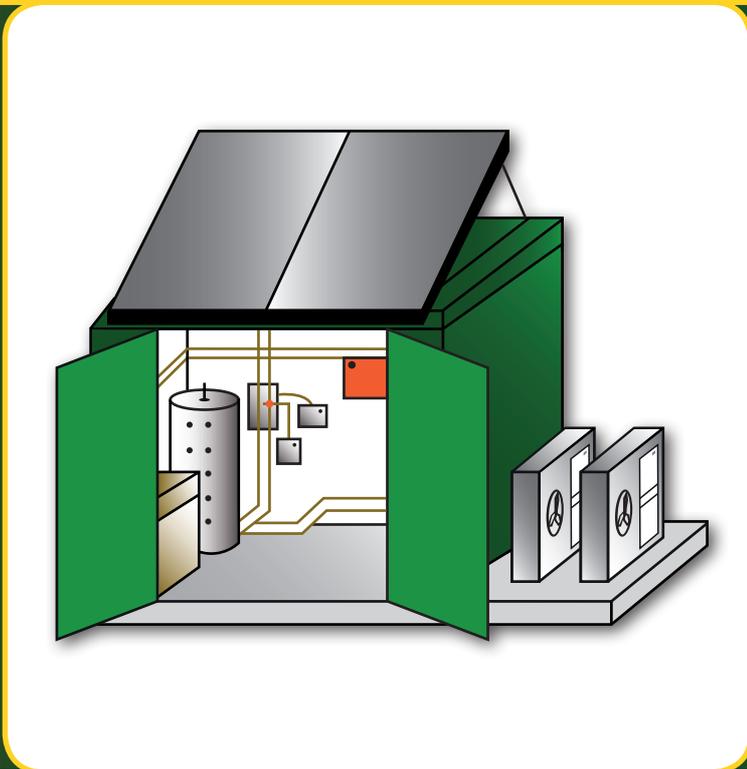




PRODUCTS YOU CAN TRUST



- Mistral Mistral Combo System
- Mistral Solar Panels For Hot Water
- Mistral Air Source Heat Pump For Hot Water
- Mistral Hot Water Cylinders
- Mistral Buffer Tanks
- Mistral Heating Systems
- Mistral Back up Heating Products
- Mistral Outdoor Modular Heat Station
- Mistral Outdoor Combo System 1
- Mistral Outdoor Combo System 2
- Mistral Outdoor Combo System 3

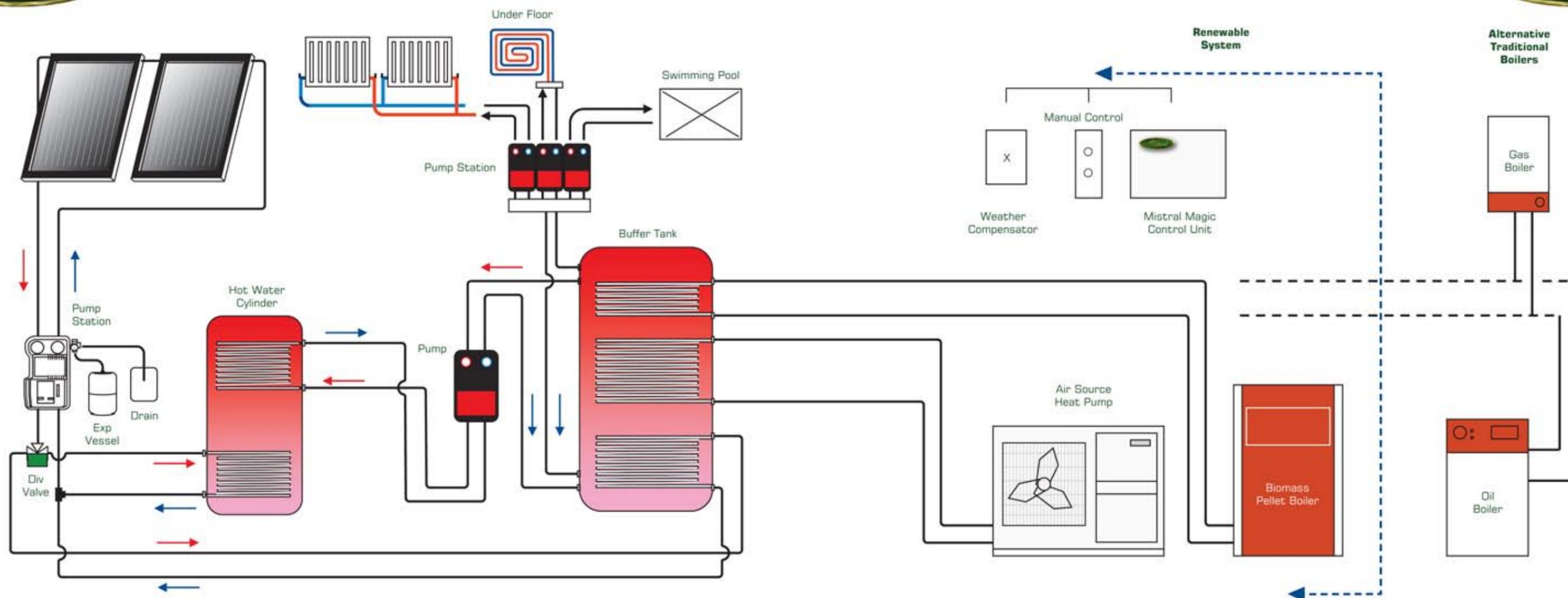
SEE

THE FUTURE

TODAY

One of the UK's most advanced Bespoke systems
made available to everyone

The Mistral Combo System



Whether it is climate change, emission reduction or simply rising energy costs, everyone will want to consider the Mistral Combo System to help resolve the current issues we all face when considering the provision of hot water and heating.

The 'Mistral Combo' System

A professional complete system configuration fully supplied by Mistral, for the person who is serious about getting the best value and efficiency to meet their energy requirements.

Using economical and highly efficient products, you can have a hot water and heating system run either part or entirely on renewable technology, thereby giving lowest carbon emissions, whilst still meeting your household needs.

The technology behind this is the 'Mistral Magic' control unit. This specifically designed computer programmed control unit allows the individual systems to co-ordinate between each other to achieve best results, working also with a weather compensator for further enhanced performance.

Although there can be variations, the 'Mistral Combo' system including all Mistral approved products as above, operates as follows;

Hot Water

Solar panels heat up the twin coil solar cylinder. When this is at the required temperature, a diverter valve will open to allow the triple coil buffer tank to be heated through the lower coil. The buffer tank can be used to supply extra hot water back to the cylinder, give pre-heated water for the heating system, or help heat a swimming pool. When up to temperature, the solar system can simply shut down.

When hot water is used, reducing the temperature in the solar cylinder, the 'Mistral Magic' control unit will switch the solar pump back on to this tank to replenish it in the first instance.

If the solar cylinder temperature falls to a pre-determined level and this cannot be replaced by the solar system, the control unit will switch over to the buffer tank to supply the solar cylinder thus providing access to substantially more available water. This could be further supported if necessary by the heat system supplying the buffer tank.

Heating System

Pre heating the Buffer tank by the solar panel system, clearly gives an advantage to reducing heating costs, as well as giving extra available hot water potential.

Our triple coil Buffer tank will generally supply either radiator panels, an u/floor system, or a combination of both for household heating. It can also be split off to help heat a swimming pool complex.

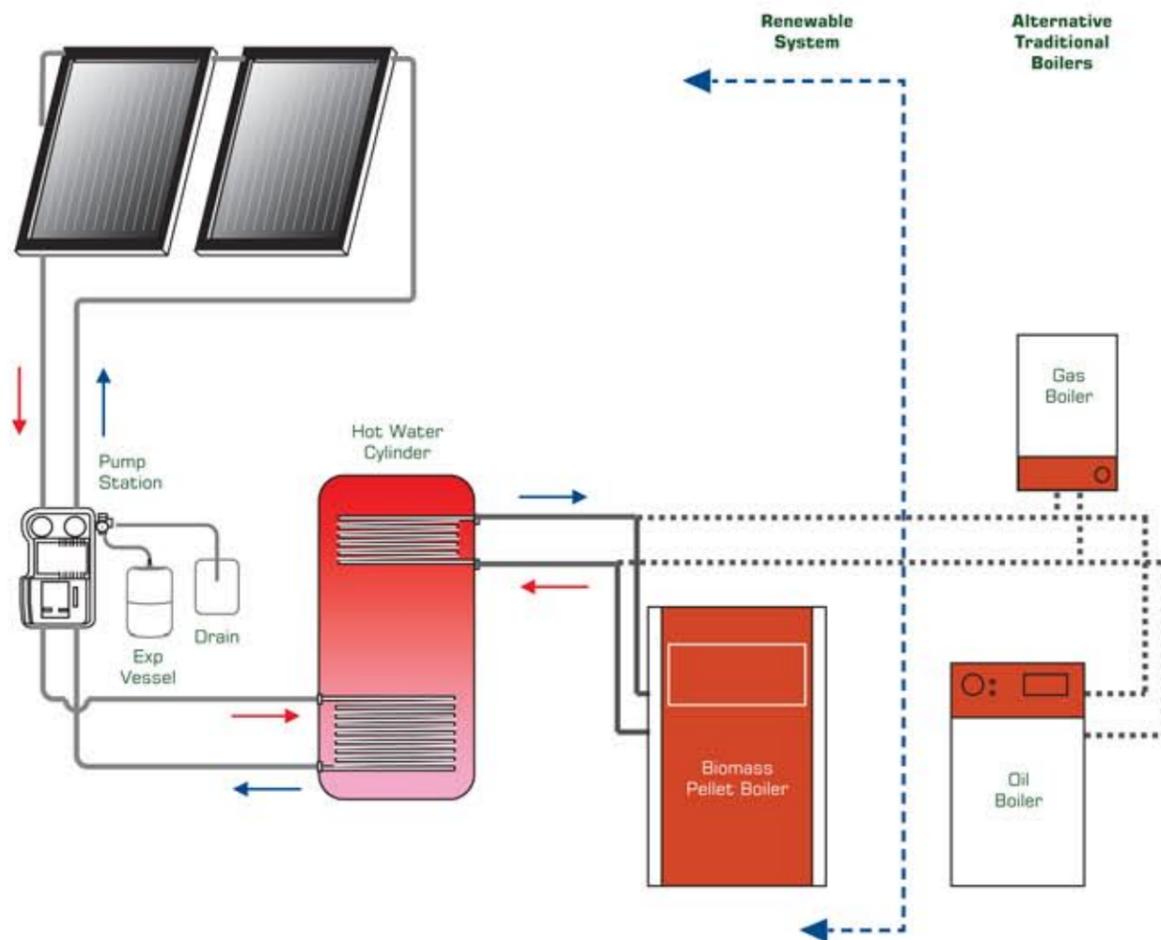
Air Source Heat Pumps (A.S.H.P.) have been chosen as the preferred main heat unit and they can be run in series to achieve higher outputs. A more detailed explanation can be found under the section Heating Systems.

As with most renewable heat units, they are less efficient in winter conditions and may not continuously provide total requirements. We therefore strongly recommend it is further backed up by either a biomass, gas or oil boiler. This is what makes the 'Mistral Combo' system complete. All your needs all year, using the appliances when they give their best return.

The fully designed system, operated by the 'Mistral Magic' control unit will give the best all year round use of the various technologies available now.

Get a complete system delivered to your door ready to install.

The Mistral System For Solar Hot Water



Getting the balance right when selecting a system which can provide for your hot water needs, may be down to economics, environmental concerns, personal preference or simply convenience. Mistral have selected 2 systems which we believe will give a modern day approach to providing hot water for the home for either new, or indeed replacement systems, Solar Panels and Air Source Heat Pumps.

Solar Panels for Hot Water

Solar panels are a highly efficient method of extracting energy directly from the sun to provide hot water for the home.

The benefits of using solar technology to heat water are enormous, once you have your system installed. Not only is it free energy, it is also an investment in the property and helps the environment.

In conjunction with our Buffer tank, it can also provide a hot water start up for your heating system, rather than the solar pump station being shut down when the solar cylinder is up to temperature.

- Average family of 4 can be provided for by a 2 panel set up, with app. 200 litre cylinder.
- The system can provide 70% average annual consumption up to 100% water needs in the summer.
- Easy to install fixing kits.
- Eco or High Efficiency panels.
- Standard panel package from 1 - 4 units.
- East / West kits available.

Collector Eco are Standard Efficiency.
Collectors H/E are High Efficiency Panels.

Standard Panel sets up to 4 units.

Basic Pack Includes:

				
Collector - Eco	Eco 1	Eco 2	Eco 3	Eco 4
OR				
Collector - H/E	HE 1	HE 2	HE 3	HE 4
Fixing kit	*	*	*	*
Pump station twin line	*	*	*	*
Controller	*	*	*	*
Expansion vessel	12L	12L	18L	18L
Solar liquid	*	*	*	*

Additions, Options & Accessories

- DN 16 twin insulated pipe inc. sensor wire 10m, 15m, 20m 25m.
- DN 20 twin insulated pipe inc. sensor wire 10m, 15m, 25m.
- DN 25 twin insulated pipe inc. sensor wire 15m, 25m.
- DN 16 single insulated pipe 10m, 15m, 20m, 25m.
- DN 20 single insulated pipe 20m, 50m.
- Sensor cable 2 core wire 50m reel.
- Intermediate pre heat dissipation vessel.
- Pressure vessels from 12 L - 600 L.
- Pump upgrades.
- Safety valve discharge tank.
- Sensor connection box - protects against elec. surges.

Any fitting packs by request.

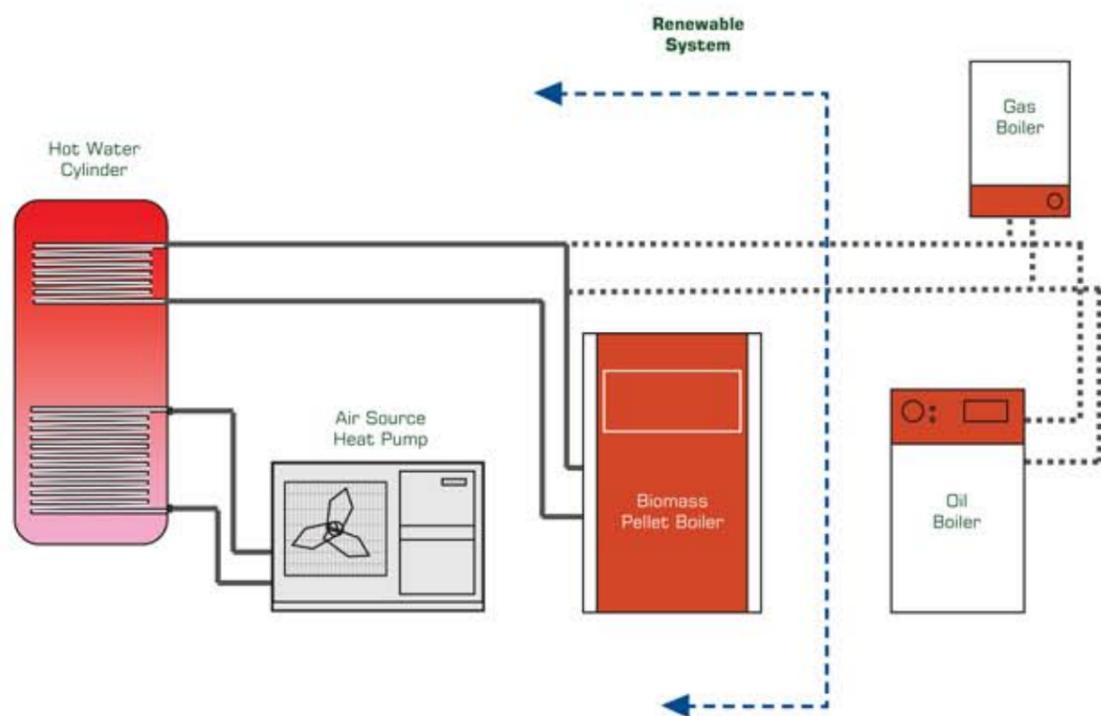
Tools

- Pipe cutter set with flanging tool.
- Solar engineer test kit (in case).
- Solar pump station (for filling system with solar liquid).

If you need the full package, we will supply, you fit.

The Mistral System For Hot Water Using Air Source Heat Pumps

Mistral Cylinders & Buffer Tanks



Air Source Heat Pump for Hot Water

Air Source Heat Pumps work on the basis of extracting heat from the air, which is then converted into useable heat for the home. Heat Source Pumps are extremely versatile and can be used in a number of different applications.

Easy to install, much cheaper to run than Gas, LPG, Oil or Electric.

For hot water only, a relatively small air source heat pump of 8kw can be used. On a ratio estimate of COP 4/1, this would use only 2kw while operating at it`s optimum.

This figure of COP 4/1 is not consistant throughout the year and is seasonally affected.

For higher water use, a 12kw air source unit can be used.

As with the solar package, Mistral always recommend a back up system (biomass, gas or oil) to maintain hot water requirements at a satisfactory level throughout the year.

These provide fast recovery products for hot water.

Summary

Whether you choose to install Solar Panels or Air Source Pumps to provide hot water, both systems are regarded as long term solutions. Both also have their slight advantages and disadvantages to each other even taking into account the different type of installations.

It is clear that either system will operate at their highest efficiency during the better weather months of the year and we think customers should take advantage of this window of opportunity.

These systems may achieve high rates of return for perhaps 10 months of the year, but you should always take into account the need for a satisfactory back up system to get through the worst months comfortably.

The need for economical and highly efficient methods of providing hot water and heating has never been greater.

The demand for environmentally friendly solutions is what everyone is looking for

The Mistral range of selected cylinders are considered by us to be the best available.

They can provide both hot water and heating using a variety of heat sources from Solar, Air Source, Ground Source, Biomass, Gas or Oil boilers. The objective as ever is to utilise each product to both work within it`s own best parameters, whilst maintaining the needs of the household, with back up when required.



Hot Water Cylinder - single coil standard recovery.
For use with Solar, Biomass, Gas or Oil boiler.
Range: 170 - 200 - 250 - 300 - 400 - 500 litres.



Hot Water Cylinder - single coil fast recovery (high gain)
For use with Air Source or Ground Source Pumps.
Range: 170 - 200 - 250 - 300 - 400 - 500 litres.



Hot Water Cylinder - twin coil standard recovery
Top coil - For use with Biomass, Gas or Oil boiler.
Lower coil - solar
Range: 170 - 200 - 250 - 300 - 400 - 500 litres.



Hot Water Cylinder - twin coil fast recovery (high gain)
Top coil - For use with Biomass, Gas or Oil boiler.
Lower coil - Air Source or Ground Source Pumps.
Range: 170 - 200 - 250 - 300 - 400 - 500 litres.



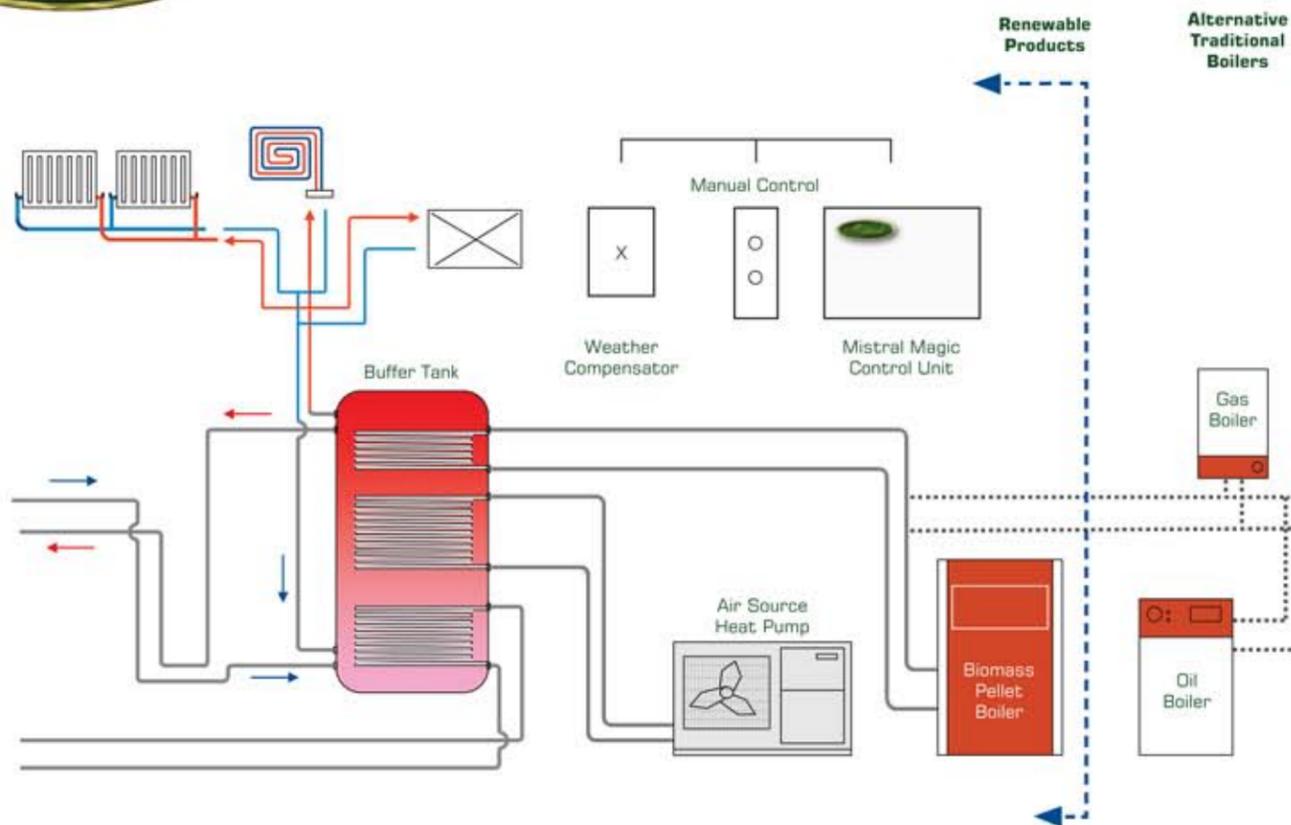
Buffer Tank for Heating - Supplementary Hot water supply.
triple coil - centre coil fast recovery
Top coil - For use with Biomass, Gas or Oil boiler.
Centre coil - Air Source or Ground Source Pumps.
Lower coil - Solar
Range: 170 - 200 - 250 - 300 - 400 - 500 litres.
Tanks can be up to 5000 litres special purchase.

All Mistral supplied cylinders are manufactured from high grade stainless steel and come with the best manufacturers warranty available.

All cylinders are intended to be used on indirect, unvented and fully pumped systems.

If you do not see the tank you need, just call us.

The Mistral System For Heating



The Mistral System for Heating is designed to give a full performance related package which will take into account annual efficiency, environmental and economic considerations, energy consumption and emissions, as well as give you the comfort of still being able to get the hot water and warmth needed for a comfortable living.

We have chosen a number of individual products which combined will give a bespoke system to many more people at an affordable price.

Mistral cannot stress enough the importance of having a back up system to ensure that you as a family can maintain hot water and heating for 12 months of the year, not just 10 months.

Unless your accommodation is entirely up to building regulation standard, it is likely the renewables you may install (Air or Ground Source Heat Pumps) will not live up to your expectation all year round and it is normal to back this up with either a biomass boiler, or more likely you may have a gas or oil boiler which can serve the purpose for this short period of time during extremes of winter.

Main Components of The System

Buffer Tank

Can be anything from 200 up to 5000 litres of water and will act as a top up for your normal hot water cylinder or, as it is pre - heated from solar, an economic start to your heating system.

Obviously, the larger the store, the more heat is available for stored solar water and subsequently a lower energy consumption from heat energy sources.

To get the benefit of the system the Buffer tanks are triple coiled and made to take a variety of different heat providers.

Air Source Heat Pumps

We have selected the ASHP as the main heat provider for the 'Mistral Combo' system taking into account the average COP of 4/1, the ease of installation and the economic gains, as well as the obvious advantages of reducing carbon emissions.

They basically work on the principle of removing heat from the air and returning this heat into usable heat for the provision of hot water or heating. Standard models come in approximate sizes of 3kw, 8kw and 12kw.

They can also be linked in series.

The efficiency of the ASHP however does start to decline when the temperature falls below 5°C and we feel that as with most renewable systems, it is far better to be backed up by another source of heat such as a Pellet boiler, or alternatively Gas or Oil Burners.

Ground Source Heat Pump

A GSHP can also be used as the main heat provider if preferred, it is likely to give a better overall performance in efficiency than the ASHP, however it has to be taken into account that the installation is usually quite substantial and this affects the overall cost of outlay.

These also work on the principle of extracting the heat from below ground and converting this energy into usable heat for hot water or heating.

Pellet Boilers

Carbon neutral biomass boilers are a cost effective way of reducing your carbon footprint.

Pellet boilers have also moved on substantially since their introduction and can now come with self cleaning, de-ashing or low maintenance models from 15 - 45kw.

They are also available as an outdoor model with added frost protection.

Pellet boilers can also be used either as primary heat providers or a secondary back up to the main system.

Back up Boilers

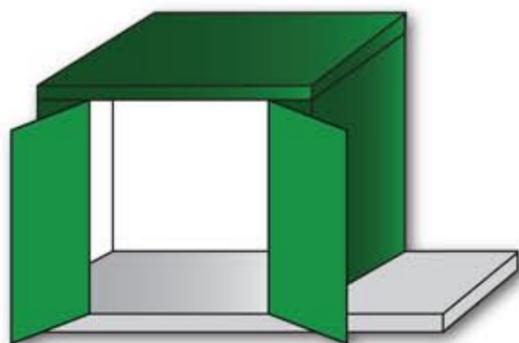
The best back up boilers available at the present time are still the traditional Gas, LPG or Oil boilers and there is nothing stopping you from using these to support any renewable system which you may be considering.

Summary

The 'Mistral Combo' package has been designed to provide a system which can take the best of the current technology which is affordable and match this with the traditional methods of producing hot water and heating requirements in order that everyone can be satisfied that a balance has been struck between economical, environmentally friendly, highly efficient products and the need for the hot water and heating demand required by your family, to still be satisfied all year round.

The Mistral Outdoor Combo System

Outdoor Modular Heat Station



Outdoor Modular Heat Station

This unit is designed to incorporate the Combo systems available from Mistral, when space indoors is limited, however can be used to provide a housing unit for any bespoke system, even including perhaps a plant room for a swimming pool complex, and therefore can be purchased as an individual product.

Made from solid mild steel panels, easy to assemble on site, pre-treated and powder coated in a green textured finish to provide better weather protection, the units are modular, although the standard system size is 2500mm x 1250mm x 2200mm high approx. Large front doors make this unit easily accessible for maintenance of the system.

The Station comes as basic, with the following optional extras; Full insulation pack, 6 way waterproof electrical consumer unit with 40 amp main breaker, 4 fuses 20,20,16 and 6 amps, waterproof light and switch, waterproof plug sockets x 2, isolator switches x2 off.

Mistral Outdoor Combo 1

This has been developed specifically to overcome the potential problem of lack of free space within a house or garage when deciding to fit a complete 'Mistral Combo 1' system.

It can be a great way of locating all your heating and hot water systems under one roof, but not taking valuable space from within the property.

Servicing and maintenance is much easier when everything is located together.

The housing unit would be fixed down to a concrete base, close to the property for ease of getting the pipework from the collector panels to the Station.

Internal pre-punched locating panels make the sub-assembly of the system parts easy to fit.

All optional extras listed above are available.

No more finding a cupboard to empty, to fit a cylinder in!!!

Mistral Outdoor Combo 2

This has to be the ultimate system available at present.

A 'Mistral Combo' system complete with solar collector panels attached to the roof of the housing unit. Up to a 2 panel set up, to put anywhere in your garden that suits.

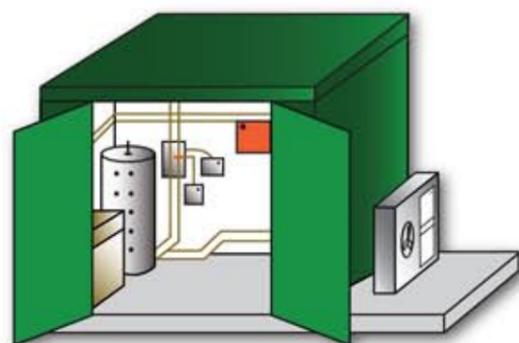
Many people object to collectors on the roof making their property unsightly, as well as taking into account the cost of scaffolding and labour.

No more issues nor extra expense with East/West kits. You do not have to worry whether your house faces the right way, providing you can fit the Combo 2 anywhere you like within your property boundary, subject to local planning approval if needed.

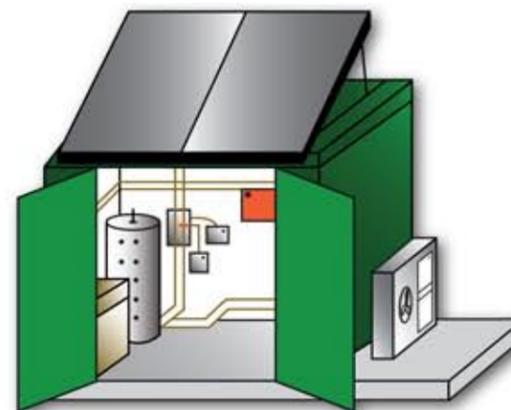
Also ideal for listed buildings, to prevent the external appearance being altered.

Please consult local planning to confirm whether planning permission is needed.

Mistral Outdoor Combo 1



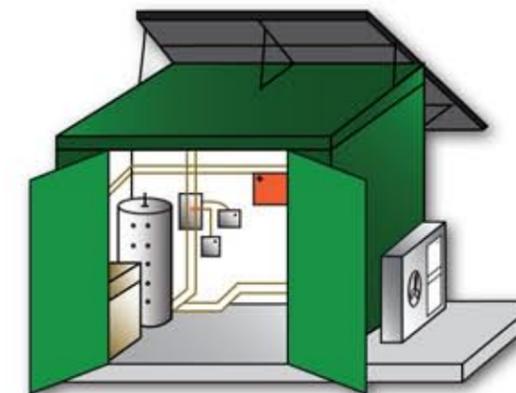
Mistral Outdoor Combo 2



Mistral Outdoor Combo 3

Identical to the Combo 2, except the solar panels are rear facing.

Mistral Outdoor Combo 3



The 'Mistral Combo' System

The Full System referred to in this brochure would comprise of the following;

Solar panels, insulated pipework, pump station, intermediate vessel, pressure vessel, drain container, twin coil hot water cylinder, triple coil buffer tank, circulation pump sets, pipework kits, Air source heat pump, 'Mistral Magic' controller, manual controller, weather compensator and a back up boiler, such as a biomass (Pellet boiler), or a more traditional unit such as a Gas or Oil boiler.

You can have the lot, or just a part of the system to suit.

Although we recommend the Air Source Heat Pump unit as the main provider to the system, this has been primarily for financial reasons versus return on investment.

There is no reason why the main provider cannot be Ground Source or Pellet Boilers and if this is your preferred choice, we are happy to provide any of these as part of the package.

Conclusion

Mistral hope that the 'Combo' system can bring to you a complete package which takes into account the initial cost, the limitations of individual products and the needs of your family requirements throughout the year.

The majority of the Mistral Combo system can be fitted anywhere in the house where space is available, such as a boiler, or plant room. It may also be preferable to consider installation in a garage. If these options are not available to you, then consider the Modular Heat Station as a solution to giving that extra room.

If there is any further information you would like, please do not hesitate to contact us for advice.

As a specifier, builder, architect, or a merchant Your Customer Needs this System.

We would like to thank you for taking the time to read through our product catalogue and hope you have found something which meets your requirements.

Whether it is a complete or part system, we will strive to give you the best products and service available at a competitive price.

It is our Company policy to create continual improvements in products and systems, and as such, we are always open to new ideas, some of which can be seen in this brochure.

The systems and diagrams shown in this brochure are for illustration purposes and should not be relied upon solely as the only way a system or product operates. Specific legislation may also have to be taken into account. Due to continual product development and improvement,

Mistral reserve the right to alter any specifications within this brochure.



Complies with the EC low voltage and electromagnetic compatibility and efficiency directives.



With high efficiencies and low emissions the Mistral range of products are environmentally friendly and as a result economical to run.



**British Made
Quality
Products**



Registered equipment group member of the oil firing technical association for the petroleum industry.



All our manufacturing is carried out under a stringent quality control system to ISO9001 and monitored by the British Standards Institute.

Our sales / technical / customer service departments will be pleased to assist and advise on all our products and associated components.

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