

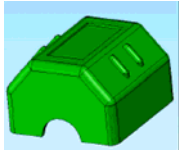


The application and benefits of fuel and water conditioning products in Churches, Vicarages, Meeting halls, Schools etc.



Fuel and Water conditioning products from MTL

MT-X1

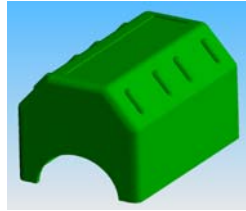


twin module unit

Available

(L) 30mm x (W) 30mm x
(D) 18mm - each module.
Up to 10mm dia. pipe

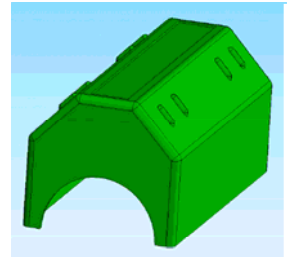
MT-X2



Available late 2009

(L) 45mm x (W) 31mm x (D)
30mm
Up to 20mm dia. pipe

MT-X3



Available late 2009

85mm x (W) 41mm x
(D) 35mm
Up to 30mm dia. pipe

MT-X8



Available

(L) 165mm
(W) 50mm
(D) 20mm

Up to 40mm dia pipe

MT6

Weight:
1.58 Kg



Available

(L) 150mm, x (W) 85mm, x
(D) 80mm - extending up to
140mm depth, dependent on
the pipe diameter.

Pipe diameters from 20mm
up to a maximum of 59mm
external diameter (bolted),
80mm (unbolted).

MTC

Weight:
varies with
model, from
1.2 Kg to
4 Kg approx



Made to order

Dimensions vary dependent on
model.

E.g. the external dimensions of
the MT-C75 (for use on 75mm
pipe) are:

L 125mm x W55mm x D65mm

N.B. A pair of units is required



REDUCE YOUR FUEL USE AND COSTS THE NATURAL WAY (and reduce the volume and levels of harmful emissions you produce at the same time)

The seemingly endless series of price increases being announced by the fuel supply companies affect us all at home, at work, and in our places of worship.

A consequence of the increased costs is that money which is sorely needed for use in the parishes, or in support of charitable and social work is taken away and handed over to the international fuel conglomerates.

Well, at last, help is at hand.

There is available a range of low-cost, simple-to-fit products, which are each having a beneficial impact in the areas of heating and transportation, by reducing fuel consumption itself. Furthermore, the fuel savings are coupled with a welcome decrease in harmful emissions, at no extra cost.

“Millside” has been marketing ranges of these products since 1997, primarily supplying the domestic and industrial markets.

Millside has recently entered into a trading agreement with Tony Price of Roseudgeon Enterprises (now based in Market Rasen, Lincolnshire) who has been installing these products in Churches, Vicarages, Meeting halls, Schools etc, in England and Wales, from Devon to Cumbria, since 2002.

If you require more information, please contact either the wholesaler who provided you with this booklet (details should be shown on the outside of the back cover), or, alternatively, contact one of the following:

MILLSIDE TECHNOLOGY LTD
(Farnham, Surrey)

VIC GREEN

01252- 714787

millsidevg@aol.com

www.millsidetech.com

ROSEUDGEON ENTERPRISES
(Market Rasen, Lincolnshire)

TONY PRICE

01472 399876

Mobile: 07833-551209



THE PRODUCTS

The majority of the reports in this publication are related to use of the successful “EC” range of products, which we have been marketing since 1997.

However, in 2008 we decided to introduce our own range of products, enabling us to treat a wider range of applications than has been possible with the EC range, and at a significantly lower cost to our clients.

We are in the process of phasing out the EC range - this should be complete by the end of 2009. The EC products will still be available after that time, if required.

All of the products in our new “MT” range are manufactured in the UK, with the exception of the MT6/7, which is supplied from Germany.

FUEL CONDITIONING

The primary use of the products is as fuel conditioners on both engines and heating equipment.

The products are used to condition the fuel, improving the combustion efficiency; producing more energy (heat in heating equipment, or power in engines) from the same amount of fuel, and reducing both the volumes and the levels of harmful emissions.

HEATING

The products can be used on all types and sizes of domestic/commercial/industrial oil/gas fired heating equipment.

Reported savings for industrial /commercial applications are typically in the range of 5 -20%, while customers using domestic/small commercial equipment generally report savings of 20% or more.

Greater savings (30 %+) are often achieved with LPG.

In addition to the reduced emissions, a further benefit, where oil-burning equipment is involved, is a reduction in the amount of carbon deposits that occur – extending the time needed between cleanings.

ENGINES

The products can also be used with similar effects on all types and sizes of petrol and diesel engines. Again, reported fuel savings are generally in the 5-20% range and significant reductions in emissions are also achieved – including diesel particulates.

WATER CONDITIONING

The second most frequent use of the products is as a limescale inhibitor. Limescale affects almost 60% of properties in the UK and Ireland, increasing the costs of water heating and damaging the equipment.

The use of the products can reduce scale build-up and remove existing scale.



The presence of scale increases heating costs significantly. Government figures are that a 6mm layer of limescale on the coil/heat exchangers, or the heating element of an electric immersion heater in hot water cylinders, increases water-heating bills by up to 40%.

Removing or preventing the scale (on the coils in the tank, or in heat exchangers themselves) therefore reduces the amount of fuel required - irrespective of fuel type (e.g. wood, coal, electricity, oil, gas, solar, heat pumps etc).

COMBI Condensing BOILERS

More recently, it has been found that the effect of scale on modern combination condensing boilers ("combi" boilers) can be to block the water circulation pipes within the heater itself, leading to inefficient heating, or even breakdowns, and necessitating expensive maintenance costs to have the pipework/heat exchanger descaled.

This had become so evident that the UK Government has recently changed the Building Regulations to read that scale-inhibiting equipment should be fitted to such boilers, in hard water areas. Some manufacturers have now begun to include scale-inhibiting features into their new products.

INSTALLATION etc

The products are all simple to install, although care needs to be taken when handling the extremely powerful MT-C range of products.

The products are simply placed onto the water/fuel pipe. There is no need to cut or alter the pipes in any way.

The MT-X1/2/3/8 products are held in place with cable ties. These are releasable, should it become necessary to remove the units.

The twin modules of the MT6 /7 products bolt together.

The twin modules of the MTC products tend to be used on steel pipes and do not usually need to be secured.

OPERATION

Once installed, the products require no operating power or chemicals; they generate no emissions.

There are no moving parts or chemicals involved and the products should last indefinitely.

FINANCIAL ISSUES

On relatively small-scale heating applications, a 100% return (in the form of lower fuel bills) on the investment will usually be achieved in the first three months (winter usage).

100% Payback on engines varies tremendously dependent on mileage/operating hours. For cars it is typically a period of 2-3 months.

The units are guaranteed for a minimum of **10 YEARS**.



ENVIRONMENTAL ISSUES

The products reduce the consumption of hydrocarbon-based fuels (liquids and gases), by improving combustion efficiency. The generation of combustion by-products/emissions is also therefore reduced by at least the same levels.

The added bonus is that more complete and efficient combustion also reduces the levels of the more harmful components in the emissions that are actually produced. All of this is at no additional cost, but as a side effect of the fuel-saving, cost-cutting exercise.

GUARANTEES

Millside Technology Ltd provides the following:

- A 10-year “Labour & Materials” guarantee.
- A 10-year guarantee on the magnetic properties of the products.

If there are any problems in the period, simply return the product(s) to your supplier or MTL and receive new replacement product(s) by return.

In addition, in most instances, the business/person who supplies/installs the products to/for you will also provide a “Satisfaction” guarantee whereby if you are not satisfied with the performance of the product, then you can simply return it to him/them within 120* days of purchase for a full refund. (This period can often be extended, especially for seasonal heating loads)

Discuss this with your supplier at the time of purchase.

THE APPLICATIONS and USERS Domestic/Commercial/ Industrial

ENGINES - fuel conditioners can be used on:

Lorries, cars, vans, coaches, mini-buses, motorbikes, generators, compressors, garden equipment (mowers, strimmers etc), agricultural & horticultural equipment, construction equipment, motorboats, ferries, canal barges, sailing ships (auxiliary engines, generators etc).

HEATING - fuel conditioners can be used on:

All types of patio heaters, barbecues, boilers, water heaters, hot air blowers, ovens, kilns, tumble dryers, kitchen equipment, grain dryers etc.

Used in schools, offices, homes, bakeries, laundries, foundries, churches, power stations, leisure centres, swimming pools, meeting halls, horticultural centres, farms etc

WATER TREATMENT – water conditioners can be used to:

Reduce and remove limescale in all types of water handling and heating equipment, including boilers and water heaters, steam generators, spray systems/humidifiers in air conditioning systems, bathrooms/showers/sinks etc.



Maintain the pH balance in swimming pools, fishponds etc to and reduce the need for chemicals. They also inhibit the growth of algae and “blanket” weed..
Treat irrigation and drinking water in agricultural and horticultural applications, improving the growth and well-being of animals, fish and plants.

OTHER USES -

Refrigeration – we have undertaken a number of trials involving the installation of the products on the refrigerant circulation systems of commercial and domestic refrigeration equipment – reducing electricity consumption by 10-15%. More trials are underway.

Beer lines – Units fitted onto beer supply lines have been shown to inhibit the growth of yeast, thereby extending the time possible between cleanings, and reducing costs (including the cost of wasted beer).

Attention! - Very strong magnetic fields

Care should be taken to avoid trapping fingers when handling, or fitting/ removing the units, especially the more powerful products, i.e. MT-X8, MT-6/7 and the MT-C series.

All magnetic products can adversely affect magnetic data assemblies etc

Keep the products at least 150mm (500mm for the MT-C series) from cardiac pacemakers and similar implants; magnetic data memories (credit cards, car keys, computer diskettes etc); relay switches and other magnets/magnetic products etc.



PROJECT REPORTS - CHURCHES

Magnetic conditioning products have been installed in the following Churches, Rectories and related Offices, Schools in England and Wales.

<p>Ambleside St Mary Aylesbury - St Mary Bearwood Church (Dorset) Bedford - All Saints Biggleswade -St Andrew's Bishops Stortford -St Michael Bletchley- St Mary Bletchley Parish Office Boston - Holy Trinity Bradford -St Chad's Brigg - St Nicholas Brookenby - St Michael & All Angels (Lincs) Chalfont St Giles Church Chalfont St Giles (Reading Room) Codicote St Giles (Herts) Crosthwaite St Mary (Cumbria) Derby - St Osmund's Downs Barn (Milton Keynes) - Cross & Stable Church Edmonsham Church (Dorset) Furzton (Milton Keynes) - Church of the Servant King Goldington (Bedford) - St Mary the Virgin Great Missenden - SS Peter & Paul (Bucks) Grimsby - St Mark Headington -,St Andrew (Oxon) Houghton Conquest - All Saints (Beds) Hughenden - St Michael's (Bucks) Ickleford - St Katharine (Herts) Keelby - St Bartholomew (Lincs) Kempston Methodist Church (Beds) Lincoln - St Mary le Wigford Llandaff North Methodist Church (Mid-Glam) Long Crendon - St Mary the Virgin (Bucks) Loughborough Emmanuel Church Luton - St. Anne Luton - St Paul Marldon - St John the Baptist (Devon) Marston Moretayne - St Mary the Virgin (Beds) Nottingham, Mansfield Road Baptist Church Ruskington - All Saints (Lincs) Salisbury Cathedral Sandy - St Swithuns (Beds) Scraptoft & Nethershall - All Saints (Leics) Shefford - St Michael & All Angels (Beds)</p>	<p>Spalding - St Nicholas Stantonbury (Milton Keynes) - Christ Church Stevenage URC Stevenage Methodist Church Stoke Poges - St Giles (Bucks) Stoke Poges - St Andrew (Bucks) Stone Cross - St Luke (E Sussex) Thame - St Mary the Virgin (Oxon) Two Mile Ash (Milton Keynes) - Holy Cross Waddesdon - St Michael & All Angels (Bucks)Walton Holy Trinity (Bucks) Woburn Sands - St Michael (Beds) Wooburn - St Paul's (Bucks)</p> <p>Bodicote (Oxon) Rectory Boston Holy Trinity Vicarage Branksome Park (Dorset) Vicarage Chinnor (Oxon) Rectory Essendine (Lincs) Vicarage Ewelme (Oxon) Rectory Haversham (Milton Keynes) Rectory Kendray (Barnsley) Vicarage Sherington (Milton Keynes) Rectory Tetsworth (Oxon) Rectory Waddesdon (Bucks) Rectory Wilden (Beds) Rectory</p> <p>Longham Church hall Parkstone Church Hall</p> <p>Oxford Diocesan Offices</p> <p>Thornton College, Buckingham Cadmore End CE School, High Wycombe Cherry Willingham Primary School, Lincoln Victoria CE School, Berkhamsted Heatherton House School, Amersham Westbrook Hay Preparatory School, Hemel Hempstead Bishop Grosseteste University College, Lincoln</p>
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A number of reports and testimonials are reproduced in this booklet. In the majority of cases these involve relatively small boilers, on which we would now recommend the use of the new lower-cost **MT-TX** products, such as the **MT-X1** or **MT-X8**. Medium size installations can be fitted with the **MT-X8** or **MTC**; and larger installations (such as that at Salisbury Cathedral -see report following), the **MT-C** series. (See Table)

EC-H3 number installed	Alternative Now recommended	EC-H2 number installed	Alternative Now recommended	EC-E2 number installed	Alternative Now recommended
1	1 X MT-X1 (pair)* or 1 x MT-X8	1	1 x MT-X8	1	1 x MT-X8
2	1 x MT-X8	2	2 x MT-X8	2	2 x MT-X8
4	2 x MT-X8	4	4 x MT-X8	4	4 x MT-X8
8	4 x MT-X8	8	6 x MT-X8 or 1 x MT6 or 1 x MT-C (pair)	8	6 x MT-X8 or 1 x MT6 or 1 MT-C (pair)

* Non –ferrous pipe only



SALISBURY CATHEDRAL (England)

REMEHA P200 Natural Gas boilers



EC-H3 magnetic fuel conditioners were installed on the steel natural gas supply pipes to three Remeha P200 boilers in Salisbury Cathedral

'We have been monitoring the results since the installation of the fuel conditioners, and I estimate a **saving of 12.4%** over previous years.'

Peter Edds

Head of Buildings and Estate
Salisbury Cathedral

May 2008



NEW PRODUCTS AVAILABLE !

We would now recommend the use of a single twin-module **MT-C75** assembly on each of these fuel supply pipes.

This new product would provide a significantly lower cost solution than the use of the **EC-H3** products.

(See table above)

FUEL SAVINGS OF 12.4%

Save Fuel - Save Money - Save the Environment



MANSFIELD ROAD BAPTIST CHURCH (Nottingham)

(Pilot Project under the auspices of Eco-Congregation)



Four (linked) Hamworthy UR Series gas-fired boilers, requiring 12 x EC-E2 units

Produced savings in excess of 15%

STATEMENT BY ALAN WILSON, CHURCH TREASURER, AND SECRETARY TO THE ASSOCIATION OF CHURCH ACCOUNTANTS AND TREASURERS (ACAT)

In 2007, under the auspices of Eco-Congregation, we agreed to be part of a pilot project to evaluate EC-E2 magnetic ionisation devices, supplied by Tony Price of Roseudgeon Enterprises, based near Market Rasen in Lincolnshire. Mr. Price had already carried out a number of installations of these devices in ecclesiastical premises in various parts of the UK.

We understand that the units work on the basis of applying a strong magnetic field to the flowing supply of fuel, and this enables more of the available fuel to be converted into useable energy.

Our heating system is operated by four Hamworthy UR series gas-fired boilers, generating 1,720,000 BTU's. These boilers required 12 of the EC-E2 fuel conditioners. No alteration or cutting of the fuel supply pipe was required, as the units simply strap onto the pipe (gas or oil). The units are power free and have an indefinite life.

The units were installed on 10th October 2007, and the position reviewed in April 2008, after 6 months of usage.

Due to fluctuating use of the building, it is difficult to state with complete accuracy the degree of savings achieved. However, having compared average consumption for the same period in the previous three years, we are confident that **savings in excess of 15% have been achieved.**

MAY 2008

Save Fuel - Save Money - Save the Environment



All Saints, Houghton Conquest, Bedfordshire

Oil fired boiler. - four **EC-H3** units fitted.
Cost of installation (incl. VAT) £200

Result:

A reduction of over 20% in oil use repeated in successive years - (2001-3)

NEW PRODUCTS

We now recommend the use of **MT-X8** units on this and the many similar installations in this brochure.

As an example, this installation would require two MT-X8 units (See table above)



Testimonial from Churchwarden Mike Padian:

I am the Churchwarden of All Saints Church, Houghton Conquest, Bedfordshire. The Church is a large mediaeval, Grade 1 listed building, often referred to as the Cathedral, and reputed to be the largest village church in Bedfordshire.

As such heating costs are a major problem and account for a large slice of annual expenditure. The present system is an oil-fired boiler providing hot water to radiators and is by no means modern or economically efficient.

About two years ago, I was asked if we would be interested in using some of the products in the Church, in the interest of reducing fuel costs. Having already seen similar products demonstrated in another situation, I was well aware of the potential saving in our costs. We decided to invest in four of the fuel treatment units, which were secured to the fuel line of our oil boiler, and immediately I was able to detect that the boiler was quieter and running with a more regular rhythm. In the first year, the economy achieved was remarkable; in previous years we had always required two or three deliveries of oil to take us from September to May. We now found that we had sufficient fuel to last from switch-on in September to just before Christmas, when we had a delivery. That one delivery then lasted until switch off in May.

The same pattern has continued this last year, albeit with a five week lay off for major pipe repairs, but in spite of this, there can be no doubt that the products have given us real benefits and substantial savings in our fuel costs. I would have no hesitation in recommending their use to anyone having a need to reduce their fuel costs. I have already made such recommendations and I am aware that they are in use now in a number of Bedfordshire Churches.

M.J. Padian, Churchwarden, Houghton Conquest PCC - May 2003.

Save Fuel - Save Money - Save the Environment



St Swithuns, Sandy, Bedfordshire Diocese Of St Albans

Natural Gas fired boiler
Four **EC-H3** fuel conditioners fitted
Cost of installation £200

Results - 11% fuel saving.



Comparative readings for successive years are shown below:

Pre-installation

Quarter ending	Units consumed
Nov 03	254
Jan 04	528
Mar 04	983
Jul 04	<u>377</u>
	<u>2142</u>

Post installation

Quarter ending	Units consumed
Oct 04	182
Jan 05	747
Apr 05	761
Jul 05	<u>226</u>
	<u>1916</u>

St Mary Parish Office, Bletchley

10.9% fuel saving

Natural Gas fired boiler – **EC-H3** units fitted December 2005

This report has been compiled using actual consumption figures before installation for the period 3 November to 30 November 2005 and after installation from 17 January to 13 February 2006.

Comparisons between consumption have then been made taking into account 'heating degree days' supplied by the Carbon Trust.

Dates	Meter Readings	Consumption	Degree days	Consumption per degree day	Saving
2005 November 3	5468	201	248	0.81	
November 30	5669				
After Fitting Ecoflows (and allowing a bedding-in period)					
2006 January 17	6069	223	306	0.73	10.9%
February 13	6292				

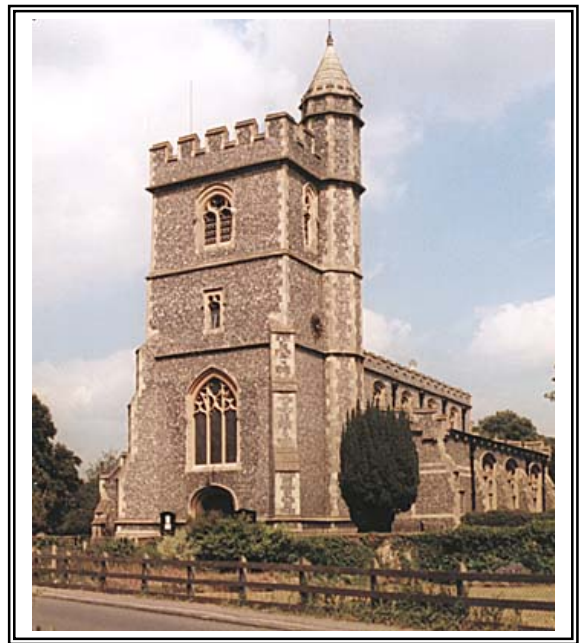
Save Fuel - Save Money - Save the Environment



St Paul's Parish Church Wooburn, Bucks

Natural Gas fired boiler - four **EC-H3** units fitted
Cost of installation £200 (incl. VAT)

Result: 18%-20% fuel saving.



EC-H3 fuel conditioners on the
Clyde Combustion 045 Natural
Gas Boiler 300,000 BTU's

Testimonial from former Churchwarden Peter Lugg:

In 2003 I was the Churchwarden of St Paul's Church, Wooburn, a listed building some 850 years old in South Buckinghamshire. With the costs of gas central heating continuing to rise we were considering asking the congregation to have a monthly 'cold Sunday', in an endeavour to contain running costs.

Coincidentally, an approach was made to me regarding the efficacy of magnetic fuel conditioners, and it was suggested that these should reduce gas consumption and, hence, reduce the cost of heating the church.

As an Engineer I was most sceptical that a so simple, non-mechanical device could do what was claimed. The PCC agreed to their installation for a period of one year on the understanding that if no reduction in gas consumption had been achieved, the units would be removed and their installed cost would be reimbursed.

*The units were installed (in under one hour) and after some 18 months in use, a comparison of consumption with the previous, similar, period was made. It was found that the fitting of the units had produced **a saving of some 18%-20% in gas consumption** – more than paying for their installation costs in their first year of use! Needless to say, the units remain in service.*

*As a result of my findings, I had a unit fitted to my domestic, gas-fuelled central heating boiler. After nearly two years in service, **the saving in gas consumption is around 12.5%**, compared with the previous performance – again, very quickly recouping the installation cost.
Peter Lugg, Churchwarden, Wooburn PCC - December 2004*



Christ Church, Stantonbury Campus Milton Keynes

EC-H3 fuel conditioners fitted to two *Mexico Super2* Natural Gas fired boilers

Result: 15.44% fuel saving.



The comparison used actual consumption figures before installation for the period 6th March to 14th April). and after installation 22 May to 12 July .

Consumption in the latter period has then been pro-rated to 39/61

Comparisons between consumption have then been made taking into account 'degree days' supplied by the Carbon Trust

The Rectory, High Street, Haversham

Oil fired boiler - One **EC-H3** unit fitted

Cost of installation (incl. VAT) £50

Result – Oil usage reduced by 15-20%.

Testimonial from Ian J. Pusey, Rector of the LAMP group of Churches

You will recall that you installed a fuel conditioner in August last year as I was becoming concerned at the increasing costs of fuel oil needed to fire our boiler. In the time since the installation I have been delighted to see a significant reduction in our fuel costs.

*It is difficult to put a precise figure on the reduction as we buy oil when it is at a cheaper rate rather than when the tank is nearly empty but I would estimate **our saving is around 15-20% per annum.***

I have no hesitation in recommending this product for use in churches and similar properties to this one. I think I can say this is amongst the best £50 I have ever spent !

Ian J. Pusey, Rector of the LAMP group of Churches - May 2004

St. Andrew's Biggleswade

Six **EC-H3** fuel conditioners fitted to a Potterton 461 Natural Gas boiler



St Chad's, Toller Lane Manningham, Bradford

Testimonial from Richard Longcake
Churchwarden - April 1998

Result:

Natural Gas savings of 35%

*'I am writing to let you know how we got on at St Chad's with the **EC-H3** units.*

As you will remember, you supplied us with three units; two for the church heating and one for our church hall.

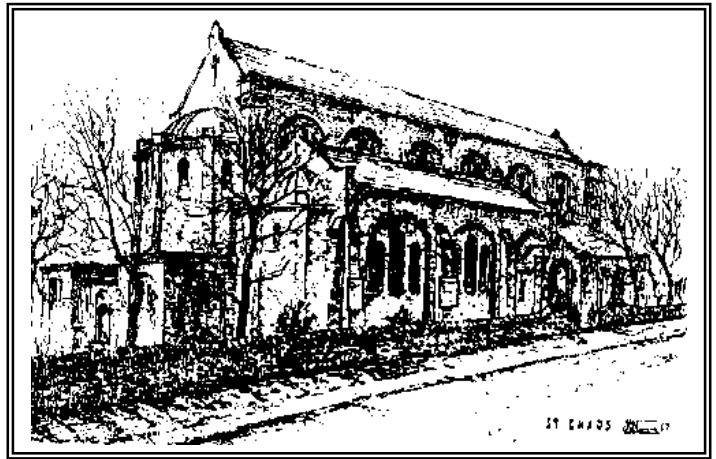
We have recently been able to compare this year's gas bill with last year's (before fitting!).

*The results are very impressive: so far we have seen a saving of approximately £700, which is **a saving of around 35%**: for an initial outlay of £150.00!*

Money well invested however you look at it!

Thank you for introducing us to the products.

Yours Sincerely, Richard Longcake, Churchwarden'



St. Peter and Paul, Great Missenden, Bucks

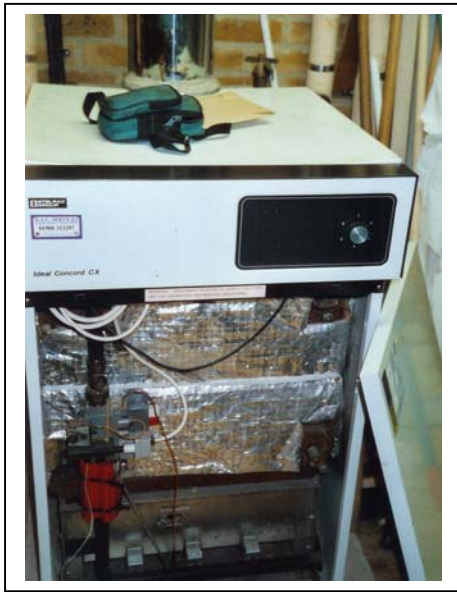
Four **EC-H3** fuel conditioners fitted to a *Viessmann VITOROND 200* oil-fired boiler



Save Fuel - Save Money - Save the Environment



Cross & Stable Church and Community Centre Downs Barn (Milton Keynes)



Two **EC-E2** fuel conditioners fitted to natural gas fired Stelrad, Ideal Concord CX boiler generating 120KwH

Result

15.09% fuel saving

This report has been compiled using actual consumption figures before installation for the period 31 December 2005 to 4 February 2006 and after installation from 19 March to 14 April 2006.

Comparisons between consumption have then been made taking into account 'degree days' supplied by the Carbon Trust.

Fuel consumption	Meter Reading	Gas used	Days	Daily average
Before installation				
2005 31 st December	1534			
2006 4 th February	1974	440	35	12.5714
After installation				
2006 19 th March	2544			
2006 14 th April	2737	193	26	7.4231
Degree days equivalent				
	Daily average	Daily gas used	Gas used per Degree day	Reduction
January 2006 = 335	(31 days) = 10.806	12.5714	1.1634	
Mar/Apr 2006 = 448	(61 days) = 7.344	7.4231	1.0108	15.09%



St Anne's Church, Crawley Green Road, Luton

Two **EC-H3** fuel conditioners fitted on each of three Potterton natural gas CH/HW boilers.



The Parish Church of All Saints, Queens Park, Bedford

Eight **EC-H3** fuel conditioners fitted to the natural gas fired heating system



St Mary, Marston

Four **EC-H3** fuel conditioners fitted to the oil fired CH/HW boiler



Diocese of Oxford Offices

Four EC-H3 fuel conditioners fitted to the Natural Gas CH/HW boiler



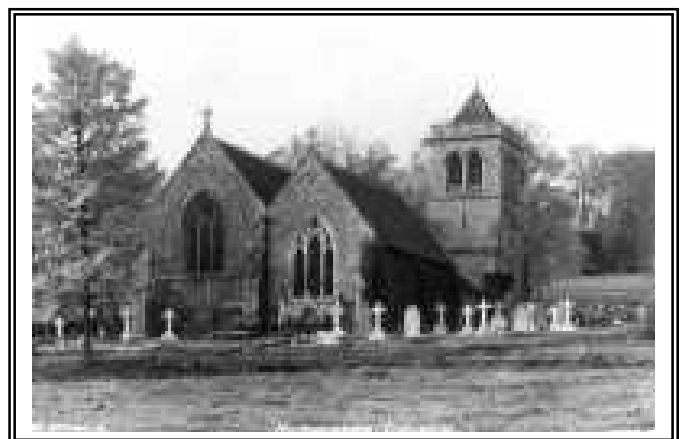
St Giles' Church, Stoke Poges



Four EC-E2 fuel conditioners fitted to a Natural Gas fired Ideal-MAX Condensing boiler, 89 Kwh

St Michael's, Hughenden

Four EC-H2 conditioners fitted to an oil-fired Riello burner on a Grundy Boiler



High Street Methodist Church Stevenage

4 x **EC-H2** conditioners fitted to each of two natural gas fired boilers.

3 x **EC-H2** conditioners fitted to a Heatrae Sadia "Megaflo" water heater to eliminate limescale problems



Church of the Servant King Furzton, Milton Keynes

Four **EC-E2** fuel conditioners fitted to a 120KwH gas-fired boiler



Thornton College, Thornton, Buckinghamshire (or the Convent of Jesus & Mary)



EC-E2 fuel conditioners fitted to the ovens, hobs and deep fat fryers (LPG) in the College kitchen .

Additional units also fitted to the 86.1KwH oil-fired boiler supplying the swimming pool.



Cadmore End, Church of England School



Four **EC-E2** conditioners fitted to the primary fuel line supplying two oil-fired Trianco boilers, 154,000 and 180,000 btu.





Llandaff North Methodist Church, Cardiff

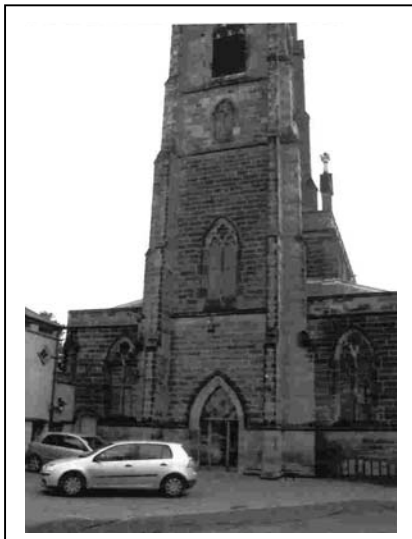
Two **EC-H3** fuel conditioners were fitted to the copper pipe supplying natural gas to the gas-fired CH/HW boiler.

Gas consumption was monitored for 34 days before fitting (9th October to 11th November 2008), and then for 81 days after fitting (12th November 2008 to 31st January 2009).

The results were then adjusted by use of the Governments heating degree days formula (to account for differences in ambient temperatures in the two periods), using statistics supplied by the Carbon Trust.

The net average daily fuel consumption figures for the two periods were then compared and revealed a saving of 35.95%

The net result was a fuel saving of 35.95%



Loughborough Emmanuel Church

6 x **EC-H3** fuel conditioners fitted to the copper gas supply pipe to the Potterton Gas fired boiler. Gas consumption was monitored for 85 days after fitting, during February to April 2009. The results were compared with the identical 85 period in 2008. The results were then adjusted by use of the Governments heating degree days formula (to account for differences in ambient temperatures in the two periods), using statistics supplied by the Carbon Trust.

The net result was a fuel saving of 6.05%



A brief summary of the History of the Magnetic conditioning of liquids and gases

Early recorded scientific research regarding the influence of magnetic fields on passing fluids dates back to **1831** and concerns mostly the experiments made by **Michael Faraday** and **James C. Maxwell**. Faraday discovered that water flowing past a conductive material will generate a weak electrical charge. (The first known patent of a device ameliorating water characteristics through the use of a magnetic field of a solid magnet was filed for protection in **Germany** in **1890** on behalf of **France and Cabell**.)

In **1847**, and following on from his **1846** work involving diamagnetics, **Farady** reported on the effects that magnetic forces had on the flame of a lit taper.

At the turn of the century a **Dutch** physicist, **Dr. Johannes Diderik van der Waals**, discovered that hydrogen has cage-like structures, which, when combined with carbon, form pseudo compounds. These molecular forces of mutual attraction and repulsion stay next to each other ("van der Waals forces"), however, when influenced by a magnetic field they will de-cluster and then interlock (bind) with additional oxygen (**which can result in dramatic increases in combustion efficiency**), and ascertained that due to them e.g. gases condense or water coagulates. In 1910 he received a Nobel Prize for his work. However a difficulty in creating a sufficiently intense magnetic field hindered commercial application until recently.

There are further reports of the development of research on fuel energizers during **World War II**. As part of the armament strategy, the **German** industrial concern **Messerschmitt-Flugzeugwerke** worked on the problem of eliminating smoke waft of the exhaust gases left by the engines of the military aircraft (fighter planes and bombers). As a solution to this problem they designed a magnetic device ("jet fuel energizer") consisting of fire resistant ceramic element with a hole for the fuel line, around which rod magnets were placed. As a result of heavy testing a configuration of the magnetic field was found at which the smoke of the aircraft engine exhaust gases was limited to the bare minimum. **Although the reduced fuel consumption was noted, it was merely regarded at the time as a (beneficial) side effect.**

In the **UK** at that time, planes were being fitted with electromagnets as 'scarf' collectors as the planes were being built so quickly. **Pilots found extra performance when the electromagnets were on.**

The first work in civilian usage was done in the early **1940s** in Europe by a **Belgian** engineer **T. Vermeiren**.

In the **United States** the commercial use of magnets for fluid conditioning started in the **1950s** by the pioneering patent of **Dean Moody**, the world precursor, together with the Belgian, of that form of fluid conditioning.

The men who wrote the next chapter in the world history of the magnetic treatment of fluids were in the **1960s** a **Japanese Saburo Miyata Moriya** (the so called "wet" devices, i.e. inline) and in the **1970s** an **American** inventor **Roland Carpenter**.

In the **1980s** **Peter Kulish**, a inventor from **California** and founder of MGI designed the so called monopole system which strapped onto fuel lines.

1996 saw two papers submitted by **Nobuko I. Wakayama** of the National Institute of Materials and Chemical Research, Tsukuba, **Japan**, which examined the effects of magnetic fields on the combustion process, as first identified by Faraday in the 1840s and reported on by Dr. Johannes Diderik van der Waals early in the 1900s.

One of the **Wakayama** papers reported on increases in flame temperature of up to 120° C and the other reported on the increased absorption of oxygen.

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