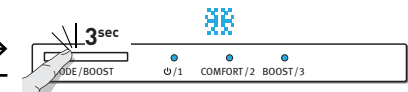
Heating



Off



Passive Cooling



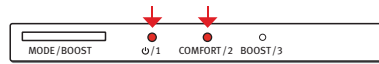
Heating

Standby/Auto



Room temperature o.k. or water temperature below 82.5°F, automatically in Standby.

Comfort



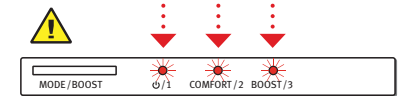
In case of low ambient temperature, automatically in Comfort. (water temperature min. 82.5°F)

Boost



Press the Boost button for a maximum output for 15 minutes, automatically switches back to Comfort mode or Standby. (water temperature min. 82.5°F)

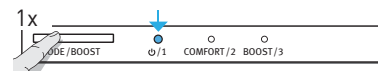
To stop Boost manually, press the button again.



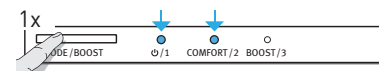
Water temperature too low (below 82.5°F). Check the position of the thermostatic valve or the room thermostat.

Passive Cooling

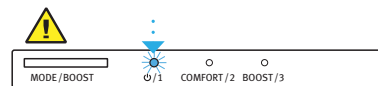
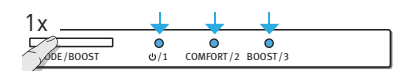
Passive Cooling - Speed 1



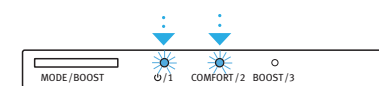
Passive Cooling - Speed 2



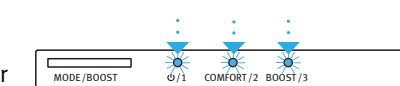
Passive Cooling - Speed 3



or



or



If the water temperature is higher than the room temperature, the DBE system will be switch back in ready mode.

DBE CONVECTORS PRODUCT DESCRIPTIONS

Dynamic boost effect DBE

The DBE system is a boost system, suitable for assembly on Low-H2O appliances.

This is a patented system that makes use of a micro-processor. This processor controls the activators.

An activator is designed to make best use of the warmth in the Low-H2O fin tube element.

In combination with Low-H2O fin tube elements DBE offers the user numerous advantages. Low-H2O-appliances powered by the DBE system are ultra high-performance for their small dimensions.

One simply clicks the parts of the DBE system to the Low-H2O heat exchanger. The system is very simple from a technical installation perspective. Nothing changes hydraulically in the heating installation. Only a 110 VAC power supply need now be provided. This power point can be internally integrated in the facing so it is invisible after the assembly of the Low-H2O appliance. (This depends on the remaining space in the Low-H2O appliance). For freestanding appliances the power supply enters through the feet of the appliance.

With the Dynamic Boost Effect Jaga introduces a new generation of intelligent convectors which think for themselves and can autonomously respond to circumstances.

The DBE system then considerably shortens the heating up time because heat is brought into the space in a highly efficient way. The improved heat dissipation in the space is also an important element of a comfortable indoor climate.

A convector with DBE can generate up to 300% extra capacity. Depending on the used fin tube element and cabinet.

The convector can now work both in static and dynamic mode. This is fully automatically controlled by a microprocessor. This microprocessor measures the room temperature and the average water temperature in the Low-H2O fin tube element. These measurements are processed, and the microprocessor determines the modulated speed of the activators depending on the required comfort temperature. The activators will then run faster if one is far from the required temperature. As the temperature increases the speed reduces and stops when the required temperature is reached. At

this time the system works statically. This automatic operation is the "comfort" mode.

Boost-function

One can demand extra heat by switching on the manual "boost" function. The system now operates at maximum power for a certain time after the fin tube element is fed with warm water.

The accelerated heating up of a space results in important energy savings.

An important inherent advantage of the DBE system is the improved power to size ratio.

This is due partly to the dynamic operation of the system. This results in a significant capacity increase with lower flow temperatures and makes DBE the best possible solution in a low temperature system.

Convenience

An ingenious system with easy operation.

Assembly of the system is straightforward, because everything is simply clicked on the heat exchanger. Only one button is needed to operate the DBE system.

Intelligent system.

Jaga fully pre-programs the microprocessor. You set the maximum room temperature just once. This is done by simply setting a switch on the microprocessor circuit to the required maximum room temperature. From then on the convector regulates everything itself. The microprocessor continually measures and controls the temperature of the room and the water in the radiator. It even recognises switching from night to day program. Extra heat whenever needed. Fully automatic.

One press on the button.

Do you suddenly want to use an unheated room? One press of the boost button and the convector emits a maximal power for 15 minutes. With the same button you switch the convector to stand-by or comfort mode.

In boost mode the system remains under 31 dB(A) noise pressure per DBE unit. (manual mode/own noise).

In comfort mode this remains under 27 dB(A) per DBE unit. (Automatic mode/own noise).

Programming

Do you want to create your own user profile? This can be done using an optionally supplied CD-Rom with connecting cable.

Parts list:

Clickable DBE unit per type of Low-H2O heat exchanger.

Type 06:

Electrical consumption:
2.708 Watts / unit in Boost mode
(3 activators / unit)

Type 10-11

Electrical consumption:
2.826 Watts / unit in boost mode
(3 activators / unit)

Type 15-16-20-21

Electrical consumption:
2.154 Watts / unit in boost mode
(2 activators / unit)

The number of DBE units depends on the length of the Low-H2O heat exchanger with a maximum of 6 dbe units coupled in series. The type of facing also has an influence on the number of possible dbe units. (For this see the manufacturer's tables).

Life time of the DBE units: by using high quality ball bearings the life time of the DBE units is 50,000 working hours at a temperature of 104°F. The activators are protected against blocking. Undesired blockage due to any object must be avoided at all times because this can damage the activator. Remove any blockages as soon as possible.

Avoid compressing the activator housing.

Connecting cable:

For connection of the DBE units to each other or to make the connection with the microprocessor.

Microprocessor circuit board including temperature sensors.

This control must be clicked on the copper arc of the heat exchanger. The MAXIMUM required temperature is set on this circuit using a position switch. Each position (from 0 to 9) corresponds to a maximum required value. A table with values can be found on this circuit board. Position no. 6 is the default factory setting. This corresponds to a value of 71.6°F.

Electrical consumption: 0.0516 Watts.

Control panel with one boost button and 3 LEDs for indication:

- Standby
- Comfort
- Boost

Power supply

12VDC 24 Watts Class II UL certified. The power supply is an electrical safety supply that meets the requirements of international prevailing safety standards.

A maximum of 6 DBE units can be connected to this supply.

Options

PC connection + communication software. The DBE microprocessor circuit has a serial communication port. (type RS 232 or USB)

Using this port one can use a PC on which the communication software is installed to reconfigure the DBE system. This involves the adaptation of the standard parameters. Use of the software is explained by a help function.

Selection:

Takes place using the tables provided by the producer. The tables with the DBE data in comfort mode are preferably used.

Installation:

The installer proposes the heating elements with DBE taking the following requirements into account:

- a heat loss calculation according to the standard;
- heat emission and dimension tables according to the tables and DBE installation conditions given by the manufacturer.
- electrical connection according to the prevailing national standard.

Optional passive cooling:

When pressing the button for 3 seconds, the unit switches to passive cooling. In this mode, the LED's change from red to blue. When the supply water temp. is lower than the room temp., the fans will start. This provides a refreshing breeze, not to mistake with air conditioning. The fan speed can be changed by pressing the button. An extra push will switch between the 3 pre-defined fan speeds. The status is indicated by the blue LED's.

STANDARD DBE
SOLUTIONS
FULLY PREMOUNTED

Output of power in comfort at 120°F AWT/68°F RT



KNOCKONWOOD FREESTANDING DBE



KNOCKONWOOD FREESTANDING DBE
H 8.2" / L 66.9" / Type 15 / 9800 BTU/hr



MINI CANAL DBE
H 5.5" / L 82.7" / B 13.4" / 4860 BTU/hr



KNOCKONWOOD FREESTANDING DBE



MINI FREESTANDING DBE
H 11" / L 71.3" / Type 16 / 9212 BTU/hr



LINEA PLUS DBE

CANAL COMPACT DBE
H 14.2" / L 70" / Type 15 / 5653 BTU/hr



LOW-H₂O CONVECTORS WITH OPTIONAL DBE PACKAGE

Output of power in comfort at 120°F AWT/68°F RT



LINEA PLUS DBE
H 19.7" / L 39.4" / Type 16 / 5961 BTU/hr



STRADA DBE
H 19.7" / L 39.4" / Type 11 / 4067 BTU/hr



KNOCKONWOOD DBE
H 21.6" / L 70.8" / Type 11 / 6868 BTU/hr



TEMPO DBE



TEMPO DBE
H 23.6" / L 39.2" / Type 16 / 6230 BTU/hr



KNOCKONWOOD DBE
H 21.6" / L 31.5" / Type 16 / 3886 BTU/hr



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