

Success Stories

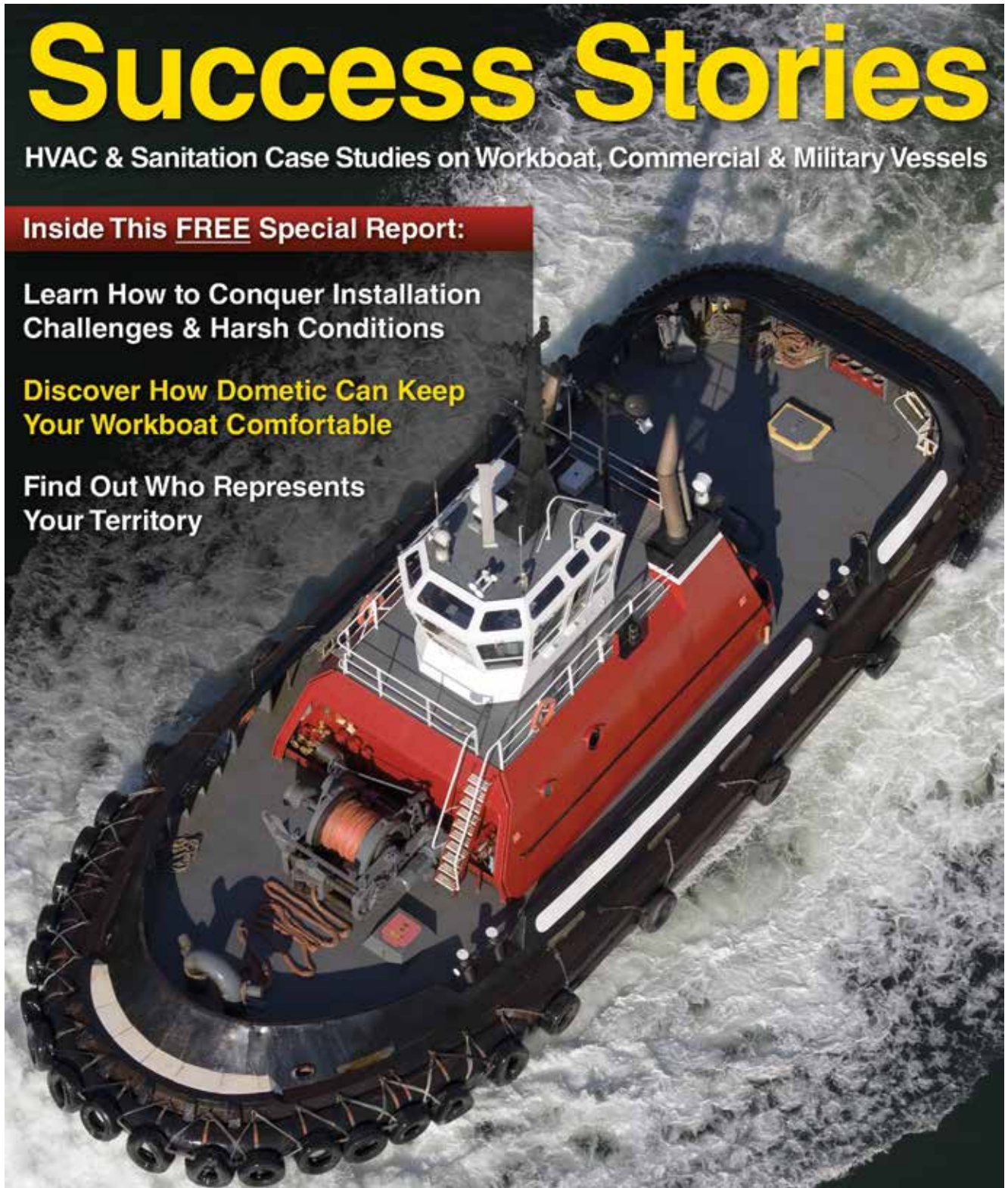
HVAC & Sanitation Case Studies on Workboat, Commercial & Military Vessels

Inside This **FREE** Special Report:

Learn How to Conquer Installation Challenges & Harsh Conditions

Discover How Dometic Can Keep Your Workboat Comfortable

Find Out Who Represents Your Territory



Dometic MARINE



Working at sea demands ruggedness — in body, in spirit, and in the equipment you choose. With over 50 years of experience producing seaworthy HVAC, engine ventilation, and sanitation systems, Dometic Marine brings expertise and reliability to products designed for the coastal and offshore commercial marine industry.

From our powerful marine-grade chillers for larger ships to direct-expansion units designed for the unique spaces of smaller vessels, our extensive lines of air conditioning systems handle the job of keeping your crew comfortable.

Fans, blowers, mist eliminators, and fire dampers keep engine rooms well ventilated and protected. In addition, Dometic's premium-quality, proven toilet systems meet any sanitation requirement for your waters of operation, with vacuum, maceration, and gravity-discharge technologies to choose from.

When it comes to innovation, versatility, and reliability, Dometic Marine's products are unmatched in the industry.

Dometic Marine proudly serves the needs of maritime commerce in a global market.

Frank Marciano, President
Dometic Group Marine Division



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Single-Team Engineering Supports You Throughout Every Phase of Your Project

Ship building is a multi-national global business. Vessels may be designed in one country and built in another; commissioned on one continent then sent all around the globe to work. With so much diversity, you can rest easy knowing your Dometic Marine team remains consistent throughout the process and you have total project management and custom-engineering solutions to rely on.

We work with your naval architects to design the best fit for your unique vessel and remain accessible throughout the build, commissioning, and operational stages of the vessel's career.

Over 50 Years of Experience and Global Support

Dometic Marine's global engineering integration service isn't just a collection of offices and people all around the globe. Dometic's global service is a web of connected teams of experienced professionals that together create a vast pipeline of knowledge that you and your own customers can access. It is further supported by the world's largest marine network of sales and service dealers.

Get a Custom System Designed to Fit Your Vessel

An off-the-shelf product is rarely a satisfactory solution to a complex problem. You need custom solutions to resolve

complicated needs, and with innovative thinking, product efficiency, and industry expertise leading the way, Dometic Marine engineers do the hard work so you don't have to.

Custom Comfort Solutions for Extreme Conditions

Dometic Marine equipment is designed to withstand rough seas, freezing temperatures, hot sun and intense humidity. In some cases, a vessel will encounter all of these conditions throughout its operating range.



"[Dometic Marine] has a hands-on approach to customer support, with a global network to provide service virtually anywhere in the world."

— Alan Goodchild,
Director of Goodchild Marine



Our engineers work only in the marine sector and specialize in understanding its needs to provide the right solution. Our systems are destined for rugged maritime demands, and are not designed for residential or mainland commercial factories.

When you choose systems designed and manufactured by Dometic Marine, you know your equipment will be as rugged as your boat.

Dometic Marine Is Your Single-Source Solution Provider for:

■ Air Conditioning – Water- and Air-Cooled Systems



Custom chillers



Air handlers



Deck-mount condensers

■ Sanitation Systems



Electronic & pedal-flush toilets



Portable toilets



Vacuum & standard holding tanks

■ Ship-Wide Ventilation



Fire & smoke dampers



AC- & DC-operated fans



Custom fan controls



Custom-made mist eliminators



Blowers

■ Refrigerators



Built-in refrigerators



AC- & DC-operated portable coolers



850-liter provisions refrigerator

Tug Boats Equipped by Dometic Marine



Cheoy Lee Tug



Cheoy Lee Tug



Cheoy Lee Tug



Cheoy Lee Tug



Cheoy Lee Tug



Cheoy Lee Tug



Signet Maritime Tugs

PG. 9



Detroit Chile Tug

Patrol Vessels Equipped by Dometic Marine



Patrol Boat by Swiftship



Patrol Boat by Docksta Shipyard



Patrol Boat by Docksta Shipyard

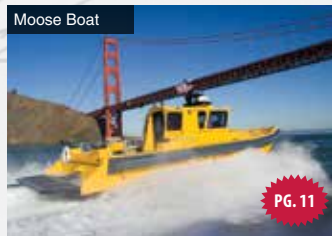


Patrol Boat by Docksta Shipyard



Combat Boat by Docksta Varvet

PG. 22



Moose Boat

PG. 11



Moose Boat



Colombian Navy Patrol Boat by Renegade

PG. 19

Small Sample of Dometic Marine's Commercial & Military Vessel Clients:

A.F. Theriault & Son Ltd.
 Armstrong Marine Inc.
 Austral USA
 Bahamas Marine Int'l Inc.
 Barcas Transportes Maritimos
 Bollinger Shipyards
 Bronswerk Marine Inc.
 Brunswick Comm & Gov Prod Inc.
 Colle Maritime Company
 Custom Steel Boats Inc.
 Cheoy Lee
 Chinese Coast Guard
 Derecktor Shipyards Inc.
 Detroit Chile
 Docksta Shipyard
 Dragamex SA De CV
 Eastern Shipbuilding Group Inc.
 Elevating Boats LLC
 EPG Trading S.A.C.
 ETP Engenharia Ltda.
 Goodchild Marine
 Gravois Aluminum Boats LLC

Hake Yachts LLC
 Hike Metal Products Ltd.
 Imeco Inc.
 Japanese Navy
 Kvichak Marine Ind. Inc.
 Le Blanc & Associates Inc. – Marine
 Lemoine Marine Refrig-Ship
 Lestada Comercio Imp/Exp Ltda.
 Marine Express Com. Imp/Exp
 Maritime Telecommunications
 Metal Shark
 Midship Marine Inc.
 Moose Boats Inc.
 MTN
 NC Dept. of Transportation
 Guido Perla & Associates
 Patti Marine Enterprises
 Renegade Power Boats Inc.
 Red Seagull Oil And Gas LLC
 Revenge Advanced Composites LLC
 Rozema Boat Works
 Scarano Boat Building

Sea Ark Marine Inc.
 Sea Tel Inc.
 Servicios Ind. De La Marina SA
 Siem Offshore Do Brasil SA
 Signet Maritime Corp.
 Silver Ships Inc.
 Skipper Manufacturing
 South Boats Special Projects Ltd.
 Statue Cruises LLC
 Swiftship
 Tampa Yacht Manufacturing LLC
 Tecnavin S.A.
 The Marine Group LLC
 Todomar Chi Marina S.A.S.
 Trinity Offshore
 Triton Submarines
 United States Coast Guard
 United States Marine Inc.
 United States Navy
 Vectorworks Marine LLC
 Wedgeport Boats Ltd.

Offshore Supply Vessels Equipped by Dometic Marine

OSV by Guido Perla & Assoc.



OSV by Guido Perla & Assoc.



OSV by South Boats Special Projects Ltd.



PG. 8

OSV by South Boats Special Projects Ltd.



Passenger Vessels Equipped by Dometic Marine

Private Charter Vessel by Skipper Manufacturing LLC



PG. 18

Private Charter Vessel by Skipper Manufacturing LLC



Bahama Ferries



PG. 21

Bahama Ferries



Hovercraft Equipped by Dometic Marine

Hovercraft by Vectorworks Marine



PG. 17

Hovercraft by Vectorworks Marine



Hovercraft by Vectorworks Marine



Hovercraft by Vectorworks Marine



Fast Pilot Craft Equipped by Dometic Marine

Pilot Craft by Goodchild Marine



PG. 20

Wave-Piercing Pilot Boat by Baltic Workboats



PG. 23
24

Torpedo Recovery Vessels Equipped by Dometic Marine

US Navy's Torpedo Recovery Ship



PG. 12

US Navy's Torpedo Recovery Ship



Emergency & Coast Guard Vessels Equipped by Dometic Marine

Massport Fireboat by A.F. Theriault & Son



PG. 7

USCG Crew Training Boat by Metal Shark



PG. 16

Chinese Coast Guard



An Award-Winning Tradition

As a trendsetter in the marine fields of air conditioning, sanitation, refrigeration, air purification, and electronics,

Dometic Marine's innovative engineering excellence has won 12 prestigious industry nominations and awards.

2013



**IBEX Innovation Awards
Nominated-DAME Award METS**
MasterFlush® 7100 Series Orbit Toilets

2012



IBEX Innovation Awards
Gold Series Air Handler

2012



Segeln Award
Waeco CDF-11 Portable Cooler

2010



**DAME Design Award METS
Pittman Innovation Award
Practical Sailor Editor's Choice**
SailVac™ Vacuum Holding Tank

2010



IBEX Innovation Awards
Breathe Easy™
In-Duct Air Purifier

2009



DAME Design Award METS
Breathe Easy™
Portable Air Purifier

2008



DAME Design Award METS
IUOU Automatic
Chargers/Inverters

2010



IBEX Innovation Awards
Turbo Air Conditioner

2009



DAME Design Award METS
Waeco CoolMatic
Built-In Refrigerator



Dometic HVAC Equipment Ensures Year-Round Operation for Live-Aboard Fireboat

Harsh Temperatures Challenge Fireboat Crew



A.F. Theriault & Son Massport Fireboat 31

For a vessel operating in the Boston Harbor area, where annual temperatures range from below freezing to extremely hot and humid, the

builders of a live-aboard fireboat had to make an important decision about their choice of HVAC equipment.

For more than 70 years, A.F. Theriault & Son Ltd. has built robust vessels from a variety of materials including steel, aluminum, fiber glass and advanced composites. One of the company's projects was the construction of a fireboat for Massport, the Massachusetts Port Authority. The Massport fireboat 31 has crew living aboard, so reliable heating and cooling is a must to ensure the vessel is equipped to operate in all climates.

HVAC Placement Support Speedy Response



Marine Air two-stage chiller under construction at the Dometic Marine manufacturing facility

Required to respond quickly to emergencies that occur anywhere on the docks or shore side, fireboats must be lightweight to maintain the high speeds required for a fast response.

Placement of the HVAC equipment was top priority to ensure that the weight was positioned proportionately so as not to affect the performance of the vessel.

The fireboat has a Marine Air 10-ton, 2-stage MCG chiller on-board that provides heating and cooling to five accommodation areas including the crew lounge, transport room and lower deck. In addition, the chilled water HVAC equipment also cools the sensitive electronics on-board, protecting them from overheating.

Great Installation and After-Sales Service

According to A.F. Theriault & Son Ltd, it is Dometic Marine's ability to provide reliable, high-performance systems that are backed by exceptional customer service that makes Dometic Marine its first choice for HVAC equipment.



AT-HV series air handlers with high-velocity blowers supply cold air to interior spaces

Graham Oakley, VP of New Construction, A.F. Theriault & Son Ltd, commented: "We have installed Dometic's Marine Air systems on several yachts and we know it is equipment we can trust. Dometic is also on hand throughout the duration of the project to offer great technical support and peace-of-mind to ensure everything will run smoothly.

"From the initial brief through to installation, they handle BTU load/capacity calculations, are able to design the systems in accordance with our specifications and can also advise on system placement to maximize performance if required, so they are very easy to work with."



Watch Video Product Testimonials:
www.dometic.com/producttestimonials

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South Boats Trusts MasterFlush Toilets to Withstand Constant & Heavy Use at Sea

Harsh Conditions Require Rugged, Home-Style Toilets



Offshore wind farm support vessel by South Boats

Based on the Isle of Wight, UK, South Boats Special Projects Ltd. are the largest builders of offshore wind-farm support vessels in the world. With 66 vessels in service

or in build within the region and with 14 company operators, it's imperative that the company uses a trusted supplier for premium on-board systems.

When it comes to the on-board environment of a workboat, the provision of efficient and reliable sanitation systems is important. Ideal marine heads should effectively macerate waste; withstand constant use in a harsh marine environment, while also providing comfort and ease of use for the crew.

Modern, Robust Toilet Systems Save Water & Power



SeaLand 8600 series MasterFlush toilet

Already familiar with Dometic's engineering capabilities and product reliability from specifying air conditioning systems for their vessels, South Boats decided to use Dometic for their toilet systems, also. Seeking a reliable toilet system that would offer both comfort and efficiency, Dometic's MasterFlush macerating toilets were the natural choice.

With a compact design and small footprint, the SeaLand® 8600 MasterFlush toilet uses 64% less power and 33% fewer

amps than competing models. In addition, it can save fresh water with a flush setting which does not add water to the bowl. This 'rough-sea' flush feature also eliminates spillage from the toilet during turbulent conditions. The 8600 toilet has through-floor or through-wall discharge options.



18-blade stainless-steel macerator turbine

The 18-blade stainless-steel macerator turbine delivers up to 2,500 rpm to grind waste into a fine effluent with no clogging. Effluent is propelled to the holding tank which can be installed up to 98 ft. (30 m) away.

SeaLand Solutions Deliver High Performance at Sea

"Dometic Marine offers a wide range of systems which they have been able to customise in accordance with our specific requirements," comments Chris Cheverton, Purchasing Manager, South Boats.

"We've had great success with Dometic's air conditioning systems so we recently expanded the scope of supply to include the company's modern and robust macerating toilets. The MasterFlush systems are quick and easy-to-install and provide efficient, high-performance sanitation solutions for the crew on-board."

For more information on the MasterFlush series of marine toilets, go to www.dometic.com/masterflush.

Watch the South Boats video testimonial
Use your smart phone to scan the code at right



Watch Video Product Testimonials:
www.dometic.com/producttestimonials



Tug Boat Builder Signet Maritime Fights Window Heat In Pilothouse

Vital Electronics & Crew Suffer from Overheating

Working at sea can be tough, so the availability of sufficient cooling on-board is essential, not only to provide a comfortable and healthy work environment for crew, but also to protect vital electronic equipment from overheating and potentially breaking down.



Signet 82-Metric Ton Bollard Pull Z-Drive tug boats

Established in 1976, Signet Maritime is an international marine transportation company specializing in the build of high performance tug boats. Tug pilots need unobstructed visibility, but with lots of glass windows to contend with, a pilothouse can feel like an overheated greenhouse. The crew suffers and the electronics are put in jeopardy.

Therefore, when designing its Signet 82-Metric Ton Bollard Pull Z-Drive tugs, the builder wanted to ensure the vessels would be equipped with ample high-quality air conditioning that would be reliable in any climate as well as easy to service and retrofit in the future.

Modular Chillers Fit the Bill & Doorways

After analyzing the boat's architectural characteristics and their effects on heat-load calculation and equipment placement, Dometic Marine arranged delivery and installation of modular cutting-edge chilled water equipment.

Providing each vessel with 240,000 BTUs (or 20 tons of capacity) are two 120,000 BTU/10-ton Dometic MCW chilled water systems specifically designed and packaged to meet the requirements of each ultra-high performance ASD tug to cool the vessels' on-board spaces.



Marine Air's MCW/MCG modular chiller

Featuring Dometic Marine's unique modular design and compact footprint, the chillers can be easily and neatly stacked vertically or horizontally to best fit the space available.

"The older equipment used on tugs is typically larger, heavier and more intrusive, making it difficult to replace," explains Nathan Farr, OEM Sales Manager (USA), Dometic Marine. "Our modular chillers feature an innovative space-saving 'box' design so they are easy to install and service. In fact, they can be moved in and out right through the doorways, so no disassembling is required."



Nathan Farr,
Dometic Marine
OEM Sales
Manager

Continued on the following page



Innovative Space-Saving Solution for Stuffy Pilothouse

To directly address the greenhouse effect in the pilothouse and conserve valuable space in this confined area, Dometic Marine supplied two AT36 air handlers for installation on the roof. These provided 72,000 BTUs of cooling without intruding into this hectic area of the vessel.

“We require the highest quality and proven-reliable air conditioning to provide a comfortable and pleasant working environment for our crew members, as well as cool sensitive electronic equipment on-board,” said Joseph W. Dahl, General Manager of New Construction for Signet Maritime. “Dometic Marine has proven to provide a wide range of HVAC solutions, which are further supported by exceptional technical expertise and customer service.”



AT-HV series air handlers with high-velocity blowers supply cold air to interior spaces

Modular Chiller Tech Tip

“The great thing about our modular chillers is that if they do ever need to be serviced or replaced, a module up to 25 tons can be easily uninstalled and walked out through the door,” adds Nathan. “With this in mind they offer a great, long term solution compared with bulky, non-modular chillers that are typically less manageable.”



Watch Video Product Testimonials:
www.dometic.com/producttestimonials



Signet 82-Metric Ton Bollard Pull Z-Drive tug boats



Supplying a Sophisticated Toilet System Solution to the US Navy's Moose Boats

The Challenges

The United States Navy asked Moose Boats, a manufacturer of vessels for law enforcement, port security, fire and rescue, and the military, to explore a more sophisticated, plumbed solution to their existing portable heads requiring manual discharge.



US Navy Moose Boat

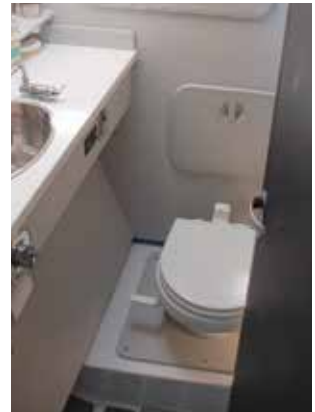
- Smaller patrol vessels like Moose Boats typically have limited capacity for a toilet system with holding tank.
- Exceptionally small head space.
- Moose Boats patrol in demanding environments, requiring rugged and durable equipment.

The Solutions

Dometic's VacuFlush technology was chosen because of its superior performance, and for the value it adds to the reputation of a manufacturer whose success depends on the reliability of its boats and all on-board systems.

"Dometic's VacuFlush toilet systems have proven to offer exceptional functionality aboard, complementing our vessels perfectly," said Abbie Walther, VP of Moose Boats.

VacuFlush provides far more functionality than competing low-cost systems while offering long-term benefits such as the reduction of odors and greater flushing capacity.



Compact 140 series VacuFlush toilet installed in a Moose Boat head

- Exceptionally low water consumption (1 pint per flush).
- Pedal-operated toilet draws a mere 5 amps per flush.
- Dometic offers a wealth of experience and specialized know-how to the marine market.

VacuFlush Low-Water Tech Tip



Nelson Frolund,
Dometic Engineer

"VacuFlush water consumption is less than one gallon per person per day, allowing more days of usage between pump-outs," says Nelson Frolund, sanitation applications engineer for Dometic. "This also allows the use of fresh water for flushing, thereby eliminating the sulfurous odor often associated with microbe-laden seawater."



Watch Video Product Testimonials:
www.dometic.com/producttestimonials



Providing an Efficient HVAC System for Extreme Heat and Sub-Freezing Destinations

The Challenges

The Marine Group, a builder of US Navy Torpedo Recovery Vessels, faced four key challenges when specifying an HVAC system for three new ships:



The Marine Group's Torpedo Recovery Vessel for the US Navy

- The naval architect wanted outdoor working decks clear of HVAC equipment, which eliminated the use of an air-cooled system.
- The ships patrol regions of the world with very hot temperatures (up to 100°F/38°C) and very cold temperatures (down to 0°F/-18°C). Water-cooled marine HVAC systems are ineffective in water temperatures below 40°F/4°C, so a standard reverse-cycle system would not be sufficient.
- The evaporating units had to fit a narrow overhead space. Small installation spaces pose a challenge since HVAC components are typically bulky and require access to multiple connection points.
- The HVAC equipment had to draw minimal amps, meaning any supplemental electric heat had to be extremely energy efficient.

The Solutions

The Marine Group contracted Dometic Marine to develop a water-cooled Direct Expansion (DX) System with space-saving air handlers and custom heaters. Here's why:

- Dometic water-cooled DX split systems offer more flexible installation options than a traditional air-cooled system, which typically takes up precious exterior deck space. In addition, Dometic split systems are easy to install and highly efficient to operate.
- Dometic has a wide range of evaporating unit configurations, including low-profile models with integrated return-air plenums for shallow overhead spaces.
- Dometic's global marine engineering group is known for designing custom HVAC equipment, including the three-phase electric heaters required to keep amp draw low but still meet temperature specs.

The Results

Water-cooled DX systems were invented by Dometic Marine's Cruisair brand more than 50 years ago. These systems are known for their reliability and durability. As such, a Cruisair split system was the ship builder's first choice for their Torpedo Recovery Vessels.

After consulting with the naval architect and reviewing the ship's plans, Dometic mounted the compressors to a custom rack for installation in a forward machinery space. Because equipment in this area is more susceptible to the stresses of wave pounding, Dometic added extra vibration isolators to the rack and refrigerant line sets.



Watch Video Product Testimonials:
www.dometic.com/producttestimonials

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Typically, air-cooled systems on boats are modified residential units that must be replaced every two to three years. The lifespan of a marinized DX split system built by Dometic Marine outlasts residential-style systems by about 10:1, staying in service up to 20 years with proper maintenance.



EBLEP series low-profile evaporator with return-air plenum

For the shallow overhead spaces, Dometic Marine selected EBLEP low-profile evaporating units from its broad range of equipment. EBLEP models require only 11.25 in.

(286 mm) of vertical space. And because they feature a return-air plenum, there was no need for bulky return-air duct.

For efficient heating during cruising in subfreezing temperatures, Dometic developed special three-phase heaters to match the three-phase system used on the ships. They were specifically designed to keep amps low to minimize power draw while still providing enough heat to keep the interior comfortable. The HVAC system was outfitted with Cruisair's Q-Logic control system which automatically switches over to electric heat when the seawater temperature is too cold for reverse-cycle operation.

With Dometic's expertise and custom engineering capabilities in marine HVAC systems, the shipbuilder was able to conquer the challenges of both high and very low temperatures in the patrol range, small equipment spaces in the cabins, and keeping exterior decks clear of bulky air conditioning equipment. In addition, the shipbuilder and owners can rely on Dometic Marine's global support team, which is available at installation and wherever service is needed.



The Marine Group's Torpedo Recovery Vessel for the US Navy with the San Diego skyline in the background

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- Eastern Europe

ANTONIO NAVARRO



- Spain
- Portugal

DENNIS CHIANG



- Asia-Pacific Region



Coast Guard Training Boats Discover New Air Conditioning Solution for Cool Cabins

Hot & Sweat Cabin Affects Crew Training

Metal Shark Aluminum Boats specializes in the production of aluminum-built commercial, military and governmental boats to support an extensive range of applications. For one of the builder's projects with the US Coast Guard, the manufacturer required the provision of reliable air conditioning.



A USCG patrol boat by Metal Shark Aluminum Boats

Training in a hot and stuffy floating classroom can negatively affect the productivity of crew members and so it was essential to install on-board air conditioning to ensure the provision of a comfortable environment that allows for delivering training programs all year round.

Swinging Doors & Open Windows Means Less Effective Air Conditioning

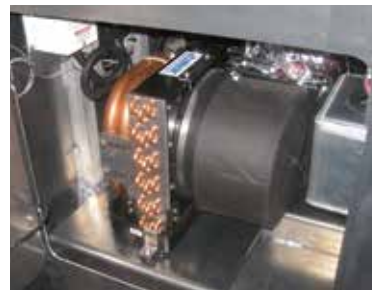


Chris Allard,
President of Metal
Shark Aluminum
Boats

Chris Allard, President of Metal Shark Aluminum Boats, explained: "Keeping a vessel such as the 38 Defiant cool can present its challenges. To ensure excellent visibility, the boat has several windows and although these can be opened, in warm climates the boat effectively becomes a greenhouse."

"Also, as part of the Coast Guard training program, the crew is frequently moving around the vessel. Doors are often left open, which can cause the air conditioning to be less effective."

Air Conditioning Solutions to Meet Specific Needs



A Cruisair Turbo 16,000 BTU/hr air conditioner installed on a USCG patrol boat by Metal Shark

Through close collaboration with customers, Dometic Marine is able to develop HVAC equipment to satisfy exact vessel requirements. In order for Metal Shark to overcome its challenges, Dometic equipped each 38

Defiant with three Turbo 16,000 BTU/hr systems to maximize the cooling capacity as well as to offer redundancy.

"Having worked with Dometic on several projects, we know they are a supplier we can trust. Whether we are sourcing air conditioning, toilets or fridges, Dometic's wide range of systems provide exceptional reliability, while its team is able to offer specialist and dedicated support, working with us to find equipment of the right size and configuration for a multitude of applications," Allard concludes.

Watch Chris Allard's video testimonial
Use your smart phone to scan the code at right



Watch Video Testimonials:
www.dometic.com/producttestimonials



Customized Air Conditioning System Fit Perfectly On Board Military Hovercraft

Problems With On-Board Space Limitations

Vectorworks is a Florida-based developer and manufacturer of composite vessels for military, commercial, sport and recreational use. During a recent project to build two 20m EPS M-10 hovercraft vessels for EPS Navy Systems for an overseas military, incorporating air conditioning presented a challenge.



A 20-meter Vectorworks hovercraft for EPS Navy Systems

For any military vessel, it is essential to operate at speed in case of an emergency as well as provide a comfortable environment for the crew and passengers. This often means that much of the space on-board is taken up with living accommodations and vital maritime safety and security equipment.

However, the provision of reliable marine air conditioning is also crucial in maintaining a cool temperature in hot climates, protecting the vessel's electronics from overheating and removing moisture from the air.

Saved By Split Air Conditioning

To ensure optimal cooling in the space available, Dometic supplied and installed four EBUL30 evaporators and four custom-designed 30,000 BTU/hr condenser coils with separate air-cooled compressor units.



EBUL30 evaporating unit

Engineers placed the coil into dead space in the head room along the side of the hull and put the compressor in a different on-board location where it was easily accessible for servicing and maintenance.

As one of the units was placed outside, oversized coils were incorporated into the design to handle the high temperatures. In addition, the outside unit was marinated with a special coating to ensure exceptional protection from salt air and sunlight for a high-performance and durable solution.



Fan-cooled 30,000 BTU/hr compressor unit

Cooling Helped With Humid Temperatures

Kurtis Hopf, P.E., Senior VP of Operations for Vectorworks commented: "We had very specific requirements for this particular project and were delighted that Dometic Marine was able to offer customized systems to help us meet our requirements."

"The hovercrafts operate in an ambient temperature of 135°F so effective and reliable air conditioning was essential, but so was the placement and weight of the systems due to the size and layout of the vessel. Dometic was able to play a key role in helping us overcome these challenges and we are thrilled with the results."



Watch Testimonial & Case Study Videos:
www.dometic.com/producttestimonials



Powerful Cooling Keeps Skipper Motoryacht Charter Customers Comfortable

Tormented by Noisy Air Conditioning

Private charter vessel, *Lady of the Lake*, is a 105-ft. SkipperLiner, a motoryacht built by houseboat and custom yacht builder Skipper Manufacturing LLC. Used by up to 150 guests on any one cruise, the provision of reliable air conditioning aboard is essential to ensure the comfort of passengers and crew as well as satisfy owner expectations.



Skipper Manufacturing's 105 ft. charter motoryacht

Hot and sweaty cabins can be detrimental to a guest's experience, as can the constant humming and vibration of an air conditioning unit, but cooling a large yacht can also have negative implications on the power source, causing wider problems.

Keep Quiet, Avoid Blackouts With Slim Cruisair HVAC



Cruisair three-stage chiller on-board *Lady of the Lake*

To ensure reliable delivery of efficient cooling and heating without noise pollution or brown or black-outs on-board *Lady of the Lake*, Dometic's custom-built chilled

water equipment provides the yacht with 480,000 BTUs (40 tons) of cooling and heating capacity.



ATL series low-profile chilled water air handler

The complete Cruisair HVAC (heating, ventilation and air conditioning) system includes a three-stage chiller with 21 standard and low-profile air handlers which are designed to be discreet and use minimal overhead space. Further advantages include flexible load management and often a reduced peak electrical load.

A Peaceful Triumph Over Stifling Surroundings

Quieter, reliable and efficient systems have provided a comfortable environment for passengers and crew, ensuring their enjoyment on-board is maximized.



AT-HV series air handlers with high-velocity blowers supply cold air to interior spaces

Bernie Clements, Purchasing Manager at Skipper Manufacturing, said: "Having worked with Dometic for several years, the team has proven to offer HVAC solutions which meet the specific requirements of virtually any application and they are also on hand throughout the duration of the project to provide exceptional technical support."



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Powerful, Compact Air Conditioning a Perfect Fit for Renegade Power Boats

Limited Space for Air Conditioner Installation

Naval patrol vessels operate at high speeds in rough water, and in hot climates crew members need a place to escape the heat. Patrol vessels are high in performance but short on available space, and the boats are often subjected to punishing usage when on duty.



Renegade Patrol Vessel destined for the Colombian Navy

Florida-based Renegade Power Boats specializes in the supply of high-performance vessels to both the recreational and commercial marine sectors. Renegade received an order from the Colombian Navy for two new patrol vessels after successfully delivering eight patrol boats the previous year.

Because the patrol boats are constantly in use, any downtime due to equipment failure must be limited. Renegade Power Boats has proven its reliability to the Colombian Navy, and the boats are easy to service when problems arise.

Compact EnviroComfort Units Pack Performance

Dometic's EnviroComfort (ECD) units were again chosen to provide marine air-conditioning aboard the new Renegade patrol boats. Exceptionally compact, ECD units can be easily installed within small cabins, making them ideal for boats which have limited space on-board.



EnviroComfort Retrofit Kit with compact digital keypad/display

The ECD Retrofit Kit cools and heats and includes an easy-to-use compact digital keypad/display. The ECD Installation Kit (below) has all plumbing and air distribution components needed for a complete A/C installation. ECD units are available 6,000, 11,000, and 16,000 BTU/hr capacities.

Durable & Reliable A/C for Extreme Conditions



The ECD Installation Kit contains all plumbing and air distribution components for a complete A/C installation

"Having already installed Dometic's EnviroComfort air conditioning systems aboard eight patrol boats, we have been very impressed by the performance of the units," said

Amed Oses, President, Renegade Power Boats. "Its low-profile design enables the system to fit neatly into small spaces on-board, which made it a natural choice when we were commissioned by the Colombian Navy to supply a further two vessels for the fleet."

The durability and reliability of EnviroComfort units have proven them suitable for use on Renegade patrol boats, while their compact size allows them to fit into restrictive spaces on-board.



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L-3105 Rev. 20120622



Goodchild Marine's Fast Pilot Craft Stays Cool With Robust Air Conditioning

Crew Comfort Vital In Rough, High-Speed Conditions

The extreme weather conditions and wind-whipped seas of the southern Thames estuary and southern North Sea present formidable challenges for pilot boats and crew. That's why Goodchild Marine was contracted to build tough new ORC 171P Fast Pilot Crafts for Estuary Services Ltd.



ORC 171P Fast Pilot Craft by Goodchild Marine

Crew comfort was paramount in the design of these 57-ft. (17.37 m) vessels, which led to the integration of an acoustically separate wheelhouse and suspended seating for all crew — as well as the introduction of air conditioning.

Vector Compact Cools Tempers & Temperatures

Pilot Craft crew work in rigorous conditions and heavy weather, so clothing and gear become wet.

“Crew comfort has been a priority throughout the design of the ORC series and in-line with this modern innovative design we wanted to install new



Marine Air's Vector Compact self-contained air conditioner

air conditioning equipment,” comments Alan Goodchild, Director, Goodchild Marine. “Dometic Marine offers a wide range of HVAC systems so they were immediately able to satisfy our brief.”

The ORC Pilot Craft utilize a Marine Air self-contained Vector Compact (VCD) 27,000 BTU/hr air conditioner in the wheelhouse accommodation areas, ensuring the crew will remain cool (or warm) and to dry out gear.

Ingenious Design Fits Minimal Installation Space

The VCD delivers over two tons of capacity in a compact package with a small footprint. VCD units were engineered for R-410A, a proven and reliable environmentally safe refrigerant gas.



Because all of the main air conditioning components are installed on a single chassis, the VCD does not require additional space for a separate evaporating unit or linesets. They are ideal for installation under a settee or berth, in a locker or cabinet, or other convenient location.

Aboard the new ORC 171P Fast Pilot Craft, the VCD is installed under the helm, with duct routed to the supply-air grilles in the rear bulkhead to ensure effective cooling.

“[Dometic] has a hands-on approach to customer support, with a global network to provide service virtually anywhere in the world,” summarized Goodchild.



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L-3126 Rev. 20120914



DuraSea Rooftop A/C Keeps On Cooling In Harsh Marine Environment

Salt-Water Damage Can Cause Costly Downtime

Tropical maritime conditions wreak havoc on exposed equipment. When a rooftop air-conditioner was needed to cool the pilot-house aboard Bahamas Ferries' 250-passenger catamaran *Sealink*, a primary goal was superior reliability.

"We needed an A/C system in the pilot-house that would last and not need to be changed out all the time," said Alan Bax, general manager of Bahamas Ferries. "It isn't so much the expense but the downtime needed to change out the unit. That's what we wanted to avoid."

Marinized Technology Wards Off Corrosion



Dometic's DuraSea Rooftop A/C unit is engineered to endure harsh marine conditions, and offers 15,000 BTU/hr of cooling. It can be fitted with

an optional electric heating kit. Both the condenser and evaporator coils are coated using the ElectroFin® E-coat process which provides superior resistance to salt-air corrosion and UV damage when compared to spray coating.

"Before we entered the market, customers complained that with other brands the chassis would rot out, the motors would seize up and coils would corrode away," said Charlie Barefoot, Dometic's vice president of engineering. "We took one of our heavy-duty rooftop air units and 'marinized' it. In addition to the coil coating, we used a high-quality fan motor and a 316 stainless steel shaft, sealed bearings and a fully enclosed case."

To combat chassis corrosion, Dometic uses the heaviest steel practical, then powder coats the chassis with a special paint that resists salt-laden air.



Dometic's DuraSea Rooftop installed on a Bahamas Ferries *Sealink* catamaran.

The DuraSea Rooftop can be installed on a flat surface and cools the space directly below it, making it ideal for patrol boats and house boats, as well as ferries. Because it's air cooled it requires no plumbing. It is controlled by the air distribution box (ADB) which is mounted on the ceiling.

Constant Operation Without Failure Since July 2011



The DuraSea Air Distribution Box with controls and return air in the pilot-house of the Bahamas Ferries *Sealink* catamaran.

The DuraSea unit has run flawlessly during continuous operation since it was installed on the *Sealink* in July 2011.

"The unit is working well and we are very happy with it," Bax explained. "It is built with the correct

materials for the marine environment and there are no dissimilar metals touching each other."

The unit features vibration-free operation and compressor stabilization to withstand extreme motion. It uses environmentally safe R-410A refrigerant and weighs just 103 pounds (46.7 kg).



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L-3196 Rev. 20130927



Ramping Up Chilled Water Air Handlers for Maximum Cooling

Exotic Locales Require Powerful Air Conditioning

Docksta Varvet's Combat Boat 90 H (CB 90) is a versatile "workhorse at sea" in use by the Mexican and Malaysian navies operating in hot and humid climates. CB 90 crews endure sweltering conditions while chasing down drug smugglers in go-fast boats.



Docksta Varvet's Combat Boat 90 H is in use by the navies of Malaysia, Mexico, Norway, and Sweden.

Conditions inside the cabin, which can be locked down to withstand nuclear, biological and chemical warfare, can become unbearable.

"The challenge is to keep the boats cool by maximizing the performance of the A/C system on board," said Gustaf Hamrén, Key Account Manager for Dometic. "The system needs to perform with the genset power available."

Marine Air Equipment Provides Comfort & Reliability

Outfitting the CB 90 with two 16,000 BTU/hr Marine Air CHC compact chillers was the perfect solution to thwart the tough weather conditions.

In the case of the Mexican navy, which battles a variety of renegades in the Gulf of Mexico, the chillers are scorched and brown on the outside, but keep running.



Marine Air's CHC compact modular enclosed chiller

The space-saving compact base of the CHC units was designed to allow individual modules to be multiplexed to provide precise capacity requirements for any application. Thermodynamically matched components assure maximum performance, and the efficient compressors are quiet and consume less power. In addition, fewer moving parts provides for better reliability.

Dometic's Superior Service Ensures Peak Performance

Dometic's global service team operates from Coatzacoalcos, a major port city in the southern part of the Mexican state of Veracruz, on the Coatzacoalcos River, where Docksta Varvet maintains a service yard.



K. A. Sundin, owner and chairman of Docksta Varvet

"We have used Dometic's air conditioning because of its light weight—our boats are high speed and lightweight," said K. A. Sundin, owner and Chairman of the Board of Docksta Varvet. "Also we use Dometic because of the worldwide support."



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www.dometic.com/producttestimonials

L-3252 Rev. 20131004



DuraSea Rooftop's Instant A/C Benefits Latvian Pilot Boat On Baltic Sea

Minimal Space & Low Power a Design Challenge

When the crew aboard Latvia's new Baltic Workboats' 20-meter Wave Piercing Pilot Boat needs a breath of fresh air, it will simply be a matter of flipping a switch and enjoying the performance of Dometic's DuraSea Rooftop unit.



Baltic Workboats 20-Meter Wave-Piercing Pilot Boat

Baltic Workboats is an Estonia-based company that builds a variety of vessels, including patrol boats, pilot boats, workboats, ferries, and tugs.

The challenges in designing a rugged air-conditioning system on this new boat centered on the harsh operating conditions and limited onboard power availability.



Gustaf Hamrén,
Dometic Account
Manager

"The boat does not have a genset, so power consumption had to be low," said Gustaf Hamrén, Key Account Manager for Dometic. "The weather is very rough on the Baltic Sea—rain, snow, wind, lots of pounding—so the exterior unit has to be durable. It also had to be easy to install and operate."



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www.dometic.com/producttestimonials

DuraSea Rooftop Proven In Tough Conditions

Dometic's DuraSea Rooftop air conditioner is a self-contained drop-in unit that provides 12,000 BTU/hr of cooling to the space below without the need for plumbing or ducting. The DuraSea Rooftop is designed built to withstand the elements. Both the condenser and evaporator coils are coated using the ElectroFin® E-coat process which provides superior resistance to salt-air corrosion and UV damage when compared to spray coating.



Dometic's DuraSea Rooftop air conditioner

"Customers complained that with other brands the chassis would rot out, the motors would seize up and coils would corrode away," said Charlie Barefoot, Dometic's vice president of engineering. "We took one of our heavy-duty rooftop A/C units and 'marinized' it. In addition to the coil coating, we used a high-quality fan motor and a 316 stainless steel shaft, sealed bearings and a fully enclosed case."

Plug-and-Play A/C Installation a Huge Plus

Because both power and space are limited, the DuraSea unit offered the flexibility of rooftop installation that Baltic Workboats required.

"The fast plug-and-play installation, easy maintenance and competitive pricing made this work for us," said Sander Vahtras, Project Manager for Baltic Workboats.

Dometic has an extensive network of offices located in three strategic regions across the world. These offices are backed in the field by the world's largest marine network of authorized distributors, dealers and fully-trained service engineers in over 100 countries worldwide.



Powerful Dometic Chilled Water A/C & Heating Required on Belgian Pilot Boats

Extreme Temperature Swings Challenge Aircon System

Baltic Workboats' new 20-meter Wave Piercing Pilot Boat is a water tight, self-righting vessel—a must for operating in the extreme wind and waves of the North Sea.



Baltic Workboats 20-Meter Wave-Piercing Pilot Boat

When Belgium ordered three Pilot Boats, the design requirements included a chilled-water system to allow for humidity reduction and air-filtration, and heating was needed to counter the capricious weather conditions.

“The demand for both heating and cooling made this a complex project,” said Gustaf Hamrén, Key Account Manager for Dometic.

Modular Chiller a Perfect Fit

Dometic supplied a TWCV 36,000 BTU/hr chiller with AT-HV air handlers and a fresh-air make-up unit to the pilot boats.

The fresh-air make-up unit draws outside air, cools it with a standard fan coil to reduce humidity and heats it up with an electrical coil, and then introduces the fresh air into the boat.

“Our Dometic system can produce reverse-cycle heat from seawater temperatures as low as 5° C (41° F), and below that the diesel boiler provides the heat,” Hamrén said.



Cruisair's TWCV Compact Chiller

The chiller has a compact footprint and is located in the engine room, and the AT-HV air handlers and fresh air makeup unit are located in the pilot house. The AT-HV units are outfitted with a motorized 3-way valve to switch between cooling provided by the chiller and heating supplied by the on-board diesel boiler. In that way they can use the same circulating water loop.

The unit is powered by the boat's twin Volvo Penta D16 478 kW engines and an 8 kW inverter, which produces 220 volts (or 230 volts). Dometic's SmartStart system is used to reduce the power draw during start up by up to 65 percent.

Modular Chiller a Perfect Fit



Sander Vahtras, project manager for Baltic Workboats

“Baltic Workboats required a rather simple, easily adjustable and very reliable air-conditioning system to provide sufficient cooling for crew and pilots in all sailing conditions,” said Sander Vahtras, Project Manager for Baltic Workboats. “Annual operational hours are estimated to be 2500, so it is of utmost importance to have onboard the most reliable systems available on the market to prevent any delays.”

Dometic has an extensive network of offices located in three strategic regions across the world. These offices are backed in the field by the world's largest marine network of authorized distributors, dealers and fully-trained service engineers in over 100 countries worldwide.



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L-3255 Rev. 20131004



Dometic MARINE

Dometic Marine, a division of Dometic Group, is the world's largest supplier of innovative and technologically advanced comfort systems and equipment for yachts and pleasure boats and a major supplier of HVAC, engine room ventilation, and toilet systems to the commercial, workboat and military markets.

A specialist supplier to OEM, refit and repair and aftermarket, Dometic Marine has an unmatched support network of company-owned offices located in 12 strategic regions across the globe supported by numerous marine R&D facilities and factories. The products are further supported in the field by factory-authorized distributors, dealers and service engineers offering a global presence in over 100 countries worldwide.

Leisure boats from 20 feet to mega-yachts are users of the company's premium brands which include Condaria, Cruisair®, Dometic, Marine Air Systems®, SeaLand® and WAECO. Their extensive product range includes marine air conditioning, engine room ventilation systems, sanitation systems, refrigerators, stoves, battery chargers and other equipment for the leisure market.

Dometic's commercial HVAC and engine room ventilation systems can be fitted to the broadest range of commercial vessels and conform to NMMA and ASHRAE standards; the company is ISO 9001:2008 certified.

Certified Worldwide Sales & Service Network



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L-3150 Rev. 20131101

