

Maximize Beer Production with Advantage Glycol/Water Chillers

- **Fermentation Tank Cooling**
- **Conditioning Tank Cooling**
- **Storage Room Cooling**
- **Wort Cooling**

- **Air-Cooled - Self Contained Package**
- **5 - 210 Horsepower Models**
- **20° - 70°F Adjustable Fluid Temperature**
- **Large Capacity Reservoir**
- **High Flow Pump**
- **Fully Factory Tested - Ready to Run**



**OACS-BC Series
Outdoor Glycol / Water Chillers**

Outdoor Air-Cooled Chillers : 5 - 210 Horsepower

Advantage OACS-BC Series air-cooled brewery chillers are designed to provide a glycol fluid temperature at 25°F but have an operating range of 20°F to 70°F.

Air-cooled OACS-BC brewery chillers are purpose built for the unique requirements of breweries. The chiller is located outdoors to save inside production space. Set up for low temperature operation and high flow, the OACS-BC chiller is designed to circulate glycol through fermentation tanks, conditioning tanks, wort chiller and storage rooms.

The electrical cabinet is NEMA 4 rated which means it is designed for outdoor use to provide protection against windblown dust and rain. The control instrument is visible through a viewing window in the control panel so chiller status is easily monitored and adjustments can be made.

A rugged frame supports the components. Shipment is made via flat bed trailer for large capacity units or enclosed trailer for small capacity units. Simply place the chiller on a field supplied concrete pad or on the roof of the production facility, connect the power and fluid piping, fill with coolant and the system is ready.

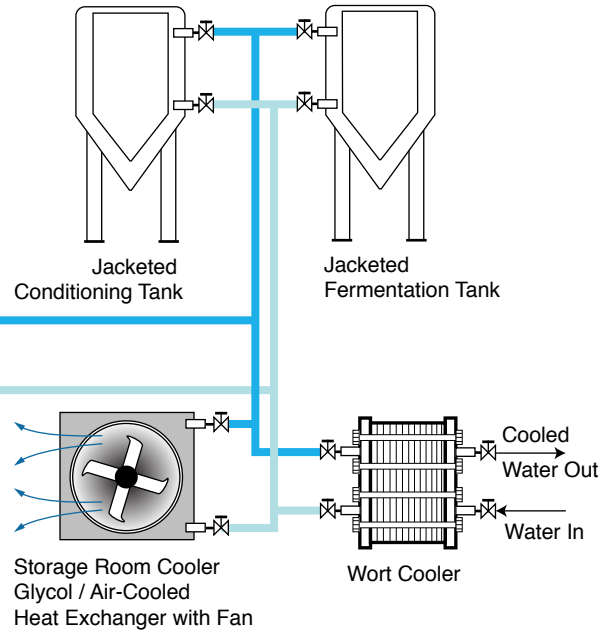
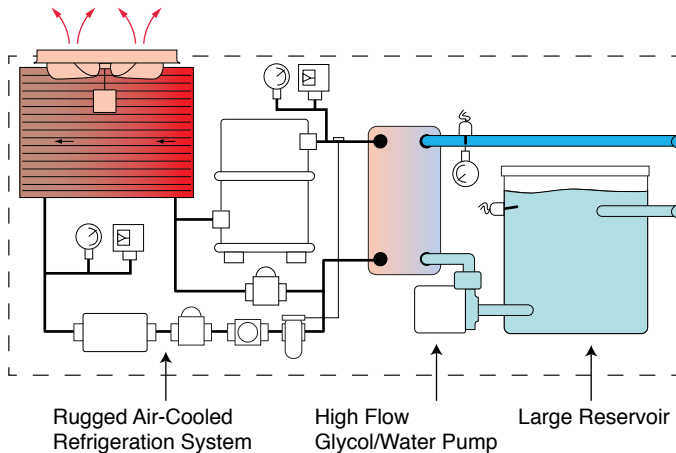


OACS-BC 15 HP central chiller shown.



OACS-BC 40 HP central chiller shown with optional disconnect switch.

Typical Applications for Advantage Chillers in Craft Brewing



Components



Brazed plate

HIGHLY EFFICIENT EVAPORATORS... High efficiency stainless steel brazed plate evaporators are used in 5 - 30 HP models. Copper shell-in-tube evaporators are used in selected models over 75 HP models. Non-ferrous construction prevents rusting.



Shell & Tube

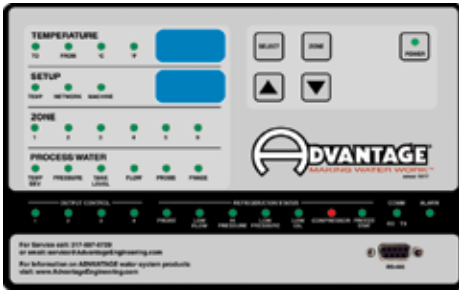
CONDENSER... Constructed of a heat transfer coil that has copper tubes and aluminum fins for full rated performance at 95°F ambient. The coil is housed in a sheet metal enclosure with fans that provide a vertical air discharge. Low ambient operation to -20°F is standard.



Typical air-cooled condenser

Control Instruments

OACS-BC Series Brewery Chillers are supplied with tailor made microprocessor control instruments that control and monitor all aspects of the chiller operation to assure accurate control and dependable operation. The controls are designed to support the specific and unique requirements of process cooling in an industrial environment. All Advantage tailor made microprocessor control instruments include a 4 year warranty. After the warranty period we'll repair your board for an economical fee should it require repair.



Multizone Controller (MZC)



M1 Controller



M1D Controller

The MZC is used on dual zone and large capacity single zone models, optional on smaller capacity single zone modes. The controller has a main operator display and an intelligent zone board for each refrigeration zone. Refrigeration zones are staged independently to bring process temperature to setpoint. In the event of a communications failure, the zone boards assume control of their respective refrigeration zones and continue to operate.

- Soft key controls for display selection and setpoint.
- Windows display setpoint & process temperature in °F or °C.
- Status lights are provided for seven system components: probe, low flow, high pressure, low pressure, low oil, compressor and freestat.
- Alarm status light is provided.
- A selected refrigeration zone lead/lag mode is standard.
- Modbus RTU communication is provided via the DB-9/RS-485 connector.

The M1 Controller is used on single zone units equipped with hot gas bypass capacity control, providing basic temperature and machine status monitoring.

The M1D Controller is standard on units with Copeland digital scroll compressors. Custom software operates the digital capacity control feature providing energy efficient capacity modulation from 20 - 100%. The controller provides basic temperature and machine status monitoring.

- Large and bright LED window displays setpoint or To Process temperature in °F or °C.
- Soft key controls are provided for setpoint temperature and operating parameter selection.
- Status lights are provided for Compressor On & Capacity Control.
- Basic chiller diagnostics is indicated by the Refrigeration Fault light.
- The illuminated On / Off switch indicates the chiller and coolant circuit are on or off.



Coolant System

The OACS-BC includes a non-ferrous reservoir and pumping system. The reservoir is generously sized to support process needs. Centrifugal pumps provide high flow to the process. Single zone chillers up to 50 HP typically use a single pump system where the flow

to process and through the chiller is provide by the single pump. Dual refrigeration zone chillers and single zone units above 50 HP typically use a two-pump system where one pump provides flow to process and the second pump provides a constant flow through the chiller's evaporator. Pumps include TEFC motors designed for outdoor operation and include suction and discharge valves. Most OACS-BC chillers can be equipped with a standby pump and manifold.

Capacity & Refrigeration Zones

The OACS-BC central chiller are available with cooling capacities from 5 - 210 HP and with single or dual refrigeration zones. Single zone models are best when the cooling load will be steady and when few use point will be served.

Models with dual refrigeration zones are best for applications where the cooling load may fluctuate and where multiple fluid use points are being serviced. Dual refrigeration zone units provide superior capacity control by staging refrigeration zones to match the chiller capacity to the process demand. Dual zone units also provide built in redundancy. If one refrigeration zone requires service, the second can operate providing 50% of the chiller capacity.

COMPRESSOR... Hermetic scroll or rotary screw compressors are standard on all models. Selected for their reliability, the compressors have few moving parts, offer low torque variation and high tolerance to liquid slugging.



Screw Compressor



Tandem Scroll Compressor



Scroll Compressor



REFRIGERANT COMPONENTS ... All refrigerant components used in Advantage chillers are selected for historic reliability and performance. Components include high & low pressure limit switches, expansion valve, relief valve, filter dryer and sight glass/moisture indicator.

Standard Features

REFRIGERANT ZONES:

- Hermetic scroll compressors on 5-60 HP single zone units and dual zone units through 120 HP using HFC-410A refrigerant
- Rotary screw compressors on 75 - 125 HP single zone units and 150 - 210 HP dual zone units using HFC-407C refrigerant.
- Liquid line solenoid valve.
- Refrigerant sight glass with moisture indicator.
- Thermostatic expansion valve
- Brazed plate or shell & tube evaporators
- System capacity control
 - Hot gas by-pass (single zone units with scroll compressors)
 - Unloading (single zone units with screw compressors)
 - Compressor staging & hot gas bypass (dual zone unit with screw compressors)
 - Compressor staging & unloading (dual zone units with screw compressors)
 - Digital compressor unloading (single zone units with digital scroll compressors)
 - Digital compressor unloading and compressor staging (single zone or dual zone models with tandem or multiple compressors)

- Air-cooled condenser with vertical air discharge
- Fully charged with non-ozone depleting refrigerant

PRESSURE INDICATION:

- Refrigerant low pressure (per zone)
- Refrigerant high pressure (per zone)
- Coolant pressure

COOLANT CIRCUIT:

- Large capacity process pump
- Evaporator pump (when included)
- Reservoir
 - Polyethylene or stainless steel (wetted surfaces) construction
 - Full insulation
 - Tank lid

ELECTRICAL:

- Outdoor rated electrical cabinet
- UL 508A compliant enclosed panel
- Branch circuit fusing
- 5 kA RMS SSCR

WARRANTY:

- 1 year on parts and labor

CHILLER CONTROLS:

- M1 (single zone units)
- Multizone (dual zone and large capacity single zone units)
- M1D (single zone units with digital scroll compressor)

Options

REFRIGERANT ZONES:

- Digital scroll compressors
 - For energy saving capacity control (not available on all models)
- Condenser coils with protective coating
 - For longer life in harsh environments
- Oversize condenser
 - For full system capacity at ambient air temperature above 95°F
- Staged tandem scroll compressors on single zone units
 - For superior capacity staging

COOLANT CIRCUIT:

- Larger process pumps
- Standby pumps and/or manifold
- Reservoir heater (mild or stainless steel tanks only)
- No pumps or reservoir
- Basket strainer (standard on dual zone units)
- Overhead pipping kit
- Low reservoir level switch (standard on dual zone units)
- Epoxy coated mild steel reservoir construction

ELECTRICAL

- Main power disconnect
- Line voltage & phase monitor

WARRANTY

- Extended compressor warranty

Model Designator for BC-OACS Series Central Chillers

OACS-10S-M1-1P-BC

OACS Series
Nominal Compressor Horsepower

Zones
S: Single Zone
D: Dual Zone

Controller
M1: Single Zone
M2C: Dual Zone
PLC: Single or Dual Zone

Brewery Chiller Series
Number of Pumps
1: Single Process Pump
2: Process & Evaporator Pumps
3: Process, Evaporator & Standby Pumps

Other Products



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