CLEVER ENERGY BOILERS

efficient heating for your home

In partnership with The Heating Hub

A consumer's guide to getting a new boiler

About this e-book

A new boiler installation is a big investment, often needed at short notice leaving you little time to make the right choice.

You will have a great number of questions. What type of boiler should I have? Which installer should I use? Can I get a free extended warranty? Which heating control am I required to have? It can be very hard to find answers to these questions and almost impossible to find them all in one place.

We have compiled this ebook to bring you the guidance you need to answer the most common questions. From the pros and cons of boiler types to understanding extended warranties and finance packages, this ebook covers each topic clearly and simply.

Our aim is for you to have a positive experience when buying a new boiler and to feel confident that you have made the right choice.

Who are The Heating Hub?

We are an independent and completely impartial consumer website providing guidance and information on home heating. Think Money Saving Expert.

From best product reviews to a range of technical matters, our website is designed to cover every aspect of your heating system. Our guidance is compiled by experts with the single aim of bringing you the best value and most efficient heating system for your budget.

How we were founded

The Heating Hub was founded by Joanne Alsop. Jo ran a local heating business for a decade and used her website to talk openly about boilers in a way that was easy to understand. It was natural to her to write honestly and share what she knew.

Overtime this led to people from across the UK visiting her website. In 2018 she sold her local heating business but kept the website and grew it into the consumer advice centre it is today.

How we support local businesses

Having previously run her own independent heating business for a decade, Jo is passionate about supporting our nationwide network of small hard-working heating businesses. Many householders like to use a great local business, but often struggle to find one.

The Heating Hub have bought together a network of local heating companies across the UK that meet Jo's high standards of practice. As well as holding industry qualifications, member companies must serve their local area, employ all or most of their staff, be accredited with at least one manufacturer and have great customer reviews on an independent review site.

Company Profile

COMPANY: CLEVER ENERGY BOILERS

CLEVER ENERGY BOILERS
efficient heating for your home

Clever Energy Boilers install energy efficient boilers and central heating in an attempt to help the UK become greener and save all their customers money on their energy bills

On a daily basis, the team at **Clever Energy Boilers** work in harmony to make sure all their customers receive the very best service, value and are provided with the highest energy savings through our A rated energy saving boilers.

Established in Bradford in 2011, the head office remains in Keighley city centre but we now serve the whole of Yorkshire, Home Counties and more recently the Midlands, with the acquisition of Hinckley Plumbing and In just a few years CEB have grown from just four members of staff to currently employing 50 people, supporting the local economy and providing employment

Clever Energy Boilers is passionate about Corporate Social Responsibility and always keen to help local causes, businesses, sports teams. They believe in giving back to the community and are currently involved in supporting Sue Ryder, Manorlands Hospice, Keighley Cougars and Midlands Air Ambulance.

Contents

1. Boilers by Type

There are three main types of boiler: Combi, Heat Only and System.

NOTE: Combi is short for Combination. A Heat Only boiler is also referred to as a 'Conventional' boiler or a 'Regular' boiler.

COMBI BOILER

A combi boiler is a single unit that generates all the heating and hot water for the home. There are no hot water tanks.

ADVANTAGES

- Creates space when removing old hot water tanks.
- Lower maintenance costs - the integral heating and hot water functions are covered by the boiler manufacturer's warranty/guarantee.
- No long wait times for hot water.

DISADVANTAGES

- They do not work well in properties with poor flow rates and/or poor incoming water pressure.
- Hot water flow rates are reduced when providing hot water to two or more outlets simultaneously. This is really only a problem in houses with two or more showers in use at the same time.

HEAT ONLY BOILER

A heat only boiler only provides heating. It works with a hot water cylinder. If your system is 'open vented' there will also be an expansion tank in the roof space.

ADVANTAGES

- Low replacement cost as heat only boilers are the cheapest type of boiler to buy.
- Works well with old radiators on an open vented system. Old radiators can leak if put 'under pressure', as is required when installing a new combi or system boiler.

DISADVANTAGES

- Only the boiler is covered by the manufacturer's guarantee/warranty. This leaves lots of other system components, e.g. hot water tank, pumps and valves, subject to replacement and breakdown.

SYSTEM

A system boiler has all the same components as a combi boiler without the hot water production. It commonly works with an unvented hot water cylinder but can work with vented cylinders too.

ADVANTAGES

- Good for properties that have a high demand for hot water, e.g. lots of showers, when paired with an unvented cylinder. An unvented cylinder can deliver good hot water flow rates to multiple outlets simultaneously.
- Lower maintenance costs, as more of the system's components are integral to the boiler and covered by the manufacturer's warranty/ guarantee.

DISADVANTAGES

- Hot water flow rates depend upon good incoming mains water pressure, if the pressure is poor then internal flow rates will be poor and a vented cylinder should be considered.
- They require more space. If you are swapping a combi boiler for a system boiler you will need to find an appropriate location of the hot water cylinder, ideally on the same floor as the bathrooms.

2. When to change boiler type

It is quite common to change boiler type when installing a new boiler. We take you through the most popular boiler changes and guide you on suitability.

Heat only boiler to combi boiler. This is a common swap in all kinds of properties. It will take around 2-3 days to complete.

GREAT FOR:

- Freeing up space
- Reducing maintenance costs as heating and hot water functions are integral to the boiler and covered by the manufacturer's warranty
- Giving instant hot water

AVOID IF:

- You have poor water pressure or flow rates
- You have three or more bathrooms – consider a system boiler
- You have old radiators and pipework
- You are on a tight budget – it will be a lot more expensive than installing a new heat only boiler

Combi boiler to system boiler. This is popular when extending your property and adding bathrooms. It will take around 2-3 days to complete.

GREAT FOR:

- Supplying good hot water flow rates to multiple outlets
- Households with multiple bathrooms that are in use at the same time

AVOID IF:

- You have poor water pressure or flow rates
- You have old radiators and pipework
- You do not have space to site the hot water cylinder

Heat only boiler to system boiler. Suitable in all kinds of properties. It will take around 2-3 days to complete.

GREAT FOR:

- Supplying good hot water flow rates to multiple outlets
- Households with multiple bathrooms that are in use at the same time
- Reducing maintenance costs as more system components (pumps, valves) are integral to the boiler and covered by the manufacturer's warranty

AVOID IF:

- You have poor water pressure or flow rates
- You have old radiators and pipework
- You are on a tight budget – it will be a lot more expensive than a new heat only boiler, particularly if you plan to change to an unvented hot water cylinder.

3. When to move your boiler

Moving your boiler will always increase the cost of installation. Sometimes you will have no choice but to move it, for example if the building regulations have changed. Other times the benefits of moving outweigh the cost. We guide you through sticking with your location or moving it to a new location.

Sticking with your existing location.

Great if: you are happy with your existing combi, heat only or system boiler and you are on a tight budget. A straight swap is the most cost effective and straight forward option. The works should only take 1 day.

Common considerations:

FOR ALL BOILER TYPES

- If your existing boiler is very old your installer will need to fit a new condense pipe from the boiler to a drain.

HEAT ONLY BOILER

- If the rest of your system components (pumps, valves, hot water cylinder) are very old be mindful that the generous boiler manufacturer's warranties will only extend to the boiler. External components which are integral to a combi or system boiler will be subject to long term repair and maintenance..

COMBI BOILERS

- If your new combi boiler is over 18kW it will likely require a minimum 22mm gas pipe. If your existing gas pipe is 15mm then your installer will need to re-run it.

Moving to a new location.

Great if: you need to free up space such as a kitchen cupboard, airing cupboard or bedroom wardrobe or as part of home extension plans. The roof space is a popular choice of new location. Moving the boiler to another room or floor will likely add another day to the job..

Common considerations:

MOVING TO THE ROOF SPACE:

You will require a fixed ladder, handrail, hardwired light and boarded access.

MOVING FURTHER AWAY FROM A METER:

Your installer will need to re-run the gas pipe in at least 22mm and maybe partially in larger pipe. This will add to the cost.

MOVING PIPEWORK:

Even when the boiler type stays the same, much of the pipework will be new which will add to the cost.

MOVING THE CONDENSE PIPE:

All condensing boilers have a pipe to remove water. Your installer will ideally need to be able to run a condense pipe to an internal or external drain.

4. Sizing your boiler

There is always a temptation to oversize the boiler, just in case, but this can be inefficient. A boiler should be sized accurately based on your house construction and size. The tables below give a rough guide to sizing your boiler based on the age of your property, insulation levels and, in the case of combi boilers, your hot water requirements. Find your property size down the left hand side of the table and the period your property was built across the top. NB the table shows the heat requirement needed to heat your home on the coldest day of the year. The rest of the year it will be much lower.

TOP TIP. Property ages assume standard insulation measures, such as double glazing and loft insulation have been retro fitted or for newer properties were installed at the time of construction. Some older properties have been very well insulated retrospectively. If your levels of insulation are very high for the property's age, then you may wish to move a column to the right. .

Sizing a combi boiler

The sizing table below allows for the size of your property and number of bathrooms as a rough guide. The size of your maximum heat requirement is shown on the left in kW and the size of your hot water requirement is shown on the right in LPM (litres per minute).

If you have 3 or more bathrooms that are often in use at the same time you might want to consider a larger combi (although some can be inefficient for heating) or better still consider a system boiler with unvented cylinder.

Note this is only a guide and your attending heating engineers will provide a more accurate figure.

Hot water flow rates indicate how quickly your boiler can heat water. It is expressed as 'litres per minute' or LPM. For example, a boiler with a flow rate of 20 LPM will fill a bath twice as quick as a boiler with 10 LPM.

Age of property	pre 1900	1920s-1930s	1950-1980s	1990s	2000 onwards
Insulation levels	Poorly insulated	Some insulation	Moderately insulated	Reasonably insulated	Well insulated
No of bedrooms and bathrooms					
1 bed + 1 bath	7kW/9-12LPM	7kW/9-12LPM	6kW/9-12LPM	6kW/9-12LPM	4kW/9-12LPM
2 bed + 1 bath	8kW/9-12LPM	8kW/9-12LPM	7kW/9-12LPM	6kW/9-12LPM	5kW/9-12LPM
2 bed + 2 bath	8kW/12-16LPM	8kW/12-16LPM	7kW/12-16LPM	6kW/12-16LPM	5kW/12-16LPM
3 bed + 1 bath	9kW/9-12LPM	9kW/9-12LPM	8kW/9-12LPM	7kW/9-12LPM	6kW/9-12LPM
3 bed + 2 bath	9kW/12-16LPM	9kW/12-16LPM	8kW/12-16LPM	7kW/12-16LPM	6kW/12-16LPM
4 bed + 1 bath	10kW/9-12LPM	10kW/9-12LPM	9kW/9-12LPM	8kW/9-12LPM	7kW/9-12LPM
4 bed + 2 bath	10kW/12-16LPM	10kW/12-16LPM	9kW/12-16LPM	8kW/12-16LPM	7kW/12-16LPM
5 bed + 2 bath	14kW/12-16LPM	12kW/12-16LPM	10kW/12-16LPM	10kW/12-16LPM	9kW/12-16LPM
5+ bed + 2 bath	16kW/12-16LPM	15kW/12-16LPM	14kW/12-16LPM	12kW/12-16LPM	10kW/12-16LPM

Sizing a heat only or system boiler

The table below shows approximate heat requirements for properties according to age and size. Find the period your house was built across the top and number of bedrooms down the side. Note this is only a guide and your attending heating engineers will provide a more accurate figure.

A note on hot water

Whilst your heating requirement is likely to be fairly low even on a cold day, you still may require a larger capacity boiler for your hot water cylinder. The attending heating engineer will advise you.

Age of property	pre 1900	1920s-1930s	1950-1980s	1990s	2000 onwards
Insulation levels	Poorly insulated	Some insulation	Moderately insulated	Reasonably insulated	Well insulated
Number of bedrooms					
1	7kW	7kW	6kW	6kW	4kW
2	8kW	8kW	7kW	6kW	5kW
3	9kW	9kW	8kW	7kW	6kW
4	10kW	10kW	9kW	8kW	7kW
5	14kW	12kW	10kW	10kW	9kW
5+	16kW	15kW	14kW	12kW	10kW

5. Boiler finance and other ways to pay

Boiler finance is more widely available than ever. Once the reserve of much larger companies, many smaller companies are now FCA registered and can offer their customers flexible ways to pay. The three most common packages are: interest free, buy now pay later and interest bearing over 3-10 years.

INTEREST FREE

The price of the installation is spread over a short time period – usually 1-2 years – with no interest added. A deposit may be required..

BUY NOW PAY LATER

You will receive a deferred payment period of 6-12 months before any payments are due. If you pay off the finance amount in that period no interest will be payable. If you do not pay it off, interest will be added from the start of the deferred period.

INTEREST BARING

A fixed interest rate will be payable for the finance period, commonly 3-10 years. Interest rates on our network are commonly 9.9% APR, lower than larger providers at 14.9% APR.

TOP TIP FOR FINANCE. All finance arrangements must clearly show the monthly cost and the cost of any interest added. If you do not have a good credit rating then it is unlikely you will be approved. You can take out finance on a pension! Providing your earnings are sufficient to cover repayments.

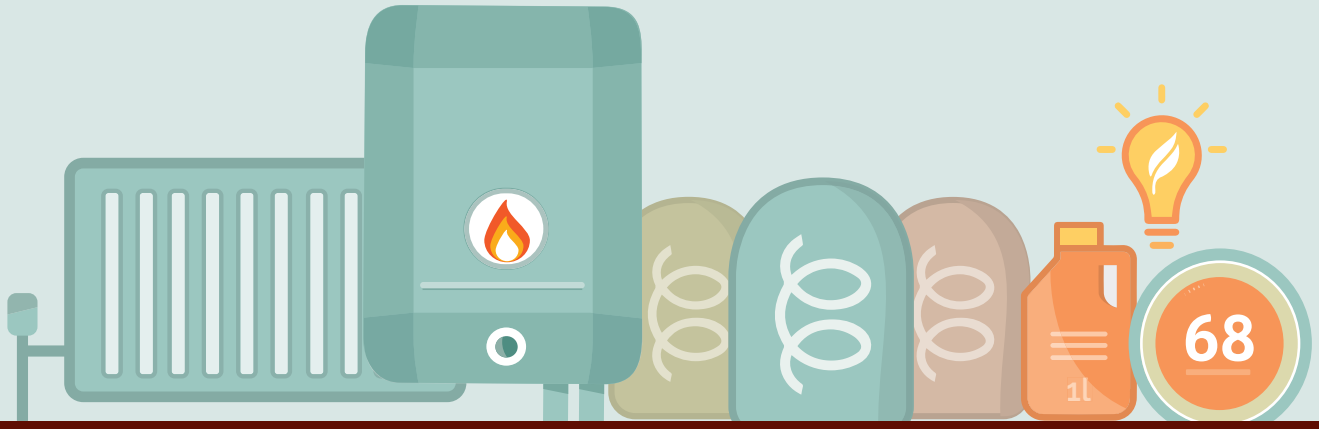
Other ways to pay

There are of course many other ways to pay. An interest free credit card will be as good as interest free finance and it will be accepted by a larger number of installers.

6. Boiler warranties and guarantees

All new boilers come with a warranty, or sometimes a guarantee, from the boiler manufacturer. This means that if you experience a genuine fault with the boiler during the 'warranty period', the manufacturer will repair the boiler free of charge. The warranty period will vary from 2 years to 12 years. The length of the warranty period has a big impact on your long term maintenance costs; particularly as the likelihood of faults occurring increases as the boiler gets older.

Over the last 10 years we have witnessed the 'war of warranties', as each manufacturer has gradually increased the length of their boiler warranty to gain a competitive advantage. This has been GREAT for us as consumers! 5 years warranties are now standard, even amongst budget products, many offer 10-12 years of boiler cover provided they are installed by an approved installer.



7. Finding a good installer

How do you find a good installer? The landscape is confusing when you search for an installation company on Google. Many companies pay to appear in local listings, but they are not necessarily local. Others look like installation companies but are actually 'lead generation' companies that collect your data and sell it on to genuine installation companies to contact you.

We have broken down installers in to four industry operators: National & regional companies, Local independent companies, sub-contractor networks and sole traders. Who you use will determine who will fit your boiler. If you have gone via a lead generation company then your details could go to any one of the industry operators below.

NATIONAL AND REGIONAL COMPANIES

British Gas, Help-Link, Swale Heating.
All long standing companies that largely employ their workforce and have their own call centres.
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LOCAL INDEPENDENT COMPANIES

Located across the UK commonly employing 2-12 staff. Often family run. The Heating Hub network is made up of local businesses like these.

SUB CONTRACTOR NETWORKS

Hometree, BOXT, Glow Green.

Use Google to good effect to generate leads and then use sub contractors across the UK to install the boilers.

SOLE TRADERS

Self-employed engineers who sometimes employ an apprentice or junior installer to assist.

8. What to look for in a good local installer

We strongly support small local heating business. Our criteria for membership is what we would recommend to look for when choosing who to install your boiler:

- Reputable local business with good reviews
- Accreditations with boiler manufacturers or part of their 'approved installer scheme'
- Gas Safe registration for the products they are installing
- Serve their local area
- Employs their engineers

9. Approved installer schemes

A number of boiler brands run 'Approved' or 'Accredited' installer schemes, whereby a gas safe registered engineer can undergo additional training in a particular make of boiler and become approved by the boiler manufacturer.

These schemes create a network of local gas installers across the UK who are listed on the boiler manufacturer's website. Most of the major brands have some form of accredited scheme or at least offer product training on the boilers.

Benefits for customers

- Extended warranties/guarantees
- Installers have undergone additional training in the products they install

Restrictions on choice

- If your preferred installer is not accredited with your preferred boiler manufacturer you will not get the free extended warranty/guarantee

10. Heating controls and Boiler Plus requirements

New efficiency standards for all new boiler installations were introduced in April 2018 aimed at reducing the amount of fuel we use to heat our homes, as follows:

1.. Every new boiler installation must have an ErP efficiency of at least 92% (not to be confused with boiler efficiencies which are 89-90%.

2. All new boilers must be fitted with time and temperature controls e.g. a programmable room thermostat, if not already present

3. An additional energy saving measure must also be installed for combination boilers from the list below. Measures A-C are all forms of heating control and fall under different 'classes' of control. The higher the 'class' the more efficient the control is deemed to be.

A.
WEATHER COMPENSATION CONTROL – Class 6 control

B.
LOAD COMPENSATION CONTROL – Class 5 control

C.
SMART CONTROL WITH AUTOMATION AND OPTIMISATION FUNCTIONS SCHEME – Class 4 control

D.
FLUE GAS RECOVERY UNIT

11. The benefits of 'advanced' heating controls for Boiler Plus

Measures A – C are all forms of advanced heating control. Advanced controls work to ensure the boiler is on for the shortest possible time to meet the room temperature. Standard controls tend to overshoot the room temperature by 1 or 2 degrees which is very inefficient. Advanced controls reduce the heat output of the boiler as it approaches the desired temperature to prevent overshooting. The net result is a reduction is gas use and lower fuel bills.

12. How does Boiler Plus apply to my boiler?

Slightly different minimum requirements apply depending on boiler type - combi, heat only or system - and whether the heating control is being fitted to an existing installation or fitted as part of a new boiler installation, as follows:

NEW COMBI BOILERS

New combi boilers require a programmable room thermostat with weather compensation, load compensation or automation and optimisation features OR standard programmable room thermostat plus a flue gas recovery unit. 'Compensation' style controls must speak the same 'language' as your boiler.

NEW HEAT ONLY AND SYSTEM BOILERS

New heat only and system boilers require time and temperature controls, i.e. a programmable room thermostat or a thermostat with separate programmer. You can elect to fit a form of advanced control and we guide you on suitable products below.

EXISTING BOILERS

Existing boilers have no minimum requirement for heating controls (other than the prevailing requirements at the time of installation). It is advised that a programmable room thermostat is fitted and we guide you on suitable advanced controls and internet controls below.

13. A note on selecting measures A, B or C

If you want to opt for measures A or B (compensation controls) your boiler must speak the same language. Either use the manufacturer's own controls (opt 1) or pick a control and boiler that use the Opentherm language (opt 2). If none of that works, pick option 3.

Option 1.

Choose the boiler brand's own advanced control as that will definitely work with their boiler.

Option 2.

Choose an Opentherm control and Opentherm boiler. Opentherm is a universal language that has been adopted by some boiler and control manufacturers, for example Nest and Honeywell.

Option 3.

Opt for smart controls with automation and optimisation functions (Measure C).

14. Thermostatic radiator valves (TRVS) and smart TRVs

Building control regulations highly recommend the addition of TRVs with a new boiler installation. TRVS allow for the individual control of radiators so that you can turn down radiators in bedrooms and little used rooms and turn them up in the lounge for example.

Flow-setting TRVs

A recent development in the TRV market is the 'flow-setting' TRV. These work by restricting the amount of water 'flow' to the radiators once they have reached their temperature. The net result is that the boiler reduces its output quicker and this reduces the amount of gas used. It is estimated that they can save upto 15% on your heating bills and are not much more expensive than a mid-range standard TRV.

Smart TRVs

Smart thermostatic radiator valves have been around for a few years. Smart radiator valves work with smart controls to remotely control radiators or groups of radiators as part of your smart control system. Like flow-setting TRVs they often work by adjusting the 'flow' of water to the radiators so that the boiler reduces its output quickly as those rooms reach temperature, hence saving on gas.

Smart TRVs tend to work with a limited range of smart controls and usually only those of the same brand. Nest work with third party TRV controls from Energenie and both Worcester Bosch and Vaillant manufacture smart TRVS that are compatible with their latest smart controls.

15. Power flushing and magnetic filters

It is very important that your heating system is kept clean. When the water that flows around your heating system gets dirty it will damage the boiler and radiators and increase your fuel bills. Systems get dirty when air is introduced to the system, for example when we 'top up the pressure' on our boilers.

There are a number of very effective measures available to clean your system and keep it clean. The best measures are always preventative, i.e. having a clean system and using a magnetic filter and deaerator. Other measures such as power flushing will reverse a build up of dirt in the system but will not undo any damage it may have caused.

An important consideration for any installer is the space available to fit magnetic filters and deaerators. Fortunately they come in lots of shapes and sizes.

Power flushing

A power flush is the process by which a purpose built machine pumps chemically treated water through your radiators and pipes at high speed in order to clear a build-up of corroded metal and scale. In severe cases the deposits can cause blockages that stop radiators from getting warm, increase fuel bills and damage the boiler.

Common symptoms that your system may need a power flush are:

- **Cold spots** at the bottom of the radiators
- **Hot pipes** but cool radiators
- **Dirty water** when radiators are bled
- **Knocking** or **banging** noises
- **Luke warm water** from combi boilers
- Boilers overheat or **'whistle'**

Deaerators

Deaerators are a little device, about the same size and cost as a magnetic filter, that remove air from the system and keeps it clean on an ongoing basis. This is the best form of prevention for sludge.

Magnetic filters

Magnetic filters remove sludge from the system as it passes through the magnet. They are a great device for protecting the boiler from any latent sludge in the system and when paired with a deaerator they ensure a clean and efficient heating system for the long term.

16. Hot water cylinders

There are two types of hot water cylinder: vented and unvented. You may hear the term direct and indirect used by engineers, but it is worth noting that only indirect cylinders are used with central heating boilers.

OPEN VENTED INDIRECT COPPER OR STEEL CYLINDERSS

Open vented cylinders work in conjunction with a cold water 'expansion' tank (usually in the roof space) and are compatible with any boiler. They are also known as 'tank fed' as they are not dependent on the incoming mains pressure to deliver good hot water flow rates to your taps and showers. It is best to retain this system if your incoming water pressure is poor. Tank fed hot water systems can be further improved with a pump.

UNVENTED HOT WATER CYLINDERS

Unvented cylinders use an expansion vessel (round red metal container found next to the tank) rather than an open vent and expansion tank. Unvented cylinders are always made of steel, rather than copper, in order to withstand the high pressure placed upon them. Unvented cylinders require a lot of safety devices and must be fitted by an engineer specifically qualified to work on and install unvented cylinders.

17. Boiler efficiency and the most efficient new boilers

A boiler's 'energy efficiency' is the percentage of the total energy used by the boiler to provide useful heating. For a modern boiler with 90% efficiency, 90% of the energy used by the boiler goes to heating the home, only 10% is 'lost'/used to run itself. For a very old boiler with 60% efficiency, only 60% of the energy used by the boiler goes to heating the home, a whopping 40% is lost.

How efficient is your existing boiler? As a rough guide assume:

Over 20 years old: 60% efficient

20 years old: 70% efficient

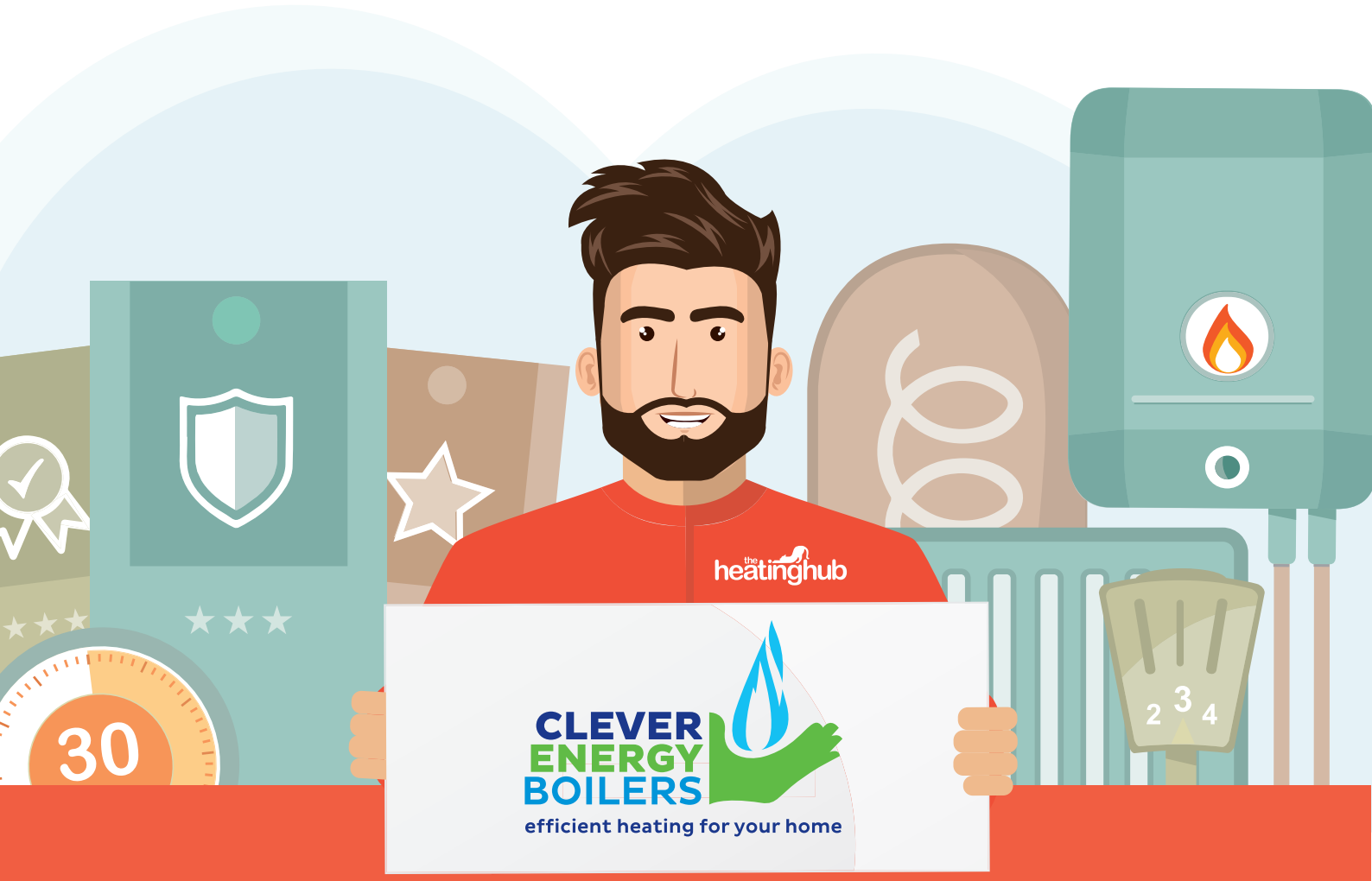
15 years old: 75% efficient

10+ years old: 80% efficient

How efficient is a new A-rated boiler?

Boilers have factory rated efficiencies of 89%-90%, however they must be fitted correctly in order to achieve these efficiencies.

In order to achieve factory rated efficiencies, the boiler must be sized correctly and be fitted with a compatible compensation control.



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