

INSPIRED BY COMFORT



PRODUCTS FOR COMMERCIAL, WORKBOAT & MILITARY VESSELS



مركز البراغي والعدد
BOLTS & TOOLS CENTER **BTCO**

**HVAC & SANITATION SYSTEMS, SHIP-WIDE VENTILATION,
REFRIGERATORS, & WATERMAKERS**

L-2675 Rev. 20140620

Dometic MARINE



Working at sea demands ruggedness — in body, in spirit, and in the equipment you choose. With over 55 years of experience producing seaworthy air conditioning systems, ship-wide ventilation systems, refrigerators and watermakers, 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. Our ship-wide ventilation systems include a diverse range of fans, blowers, mist-eliminating grilles, and smoke and fire dampers.

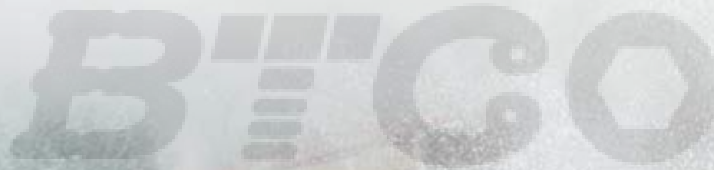
Our Dometic Sea Xchange reverse-osmosis watermaker systems desalinate seawater, providing unlimited potable water on-board. Our broad range of built-in and portable refrigerators and freezers fit any space and meet any need.

In addition, Dometic's premium-quality, proven toilet systems include vacuum, macerating, and gravity-discharge technologies.

When it comes to innovation, versatility, and reliability, our product lines are unmatched in the industry.

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

Frank Marciano, President
Dometic Group – The Americas




Chilled Water Systems

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Air Handlers for Chilled Water

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Water-Cooled DX Air Conditioning

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Air-Cooled Air Conditioning

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Special Applications

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Environmental Policy

Since 1994, Dometic Marine has provided air conditioning and refrigeration systems with green refrigerants. We lead the industry in the development of globally compliant marine air conditioning systems.

Dometic Marine is committed to minimizing the environmental impact of our products through regular assessment of energy and material demands, emissions, waste generation, and recyclable resources.


For many years we have proudly displayed our “Environmentally Responsible” logo, which indicates our commitment to the environment.



**Breathe Easy
Air Purifiers**

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**Engine Ventilation
Systems**

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**Dometic Sea Xchange
Watermakers**

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**Sanitation
Systems**

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Refrigerators

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Mist-eliminating grilles stop corrosive salt mist and water from entering the engine room. Each mist eliminator is custom designed for maximum air flow and minimum restriction for a given machinery package.

Pressure- and temperature-monitoring fan controls can be manual variable speed, temperature controlled, pressure controlled, or pressure and temperature controlled – all standard with fire-system shutdowns.

The Three Biggest Challenges When Choosing the Right HVAC Manufacturer

Dometic Marine understands the three biggest challenges faced by naval architects and ship owners when choosing the right company for their air conditioning equipment: Support, Selection, and Service.

Challenge #1: Support — Trust Dometic Marine's award-winning engineering team to review your drawings and specifications to ensure all measurements and load calculations are correct. Or, we can layout your entire system, size all the appropriate capacities, and design the most suitable system for your vessel. Dometic Marine can also supervise installation and provide on-site training and documentation to your crew.

Challenge #2: Selection — Dometic Marine provides the world's broadest range of chilled water systems, including air handlers and controls. Our chillers provide up to 2.4 million BTUs of cooling or heating and come in a

variety of configurations, with custom designs available. Our air handlers feature "WhisperCool" technology and are available in unique vertical and horizontal configurations that maximize space. Network-capable controls can be incorporated into most ship-automation solutions.



Challenge #3: Service — Dometic Marine has the world's largest network of trained and certified sales and service teams to support you no matter where you build or navigate. All products are in accordance with NMA and ASHRAE standards, and our manufacturing facility is ISO 9001:2008 certified.



Sample of Our Commercial, Workboat & Military Clients:

Owners/Operators/Builders

ACP, Autoridad del Canal de Panama
A.F. Theriault & Son Ltd.
All American Marine
Allicat
Al Fattan
Aresa
Armon
Armstrong Marine Inc.
Austal USA
Bahamas Marine Int'l Inc.
Baker Hughes
Baltic Workboats
Barcas Transportes Maritimos
Bollinger Shipyard
Bronswerk Marine Inc.
Buquebus Shipyard
BW Offshore
Caprock Comunicacoes do Brasil Ltda.
Cheoy Lee
Colle Maritime Company

Cotecmar
Custom Steel Boats Inc.
Damen
Derecktor Shipyards Inc.
Detroit Chile
Dockstavarvet
Dragamex SA De CV
Elevating Boats LLC
EPG Trading S.A.C.
ETP Engenharia Ltda.
Freire
G&H Towing
Geo Shipyard
Gondan
Goodchild Marine
Grandweld
Gulf Coast Shipyard
Hike Metal Products Ltd.
Huntington Ingalls
Inace Shipyards
Intertug

Island Logistic, S.A.
Juneau Marine
Kvichak Marine Ind. Inc.
Leeshore Boats
Lemoine Marine Refrig-Ship
Lestada Comercio Imp/Exp Ltd.
Marine Alutech
Marine Express Com. Imp/Exp
MarinTec Ltda.
Metal Craft
Metal Shark
Midship Marine Inc.
Moose Boats Inc.
MTN
Navantia
NavTec Ltda.
NC Dept. of Transportation
Nichols Brothers
North River Boats
Oregon Iron Works
OTM Remolques

Prime Mechanical
Qwest
Red Seagull Oil & Gas LLC
Renegade Power Boats Inc.
Roeling Marine
Rozema Boats
SAAM Remolques
Safe Boats
Safehaven Pilotboats
Scarano Boat Building
Sea Tel Inc.
Servicios Ind. De La Marina SA
Siem Offshore Do Brasil SA
Silver Ships Inc.
SIMA-Chimbote
Somerc S.R. L.
South Boats Special Projects Ltd.
Statue Cruises LLC
Tampa Yacht Manufacturing LLC
Tecnavin S.A.
The Marine Group LLC

Todomar Chl Marina S.A.S.
Triton Submarines
TSM Remolques
Tugs Brasil
Vectorworks Marine LLC
Wedgeport Boats Ltd.

Designers/Naval Architects

Elliott Bay Design Group
Guido Perla & Associates
Robert Allen & Associates

Government Agencies

British Navy
Chinese Navy
Israeli Navy
Japanese Navy
Russian Navy
Turkish Navy
US Coast Guard
US Navy

Offshore Supply Vessels Equipped by Dometic Marine



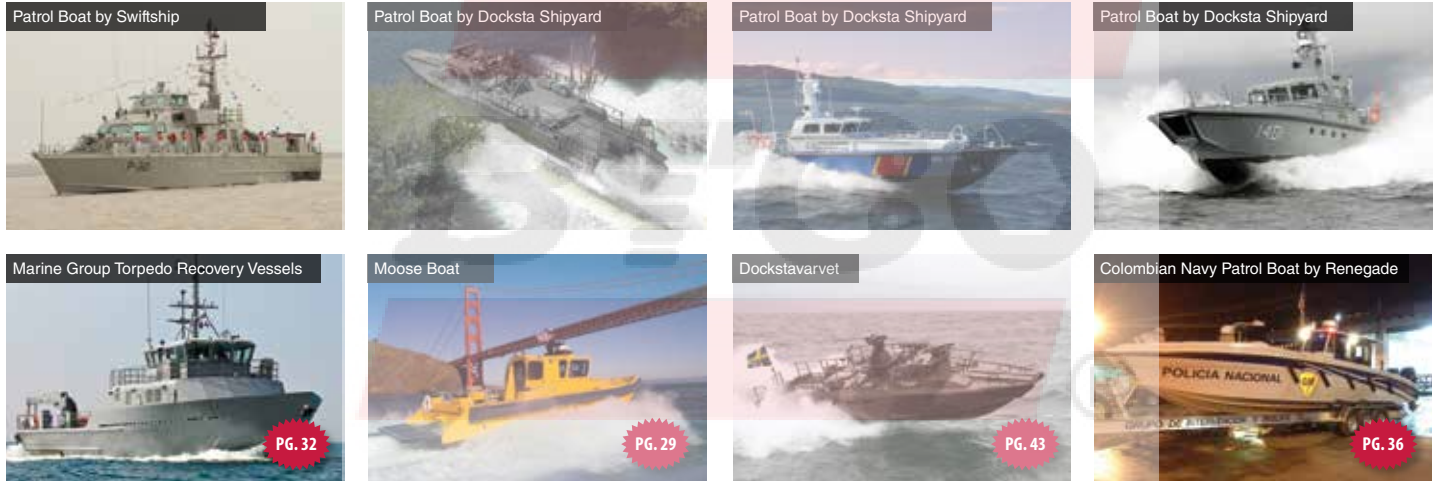
Passenger Vessels Equipped by Dometic Marine



Tug Boats Equipped by Dometic Marine



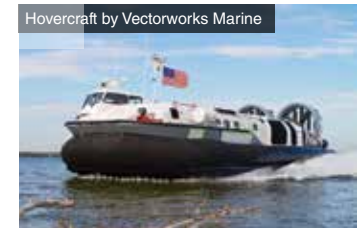
Patrol/Combat Vessels Equipped by Dometic Marine



Fast Pilot Craft Equipped by Dometic Marine



Hovercraft Equipped by Dometic Marine



Emergency & Coast Guard Vessels Equipped by Dometic Marine



Modular Chillers

Proven in thousands of marine installations, Dometic Marine modular chillers range from 16,000 to 396,000 BTU/hr. For larger capacities, modular chillers can be staged in custom configurations for up to 2.4 million BTUs (200 tons). Up to six stages are supported.

Dometic Marine modular chillers feature a compact footprint and are available in space-saving low-profile and fully-enclosed designs. Stainless-steel components and other tough, marine-grade materials are used in construction. Condensers are available in standard coaxial coil and shell-and-tube configurations.

KEY BENEFITS OF A DOMETIC CHILLED WATER SYSTEM

- Refrigerant gas circuit is contained within the chiller
- Allows more focused heat removal in interior spaces
- Reverse-cycle or electric immersion heating
- Scroll or rotary compressors in all standard voltages
- Up to six modules can be staged for large capacities in custom configurations
- Lightweight marine-grade materials
- Air-cooled chillers are available (see page 16)



TWCV48 model shown

TWCV Series Chillers by Cruisair

- Compact, enclosed design
- High performance and cost effective
- Reverse-cycle heating
- Chilled water flow switch
- Refrigerant high- and low-pressure switches
- Inlet and outlet circulated water temperature sensors
- Blazed plate coil evaporator and coaxial cupronickel seawater condenser for superior performance
- Electrical box can be mounted remotely on 24K and 36K models
- Electrical box is installed within enclosure on larger models

24,000 • 30,000 • 36,000 • 48,000 • 60,000 • 72,000

230V/60Hz • 220V/50Hz • 460V/60Hz • 380V/50Hz

R-410A

For 24K and 36K models, the electrical box can be mounted remotely or on top of the unit



MTDV120 model shown

MTDV Series Chillers by Cruisair

- Installation flexibility and easy maintenance access
- Scroll compressors standard
- Larger drain fittings for faster condensate drainage
- Flexible hose improves alignment for seawater connections
- Seawater connections reinforced with stainless steel
- Thermal expansion valves optimize performance over a wide range of conditions
- Hot-gas bypass valves maintain heating performance in cold seawater
- Removable seawater manifolds allow cleaning of condenser tubing

24,000 • 30,000 • 36,000 • 48,000 • 60,000
72,000 • 96,000 • 120,000

230V/60Hz • 220V/50Hz • 460V/60Hz • 380V/50Hz

R-410A



MTDVSP2X10 model shown

MTDVSP Chiller by Cruisair

- Custom designed modules can be staged for larger capacities
- Engineered to perform in extremely high entering condensing water temperatures of 122°F (50°C)
- Cooled by vessels equipped with keel coolers using a glycol water solution
- Sub-cooler provides adequate cooling of liquid refrigerant entering the thermal expansion valve for optimal performance
- Efficient, compact brazed plate heat exchanger provides enhanced cooling performance in extreme conditions
- Captive mount vibration isolators on the module drain pan reduce vibration transmission from the vessel to the chiller

240,000

230V/60Hz • 220V/50Hz • 460V/60Hz • 380V/50Hz

R-410A

Sub-cooler ensures adequate cooling of liquid refrigerant entering thermal expansion valve for optimal performance





CHCG20 model shown

CHCG Series Chillers by Marine Air

- Compact footprint for installation flexibility
- Thermodynamically matched components for best performance
- High-efficiency rotary or scroll compressors
- Spiral-fluted cupronickel condenser coil provides maximum heat transfer and corrosion resistance
- Includes hot-gas bypass for heat mode operation in water temperatures as low as 40°F/4.4°C
- Electrical box can be mounted on top or rear of unit or remotely for installation flexibility

 16,000 • 20,000 • 24,000

 115V/60Hz • 230V/60Hz • 220V/50Hz • 380V/50Hz


 R-410A



MCGVLP 15-ton model shown

MCGV Low-Profile Series Chillers by Marine Air

- Fits into height-restrictive spaces
- Up to 25% more condenser area than similar units
- Spiral-fluted cupronickel condenser coil provides maximum heat transfer and corrosion resistance
- Removable PVC water headers resist corrosion and erosion
- Includes hot-gas bypass for heat mode operation in water temperatures as low as 40°F/4.4°C
- Stainless-steel drain pan on 36,000 – 72,000 BTU/hr models
- Lightweight painted aluminum drain pan on larger models

 36,000 • 48,000 • 60,000 • 72,000 • 90,000
120,000 • 150,000 • 180,000

 230V/60Hz • 220V/50Hz • 460V/60Hz • 380V/50Hz


 R-410A



MCGV 5-ton model shown

MCGV Series Chillers by Marine Air

- Compact footprint for installation flexibility
- Aluminum construction is lightweight and resists corrosion
- Bi-flow expansion valves balance the system between heat and cool modes
- Compact stainless-steel brazed plate heat exchangers for maximum efficiency
- Spiral-fluted cupronickel condenser coil provides maximum heat transfer and corrosion resistance
- Up to six 180K modules can be staged for 90-ton BTU capacity

 24,000 • 36,000 • 48,000 • 60,000 • 72,000
90,000 • 120,000 • 150,000 • 180,000

 230V/60Hz • 220V/50Hz • 460V/60Hz • 380V/50Hz

 R-410A



MTS 25-ton model shown

MTS Series Chillers by Marine Air

- Marine-grade cupronickel shell-and-tube condenser
- Hermetically-sealed compressor
- Aluminum chassis and frame
- High-pressure switch and pressure-relief valve for safety
- 100% pump-down capacity for making circuit repairs without recovering the refrigerant
- Dual bottom-draining liquid connections for optimal performance in choppy seas
- Filter drier keeps refrigerant oil clean and dry for long compressor life
- Optional electric-immersion heating
- Optional variable frequency drives smooth out compressor startup power demand

 96,000 • 120,000 • 150,000 • 180,000 • 240,000
300,000 • 396,000

 230V/60Hz • 460V/60Hz • 380V/50Hz

 R-410A

Controls for Chilled Water

Dometic provides sophisticated, microprocessor-based controls for the precise operation and monitoring of single and multi-stage chilled water systems. Up to six chiller stages are supported.

These controls offer central management of all chiller modules and monitor important information such as water temperatures and diagnostic faults. Ship-wide chiller operation is available via PC interface or over the internet via Modbus/TCP Ethernet protocol.

KEY BENEFITS OF DOMETIC CHILLED WATER CONTROLS

- Provide central control and monitoring for up to six chiller modules
- Control over all cooling/heating functions including operation of seawater and chilled water pumps, coordination of the compressor(s), and more
- Provides monitoring of inlet/outlet water temperature, compressor run times, diagnostic faults, and more
- Remote control via PC interface, ship-wide Modbus/TCP Ethernet protocol

NEW

Smart Touch Chiller Control

- Easy chiller management with intuitive, high-resolution touch-screen operation
- Touch-screen display available in 13 in. (330 mm) and 7 in. (178 mm) – can be installed in the electrical box or mounted remotely
- Networks to ship management controls via Modbus, CAN Bus, Ethernet, or BACnet
- Remote access through smart phone or computer via internet
- Increased analog inputs for detailed system monitoring
- Provides clear indications of current status, operational trends, animated real-time monitoring of the refrigeration circuit and more
- Alarm messaging via text or email
- Customizable home screen



Smart Touch high-resolution touch-screen display is available in 13 in. or 7 in.



Select chilled water temperature setpoint and cool/heat modes in main control screen



Refrigerant circuit monitoring



Graphical trending data



Remote support access via the Internet

Chilled Water Master Control (CWMC)

- Provides central control for chillers with up to six stages
- Optimizes compressor operation
- Displays water temperatures, compressor run times, diagnostic faults, and more; records and logs faults and run times
- Interfaces with PC (sold separately) via serial port for remote control and monitoring



Chiller Electronics Custom Enclosures

- Custom marine-grade enclosures to house and protect sensitive chiller electronics
- Used for Smart Touch and CWMC chiller electronics
- Circuit breakers for compressors and pumps
- Circuit boards are coated for high resistance to damage and corrosion
- Grounded and protected against static interference and RF noise
- Door-mounted Smart Touch high-resolution touch-screen or CWMC keypad/display



Exterior with door-mounted Smart Touch high-resolution touch-screen display



Enclosure interior features circuit breakers for compressors and pumps; circuit boards are coated for corrosion resistance

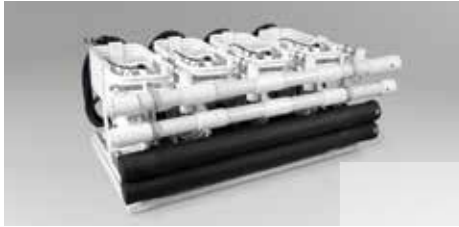
Custom Multi-Stage Chillers

Multi-stage chillers combine two or more chiller modules on a single platform for capacities of up to 2.88 million BTU/hr.

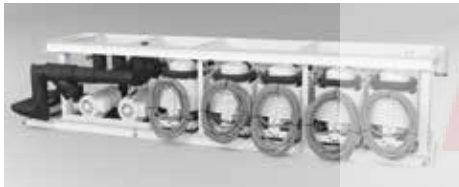
Multi-stage chillers have built-in redundancy, ensuring the system will function even if one of the circuits malfunctions. They feature sophisticated, networkable controls for local or remote monitoring, and

are available on tough, marine-grade aluminum-alloy frames that can be constructed in virtually unlimited configurations.

The systems pictured on these pages are examples of multi-stage chillers built to custom requirements. Please contact us to discuss the system we could design and build for you.



■ MCW 4-Stage 192,000 BTU/hr (16 ton)



■ MCWLP 5-Stage 360,000 BTU/hr (30 ton)



■ MTC 2-Stage 120,000 BTU/hr (10 ton)



■ MCG 3-Stage 270,000 BTU/hr (22.5 ton)



■ MTC 5-Stage 300,000 BTU/hr (25 ton) in Japanese Coast Guard green



■ MCWLP 6-Stage 360,000 BTU/hr (30 ton)



■ STS 3-Stage 432,000 BTU/hr (36 ton)



■ MTS 2-Stage 480,000 BTU/hr (40 ton)



■ MCW 3-Stage 540,000 BTU/hr (45 ton)



■ STS 3-Stage 540,000 BTU/hr (45 ton)



■ STSV 3-Stage 540,000 BTU/hr (45 ton)



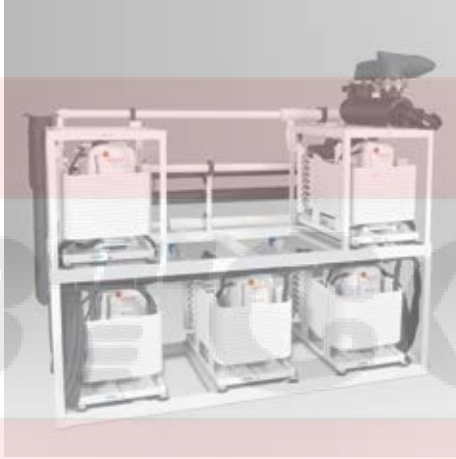
■ STS 4-Stage 576,000 BTU/hr (48 ton)



■ MTSVLP 4-Stage 720,000 BTU/hr (60 ton)



■ SCW 4-Stage 720,000 BTU/hr (60 ton)



■ MCWLP 5-Stage 900,000 BTU/hr (75 ton)



■ MTSV 3-Stage 1,080,000 BTU/hr (90 ton)



For vessels with very high capacity HVAC requirements, Dometic Marine's Condaria brand designs and builds chilled water systems with capacities up to 2.88 million BTU/hr. These chillers typically have shell-and-tube heat exchangers and accessible semi-hermetic compressors which can be opened for maintenance to ensure peak performance throughout the life of the system. Each compressor is driven by a frequency inverter which controls the starting electrical current peak and the frequency/speed range while running. The custom-made chillers pictured below are examples of these higher-capacity systems.



■ (PC)WM-S/FCL 240004 960,000 BTU/hr (80 ton)



■ WM-S/FCL 240004 4-Stage 960,000 BTU/hr (80 ton)



■ WM-S/FCL 360004 4-Stage 1,440,000 BTU/hr (120 ton)

Chilled Water Air Handlers

Dometic Marine air handlers are available in a wide range of BTU capacities and space-saving configurations.

Air handlers have high-efficiency, high-velocity (HV) blowers. Upgrade to brushless WhisperCool (DC) blowers, which are extremely quiet but powerful enough to overcome high-static-pressure duct.

Dometic Marine air handlers work with all Cruisair and Marine Air chillers.

KEY BENEFITS OF DOMETIC CHILLED WATER AIR HANDLERS

- Configurations to fit any installation space
- Exceptional dehumidification
- Vibration-isolation mounting
- Optional flow control automatically balances circulated water throughout system
- Optional electric heat
- Optional integrated Breathe Easy™ air purification (Gold series only)



AU-HV model shown

Gold Series (AU) Air Handlers

- Rust-free composite drain pan with positive flow drain channels
- Single adjustment screw allows up to 270° blower rotation
- Reinforced drain holes and vibration-isolation mounts
- Braided kink-proof air bleeder hose
- Left- or right-oriented blower for installation flexibility
- Rotate the blower straight down for overhead installation
- Optional integrated Breathe Easy™ air purification
- High-velocity blowers (AU-HV models)
- Brushless WhisperCool blowers (AU-DC models) are ultra quiet yet strong enough to overcome high static pressure duct

6,000 • 9,000 • 12,000 • 18,000 • 24,000

115V/60Hz • 208-230V/60 or 50Hz



AT-DC model shown

AT Air Handlers

- Compact design
- Improved cooling and dehumidification
- Drain pan has anti-slosh, anti-fungal lining
- Exposed sheet metal insulated against secondary insulation
- High-velocity blowers (AT-HV models)
- Brushless WhisperCool blowers (AT-DC models) are ultra quiet yet strong enough to overcome high static pressure duct

4,000 (AT-HV only) • 36,000

115V/60Hz • 208-230V/60 or 50Hz



ATL-HV model shown

ATL Low-Profile Air Handlers

- Suspend from above or support from beneath
- Bypass valve has removable power head for simple servicing
- Horizontally mounted blowers for exceptional low profile
- Vibration-isolation suspension mounting hardware included
- High-velocity blowers (ATL-HV models)
- Brushless WhisperCool blowers (ATL-DC models) are ultra quiet yet strong enough to overcome high static pressure duct

6,000 • 9,000 • 12,000 • 18,000 • 24,000

115V/60Hz • 208-230V/60 or 50Hz



ABL-HV model shown

ABL Low-Profile Air Handlers

- Suspend from above or support from beneath
- Bypass valve has removable power head for simple servicing
- Blowers mounted at 90° angle to the coil for minimal depth
- High-velocity blowers (ABL-HV models)
- Brushless WhisperCool blowers (ABL-DC models) are ultra quiet yet strong enough to overcome high static pressure duct

18,000 • 24,000

208-230V/60 or 50Hz



ATV-HV model shown

ATV Slim-Profile Air Handlers

- Unique vertical design results in dramatically reduced depth
- Fits into walls and other tight spaces
- Exposed are components insulated against secondary insulation
- Reduced height models available
- High-velocity blowers (ATV-HV models)
- Brushless WhisperCool blowers (ATV-DC models) are ultra quiet yet strong enough to overcome high static pressure duct

6,000 • 9,000 • 12,000 • 18,000 • 24,000

115V/60Hz • 208-230V/60 or 50Hz



ATV-HV-4P model shown

ATV "4-Pipe" Slim-Profile Air Handlers

- Separate heating provided by an auxiliary heat source such as a hydronic boiler (see page 16)
- Unique vertical design results in dramatically reduced depth
- Fits into walls and other tight spaces
- Exposed are components insulated against secondary insulation
- Reduced height models available
- High-velocity blowers (ATV-HV-4P models)

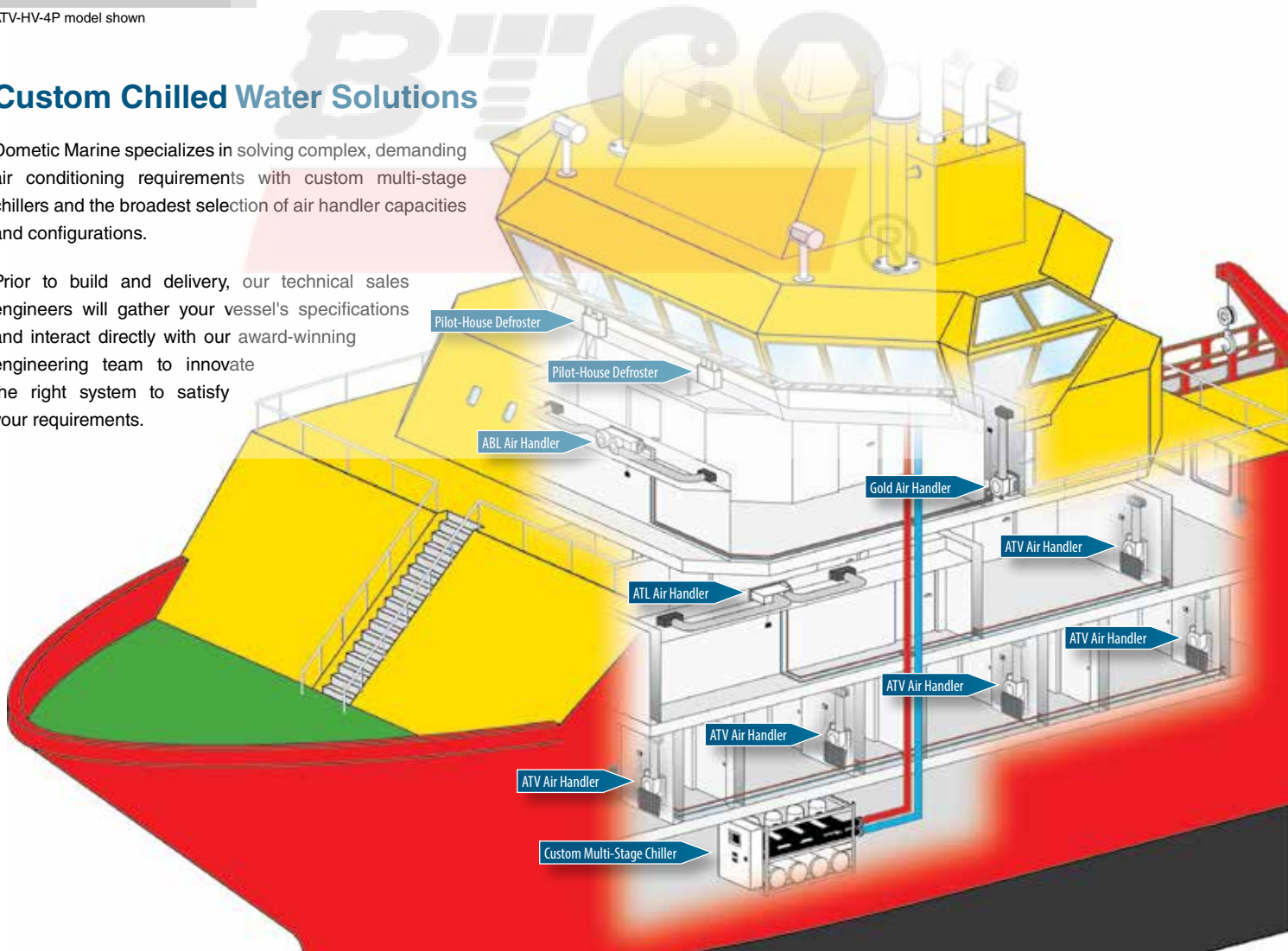
6,000 • 9,000 • 12,000 • 18,000 • 24,000

115V/60Hz • 208-230V/60 or 50Hz

Custom Chilled Water Solutions

Dometic Marine specializes in solving complex, demanding air conditioning requirements with custom multi-stage chillers and the broadest selection of air handler capacities and configurations.

Prior to build and delivery, our technical sales engineers will gather your vessel's specifications and interact directly with our award-winning engineering team to innovate the right system to satisfy your requirements.



Split-Gas Air Conditioning

Dometic Marine's water-cooled split-gas air conditioning systems are the most durable and energy-efficient available for marine use.

Emerald series R-410A condensers are engineered for flexible installation and easy maintenance access and work efficiently with compact and lightweight Emerald TurboVap evaporating units. We also provide evaporating units that work with R-417A condensers.

KEY BENEFITS OF DOMETIC SPLIT-GAS AIR CONDITIONING


- Compact and extremely energy-efficient
- Central condensing unit reduces plumbing for easier installation
- Quiet evaporating units with vibration-isolation mounting available
- Rust-free, composite molded drain pans (Emerald and TurboVap series only)
- Optional electric heat



Emerald multi-ton condensing unit shown

Emerald Series Condensers

- Rust-free composite drain pan
- Up to 85% less standing water in the drain pan
- Square chassis for easy installation in tight spaces
- Reversing valve, pressure switches and service ports centrally located for easy maintenance access
- Built-in refrigerant line filter drier reduces install time
- Vibration-isolation mounting hardware

 6,000 • 8,000 • 10,000 • 12,000 • 16,000 • 24,000
30,000 • 36,000 • 48,000 • 60,000 • 72,000

 115V/60Hz • 230V/60Hz • 220V/50Hz • 460V/60Hz • 380V/50Hz

 R-410A



TurboVap 16,000 BTU/hr model shown

Emerald TurboVap Series Evaporating Units

- Up to 28% reduced amperage
- Up to 85% less standing water in the drain pan
- Up to 14% increase in cooling capacity
- Up to 15% lighter and up to 17% reduced height
- Up to 19% increased air flow CFM
- Rust-free composite drain pan

 4,000 • 6,000 • 8,000 • 10,000 • 12,000 • 16,000

 115V/60Hz • 208-230V/60 or 50Hz

 R-410A



EBE 18,000 BTU/hr model shown

EBE Series Evaporating Units

- Compact design with high-velocity blower
- Drain pan has anti-slosh, anti-fungal lining
- Larger blower inlet for increased air flow across the coil
- Thermal expansion valve for optimal performance over a wide range of conditions
- Optional electric heat (EBHE models)

 8,000 • 10,000 • 12,000 • 16,000 • 24,000 • 30,000 • 36,000

 115V/60Hz • 208-230V/60 or 50Hz

 R-410A



EBDE 30,000 BTU/hr with horizontal discharge

EBDE Series High-Capacity Evaporating Units

- Variable-speed blower
- Horizontal or vertical air discharge models
- Drain pan has anti-slosh, anti-fungal lining
- Easy-to-replace air filter
- Integrated chassis with vibration-isolation mounts

 30,000 • 36,000 • 48,000 • 60,000 • 72,000

 230V/60Hz • 220V/50Hz

 R-410A



EBLE shown with oblong duct rings

EBLE Series Low-Profile Evaporating Units

- Dual variable-speed, high-efficiency PSC blowers
- Optional return-air plenum for overhead installations
- Thermal expansion valve for optimal performance over a wide range of conditions
- Optional electric heat

 12,000 • 16,000 • 24,000 • 30,000 • 36,000

 115V/60Hz • 208-230V/60 or 50Hz

 R-410A

Self-Contained Air Conditioning

Self-contained direct expansion air conditioning systems by Dometic Marine are engineered for the cooling or heating of small or confined interior spaces, or as auxiliary units to cool an engine room, electronics storage, or exterior deck area.

The compact size of self-contained systems make them ideal for installation under a bunk or bench or in a locker or closet, yet are powerful enough to be ducted to two or more areas.

KEY BENEFITS OF DOMETIC SELF-CONTAINED AIR CONDITIONING

- Ideal for smaller or confined interior areas, or for cooling engine room, electronics storage, or exterior deck area
- All major components mounted on a single chassis
- Small footprint and compact size is ideal for installation under a bunk or bench, or in a locker or closet
- Vibration-isolation mounting hardware reduces noise and vibration



Turbo self-contained air conditioner shown with optional compressor sound shield

Vector Turbo Series Air Conditioning

- Up to 27% more energy efficient
- Up to 21% increased capacity
- Up to 85% less standing water in the drain pan
- Improved rust-free composite drain pan
- Vibration-isolation mounting hardware
- Optional sound shield reduces compressor noise up to 50%

 6,000 • 8,000 • 10,000 • 12,000 • 16,000

 115V/60Hz • 230V/60Hz • 220V/50Hz

 R-410A



Dash Air 16,000 BTU/hr model shown

Dash Air Low-Profile Air Conditioning

- Only 8 in. (203 mm) high thanks to unique horizontal compressor
- High-efficiency ductable dual tangential blowers
- Ideal for flybridge, cockpit and on-deck installations
- Stainless-steel 304 drain pan
- Oversize four-row evaporator for excellent heat removal

 16,000

 115V/60Hz • 230V/60Hz • 220V/50Hz

 R-410A



VCD 27,000 BTU/hr model shown

Vector Compact Series Air Conditioning

- High-capacities in a compact self-contained package
- High-velocity insulated blowers are rotatable
- Condenser coil's cupronickel-encased copper condenser coil provides maximum heat transfer and corrosion resistance
- Dual-blower 30,000 BTU/hr model available
- Evaporator coil with enhanced fin design and rifled copper tubing to provide maximum capacity
- Optional stainless-steel drain pan (SVCD models)

 18,000 • 27,000 • 30,000

 115V/60Hz • 230V/60Hz • 220V/50Hz

 R-410A



FPV 60,000 BTU/hr unit with vertical air discharge

Framed Package Units

- Sturdy 3/16 in. aluminum frame
- Reverse-cycle cooling heating
- Cushioned mounts reduce noise and vibration
- Performs at full capacity in 90°F/32°C seawater
- Vibration-isolation mounting hardware reduces noise and vibration
- Vertical or horizontal configurations (vertical shown)
- Evaporating unit has vertical or horizontal blower discharge
- Modular layout allows easy maintenance access and replacement of components

 36,000 • 48,000 • 60,000 • 72,000

 230V/60Hz • 220V/50Hz • 460V/60Hz

 R-417A

Air-Cooled Air Conditioning

Dometic Marine offers several types of rugged, marinated air conditioning systems designed for air-cooled applications. These units are designed for exterior installation and are engineered for exceptional resistance to harsh marine environments.

Available in split and self-contained configurations, air-cooled systems are ideal for replacing non-marinated HVAC systems.

KEY BENEFITS OF DOMETIC AIR-COOLED AIR CONDITIONING

- Designed for exterior installation on rooftop, deck, or pedestal
- Air-cooled DuraSea chillers available
- Exterior components take up no interior space
- Corrosion-resistant components and coatings to withstand harsh nautical environments



DuraSea Rooftop Self-Contained Air Conditioner

- Drop-in cooling unit that requires no plumbing or ducting
 - Rugged and strong but lightweight
 - ElectroFin® E-coat process for superior resistance to corrosion and UV damage
 - Compressor stabilization to endure extreme motion
 - Sealed motor and bearings; stainless-steel fan shaft
 - Oversize coils for better performance and dehumidification
- 15,000 (60Hz model) • 12,000 (50Hz model)
- 115V/60Hz • 220V/50Hz
- R-410A



SSA16 Pedestal-Mounted Self-Contained Air Conditioner

- Installed on rooftop or pedestal and ducted to interior spaces
 - Originally engineered for jack boats
 - Stainless-steel 304 enclosure
 - Four-row high-efficiency evaporator coil with heresite coating for excellent corrosion resistance
 - 1.5 kW electric heat
- 16,000
- 230V/60Hz
- R-410A



DuraSea Series Direct Expansion (DX) Condensing Units

- The only marinated air-cooled condenser
 - Stainless-steel 304 enclosure
 - Permanently lubricated fan motor with IP 54 protection
 - High-efficiency copper tube and aluminum fin coil with dipped E-coating that exceeds 6,000-hour salt spray test
 - Hermetically sealed compressor with overload protection
 - Optional risers elevate the unit above the mounting surface
 - Optional copper tube/copper fin coil for the ultimate in corrosion protection
- 36,000 • 48,000 • 60,000 • 72,000
90,000 • 120,000
- 230V/60Hz • 460V/60Hz
- R-410A



DuraSea Series Modular Chillers

- Maximum durability in the harshest nautical conditions
 - Stainless-steel 304 enclosure
 - Permanently lubricated fan motor with IP 54 protection
 - High-efficiency copper tube and aluminum fin coil with dipped E-coating that exceeds 6,000-hour salt spray test
 - Hermetically sealed compressor with overload protection
 - Units can be multi-staged for high capacity requirements
 - Optional risers elevate the unit above the mounting surface
- 36,000 • 48,000 • 60,000 • 72,000
90,000 • 120,000
- 460V/60Hz
- R-410A

NEW

Cabin Controls

Dometic Marine provides microprocessor-based, easy-to-use cabin controls for the precise monitoring and control of the temperature and humidity levels of interior spaces.

The optional CAN Bus adapter allows remote control over multiple air handlers and evaporators – even self-contained air conditioners – via the ship-wide network.

KEY BENEFITS OF DOMETIC MICROPROCESSOR CABIN CONTROLS

- Automatic humidity control
- Cool-only, heat-only, and automatic modes plus multiple fan-speed control
- Internal circuitry is resistant to corrosion
- Optional CAN Bus adapter puts multiple cabin control on the vessel's network
- New full-color touch-screen display works with Marine Air Passport I/O system



Smart Touch Cabin Control (for use with Marine Air Passport I/O System)

NEW

- The easiest to use, most intuitive marine cabin control
- Highly customizable displays enable personal preferences
- Intuitive icons and menus for easy use
- Interactive screens leads the user through startup and troubleshooting
- Programmable scheduler allows startup and shutdown times or temperature changes
- Faults and service alerts display on screen
- Links to manuals and other help resources
- CAN bus compatible



Elite display/keypad accommodates a variety of Vimar bezels

Marine Air Passport I/O Control System

- Automatic humidity control
- Cycle fan with compressor or continuous fan operation
- Compressor time delay staging for multiple unit applications
- Cool-only, heat-only, dehumidify, and auto modes
- Compressor fail-safe protection
- Programmable de-icing cycle
- Optional CAN bus puts cabin control on ship-wide network
- Passport I/O system works with three keypad/displays: Elite, Passport Compact, and the new Smart Touch Cabin Control



The Passport Compact keypad/display features a simple three-button layout and built-in bezel



Qht display/keypad accommodates a variety of Vimar bezels

Cruisair Q-Logic Control System

- Easier menu-based programming
- Smarter error/fault codes
- Timed setting for air filter replacement
- Automatic dehumidification
- Easier maintenance with separate off-board compressor triac
- Optional CAN bus adapter puts cabin control on ship-wide network
- Optional electric heat package
- Q-Logic system works with the Qht and Q3 keypad/displays



The Q3 keypad/display features a simple four-button layout

Air Conditioning Accessories



SmartStart™ Soft Starter for Single-Phase Compressors

- Smooths out inrush of compressor starting current
- Reduces strain on the power source
- Reduces brown-out effects at compressor start-up
- May enable an inverter to power the air conditioner
- May eliminate the need to upgrade the generator
- Inexpensive, small, and lightweight

 Input: 115V/60 or 50Hz • 208-240V/60 or 50Hz

Special Applications

Many workboats have unique needs requiring specialized equipment. Trust Dometic Marine to engineer the right solution.

This can be seen in products such as the Radome ECU, which cools the critical components inside the radar domes, or fresh-air make-up air handlers which help prevent the air below decks from going stale.

Auxiliary electric heat warms cabins in cold climates, and multi-duct defrosters maintain visibility in the helm for safe maneuvering.

KEY BENEFITS OF DOMETIC SPECIAL APPLICATIONS PRODUCTS

- #1 engineering team provides unique solutions for unique requirements
- Specialized cooling and heating equipment for almost any marine environment
- Rugged equipment to maintain ideal temperatures for sensitive electronics
- Electric or diesel-powered auxiliary heating
- Quiet and efficient defrosters



Interior self-contained model shown



Remote ducted self-contained model shown

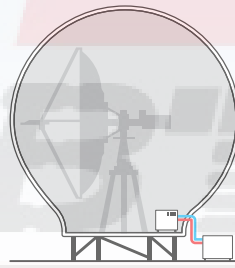
Radome Environmental Control Unit

- Keeps sensitive domed electronics cool
- Air cooled – no plumbing required
- Durable corrosion-resistant coating on interior components
- Raised lance fin and rifled tubing for maximum capacity
- Solid-state digital control provides reliable temperature and humidity control

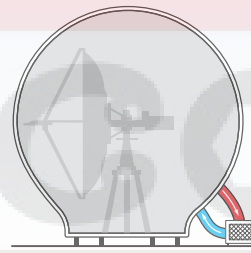
 16,000

 115V/60Hz • 230V/60 • 220V/50Hz

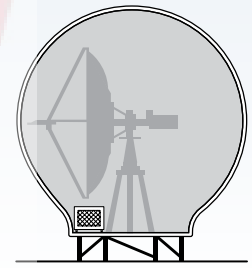
 R-417A



Split-Gas



Remote Ducted Self-Contained



Interior Self-Contained



Vectronic Air Conditioning System

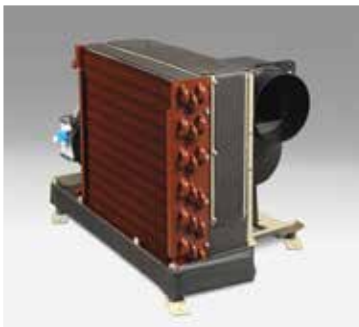
- Prevents critical electronics or machinery from overheating
- Specifically adapted to cool electronics and other equipment in harsh workboat environments
- Powerful, compact and quiet self-contained system
- Seawater cooled
- Stainless-steel drain pan has three drain locations for rapid removal of condensate water
- Rotatable blower
- Unit-mounted digital control provides precise operation

 18,000

 230V/60Hz • 220V/50Hz

 R-410A

NEW



Fresh-Air Make-Up Air Handlers

- Keeps air inside the vessel from going stale
- Corrosion-resistant coating on evaporator coil, blower and drain pan
- Drain pan has anti-slosh, anti-fungal foam lining
- High-velocity (HV) blower; ultra-quiet WhisperCool blowers available
- Electric heat with two-stage overload
- Heater assembly accessible from the top or side

 18,000 • 24,000 • 36,000

 115V/60Hz • 230V/60Hz • 220V/50Hz



Hydronic Diesel Boiler

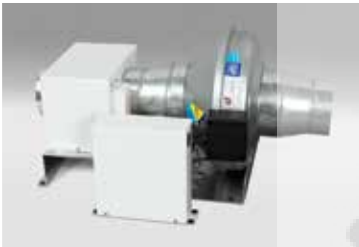
- Quiet, fuel-efficient heater
- Works with chilled water air handlers
- 3.0 or 3.5 kW of heating
- Supplies water at temperature of 120°F/45°C
- Ideal for use when reverse-cycle heating is unavailable
- Fuel-efficient alternative for vessels operating in northern extremes where heating is needed for extended periods
- Easily retrofittable
- Maintains comfortable on-board temperatures at night when the primary generator may be shut down



Auxiliary Ductable Heater

- Provides ductable heating in cold seawater conditions
- Up to 4 kW of electric heat
- Fin tube heating elements
- Two-stage thermal protection
- High-temperature thermal protection

 115V/60 or 50Hz • 230V/60 or 50Hz



In-Line Duct Defroster

- 1 kW of heat
- External controls
- Typically used with chilled water systems
- Large blower provides the needed back pressure to push hot air through the small grilles directed at the glass

 115V/60 or 50Hz



Pilot-House Defroster

- Individual ducts for each pane of glass
- Custom configurations for up to six duct ring outlets
- May be mounted horizontally, vertically, flat or on edge
- Fan-with heat or fan-only modes
- Lightweight marine-grade aluminum construction
- Tapered duct housing permits easy duct connections
- Slim design fits easily in overhead spaces or under pilot-house coaming area
- Quiet and efficient squirrel cage fan for long service life

 5,120 (Heat)

 230V/60



Breathe Easy™ Air Purifiers

Dometic's award-winning Breathe Easy™ air purifiers use innovative photocatalytic nano-mesh technology and non-ozone-producing ultraviolet (UV) light to stop on-board odors and enhance air quality.

Two configurations are offered: In-duct and portable. In-duct models work silently within the A/C duct and do not significantly decrease air flow velocity. The compact portable model is effective in areas up to 500 sq. ft. (46 sq. m) and includes worldwide AC adapter with plugs and 12V DC power plug.

KEY BENEFITS OF BREATHE EASY AIR PURIFIERS

- Eliminate unpleasant on-board odors
- Uses an intense ultraviolet light that produces no harmful ozone
- Enhances air quality
- Up to 98% reduction in volatile organic compounds (in-duct models)
- Up to 99.9% reduction in biological contaminants (in-duct models)
- Cleaner air may lessen allergy and asthma symptoms

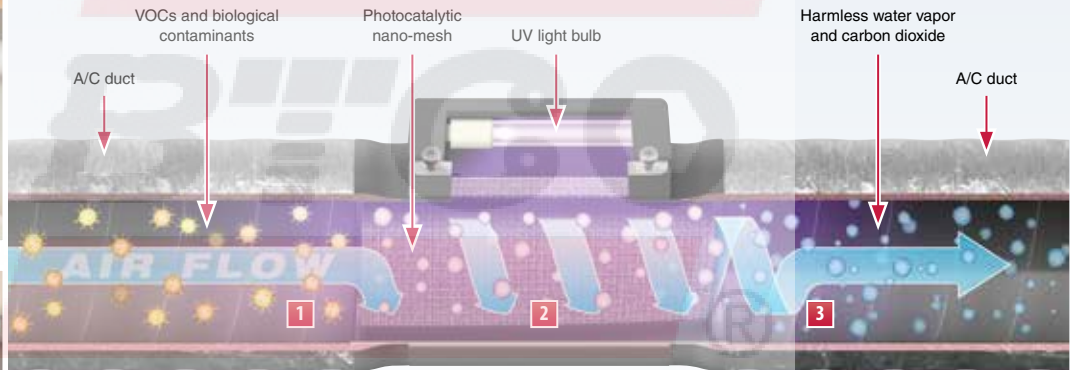


In-duct air purifier installed under a berth within the A/C duct

Breathe Easy™ In-Duct Air Purifier

- Will not significantly decrease air flow velocity
- Silent operation
- Up to 98% reduction in diesel fumes, acetone, benzene, formaldehyde, and other volatile organic compounds
- Up to 99.9% reduction in bacteria, fungi, mold, and pollen
- Sizes for common duct diameters
- UV bulb is easy to replace

 115V/60Hz • 230V/60Hz • 220V/50Hz



How Breathe Easy Works:


- 1 Chemical and biological impurities enter the in-duct air purifier through the A/C duct.
- 2 UV light activates the photocatalytic nano-mesh, reconfiguring impurities into non-toxic elements. Vortex action maximizes contact with the nano-mesh structure.
- 3 Harmless water vapor and carbon dioxide exit the air purifier



Worldwide AC power adapter with plugs and 12V DC power plug included

Breathe Easy™ Portable Air Purifier

- Two internal fan speeds
- Quiet operation
- Up to 96% reduction in diesel fumes, acetone, benzene, formaldehyde, and other volatile organic compounds
- Up to 99% reduction in bacteria, fungi, mold, and pollen
- Worldwide AC power adapter with plugs and 12V DC power plug
- UV bulb is easy to replace
- Can be mounted vertically on a wall

 Effective up to 500 sq. ft. (46 sq. m)

 12V DC • 115V/60Hz • 230V/60Hz • 220V/50Hz

Dometic Engine Ventilation Systems

Dometic Livos engine ventilation systems protect and cool marine machinery spaces with a complete line of smoke and fire dampers, mist-eliminating grilles, commercial-grade fans and blowers, and digital and manual controls.

All materials used in construction are marine grade and built to withstand harsh marine environments. Dometic Livos specializes in custom components and integrated systems.

KEY BENEFITS OF DOMETIC ENGINE VENTILATION SYSTEMS

- Commercial-grade fans and blowers provide cooling and/or combustion air
- Fan blades constructed of high-strength PPG glass-reinforced polyamide
- Mist-eliminating grilles stop salt mist and water from entering the engine room
- Smoke and fire dampers available in marine-grade aluminum or stainless steel
- Control systems available for 3-phase and 24V DC fans and blowers



Pressure & Temperature Monitoring Fan Controls

- Available for 3-phase and 24V DC fans and blowers
- Controls can be manual variable speed, temperature controlled, pressure controlled, or pressure and temperature controlled
- DC controls are temperature based
- 3-phase systems can have fire damper control
- Optional central monitoring interface

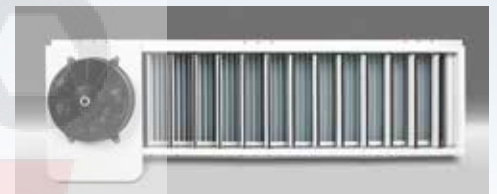


Custom-made fan control enclosure with VFDS



Smoke & Fire Dampers

- Close off the engine space in a fire event
- Lack of fresh air in conjunction with the release of fire retardant can snuff out a fire
- Available in marine-grade aluminum or stainless steel
- Available with electric actuators as well as pneumatic (fire system) release spring closures



Custom integrated mist eliminator and damper with DC fan

A-60 rated fire damper with electric actuator



Mist-Eliminating Grilles

- Stop corrosive salt mist and water from entering the engine room
- Each mist eliminator is custom designed for maximum air flow and minimum restriction
- Four drainage options: Bottom, face, horizontal, and sump



Bottom-draining mist-eliminating grille

Custom two-stage mist eliminating grille



Commercial-Grade Fans & Blowers

- Provide cooling and/or combustion air for marine machinery spaces
- Corrosion-resistant, lightweight materials
- Blades constructed of high-strength PPG glass reinforced polyamide
- AC fans have powder coated housing
- Fan motors are high-efficiency, direct drive, and reversible
- Marine-grade aluminum or 315 stainless-steel hardware



DC and AC powered fans

3-phase axial fan (12 to 48 in. diameter range)

Domestic Sea Xchange Watermakers

Domestic Sea Xchange systems use reverse osmosis to turn seawater into fresh, drinkable water. Keep your water tanks filled to capacity without having to load and transport extra water supplies.

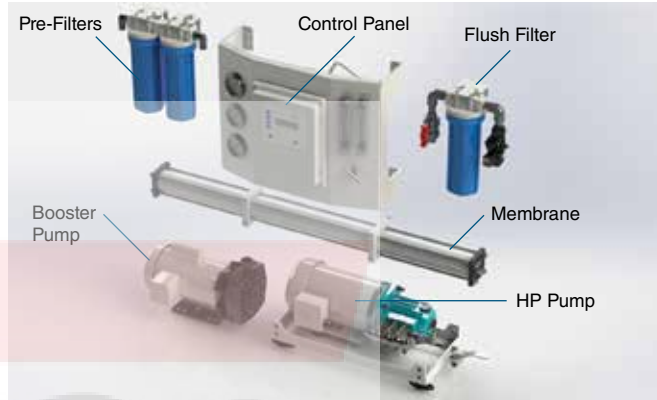
Built with high-quality components, including high-rejection seawater membranes, a compact Sea Xchange system takes up minimal space on-board and is designed for continuous high performance.

KEY BENEFITS OF DOMESTIC SEA XCHANGE WATERMAKERS

- Turn seawater into fresh, drinkable water
- Keep fresh-water tanks filled to capacity without transporting extra water supplies
- Built with high-quality components
- 600 to 20,000 GPD capacity models
- Compact self-contained system or modular component installation



Compact self-contained SX600 model



2-in-1 frame and components for modular installation

Domestic Sea Xchange SX600, SX1200, SX1800, and SX2200

- 600, 1,200, 1,800, and 2,200 GPD capacity models
- 316SS high-pressure pump
- 316SS flow and pressure components
- 316SS boost pump shaft
- 316SS high-pressure pump motor assembly, including aluminum powder-coated drip pan with ten separate vibration-isolation mounts
- FRP pressure vessel assembly with solid 316SS rods and re-usable 316SS hose-end fittings
- TEFC motor with thermal motor protection
- Fully integrated control panel featuring digital readouts, analog gauges and flow meters
- Filmtec™ high-rejection seawater membranes
- Standard dual 20 and 5 micron pre-filters

115V/60Hz • 230V/60Hz



Integrated digital display/control panel, analog pressure gauges and flow meters



Vibration-isolation mounts reduce noise and vibration



CX series watermaker rendering

Domestic Sea Xchange CX Series Commercial-Grade Watermakers

- 10,000 to 20,000 GPD capacity models
- Commercial-duty aluminum powder-coated frame
- 316SS boost pump with washdown duty motor
- Iron removal/particulate removal media filtration incorporated on watermaker skid
- Minimum of 160 sq. ft. of commercial prefiltration with 316SS prefilter housing
- 316SS high-pressure ceramic plunger pump (positive displacement pump)
- 8-in. diameter spiral wound membranes with FRP pressure vessels
- 316SS high-pressure piping and tubing
- Fully automatic system with commercial-grade color touchscreen

230V/60Hz



CX series models feature a full-color touchscreen

MasterFlush® Toilet Systems

Dometic's industry-leading MasterFlush® toilet system employs a high-efficiency 18-blade macerator turbine to pulverize waste for no-clog performance. The holding tank can be installed up to 98 ft. (30 m) away.

Superior technology means 64% less power consumption and 33% lower amps per flush than competing models.

KEY BENEFITS OF A MASTERFLUSH TOILET SYSTEM

- No-clog macerator performance with electronic flush activation
- 64% less power consumption and 33% lower amp draw per flush
- Fresh-water and raw-water systems available
- 98 ft. (30 m) maximum distance to holding tank increases installation flexibility



Dometic's new 7100 and 7200 series macerating toilets with ORBIT base can be positioned in any head configuration and will accommodate diverse plumbing layouts.

7100 & 7200 Series MasterFlush® Toilets With ORBIT Base

- Full 360° bowl-to-base rotation allows virtually limitless positioning to accommodate small spaces and diverse plumbing layouts
- Small footprint to fit in tight spaces
- Freshwater and raw water flush models available
- Standard dual-function "add water/flush" switch; optional triple function "flush/add water/dry bowl" switch (freshwater flush models only)
- Draws only 20 amps at 12VDC, or 10 amps at 24VDC

 12/24V DC

 Low-Profile • Medium Height

 Above-Floor Discharge



MasterFlush 7220 toilet with compact marine bowl

MasterFlush 7120 toilet with residential-style seat and bowl



8100 Series MasterFlush® Toilets

- All-ceramic construction with enameled wood seat for premium comfort
- Small footprint fits in almost any head compartment
- Standard and low-profile heights
- Through-floor and through-wall discharge options
- "Dry Bowl" flush option drains bowl for rough sea operation
- Convenient electronic flush toggle switch panel

 12/24V DC

 Low-Profile • Standard Height

 Through-Floor Discharge • Above-Floor Discharge

RushFlush® Toilet Systems

For offshore vessels that accommodate high-flow toilet systems, RushFlush® marine toilet technology delivers unmatched power, resource efficiency, and ease of installation compared to similar toilet systems.

RushFlush begins with two hyper-pressurized water lines – one through the upper rim for a bowl clearing rinse and another at the bottom of the bowl to macerate effluent and drive it to the discharge plumbing.

KEY BENEFITS OF A RUSHFLUSH TOILET SYSTEM

- Dual high-velocity water jets clear the bowl, macerate waste, and propel effluent to the holding tank
- Pre-assembled integral trapway and discharge loop for faster installation
- No mechanical waste-macerating system required
- Fresh-water, odor-free flushing




RushFlush 9410 model shown

RushFlush® Series Toilets

- Luxurious, all-ceramic full-scale fixture for home-like comfort
- Standard height with elongated seat and deep bowl
- Electronic flush handle or wall switch activation
- Easy, fast plug-and-play installation
- 3/4 full-tank warning option
- Full-tank shutdown option prevents overflowing of the holding tank

 12/24V DC

 Standard Height

 Through-Floor Discharge
Above-Floor Discharge



VacuFlush® Toilet Systems

VacuFlush® technology uses stored vacuum energy to clear the bowl instantly and propel waste to the holding tank, resulting in odor-free, clog-free performance.

VacuFlush toilets use very little water per flush (as low as one pint). This not only extends the fresh water supply, but also increases the time between holding tank pump-outs — a significant advantage for vessels operating in waters with overboard discharge restrictions.

KEY BENEFITS OF A VACUFLUSH TOILET SYSTEM

- Uses powerful vacuum energy for odor-free, clog-free performance
- Extremely low water use — as low as 1 pint per flush
- Multiple discharge configuration options
- Electronic one-touch control or pedal-flush models
- Pedal-operated toilets draw a mere 6 amps per flush
- Fresh water use reduces maintenance and odors associated with raw-water systems



149 VacuFlush model shown

140 Series VacuFlush® Toilets

- Compact size fits small head compartments
- Powerful, foot-pedal-activated vacuum flush
- Ultra low water consumption — only 0.13 US gal. (0.5 l) per flush
- Small footprint fits in almost any head compartment
- Premium-strength wood seat
- Pedal lock keeps flush ball open for service or holding tank pump-out

 12/24V DC

 Medium-Height

 Through-Floor Discharge • Above-Floor Discharge



5009 VacuFlush model shown

5000 Series VacuFlush® Toilets

- Powerful, foot-pedal-activated vacuum flush
- Ultra low water consumption — only 0.13 US gal. (0.5 l) per flush
- Small footprint fits in almost any head compartment
- Full-size residential wood seat
- Deep, household-size bowl
- Low-profile, medium, and standard height models

 12/24V DC

 Low-Profile • Medium-Height • Standard-Height

 Through-Floor Discharge • Above-Floor Discharge



J series vacuum generators shown

VacuFlush® Vacuum Generators

- Versatile, efficient, and ultra-quiet vacuum source units
- Adjustable components accommodate diverse layouts
- Large 2 in. (51 mm) ID openings improve flow (J Series)
- Precise tolerances of injection-molded tank optimize efficiency and reliability
- Pre-wired and assembled

 12/24V DC



HTS-VG 28-gal. (106-liter) VacuFlush holding tank

VacuFlush Holding Tanks

- Completely integrated VacuFlush systems feature waste tank, vacuum generator, and discharge pump in one package
- Compact 6.5-gal. (25 l) and 9-gal. (34 l) VHT models include tank-level sensors
- HTS-VG models have capacities from 10 to 80 gal. (38 to 302 liters)
- Corrosion-proof, leak-proof, and odor-proof performance
- Pre-wired and pre-plumbed for easy installation
- ISO/USCG compliant

 12/24V DC



VHT4500 9-gal. (34-liter) vacuum holding tank

Gravity-Flush Toilet Systems

Dometic gravity-flush toilet systems offer excellent water efficiency. Self-contained toilet and holding tanks available, as well as custom systems.

KEY BENEFITS OF A GRAVITY TOILET SYSTEM

- Excellent water efficiency



711-M28 Self-Contained Gravity-Flush Toilets

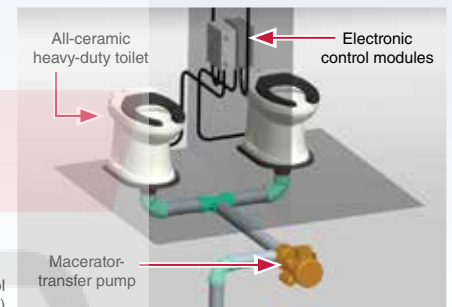
- Ceramic bowl and solid seat for home-like comfort
- Integrated 9-gal. (36-liter) high-strength, long-lasting holding tank
- As little as 1 pint (0.4 liter) of water per flush
- Foot-pedal flush requires no electric power
- Integral vacuum breaker protects water supply

 Standard Height



4410N Custom Gravity-Flush Toilet System

- Custom raw-water-flush system for naval and commercial vessels
- 115V AC operation through specially engineered control module
- Clog- and corrosion-proof water valve system lowers maintenance costs
- All-ceramic, heavy-duty toilets with electronic gravity-flush
- Integrates with macerator-transfer pump to clear drain pipes when flushing
- Toilet and control module constructed and field-tested to withstand constant demands of open-water environment



Segment of two-unit system with commodes, electronic control modules, and macerator-transfer pump (not included)

Holding Tank Systems

Complete your sanitation system with Dometic's HTS line of corrosion-proof, leak-proof, and odor-proof holding tanks.

With a wide range of sizes and capacities, HTS systems feature top-mounted fittings and diptube discharge plumbing to prevent leaks. Enjoy accurate, continuous tracking of tank capacities with DTM series of tank monitors. Eliminate tank vent line odors with the SaniGard vent line filter, which removes odors 2.4X better than the closest rated competitor's filter.

KEY BENEFITS OF STANDARD HOLDING TANK SYSTEMS

- Standard holding tanks (HTS) and tanks with built-in discharge pump (HTS-T)
- Corrosion-proof, leak-proof, and odor-proof high-density polyethylene construction
- "Diptube-style" discharge fittings for thorough, leak-proof pump-out
- Easy to install — no solvent-bond connection required
- Capacities from 10 gallons (38 liters) to 80 gallons (302 liters)
- ISO/USCG compliant



HTS-T 28-gal. (106-liter) holding tank with built-in discharge pump and SaniGard vent filter

HTS Series Standard Holding Tanks

- High-density polyethylene tank construction is corrosion-proof, leak-proof, and odor-proof
- "Diptube-style" discharge fittings for thorough pump-out
- All components pre-plumbed and pre-tested
- No solvent-bond connections required for easy installation
- Available with or without discharge pump
- Tank monitor systems indicate tank levels
- Custom configurations available

 12/24V DC



HTS 28-gal. (106-liter) holding tank



SaniGard™ Holding Tank Vent Filter

- Absorbs vent line odors 2.4X better than closest-rated competitor's filter
- Prevents foul odors from invading living areas
- Easily retrofittable, installation hardware included ; range of sizes available

Refrigerators

Dometic built-in and portable refrigerators are designed to withstand the rigors of marine use.

Award-winning CR series refrigerators with full-width freezer compartments have a refrigeration capacity of up to 4.8 cu. ft. (136 liters). Portable CF coolers can operate as a refrigerator or freezer. The CF-850 offers 29.3 cu. ft. (830 liters) of refrigeration space and an 8-hour battery for the reliable transportation of provisions.

KEY BENEFITS OF DOMETIC REFRIGERATORS

- Built-in and portable refrigerators
- 12/24V DC or 110/220V AC operation
- Fully hermetic compressors
- Award-winning design (CR series)
- Rugged and reliable construction



Stainless-steel CR refrigerators

CR Series Built-In Refrigerators With Full-Width Freezers

NEW

- Exclusive protected evaporator eliminates risk of ice-pick damage
- Full-width freezer compartment
- New stainless-steel models with one-piece wrapped door
- Recessed handle provides smooth, sleek finish
- Double-lock door stays closed in rough seas (not included on stainless-steel models)
- Vent feature holds door open slightly for easy defrosting



5 sizes from 1.7 to 4.8 cu. ft. (48.1 to 136 liters)



12/24V DC • 100-240V AC



CRD-050 model (left) and CD-030 (right) shown

CRD-050 & CD-030 Built-In Drawer Refrigerators

- Easy pull drawer opening on ball-bearing slides
- Removable freezer compartment allows additional storage for items needing refrigeration only (CRD-050)
- CD-030 turns any unused nook into a practical 29-liter refrigerator
- Recessed handle provides smooth, sleek finish
- Continuously variable thermostat
- Stainless-steel model available (CRD-050)



CD-030: 1.0 cu. ft. (29 liters)
CD-050: 1.8 cu. ft. (50 liters)



12/24V DC • 100-240V AC



CF-80 and 110 models have a removable storage basket

CF Series Portable Refrigerators/Freezers

- AC/DC or DC-only models
- Can operate as a refrigerator or freezer
- Convenient carry handles
- Soft-touch control panel with digital temperature display
- Quick-chill function runs compressor at maximum until the desired temperature is reached
- Memory feature maintains presets when the system is turned off
- Optional insulated protective cover for all models



7 sizes from 0.7 to 3.8 cu. ft. (20 to 108 liters)



0° to 50°F (-18° to 10°C)



12/24V DC • 100-240V AC



CF series soft-touch control panel with digital temperature display



CF-18

CF-25

CF-35

CF-40

CF-50

CF-80

CF-110



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."



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."



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."

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



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.”



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

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.



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



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 talk about Dometic's comfort solutions for Metal Shark](#)



Powerful Cooling Keeps Skipper Motoryacht Charter Customers Comfortable

Tormented by Noisy Air Conditioning

Private charter vessel, Lady of the Lake, is a 105 ft. Motoryacht Class which has been 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."



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.



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.

VectorCompact Cools Temps & 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.



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).



Dometic Livos Fans Help Release Boatworks Thrive In Tropical Heat & Humidity

Sweltering Temperatures Hard On Engines

When Miami-based Release Boatworks was founded in 2011, company owner Jim Turner was determined to build a boat able to withstand extreme tropical temperatures. Casa Vieja Lodge, Turner's fishing resort in Puerto Quetzal on the Pacific coast of Guatemala, has a fleet of boats offering a wide range of fishing options, but are difficult to maintain in the high-humidity climate that sees tropical conditions year-round.



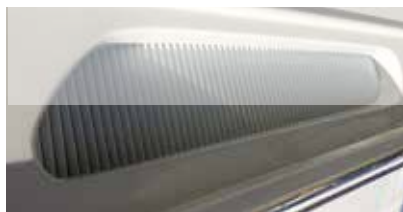
Jim Turner, owner of Release Boatworks

"Our fleet is top notch but the boats are older and repairs can be expensive," Turner explained.

Retrofitting the boats with the proper forced-air engine ventilation was an important step in ensuring longer engine life. When it came time to order new boats for his fleet, Turner instead decided to build his own, and Release Boatworks was born.

Engines Ventilated by Dometic Livos Perform Best

Dometic Livos, supplier of engine-room ventilation equipment and systems, including axial fans, centrifugal blowers, smoke and fire dampers, mist-eliminating grilles, and electronic fan controls, was first involved in the ventilation retrofit of Turner's older fishing boats. Dometic Livos was then brought in to design the engine ventilation systems for the Release Boatworks line of 34- to 46-foot sportfishing boats.



Engine room vent installed in the hull of a Release Boatworks 46.



43-ft. sportfish by Release Boatworks

The high-end sportfishing boats utilize Dometic Livos grilles and mist eliminators that not only protect the engines from seawater intrusion, but are an attractive design feature on each side of the boat.

"Release Boats are walkaround sportfishing boats and one of the issues was addressing the difficulty of dissipating the heat from the engine room," said Mike Murray of Dometic Livos. "Our auto DC fan control lets the fan run whenever needed, which in this case is most of the time. With the fans running and with the thermo control, the boats proved able to perform in tropical conditions."

Entire Release Line Utilizes Dometic Livos Equipment

"Most people don't even think about the mist eliminators and the automatic fans," said Erwin Gerards, naval architect for Release Boatworks. "But the eliminators and fans from Dometic Livos ensure the engines last longer, period. Having the mist eliminators and fans is also a selling point because it shows we take care of what is in the engine room."



Dometic Livos Mist Eliminators, Dampers Thwart Saltwater Spray

Corrosive Effect of Seawater Can Ruin Engines

When Smith Brothers of Galesville, Md., began work on the new 50-foot (15.24 m) shallow-water draft tug Capt. Kenneth, developing a way to keep saltwater spray from getting inside the engine room was important, and mist-eliminator grills from Dometic Livos were the solution.



Smith Brothers' 50-ft. shallow-water draft tug Capt. Kenneth

Ensuring the engines don't ingest saltwater spray can reduce costly repairs and extend engine life. However, new U.S. Coast Guard regulations for fire prevention require damper devices on engine room inlets and exits, requiring further modifications of the design.

Custom Design Satisfies All the Requirements

"We have taken a proactive approach and worked closely with the Coast Guard, asking them what they would like to see, which saves a lot of money," said Preston Hartge, general manager of Smith Brothers. "Unfortunately, the mandatory dampers used the space where the mist eliminators were intended to go."



Preston Hartge, general manager of Smith Brothers

Dometic Livos engineers worked with Smith Brothers to create mist eliminators that could function in the limited air trunk space still available on the Capt. Kenneth.

"We used the original concept of a mist eliminator and added our design flair to it," said Mike Murray of Dometic Livos. "We had already supplied Smith Brothers with dampers in the event of a fire, and originally didn't think we could put in mist eliminators because of the size constraints."



Custom integrated damper and mist eliminator with fan by Dometic Livos Technologies

Murray designed a unique solution that mounts the mist eliminators on the side of the boat rather than protruding into the engine room. Located just aft of the pilot house door, the mist eliminator frame was modified so it would not block the shallow depth of the air trunk.

On-Time Delivery Keeps Project On Schedule

"Dometic Livos makes a good product and its team does what it says it is going to do," Hartge said. "Being on time is a big part of building any boat. Money is always a concern, but if you have a company that stays within the lead time, then that is very important."



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.



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."

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.



Dometic's DuraSea Rooftop air conditioner

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.

"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.



Ramping Up Chilled Water Air Handlers for Maximum Cooling

Exotic Locales Require Powerful Air Conditioning

Dockstavarvet'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.



Dockstavarvet'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 CHCG 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 Dockstavarvet maintains a service yard.



K. A. Sundin, owner and chairman of Dockstavarvet

"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 Dockstavarvet. "Also we use Dometic because of the worldwide support."

Certified Worldwide Sales & Service Network



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