

R e f r i g e r a t e d A i r D r y e r s



M a g n u m S e r i e s

Smart Cycle® Dual Mode Demand Control

Airtek's patented Smart Cycle demand control reduces energy consumption and maintains a true and constant dew point by loading and unloading or turning the refrigeration compressor on or off in direct response to the actual dew point temperature of the compressed air. The Smart Cycle control automatically adjusts for constantly changing operating conditions.



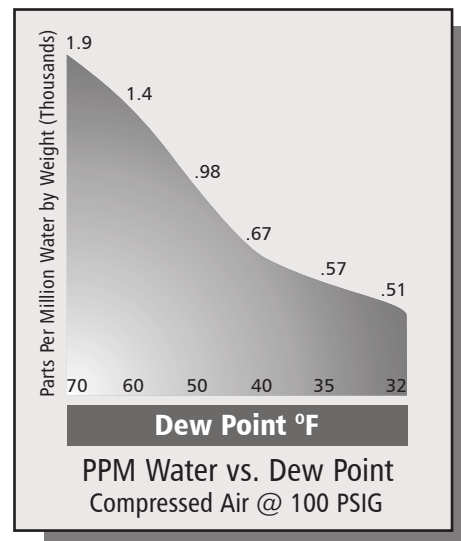
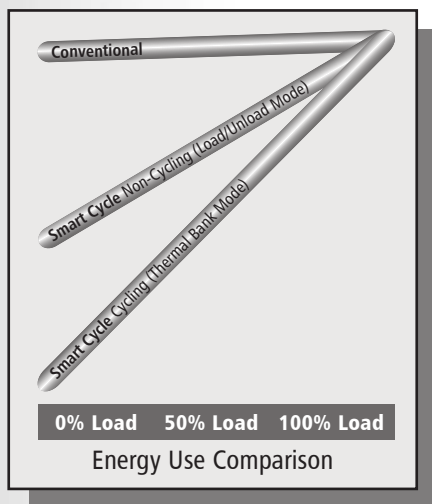
The Smart Cycle computer eliminates hard wiring and contains an intuitive set of control instructions that provides for a level of precision performance not possible with the conventional systems of switches and relays. The controller simplifies dryer operation by automatically anticipating and executing the necessary operating steps. A nonvolatile EPROM controls all operating functions. The electronics are protected from voltage spikes and electrical shorts by board mounted relays.

Direct dew point sensing and control assures the driest compressed air possible, and significant energy savings. The Smart Cycle Control employs a patented, quick acting temperature sensor to precisely monitor the temperature of the compressed air at the evaporator discharge and adjusts the refrigeration compressor capacity accordingly. Whether the refrigeration compressor is loaded, unloaded, or cycles off, is determined directly by the rising and falling dew point temperature of the compressed air. The dew point ranges from the low setting of +34°F to the upper set point of +39°F (set points are adjustable).

Smart Cycle Energy Savings: When the refrigeration system is completely unloaded, approximately 30% of full load power is used. When the compressor cycles in the standby/off position, no energy is consumed.



Magnum MSC20000

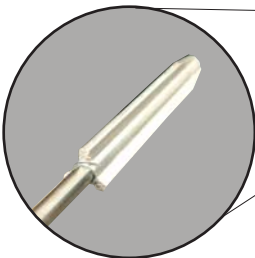


Airtek Magnum dryers DO NOT use a hot gas bypass valve. Compressor cylinder unloaders together with Smart Cycle unloading obtain optimum performance and energy savings. In simple terms, a hot gas bypass valve places a false load on the refrigeration system, whereas the Smart Cycle system design does not. It uses only the energy necessary to achieve desired dew point.

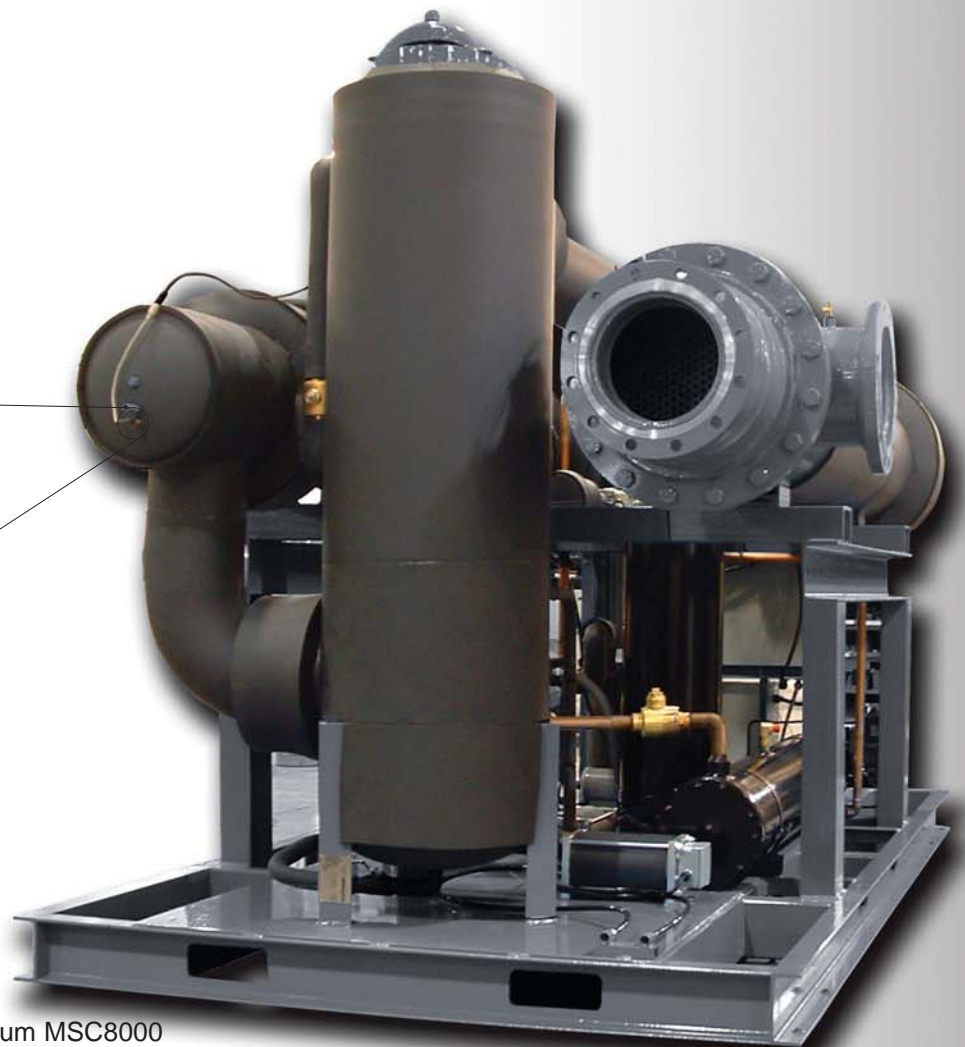
Conventional dryers control the evaporator's refrigerant pressure temperature using a hot gas valve designed with the assumption that if the refrigerant is 33°F the air will come out at 39°F. The truth is hot gas valves swing 10-15 psi/8-12°F between fully open/closed allowing the refrigerant in the evaporator to rise to 40-45°F before it actually stops adding false load to the refrigeration system. This translates to higher dew points and wasted energy.

Multi-Step Unloading

The precision and accuracy of our patented Dew Point Sensor allows the Smart Cycle system to use multiple setpoints that work in concert with the compressor's unloader valves to affect a smooth multi-step loading and unloading demand control. This controlled sequencing eliminates dew point spikes and ensures longer compressor life, better performance, and reduced energy consumption.



Patented Dew Point Sensor



Magnum MSC8000

Dual Mode

The Smart Cycle control system includes three modes of operation. The circuitry allows the dryer to function in either of two energy saving modes. Load/unload "Constant Run" mode will maintain a tight dew point range and can realize power savings to 70%. The "Thermal Bank" (stop/start) mode will provide optimum performance and cycle off when lighter loads permit. Selecting the auto button allows the controller to switch between the modes to optimize energy savings and dew point. The dryer will use no power when in the standby (off) position. Dual Mode provides flexibility in energy savings.

Thermal Bank™ (Start/Stop Mode): Pushing the Thermal Bank mode selector switch puts the Airtek Magnum dryer in the "start/stop" operation. The dryer will maintain an optimum dew point and will go into a standby (off) condition during periods of light load. The Smart Cycle computer turns the refrigeration compressor on or off in response to the temperature of the compressed air as measured by the electronic sensor located in the air stream at the evaporator discharge. During periods of light load compressed air reaches the lowest setpoint, and the SmartCycle computer turns the refrigeration compressor off. It is within this extra cold temperature differential where thermal storage is banked. The refrigeration compressor will restart when the temperature of the compressed air rises to its upper set point.

Loadless starting prolongs compressor life: When the compressor restarts on rising dew point temperature, the Smart Cycle computer holds the unloader valve open until the motor gets up to speed. Once the motor is up to speed (about two seconds) the unloader solenoid closes and sequenced load operation resumes. Due to the extra thermal storage and the time delay countdown, motor starts are kept to a minimum. The unloaded start also prolongs motor life.

Because the refrigerant is in direct contact with tubes in the evaporator, dew point spikes are only a few degrees and last only a few minutes, unlike conventional cycling dryers that use a higher temperature glycol solution as the cooling medium and can have dew point spikes to 60°F lasting up to 45 minutes.



Magnum MSC2000 (Custom)

Performance Charts

Refrigerated Air Dryer Performance Comparison				
	Non Cycling	Cycling		
Typical Data	False Load (Constant Run)	Conventional Cycling Dryers	Smart Cycle Dual Mode	
		Stop / Start	Load /Unload	Thermal Bank
Dew Point Range Degree F (Celsius C)	39° F to 55° F (3.88° C to 12.77° C)	33° F to 39° F (3.89° C to 10° C) Spikes to 60° F (15.55° C)	33° F to 39° F (.55° C to 3.88° C)	27° F to 39° F (-2.77° C to 3.88° C) May Spike to 43° F (6.11° C)
Moisture Carryover PPM/W	661 to 1,173	528 to 661 Spikes to 1,391	528 to 661	407 to 661 May Spike to 766
ISO Class Moisture	6	6	4	5
Duration Dew Point Spike	Does Not Apply	45 Minutes	Does Not Apply	3 to 5 Minutes
Energy Costs	High	Low	Medium	Low
First Costs	Low to High	Very High	Medium	

Direct Expansion vs. Mass Only

The Thermal Bank system has several advantages over heavy mass only systems. It reacts faster, through direct air sensing and the main heat exchanger can be easily serviced. The Thermal Bank system delivers significantly cleaner and drier compressed air, has virtually no dew point spike and consumes no power when in a standby condition. The Thermal Bank system prevents evaporator hot spots common to heavy mass dryer designs because it does not rely on an intermediate mass between the refrigerant and the compressed air for BTU storage. The Thermal Bank system will (at times) drive the dew point below +32° F (0° C), but because of the precise timing/programming routine and inherent defrost on each cycle, there is no possibility of a “freeze-up” condition. With the unloaded restart, there is no chance of motor overheating. The Thermal Bank system displays the actual compressed air temperature on the panel mounted digital readout. Heavy mass dryers typically display glycol temperatures but the compressed air temperature is significantly warmer. To protect the motor from overheating, heavy mass dryers limit the number of compressor restarts per hour without regard to performance or dew point. Mass only dryers are subject to severe dew point spikes, and inherent to that design.

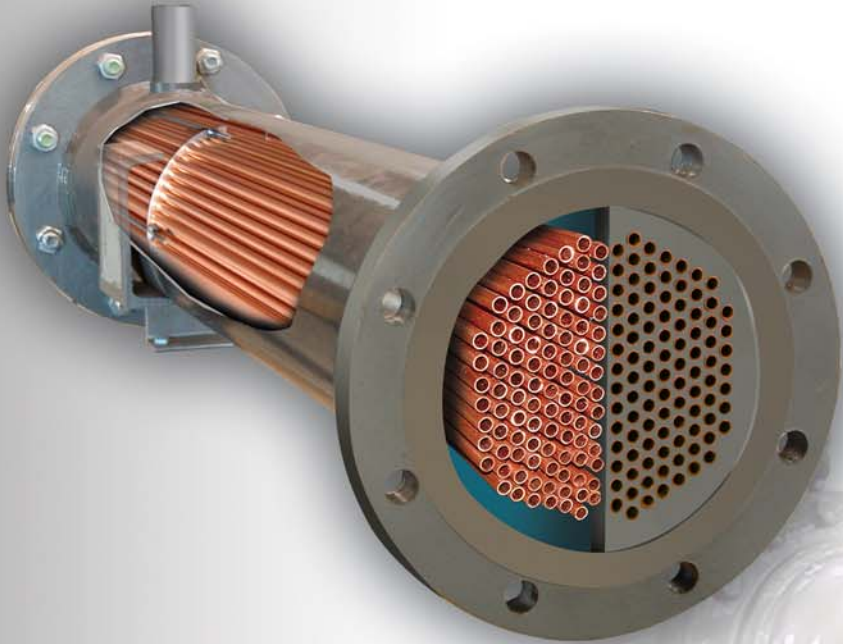
Direct Expansion vs. Water Chiller

Airtek direct expansion technology has several advantages over water chiller dryers. Airtek’s direct expansion refrigeration system uses cold liquid refrigerant to directly cool compressed air. It is a highly reliable, fast acting, and easy to control method of heat exchange. Conversely, water chiller refrigeration systems use a refrigerant to chill a cooling media (water) that, in turn, cools the compressed air. Water chiller dryers are indirect and slow, use extra heat exchangers, are much more complicated, require more service, cost more to operate, and deliver inconsistent dew points.

Heat Exchangers

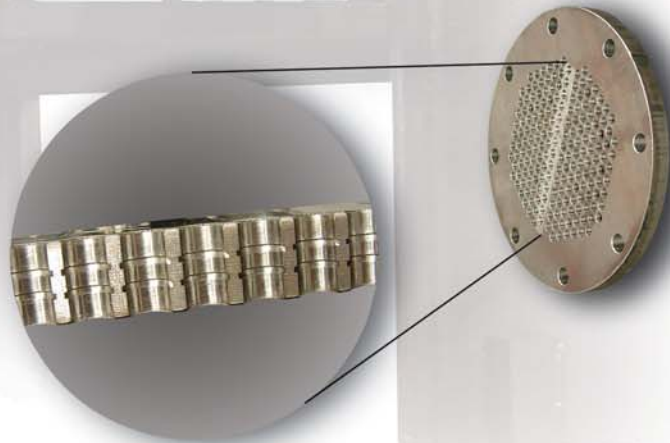
The Magnum Series Dryers use high efficiency, non-fouling, tube and shell heat exchangers. They are simple, reliable, and time proven. Airtek directs the flow of raw compressed air through straight, smooth bore, copper tubes that are surrounded by cold air in the pre-cooler/ re-heater and colder liquid refrigerant in the main evaporator. This envelope of cold allows the Magnum Dryers to achieve and maintain optimum performance and dew point within minutes of start up. The fully active, flooded evaporator eliminates evaporator hot spots and assures a consistent dew point at all load conditions. Because tubes have no extended surfaces, bends or curves to trap and collect sediment, energy consuming flow restrictions are eliminated. The heat exchangers do not foul and pressure differential is kept to a minimum.

Due to the limited number of mechanical connections and clear flow path, Airtek heat exchangers require little, if any, maintenance. Most other types of dryers direct the flow of dirty air through the shell of the heat exchanger where the dirt and oil collect on the tubes and surfaces. Since these heat exchangers are not cleanable, efficiency is lowered and energy consuming pressure drop increases as soon as it is put into service.



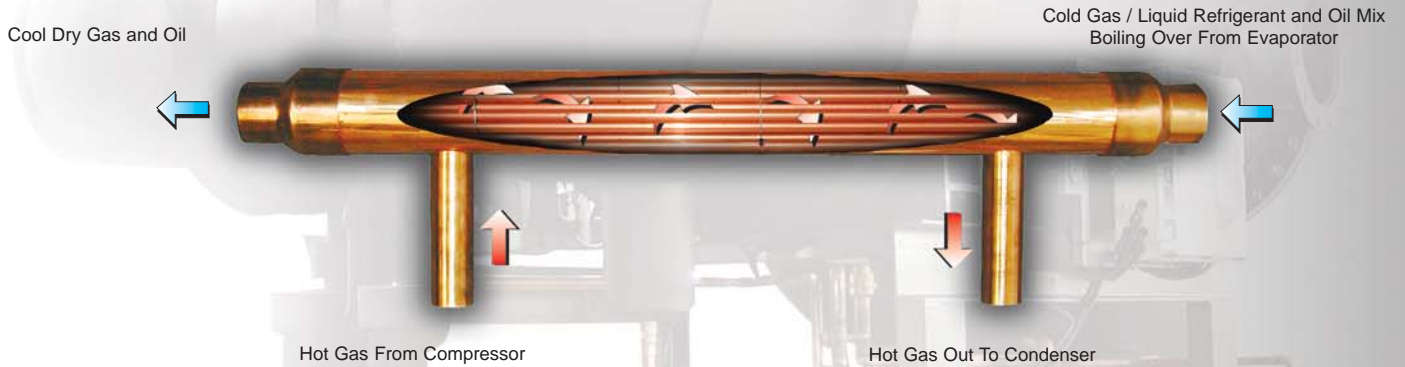
Grooved Tube Sheets

- An Airtek Exclusive
- Each Tube Sheet Hole Has Precision Milled Grooves
- Leak-proof Joints
- Greater Mechanical Strength



Patented Flood Level Control

- Improves performance by doubling the effective surface area of the main evaporator.
- Protects the compressor from refrigerant “floodback” which is a major cause of compressor failure on competitors’ dryers.
- Ensures proper oil return to the compressor, eliminating a major cause of compressor failure on competitors’ dryers.
- Eliminates the need to attempt precision adjustments on the thermostatic expansion valve.

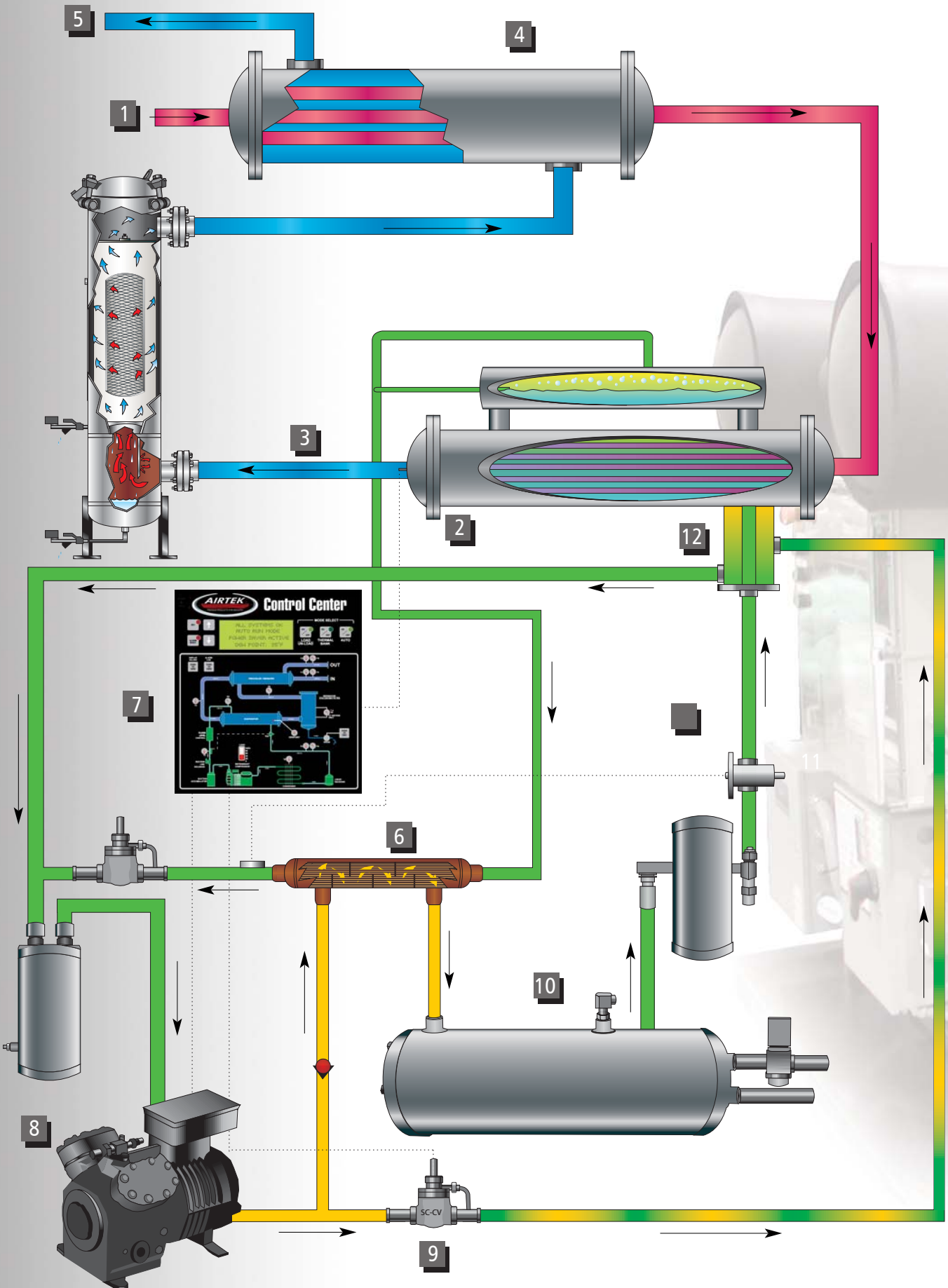


Maximum Reliability Demand Drain

All Airtek Magnum Dryers are equipped with factory installed “Zero Air Loss” electronic drains, assuring unattended, reliable demand draining with absolutely no air loss. A large orifice solenoid valve is automatically opened by a level switch assuring complete drainage. The MRD Drain resists fouling, and requires no manual adjustments associated with timed drains. A drain alarm with remote alarm contacts is standard.



Flow Schematic



Air Circuit

Saturated compressed air enters the tubes of the air to air heat exchanger **1** where it is pre-cooled by the cold compressed air returning through the shell from the evaporator. Pre-cooling saves energy by reducing the heat load on the refrigeration system. After the compressed air has been pre-cooled, it flows into the evaporator tubes **2** where the temperature is lowered to approximately 34°F (1.1°C). The temperature reduction forces water and oil vapors to condense. The mixture of cold compressed air and condensed liquid flows into the mechanical moisture separator **3** where the liquids are removed by impingement and centrifugal action. The compressed air then flows through the second stage 3 micron* particulate filter element where it is further purified. The purified compressed air returns through the shell side of the air to air heat exchanger **4** where its volume is increased through reheating. The processed compressed air then enters the main distribution system **5** as a dry, clean and efficient utility.

* If it is a Cold Trap Unit, .01 high efficiency coalescing element is installed

Patented Refrigeration Circuit

Airtek's patented refrigeration system enables the use of a fully active flooded evaporator **2**. Compressed air flows through the submerged tubes in the flooded shell to ensure dew point integrity. This is made possible because the refrigerant gas returning to the compressor must pass through the patented Flood Level Control Heat Exchanger **6**. If any liquid refrigerant were present in the suction line, it would flash off to a vapor by the heat of the discharge high temperature refrigerant gas on the other side of the exchanger. Along with the suction line accumulator, the Flood Level Control exchanger eliminates the possibility of liquid refrigerant slugging back to the compressor.

An air temperature probe in the evaporator's air side tubing reads the temperature and displays it on the control center panel **7**. When the air temperature reaches its low setpoint, the compressor will either shut off, or unload, depending upon the mode selected by the operator thereby, saving energy during periods of low load. When the dew point setting is reached, the compressor **8** will resume normal operation.

When operating in the cycling mode, a virtually unlimited number of stops and starts is made possible by the Smart Cycle unloader valve **9** opening prior to the starting of the compressor. This allows a 100% unloaded start each time the compressor comes on.

When operating in the unloaded mode, heat from compression drop drastically as the compressor is idling and the warm low pressure refrigerant gas bypasses the condenser **10** and expansion valve **11**, and flows through the Static Cooler **12**. This core of cold liquid removes a small amount of heat from the unloaded motor as the cool gas returns to the inlet side of the compressor.

Smart Cycle® and Cold Trap® Performance Guarantee

Airtek Smart Cycle and Cold Trap refrigerated air dryers are guaranteed to hold temperature of compressed air at +33°F(5°C) to +39°F (3.8°C) at all operating conditions up to the maximum capacity of the dryer.

All Airtek Smart Cycle and Cold Trap refrigerated air dryers are equipped with a standard digital readout to prominently display the guaranteed compressed air temperature on the control panel.

The Cold Trap[®] Difference

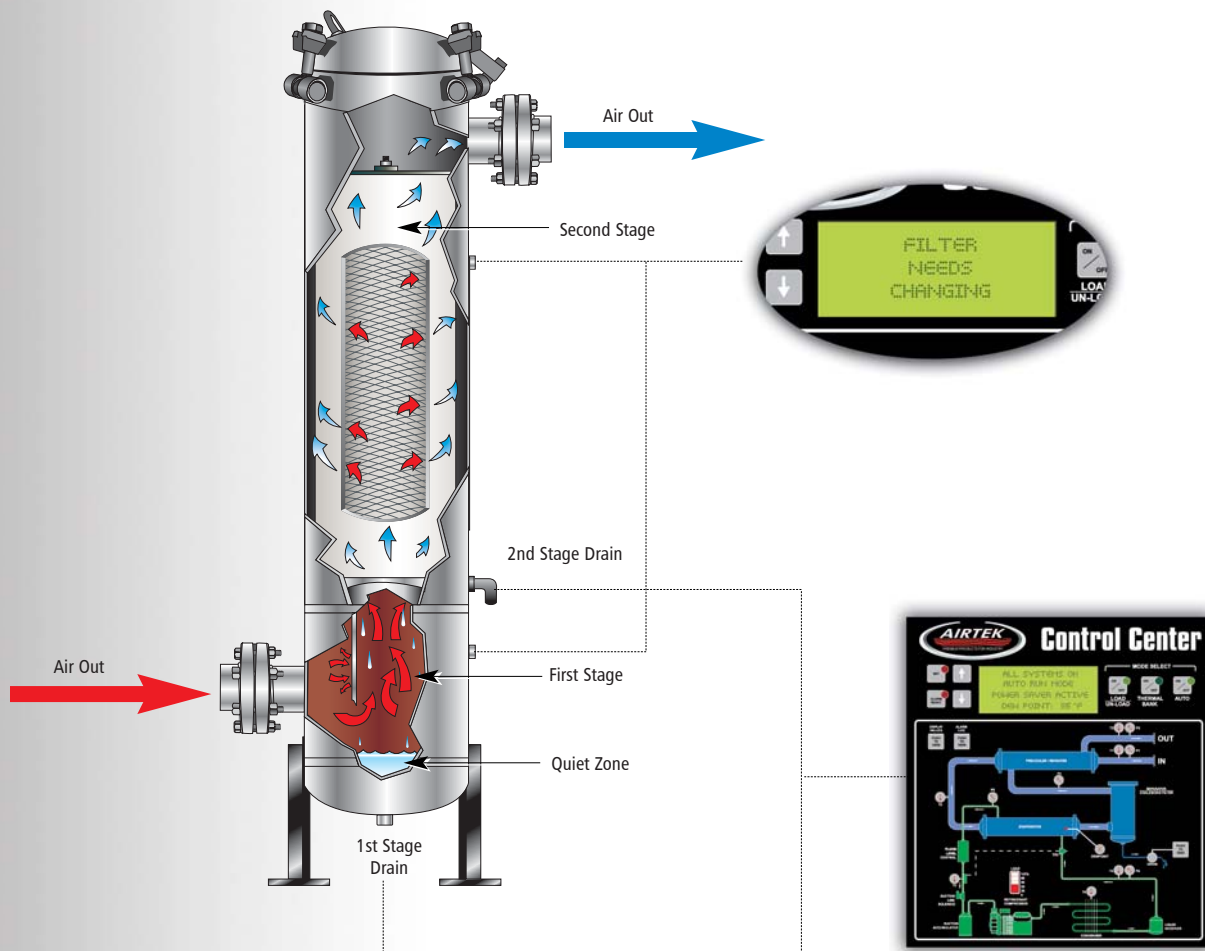
Airtek's Cold Trap (CT) configuration combines the advantages of the Smart Cycle performance and energy savings with the oil removing efficiency of a built in, two stage, cold coalescer.

At lower temperatures there will be a higher concentration of condensed mist and liquids and lower concentrations of vapor. Coalescers can not remove true vapor. At 35°F (1.6°C) as much as 100 times more oil will be in the condensed form which can be removed by the coalescer.

The Cold Trap design also prolongs element life by removing bulk liquids and contaminants in the first stage mechanical separator and coalescing the aerosols in the second stage. Because the element is not exposed to bulk contaminants, flow restrictions are kept to a minimum, further reducing pressure drop.

The element can be easily replaced without disturbing insulation, air line or drain piping. It simply lifts out of the top of the filter housing. An integrated digital indicator is provided to display element condition.

Individual MRD Drains for both first and second stage assures unattended Maximum Reliability Demand draining with "Zero Air Loss".

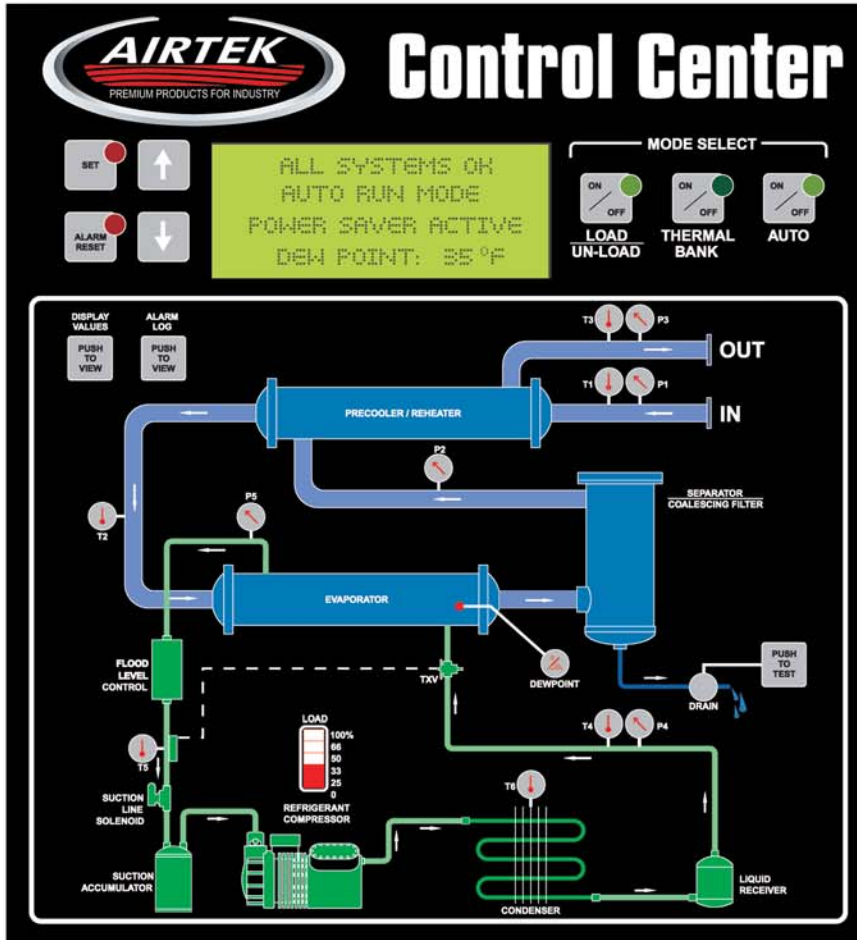


Note: Airtek Mist Eliminator is an available option. Mist Eliminator provides 10-year element life with pressure drop of less than 0.5 PSID. (See Mist Eliminator brochure for details.)

Control Center

Airtek's Control Center features a complete complement of data acquisition functions. The easy to use Control Center affords superior dryer control along with digital telemetry, for remote analysis of performance. The Control Center features an "Auto" mode that will switch between standard "Load / Unload" and "Thermal Bank" operation as demand dictates. The Auto Selection innovation will greatly expand the dryer's functionality and utility.

Housed in a NEMA 4X Control enclosure (Standard)



RemoteWatch™ software is standard with the Control Center. This allows you to monitor from any PC every detail of operation, including all alarms.

The Control Center has a distinctive "Flow Schematic" with active indicators. Dryer operation is easily viewed and ascertained. Should any parameter be outside a normal value, the system schematic annunciates by flashing the source area problem, as well as specifically stating details in the LCD display. A Load Capacity Meter (LCM) shows the percent-of-burden at which the system is performing at any given moment.

The Control Center will display everything relative to dryer operations. But that's just the surface... In depth information is available at the touch of a button. Easily navigated menus present detailed operational data. Every nuance can be studied (or adjusted if appropriate), assuring both the "wellness" of the dryer, as well as the quality of the performance.

Included with every Control Center is a communication port making StarWatch™ Services accessible. Airtek can monitor and analyze every moment of operation (24-7); it can even do it wirelessly. When StarWatch™ is active on an installation it's like having an Airtek factory technician in your plant, to advise your process engineer.



Airtek Designs With The Following Priorities

Reliability

Reliability is achieved using our proven design and components, along with quality workmanship. Examples of this principle are obvious when looking at our rugged steel bases and frames, as well as our heat exchangers that resist fouling and minimize any possibility of a leak.

In addition, the patented Flood Level Control exchanger eliminates problems associated with compressor floodback and poor oil return that are commonly experienced with other dryers. The "Loadless Starting" feature reduces the start up load on the refrigeration compressor by 80%. Low refrigerant warning and shutdown prevents compressor failure in the refrigeration system. Additional safety devices include a "low pressure side pump down", suction accumulator, high pressure shutdown switch with manual reset, and both liquid and suction line filter / dryers to assure clean refrigeration circuits.

Operation

Airtek dryers are designed so that minimal operator attention is needed. Operation is as simple as turning the dryer on. The on-board computer then controls the unit so that it will react to ever-changing operating conditions.

A diagnostic control system will inform the operator of the dew point, as well as warn of any upset conditions that may affect dryer performance.

Drain valves activate only when necessary and prevent valuable compressed air from being vented. A drain alarm warns of any malfunction.

Maintenance

Airtek dryers are designed to require as little routine maintenance as possible. Examples of this design principle can be seen in our choice of smooth bore non-fouling heat exchangers, along with electronic rather than mechanical control devices. Other examples: use of bolts with captive nuts instead of sheet metal screws; large open spaces for easy access to components; use of modular type electronic panel for ease of replacement; isolation valves on all refrigerant switches allows service to any part of the system without having to reclaim the entire charge thereby, saving money and drastically reducing down time.

Typical component selection and layout is simplistic, and use standard "off the shelf" items that can be supplied either by Airtek or your local refrigeration service company.

Air Quality

The customer purchases an air dryer to improve air quality. It is an essential component in their operation. Poor air quality results in problems with product quality and production processes.

The heart of Airtek's air quality design is the unique, patented Smart Cycle system, which directly senses the air temperature leaving the evaporator, and controls the refrigeration compressor in response. It is the compressed air temperature that controls the dryer functions. The system keeps the compressed air temperature in the 33-39°F (.55-3.8°C) range, shutting off or unloading the refrigeration compressor when the optimum dew point is achieved. The air temperature is displayed continuously by an LED readout on the control panel.

Energy Savings

Energy savings is an additional bonus. With our proven design, the savings are built into each unit, which runs only when inlet temperature demand and compressed air temperatures dictate.

Loadless starting, cycling the compressor on and off, or alternating between load and unloaded, and low overall system pressure drop allow for energy savings without sacrificing performance.

Magnum Specifications

Magnum MSC Series

MODEL	CAPACITY SCFM @ 100 PSIG (Nm ³ /min@6.9 Bar)	REF. H.P.	Avail. KW	Oper. KW	SC ΔP PSIG (Bar)	DIMENSIONS			Approx. Weight LBS (KG)	Conn. In/Out	Water In/Out	Water GPM @ 70°F	Water GPM @ 85°F
						L" (mm)	W" (mm)	H" (mm)					
MSC1500	1600 (45.3)	7 1/2	6.0	5.6	3.5 (.24)	78 (1981)	48 (1219)	61 (1549)	2200 (998)	4" FLG	1"	10	22
MSC2000	2050 (58.0)	10	8.8	8.6	2.9 (.20)	96 (2438)	48 (1219)	74 (1361)	3000 (1880)	6" FLG	1"	11	22
MSC2500	2500 (70.8)	15	10.0	9.9	3.9 (.27)	102 (2591)	54 (1372)	83 (1529)	3370 (2108)	6" FLG	1-1/4"	14	25
MSC3000	3050 (90.6)	15	13.2	12.9	3.8 (.26)	108 (2743)	66 (1676)	83 (1821)	4015 (2108)	6" FLG	1-1/4"	15	25
MSC4000	4200 (118.9)	20	16.6	14.9	3.4 (.23)	114 (2896)	72 (1829)	90 (2576)	5680 (2286)	8" FLG	1-1/2"	25	34
MSC5000	5000 (152.9)	25	22.7	18.2	4.1 (.27)	114 (2896)	72 (1829)	95 (3565)	7860 (2413)	8" FLG	1-1/2"	35	57
MSC6000	6000 (175.6)	30	26.9	21.1	3.3 (.22)	144 (3658)	78 (1981)	95 (2413)	8184 (3712)	8" FLG	2" FLG	40	82
MSC8000	8000 (226.5)	40	40.5	31.9	4.1 (.28)	144 (3658)	78 (1981)	95 (2413)	8640 (3919)	10" FLG	2-1/2" FLG	60	99
MSC10000	10000 (283.2)	50	49.4	39.9	4.3 (.30)	144 (3658)	84 (2134)	101 (2565)	10050 (4559)	10" FLG	2-1/2" FLG	70	124
MSC12000	12000 (339.8)	(2)30	58.2	43.9	3.6 (.25)	150 (3810)	96 (2438)	114 (2896)	12600 (5715)	12" FLG	2-1/2" FLG	75	132
MSC15000	15000 (424.8)	(2)35	68.8	51.9	3.8 (.26)	150 (3810)	96 (2438)	114 (2896)	13700 (6214)	12" FLG	2-1/2" FLG	84	166
MSC18000	18000 (509.7)	(2)40	81.0	63.9	3.2 (.22)	162 (4115)	96 (2438)	114 (2896)	17200 (7802)	14" FLG	4" FLG	100	181
MSC20000	20000 (566.3)	(2)50	98.8	79.0	3.4 (.23)	198 (5029)	100 (2540)	114 (2896)	23400 (10614)	14" FLG	4" FLG	120	230

Magnum MCT Series

MODEL	CAPACITY SCFM @ 100 PSIG (Nm ³ /min@6.9 Bar)	REF. H.P.	Avail. KW	Oper. KW	CT ΔP PSIG (Bar)	DIMENSIONS			Approx. Weight LBS (KG)	Conn. In/Out	Water In/Out	Water GPM @ 70°F	Water GPM @ 85°F
						L" (mm)	W" (mm)	H" (mm)					
MCT1500	1600 (45.3)	7 1/2	6.0	5.6	5.0 (.24)	78 (1981)	48 (1219)	61 (1549)	2200 (998)	4" FLG	1"	10	22
MCT2000	2050 (58.0)	10	8.8	8.6	4.4 (.20)	96 (2438)	48 (1219)	74 (1361)	3000 (1880)	6" FLG	1"	11	22
MCT2500	2500 (70.8)	15	10.0	9.9	5.4 (.27)	102 (2591)	54 (1372)	83 (1529)	3370 (2108)	6" FLG	1-1/4"	14	25
MCT3000	3050 (90.6)	15	13.2	12.9	5.3 (.26)	108 (2743)	66 (1676)	83 (1821)	4015 (2108)	6" FLG	1-1/4"	15	25
MCT4000	4200 (118.9)	20	16.6	14.9	4.9 (.23)	114 (2896)	72 (1829)	90 (2576)	5680 (2286)	8" FLG	1-1/2"	25	34
MCT5000	5000 (152.9)	25	22.7	18.2	5.4 (.27)	114 (2896)	72 (1829)	95 (3565)	7860 (2413)	8" FLG	1-1/2"	35	57
MCT6000	6000 (175.6)	30	26.9	21.1	4.8 (.22)	144 (3658)	78 (1981)	95 (2413)	8184 (3712)	8" FLG	2" FLG	40	82
MCT8000	8000 (226.5)	40	40.5	31.9	5.6 (.28)	144 (3658)	78 (1981)	95 (2413)	8640 (3919)	10" FLG	2-1/2" FLG	60	99
MCT10000	10000 (283.2)	50	49.4	39.9	5.8 (.30)	144 (3658)	84 (2134)	101 (2565)	10050 (4559)	10" FLG	2-1/2" FLG	70	124
MCT12000	12000 (339.8)	(2)30	58.2	43.9	5.1 (.25)	150 (3810)	96 (2438)	114 (2896)	12600 (5715)	12" FLG	2-1/2" FLG	75	132
MCT15000	15000 (424.8)	(2)35	68.8	51.9	5.3 (.26)	150 (3810)	96 (2438)	114 (2896)	13700 (6214)	12" FLG	2-1/2" FLG	84	166
MCT18000	18000 (509.7)	(2)40	81.0	63.9	4.7 (.22)	162 (4115)	96 (2438)	114 (2896)	17200 (7802)	14" FLG	4" FLG	100	181
MCT20000	20000 (566.3)	(2)50	98.8	79.0	4.9 (.23)	198 (5029)	100 (2540)	114 (2896)	23400 (10614)	14" FLG	4" FLG	120	230

Note:

- (1) For larger models available consult factory. Air cooled systems also available.
- (2) Rated conditions meet recommended Standard NFPA/T3.27.2-198 (ANSI B93, 45M) and CAGI Standard No. ADF 100 for Class H 33°F - 39°F (1°C - 4°C) pressure dew point, based on 100 PSIG (6.9 Bar) inlet air pressure, 100°F (38°C) inlet air temperature, 85°F (29°C) cooling water temperature and 100°F (38°C) ambient air temperature. Maximum air side pressure drop is 5 psi (0.3 Bar). See actual pressure drop listed for each model.
- (3) Dimensions and weights are for water cooled units. Consult factory for air cooled units.
- (4) Due to continuing research and development, specifications and dimensions are subject to change without notice.
- (5) For ΔP less than 3 psi see options or consult factory.
- (6) Available Kilowatt is calculated at 35°F evaporating temperature.

Standard Equipment

Refrigeration Group

- Smart Cycle® Loadless Starting
- Smart Cycle® Unloader Control
- Compressor Vibration Eliminators
- Compressor Crankcase Heater
- Compressor, Semi-Hermetic
- Compressor Isolation Springs
- Compressor Cylinder Unloaders
- Flood Level Control (patented)
- High Head Pressure Switch
- Low Suction Pressure Switch
- Thermostatic Expansion Valve
- Isolation Valves Throughout
- Water Cooled Condenser
- Automatic Water Control Valve
- Optional Air Cooled Condenser
- Low Ambient Fan Controls (Air Cooled Only)
- Replaceable Core Type Liquid Line Filter-Dryer
- Liquid Line Sight Glass
- Liquid Receiver
- Suction Line Accumulator
- Replaceable Core Type Suction Line Filter-Dryer
- Suction Line Solenoid
- Condenser Pressure Relief Valve
- Automatic Pump Down Cycle
- Starter (Across the Line)
- Disconnect
- Separate High Voltage Enclosure

Evaporator Group

- Tube & Shell Evaporator
- Fully Active Flooded Evaporator
- Refrigerant Surge Tank

Refrigeration Service Features

Isolation Valves for:

- Condenser
- Compressor
- Evaporator
- Suction Line Filter
- Liquid Line Filter
- Liquid Line Sight Glass
- Liquid Receiver
- Patented Flood Level Control
- Suction Line Solenoid
- Refrigerant Check Valve

Isolation valves eliminate the need to pump down and recharge the system when you need to repair or replace components.

Air System

- Air to Air Pre-Cooler/Re-Heater
- Heavy Structural Steel Base and Frame with Top Plate
- 3 Micron Centrifugal Separator (MSC Series)
- Severe Duty, Two Stage Cold Coalescer (MCT Series)
- Electronic Demand Drain (MRD Drain)
- Drain Isolation Valve
- ASME Coded Heat Exchanger
- Closed Cell Insulation

Note:
Included with the Control Center is a communication port making Star Watch™ Services accessible.

NEMA 4 Panel Encloser

Instrumentation Group
Digital Readout

- Modem Fault
- Air Pressure Out
- Air Temperature In
- Air Temperature Out
- Refrigerant Suction Pressure
- Refrigerant Discharge Pressure
- Refrigerant Liquid Temperature
- Refrigerant Suction Temperature
- Super Heat Temperature
- Intermediate Air Temperature
- Dew Point Temperature
- Water/Ambient Temperature

User Inputs

Flow Meter (Customer Supplied)
Auxiliary (Any User Defined 4-20 mA or 1-5v)
i.e. Compressor Motor Amp Draw

Alarms

- Modem Fault
- High Dew Point
- High Flow (User Flow Meter)
- Sensor Fault
- Low Inlet Air Pressure
- High Inlet Air Pressure
- High Inlet Air Temperature
- High Ambient/Water Temperature
- High Coalescer Differential Pressure (MCT)
- Drain Fault

Shutdowns

- Motor Thermal Protection
- Low Refrigerant Level
- Low Dew Point
- Dryer Overload
- High Refrigerant Pressure
- Low Refrigerant Pressure
- Low Oil pressure

5 Year Warranty (See Warranty & Procedure Manual for Details)
Factory Assistance 1-800-451-6023



Magnum MSC5000

Available Equipment

Refrigeration Options

- Open Drive Compressor
- 100% Back-up Compressor
- 50% Back-up Compressor (MSC/MCT 12000 & larger)
- 404A Refrigerant
- Alternate Refrigerants

Air System Options

- Stainless Steel Exchangers and/or Piping (304L or 316L)
- Low Pressure Drop Air System (<3 psid)
- Cupro-Nickle Tube

Condenser Options

- Air Cooled
- Cupro-Nickel Tubes (Water Cooled)
- Stainless Steel Tubes (Water Cooled)
- Air Cooled w/ Water Cooled Assisted
- Remote Air Cooled (Std 4000-Larger)
- Heresite Coated Air Cooled Condenser

Package Options

- Particulate Prefilter
- Coalescing Afterfilter
- Spare Element
- Cold Point Mist Eliminator Ports
- 3 Valve By-Pass Piping (Pre-Assembled, Shipped Loose)
- Customized (reduced footprint, connection size and Location, Mirror Image, Etc.)

Electrical Options

- Fused Disconnect
- JIC Electrical Wiring
- Z Purge Control Panel
- Any Voltage
- Heat Tracing
- Low Ambient

Instrumentation Options

- StarWatch™ Services
- Dual Hour Meters
- Remote Control Panel
- 4-20 mA Output For Dew Point
- PLC Interface
- Audible Alarm

Pressure Options

- 200 MAWP
- 300 MAWP
- 500 MAWP
- 700 MAWP

Miscellaneous Options

- Lifting Lugs
- Factory Supervised Start-Up
- Export Package
- Special Paint Color
- Certified "As Built" Drawings

Specialty Magnum Dryers

- Landfill Gas Dryer
- Digester Gas Dryer
- Air and Gas Coolers
- Chilled Water Dryers

With Airtek your options are unlimited, consult the factory for your special requirements.



Magnum MSC20000 with outdoor insulation package



Patents: Refrigerated Dryers 5, 207, 072; 5,099, 5,062, 571. Twin Tower Dryers Using Multi Port Feature, 6,099,620. The equipment indicated in the catalog is meant for use in operating "compressed air driven" apparatuses. At no time should any Airtek equipment be used for breathing air situations unless all government regulations regarding breathing air are met.

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