

WITH MAR-IX
ADVANCED
HVAC SYSTEMS
UP TO 80%
ENERGY SAVINGS
ON SUPERYACHTS.



WE TAKE
OUR FUTURE
SERIOUSLY

SERIOUSLY INVENTIVE

The evolution of HVAC technology is picking up speed, constantly being redesigned, reconceptualised and transformed. Change comes from the rebels, the ones that take a different approach... And that's how we see HVAC systems on yachts.

The result is advanced technologies that provide optimal comfort and wellbeing on board.

Our role as an advanced HVAC system creator revolves around serious thinking on how best to deploy existing techniques and technologies for our clients. Being inventive together allows the MAR-IX experts to achieve much on your behalf, always keeping your comfort and health and our future in mind.

In a sector like HVAC, with huge potential to move the dial, standing still is not an option. That applies to every new build but also to refits... A great deal is possible with

the technologies of today, much of which is already in place on your yacht and waiting to be used more smartly. At MAR-IX we never take HVAC for granted.

**OUR PROMISE: UP TO
80% ENERGY SAVINGS
ON SUPERYACHTS,
THANKS TO A
PROCESS WE CALL
HYPER TP.**

**MAR-IX ADVANCED
HVAC SYSTEMS.
WE TAKE OUR
FUTURE SERIOUSLY.**

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and see our MAR-IX Video





ABOUT MAR-IX

Established in 1992, MAR-IX advances the cause of HVAC via inventive products and systems.

MAR-IX designs, develops, engineers, manufactures and tests all its inventive HVAC products and systems entirely in-house at our state-of-the-art premises in the Netherlands.

As masters of our own domain, MAR-IX can guarantee you a degree of quality and innovation that is quite frankly unique in today's HVAC market.

IN CONCRETE TERMS, PARTNERING WITH MAR-IX ON YOUR NEXT PROJECT WILL ENSURE YOU:

- Industry-leading energy efficiency
- 30% energy savings as standard
- Up to 80% energy savings possible
- Optimum waste heat recovery via system integration
- The calming sound of silence
- Smaller unit sizes, built to scale and lighter weight
- Long lifespan, easy maintenance, online support
- Protection against viral contamination

HYPER TP AND ENERGY SAVINGS

The revolutionary Hyper Thermal Process (HYPER TP) from MAR-IX is the result of forward thinking and a commitment to going way beyond the extra mile.

Leaving conventional wisdom behind, our passionate experts recognise how much more can be achieved when it comes to energy saving.





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PLAYING OUR PART

Critically aware of the perils of climate change – deniers need not apply – everyone at MAR-IX is determined to play their part in creating a cleaner world. But we also recognise that our clients deserve the best of the best when it comes to onboard climate control.

Driven by progress, inspired intellect, MAR-IX specialists will prove to you that circular thinking and premium HVAC are not mutually exclusive... In fact, they go hand in hand. And they save you money too.

Uniquely in the HVAC industry, this 100% in-house developed Hyper Thermal Process (HYPER TP) offers you by far the highest reductions on electric (hotel) load available on the market today.

A WIN-WIN FOR ALL

Yards that take sustainable solutions seriously have a solid commercial story to tell and will be on the radar of the growing band of eco-conscious owners. We can provide you with interesting example from some recent projects that gives you an idea of the benefits you can offer potential clients.

CLEVER THINKING

In our experience yacht owners care deeply about our planet and the oceans they explore. We know that they want to do their best for the environment while also making no compromises on HVAC quality for their family and friends. We share your passion for energy saving, and our ability to find the right solutions for owners and yards is what makes MAR-IX frontrunner in the competitive but still rather unadventurous HVAC market.

In essence, HYPER TP integrates all the various thermal energy sources and onboard consumers. It is the ultimate combination of smart system design with intelligent monitoring & control, custom-created for the specific requirements of your yacht. Guaranteeing you a significantly lower e-load lessens your vessel's carbon footprint, resulting in a more sustainable operation as well as lower operational costs.

Another reason to choose for HYPER TP is that integration of HYPER TP in a new build or refit with MAR-IX HVAC equipment can result in energy savings as high as 80%.

HEATING

As more owners enjoy heading for the colder climates of Scandinavia and Alaska, with some yachts even venturing into the polar regions, heating has long since evolved from its occasional use on chillier evenings in the Med or Caribbean.

MAR-IX heating solutions cover every aspect of your accommodations and can be combined with floor heating, exterior systems on deck, in the pool/jacuzzi and much more besides.

OPTIMAL EFFICIENCY

We offer various heating solutions, from simple electrical systems to optimal heating of accommodations and systems with residual heat. The MAR-IX marine heat pump is a groundbreaking innovation in sustainable heating and extremely efficient compared to anything else available on the market today. Our modulating water heating systems are also exceptionally efficient.

Each part can be integrated into the complete HVAC system, with waste heat from units

such as fridges being reused for heating purposes. MAR-IX guides the entire system design taking all parameters into account in our calculations, including system costs, efficiency, comfort levels and the type of climates you're likely to encounter. Leveraging on our in-house-developed HYPER TP concept ensures you the most sustainable heating solutions with energy savings of up to 80% attainable.

SERIOUS ABOUT HEATING

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For more information about our high quality products go to www.MAR-IX.com.

VENTILATION

SERIOUS ABOUT VENTILATION

Always essential to the good life, a well-balanced ventilation system is now of critical importance in terms of virus control. MAR-IX is uniquely positioned to ensure you 100% fresh air, with excellent filtering techniques that result in a safe air supply system. Both

the extraction of moisture and the refreshing of musty air with filtered conditioned air keep each space a healthy environment for everyone onboard.

HEAT RECOVERY

We also offer you an excellent degree of heat recovery on the fresh air system without mixing the extraction and fresh air. You can expect to be reusing up to 60% of the energy saved from the extraction air, which is transported in liquid form. As this recovery will significantly reduce your cooling/heating capacity requirement you can fit smaller chiller or heater units, again gaining precious onboard space.

SMALLEST GIANTS

MAR-IX fresh-air systems are probably the smallest available in the market today, giving yacht designers and yards the chance to create more living space for the owners and their guests.



100% FRESH AIR ALWAYS STAY FRESH... AND KEEP VIRUSES AT BAY

Has fresh air – genuinely fresh air – ever been more important? Certainly not on a superyacht, where people spend long periods together in relatively confined spaces.

We all saw what happened to cruise vessels when COVID-19 first imposed on our lives and health. The pandemic has made crystal clear how important it is not to recirculate air within a vessel.

THE KEY BENEFITS THAT A MAR-IX SYSTEM OFFERS YOU ARE:

- We only use 100% fresh-air from outside
- Extracted air is never mixed with fresh air

WHY IS IT DIFFERENT?

Worryingly, the majority of the larger superyachts are currently equipped with installations that mix extraction air with fresh air in order to recover heat from the exhaust air. Mixing air sources in this way has the potential to spread viruses around the yacht via the ventilation system. It's a continuous process and viruses cannot be entirely stopped by filters or UV-light solutions.

The heat recovery on every MAR-IX system uses a fluid process, with thermal energy

in the extraction air captured and dirty air immediately discharged overboard. Each ventilated area of the yacht is isolated from the rest in our system.

A MAR-IX system ensures there is no chance of any cross-contamination of supply and extraction air. Or anything more sinister.



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AIR-CONDITIONING

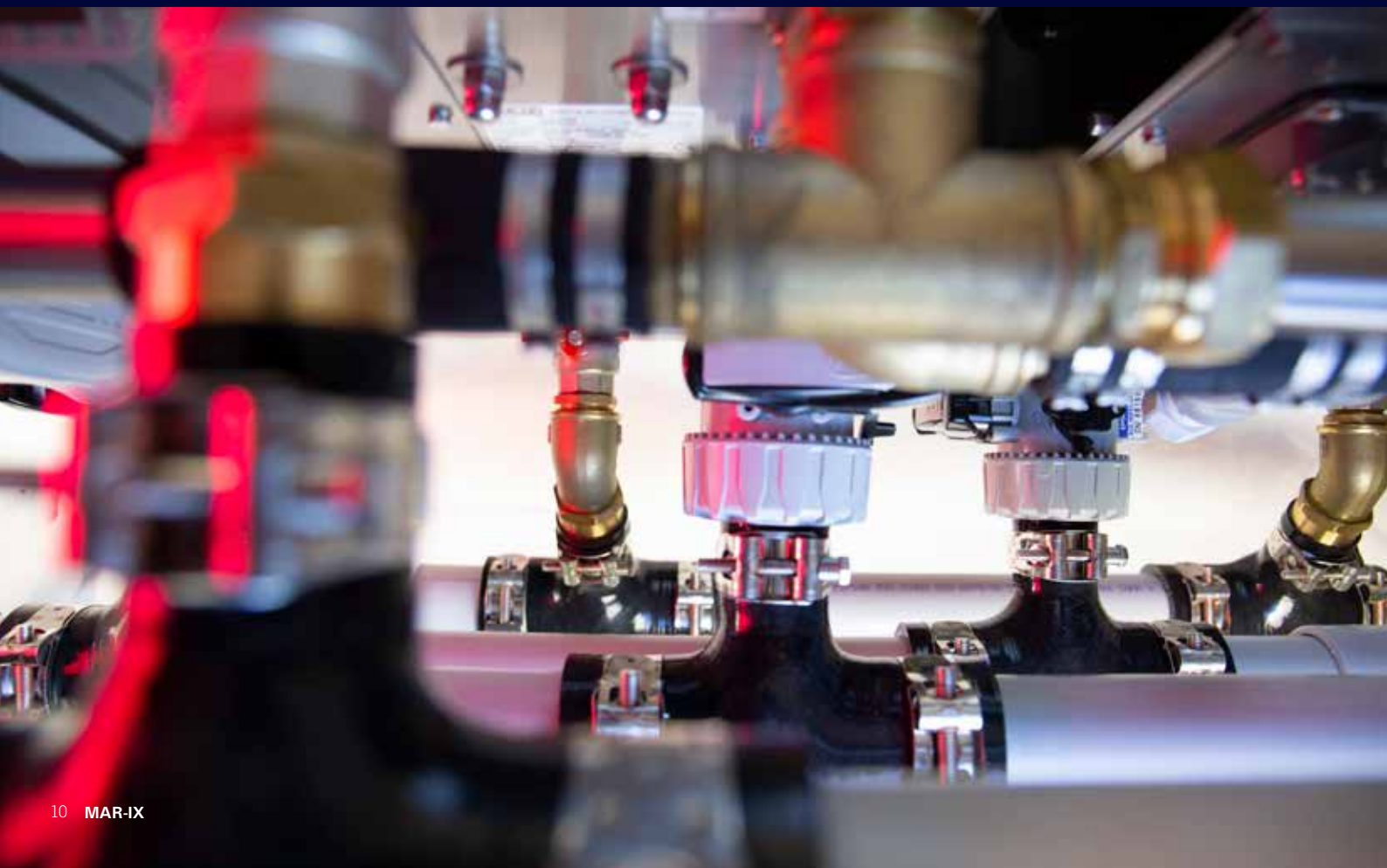
Compact in size, big on reliability, MAR-IX chiller units are equipped with advanced speed controlled inverter compressors that vary the speed to control your cooling capacity.

Say goodbye to current peaks as your on-board electrical system will always have a balanced load. And say hello to maximum comfort levels for crew and guests.

ALL FOR ONE AND ONE FOR ALL

All our HVAC products are renowned for their individual quality and yes, we'll be happy to sell you standalone units if that's all you require. We know how precious your onboard real estate is, so each product has been optimised for size and weight. MAR-IX units are also exceptionally quiet and easily exceed class requirements for noise.

To make the very best of your partnership with MAR-IX, we recommend marrying our fully scalable products in a total solution. Custom-designed and meticulously planned by us to offer you the smartest and most efficient system that money can buy.





CHILLER RACKS

Larger vessels often need to install more than one chiller unit to increase cooling capacity and enhance redundancy. Our chiller racks are a fine example of how advanced thinking meets the latest technical possibilities at MAR-IX, combining our premium-quality chiller units into a bespoke frame that will meet your request perfectly. MAR-IX chiller units are renowned for their exceptionally quiet operation. They are suitable for the most common power supplies, including 230 VAC, 400 VAC as well as high voltage DC.

Your MAR-IX chiller racks will be pre-assembled in our factory, including fitting of the chillers, manifolds and valves, with

all electronics pre-wired. This plug-and play system means the yard only has to connect the seawater, chiller water, hot water piping and power supply.

Each chiller unit operates independently so if one malfunctions the others continue to operate normally. Chillers can be removed and replaced separately (hot swap) while the system as a whole is functioning.



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SYSTEM SOLUTIONS

The maritime industry has developed a strong environmental awareness over recent years with the demand for innovative solutions on electric and hybrid vessels rapidly growing. MAR-IX has been involved in

many such projects, supplying a wide range of advanced cooling and heating solutions for accommodations and onboard systems. The key demand in each project? Low energy consumption.

SYSTEMS FOR ELECTRIC AND HYBRID VESSELS

Our unique HYPER TP concept integrates various thermal energy sources and consumers on board. A blend of clever system design and intelligent monitoring & control provides cooling and heating in a very efficient way.

THE BENEFITS OF A MAR-IX SYSTEM FOR ELECTRIC AND HYBRID VESSELS ARE:

- Extensive experience in system design
- Sustainable approach
- Reliable, proven and maintenance-free solutions
- Eco-friendly systems with minimised e-load

BATTERY THERMAL MANAGEMENT SYSTEM

As we all know large battery packs are the future on superyachts. The performance of battery cells is greatly impacted by their temperature – excessive cold or heat can lead to permanent and extreme damage of the cells.

The MAR-IX battery thermal management system ensures you perfect temperature control in all climatic conditions.

SYSTEM COOLING

Proper cooling of your on board systems, like for example shore power converters and frequency drives is crucial for its performance. MAR-IX offers a maintenance-free solution with a package which includes all the items you need to connect your systems to the chilled water loop. We can also supply dedicated chiller unit(s) if required.

FRIDGE/ FREEZER CONNECTIONS

Connecting your fridges and freezers to the main cooling system of your vessel increases the overall efficiency as well as comfort levels. MAR-IX connection packages are specially designed with these goals in mind. They also reduce your need for maintenance and the rejected heat is recovered for reuse elsewhere.

ACTIVE ENGINE ROOM COOLING AND VENTILATION SYSTEMS

MAR-IX offers an innovative engine room ventilation and cooling system that reduces airflow to the engine room by some 70%. This means you can fit significantly smaller ducts and grills, enjoy the comfort of quietness and keep a continuous temperature in the engine room.

The engine room cooling system consists of a chiller configuration that is separate from the accommodation chillers. Always designed with redundancy from the accommodation chiller system, the system also functions as air-conditioning for the engine room when your vessel is at anchor or moored in harbour.



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for more detailed
information about our
systems on our website

ENVIRONMENT

AGENTS OF CHANGE

At MAR-IX we take our future seriously – the collective ‘our’ of people and planet as well as the future of our company and our clients and their families. There is no escaping the reality

of climate change or the need to act to save our oceans. Everyone at MAR-IX is deeply committed to playing their part in bringing transformation about.

Change always starts at home and our production facility in the Netherlands is as green as it gets. Covered with solar panels, the energy generated by the sun is stored in battery packs to make MAR-IX a zero-energy consumer. That’s despite the large amounts of power required to put all our products and systems through the most stringent of testing regimes.



REVOLUTION TIME

MAR-IX is also honoured to be a partner in the Water Revolution Foundation, a non-profit which won the Robb Report's prestigious Sustainability Award in 2020. This self-governing science-driven body is leading the way in encouraging everyone involved with building and operating large yachts to take responsibility for the impact they have on the environment.

MAR-IX is pleased to use our knowledge and experience in carrying out various eco-case studies with the Water Revolution Foundation.



PARTNERING WITH CLIENTS

Owners and captains are increasingly focused on sustainability and a well-balanced and carefully considered HVAC system can make a huge difference to a superyacht's footprint. MAR-IX meets these demands like no other as we constantly search for brand-new sustainable solutions and major energy savings.

While the overall HVAC sector has lagged behind in this respect, MAR-IX has been a forerunner in ensuring that products and solutions are made with the environment in mind as well as premium quality. This has produced some serious results in every area of heating, ventilation and airco, with our products always achieving at least 30% energy reduction as a standard in comparison with other brands available.

FAST FORWARD

And there's much more besides. The finest example of MAR-IX's pioneering eco-conscious approach is our groundbreaking Hyper Thermal Process (HYPER TP), offering the highest reductions on electric (hotel) load available on the market today. Integrated as part of the holistic system approach that is MAR-IX's hallmark, you can expect savings of up to 80%.

Combining existing technologies with next-generation thinking, we are making a massive contribution to taking the HVAC industry forward. Join us and let's be agents of change together.



MAR-IX CHILLER UNITS **COMPACT IN SIZE, BIG ON RELIABILITY, BUILT TO SCALE.**



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