WSC - WDC

WATER COOLED CHILLERS WITH CENTRIFUGAL COMPRESSORS

WIDE CHOICE OF CAPACITIES AND EFFICIENCIES

Single compressor
WSC: 300 kW ÷ 4500 kW - Approximately 1,1 million possible chiller offerings with combination options of motors, impellers, gears and vessels.
Dual compressor
WDC: 600 kW ÷ 9000 kW - Approximately 0,75 million possible chiller offerings with combination options of motors, impellers, gears and vessels.

VARIABLE FREQUENCY DRIVE OPTION

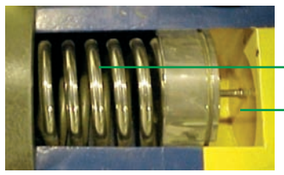
Improves part load efficiency.
Reduces annual energy costs.

HIGH EFFICIENCY

- Full load - COP up to 7
- Partial loads - COP up to 12 (with inverter)

POWER LOSS DAMAGE PROTECTION

Power failures do not allow chillers to proceed through their normal shutdown sequence. Poor lubrication at this point can damage the bearings and reduce compressor life. The compressors are equipped with a lubricant reservoir and a piston with a compressed spring that provides pressurized lubricant to the bearings during the coast-down period. Also, the compressors decelerate quickly due to the low inertia.



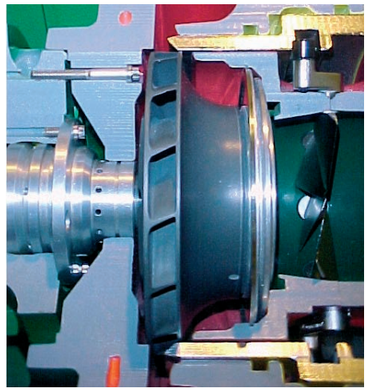
REFRIGERANT STORAGE CAPABILITY

The condensers are sized to hold the entire chiller refrigerant charge and are provided with the necessary valves to isolate this charge. This feature eliminates the need for separate storage vessels in most applications.

Refrigerant R-134a | Inverter | Exchanger FLD

UNMATCHED UNLOADING

Unloading to 10% of full load for a WSC single compressor chiller and 5% for a WDC dual compressor unit, without using inefficient hot gas bypass. This unloading capability provides improved stability of the chilled water temperature and less harmful cycling of compressors.
Movable discharge diffuser increases stability and reduces vibrations.



Moveable diffuser closing off impeller discharge area

QUIET OPERATION

Liquid Injection
A small amount of liquid refrigerant is taken from the condenser and injected into the compressor discharge area. The liquid droplets absorb sound energy and reduce the compressor's overall sound level. The droplets evaporate and reduce discharge superheat.
Quieter as chiller unloads
McQuay's design results in a reduction in sound levels at lower loads, where most chillers spend most of their operating hours.

WSC - WDC

WATER COOLED CHILLERS WITH CENTRIFUGAL COMPRESSORS

ONE WDC DUAL COMPRESSOR CHILLER VERSUS TWO SINGLE COMPRESSOR CHILLERS

- Lower equipment costs than two separate chillers
- Lower installation cost than two separate chillers
- Lower annual operating cost than either one large or two small chillers
- Less equipment room space required than for two separate chillers
- Capacity reduction to 5% of design value
- Standby redundancy for most of the cooling season

options of motors, impellers, gears and vessels.

PART LOAD EFFICIENCY

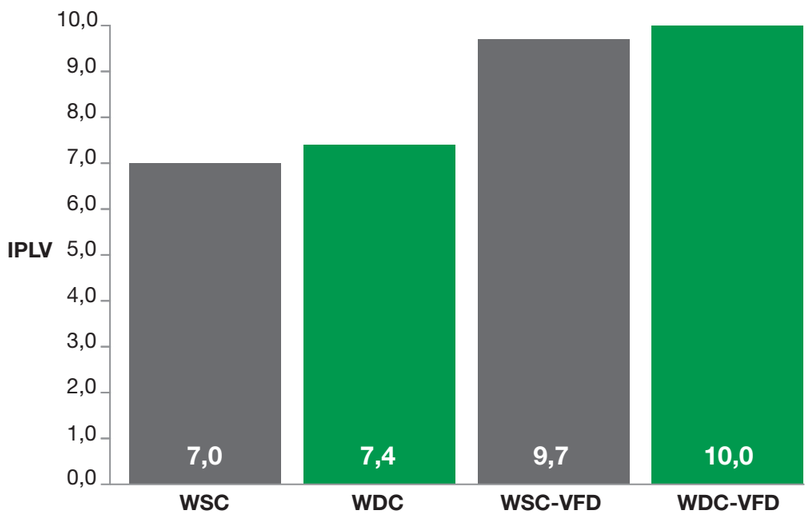
When one compressor is running, it is able to utilize the heat transfer area of the entire chiller, twice the amount found on a single compressor chiller. This huge amount of surface provides exceptional part load efficiency. The addition of VFDs to the dual compressor chiller produces an astonishing ARI certified IPLV.

THE REDUNDANCY FEATURE

McQuay dual centrifugal chillers have two of everything, connected to a common evaporator and condenser - two compressors, two lubrication systems, two control systems, two starters. If any component on a compressor system fails, the component can be removed or repaired without shutting down the other compressor; providing an automatic back-up with at least 60 percent of the chiller design capacity available. In the unlikely event of a motor burnout, the chiller refrigerant charge will not be contaminated.

PARTIAL LOADS EFFICIENCY FOR 2000 KW CENTRIFUGAL UNIT

WCS: single compressor
WDC: double compressor
VFD: compressor inverter
Specific selections can vary up or down from this example.



McQuay Air Conditioning