

How do Technicold's world class chillers and air handlers stack up against the competition?
The following is a brief review of Technicold features and benefits versus a leading competitor.
By any standard, Technicold customized marine solutions are the best on the market.

CHILLERS

TECHNICOLD

- **316 Stainless steel** (16G) used in construction of all components, including fasteners and hardware.
- The stainless steel is dressed with a swirl pattern for **aesthetics**. It is also available in a mirror finish to accent the chrome inside an engine room.
- Chiller design is **corrosion free** with minimal maintenance.
- Heavy gauge metal mass in conjunction with compressor isolation **eliminates vibration**, requiring no additional vibration mounts for installation.
- The plate chiller evaporator is totally encapsulated in **high-density urethane foam**, and sealed in stainless steel housing. This prevents condensation from forming on the evaporator chiller, as well as preventing external heat sources from affecting the performance of the evaporator.
- **Liquid line sight glass** for diagnostics and charging.
- **Liquid line filter-drier** to ensure dry refrigerant circuit, and added protection to the expansion valve.
- The **expansion valve** is installed with flare connections for ease of service. It can be easily removed for cleaning and put back into service. This also provides access to the internal inlet screen.
- The expansion valve's **sensing bulb** has maximum thermal transfer with the suction line pipe utilizing thermal mastic. It is completely sealed against the pipe using thick-walled, closed-cell insulation.

COMPETITOR

- **Light gauge** galvanized and stainless steel construction; some plastic.
- Chiller becomes aesthetically displeasing as the **paint flakes and unit corrodes**.
- Drain pan and compressor base **usually corrode** after a couple of years of service.
- Light gauge metal and unit design transfers compressor **vibration throughout the chiller housing**. Requires additional vibration isolation pads for installation.
- The plate chiller evaporator is wrapped in **foam sheeting**. This causes sweating on the outside of the insulation. The insulation is not protected, and can be torn or gouged during installation or service. Due to the minimal insulation factor of the foam, the plate is exposed to extreme conditions in the engine room, adversely affecting the chiller performance and reducing its capacity.
- **No liquid line sight glass**.
- **No liquid line filter-drier**.
- The **expansion valve is brazed** into the piping. Servicing this piece requires cutting out the valve, and replacing it, making for a timely and expensive service point.
- The expansion valve's sensing bulb is attached to pipe with a minimal amount of thermal mastic, and is wrapped with a thin piece of foam tape. This tape often peels off when exposed to high ambient temperatures in the engine room. In addition, the mastic can liquefy when exposed to high temperatures, leaving the bulb exposed and causing the **expansion valve to malfunction**.

CHILLERS

TECHNICOLD

- **Single pass spiral fluted condenser coil** with large internal volume provides a high heat transfer surface making the coil highly efficient. The design has a low-pressure drop requiring low seawater velocities. This minimizes erosion and promotes longevity.
- Technicold chiller's are designed to be **condensation free**; they require no condensate drip pan.
- Each chiller is equipped with individual **safety devices and digital control**. If one system is taken off-line for service or maintenance, the other chiller(s) will continue to operate independently.
- The **chiller temperature control** is clearly visible and easily accessible from the manifold side of the unit without opening any electrical boxes. It can be remote mounted up to 8 feet away from the chiller.
- The **freeze protection thermostat bulb** is located in the plate chiller housing, monitoring refrigerant - rather than water - temperature. The system will shut down on freeze protection prior to the refrigerant freezing the water. This highly accurate method of temperature protection eliminates the possibility of freezing inside the plate.
- Technicold chillers are straight cool only, using **in-line immersion heat** that provides 100% heating capacity in all water and ambient temperatures. The seawater pump is dormant during immersion heating, thus eliminating wear and tear on the strainer and pump.
- Two high and two low **pressure ports** allows the addition of external pressure monitoring.

COMPETITOR

- **Smooth bore condenser coils** with small internal diameter tubing. Due to the poor heat transfer capabilities of this design, multiple coils are needed. The small ID causes excessive pressure drops which leads to high water velocities and erosion.
- The chiller "sweats" excessively causing **significant condensation**. The unit requires a pan and drain to be routed to a sump or overboard. The pan design retains a large amount of condensate that can rust out all components submerged in water.
- Multiple chiller systems are controlled by a **single source**, so it is not possible to service one chiller unit without taking the entire air conditioning system off line.
- The chiller's temperature control is located inside an enclosure **requiring removal of the cover** any time you want to see the temperature readout or change a setting.
- Freeze protection is located in the water stream, which **does not accurately sense temperature** inside the evaporator plate. This can cause freeze up and rupture the plate.
- Heating is **reverse cycle only**, which is limited and dependent on the temperature of the seawater. The chiller provides 100% of heating at only one seawater temperature - usually around 60° F. In water temperatures above 60° F, the system retains heat and cycles on high-pressure fault. In water temperatures below 60° F, the heating capacity drops off and become ineffective at a water temperature of about 40° F.
- Second pressure ports **not standard** equipment.

Technicold by Northern Lights

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AIR HANDLERS

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- **316L Stainless steel** (16GA) used in construction of the pan and shroud, as well as fasteners and hardware. The stainless steel is dressed with a swirl pattern for aesthetics, and is also available in a mirror finish.
- All air handlers are designed to a **maximum height of 12"**. This allows them to be installed in restrictively tight quarters.
- Larger capacity units are equipped with a **dual blower** configuration. This allows us to maintain our low profile while adding a second duct.
- Technicold blowers are **ultra-quiet**, eliminating motor, air velocity and vane tip noise while providing maximum capacity airflow at the rated capacity. The heavy metal mass of the unit resists vibration caused by dust build up. No additional vibration mounts are required.
- All of our draw-through blowers are **slip ring mounted**. This allows the blowers to be rotated by hand prior to or after installation without the use of tools.
- All of our coils are **fully or higher rated** for their specified capacity, which provides maximum cooling or heating in all ambient conditions.
- All of our **drain pans** are two inches deep to prevent sloshing and spillage, even in rough seas. Dual drain connections are welded at the bottom of each drain pan. This allows for complete drainage and eliminates algae build up.
- The **water valve motor** is located away from the air handler's water piping. This eliminates the possibility of motor failure caused by condensate dripping from the pipes onto the motor.
- Add an optional **UVC bulb** to kill mold and other contaminants. Our bulbs are ozone-free and are installed in the air handler to eliminate contaminants in the air flow and in the evaporator water.

COMPETITOR

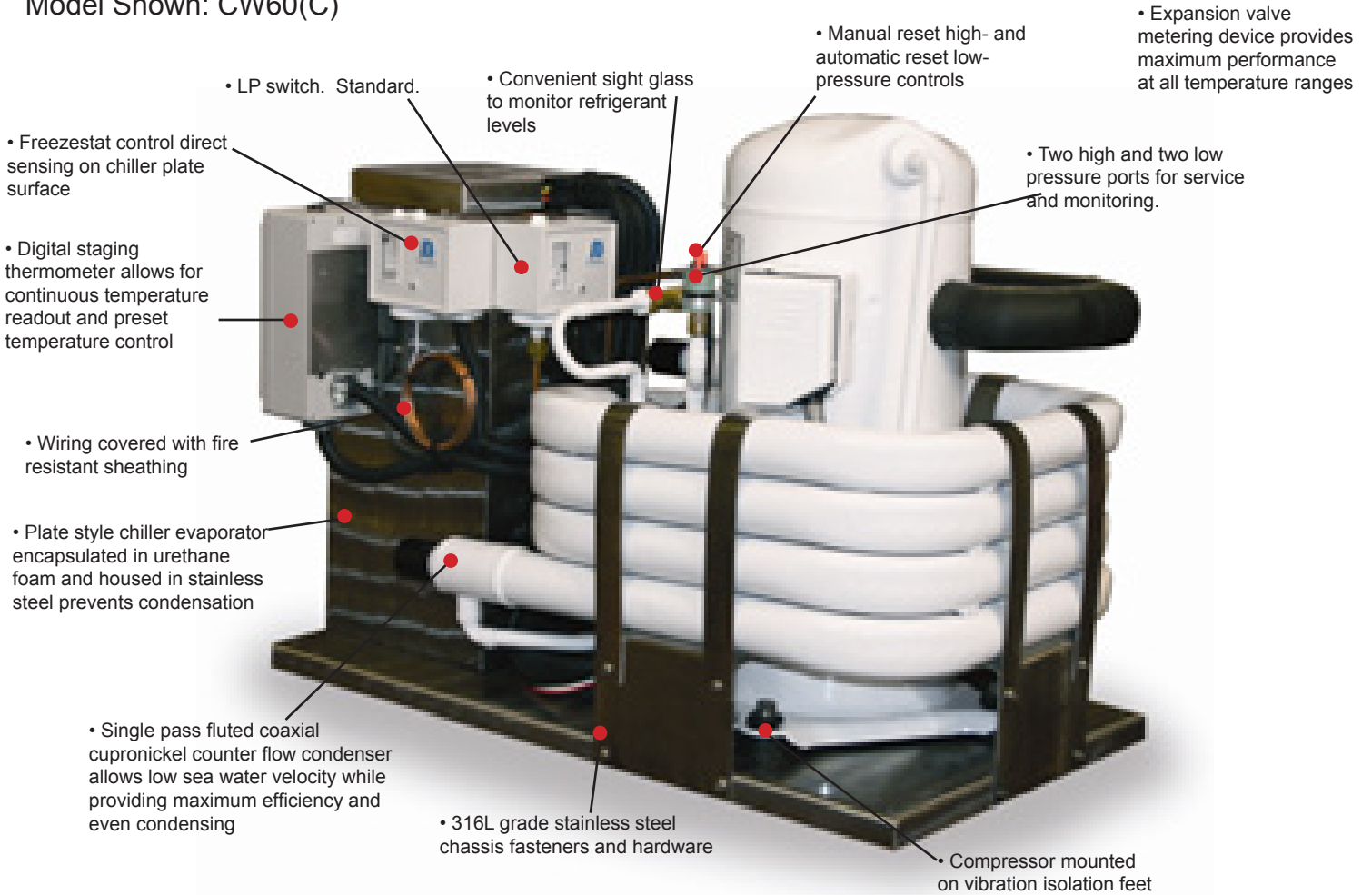
- **Light gauge** galvanized and stainless steel construction
- **High height profile** that can make installation of ducting difficult.
- Larger capacity units have **single blowers**, which makes running multiple ducts difficult and requires additional parts.
- Single, large blowers create **air turbulence, velocity and vane tip noise** when run at high speeds. Vibration mounts are required to prevent noise transfer from the unit.
- All air handlers have to be **disassembled with power tools** to rotate the blowers prior to installation. Once they are installed, any blower adjustment requires the removal of the entire unit.
- Coil capacity has been **suspect on older units**. The new units have been redesigned, but we lack the test data to verify that they have solved their earlier capacity deficiencies.
- Drain fitting for hose barb connections welded toward the bottom of the drip pan. The lip on the fitting **retains water** in the pan, which can form algae over time.
- Water valve motor is **located under water pipes**, allowing condensate to drip onto the motor, which can lead to corrosion and possible motor failure.
- UV bulbs are **installed in the piping**, meaning that contaminants are only affected when they are blowing past.

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TECHNICOLD CHILLED WATER AIR CONDITIONING - Features and Benefits

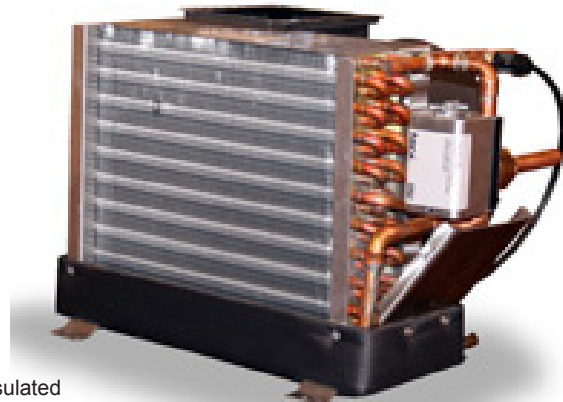
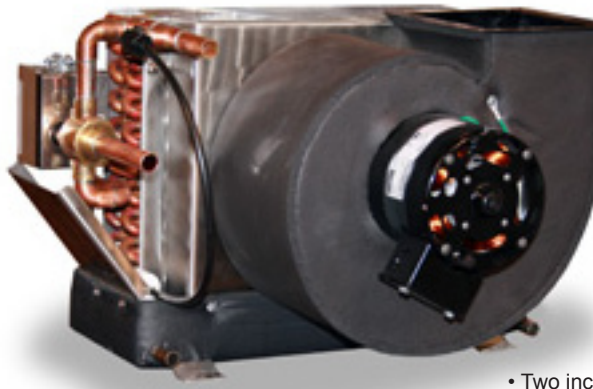
Model Shown: CW60(C)



TECHNICOLD AIR CONDITIONING CHILLED WATER AIR HANDLER - Features and Benefits

Blower and grill sides shown; voltage 115 or 230V 50/60 cycle

- Low height profile
- Blower rotates for easy installation
- High volume variable speed blower insulated for quiet operation and to prevent condensation
- Motorized Pop-Top water valve for easy serviceability
- Fully rated capacity coils



- 16 Gauge stainless steel 316L chassis fasteners and hardware

- Two inch fully insulated stainless steel condensate pan with two drains

- Stainless steel water valve drip tray