ADVANTAGE®
MAKING WATER WORK™

Efficient & Reliable Process Cooling

Advantage manufactures over 35 standard chiller models covering a wide range of capacities to meet your cooling requirements. If one of these standard models does not match your specific application requirements, Advantage's experienced machine designers can customize a standard chiller model that will.

Advantage's Maximum Series Portable Chillers are refrigeration units coupled with an integral fluid circulation system that range in cooling capacity from 1/4 to 40 tons. These units are used to cool fluids to support industrial process cooling applications requiring a fluid temperature range from 20°F to 80°F.

Maximum Portable Chillers are easily installed and operated requiring only a source of electrical power, coolant fluid and a process load to be temperature controlled. Units are placed inside the production facility and are available in Air-Cooled or Water-Cooled* models. These chillers can be configured with a remote, air-cooled condenser to decrease heat within your facility.

Portable Chillers are delivered fully charged with a non-ozone depleting refrigerant, tested and ready to run right out of the box.† All control instrument information is conveniently located permitting instant diagnosis of performance.

Over 20,000 Advantage chiller units have been put into service worldwide, demonstrating their wide acceptance.

* Water-cooled models require an external water supply source for operation.

† Units with remote condensers are not portable and require field piping and charging.

Proudly Made In The USA

www.AdvantageEngineering.com

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ADVANTAGE®
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Air-Cooled and Water-Cooled Models

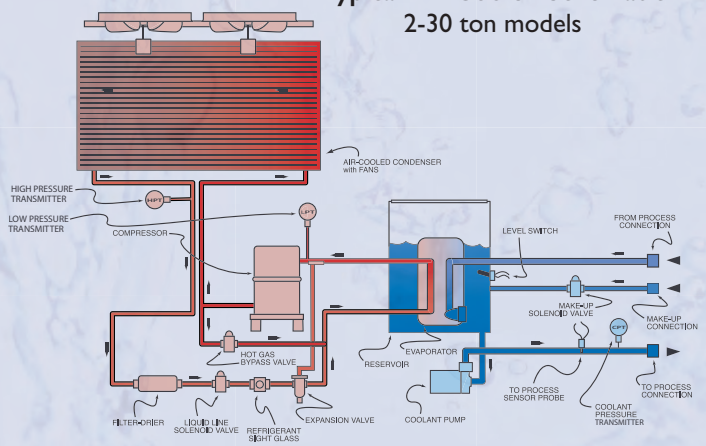
AIR-COOLED MODELS

These chillers utilize plant ambient air to extract heat from the refrigeration circuit. A fan or blower system moves plant air across the generously sized finned condenser coils to permit full rated capacity at design conditions.

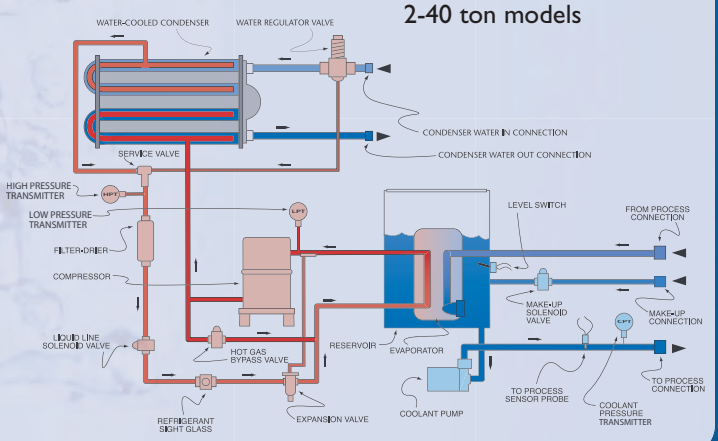
WATER-COOLED MODELS*

These chillers utilize a secondary plant water source such as cooling tower or city water to extract heat from the refrigeration circuit. Water-cooled chillers operate independently of plant ambient air temperature to provide full rated capacity even during the hottest weather and will not add extra heat to your building.

Typical Air-Cooled Schematic
2-30 ton models



Typical Water-Cooled Schematic
2-40 ton models



*** Water-cooled models require an external water supply source for operation.**

Units Using Remote Outdoor Condenser

The Maximum Series Chillers can also be configured with a remote condenser to provide process cooling while rejecting the absorbed heat outside, reducing heat inside your building.

The remote condenser is designed for outdoor installation and is equipped with controls that permit operation in a wide range of weather conditions, including ambient temperatures as low as -20˚F. Capacity ratings are selected at 95˚F with optional condenser selections available for higher ambient conditions.

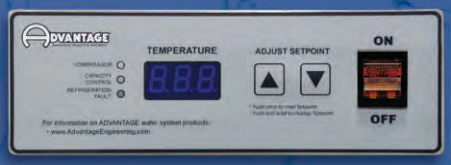
The remote condenser is installed outside and requires field piping and system charging by a qualified installer. Refrigerant piping is installed from the indoor chilling unit to the remote condenser. The installed piping makes this system a more permanent installation.

Control Instrumentation To Fit Your Needs

Maximum Portable Chillers are supplied with a tailor made microprocessor control instrument that monitors and controls all aspects of the chiller functions assuring accurate and dependable operation. The control is designed to support the specific and unique requirements of process cooling in an industrial environment.

MAXIMUM M1 CONTROL FEATURES:
(Standard for 1/4 to 1.5 ton models)

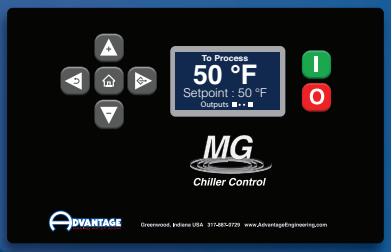
- **ACCURATE CONTROL**
- Large & bright LED temperature display
- Digital setpoint selection with soft touch keys
- Illuminated chiller on/off switch
- Compressor on light
- Basic chiller diagnostics with refrigeration fault light
- Capacity control light
- Custom control software to operate optional hot gas bypass capacity control feature
- 50-100% capacity modulation, standard on 2-40 ton models, optional on 1/4-1.5 ton models



Standard for 1/4 to 1.5 ton models

MAXIMUM MG CONTROL FEATURES:
(Standard for 2 to 40 ton models)

- Graphic LCD display with intuitive navigation
- Digital refrigerant pressure display
- Digital water pressure display
- Plain language error message reporting
- Controls hot gas bypass or digital scroll compressor for capacity control
- Alarm output with audible signal
- **INDUSTRY 4.0 READY** – Modbus RTU or SPI communication included, Modbus TCP communication optional
- High water temperature shut down feature



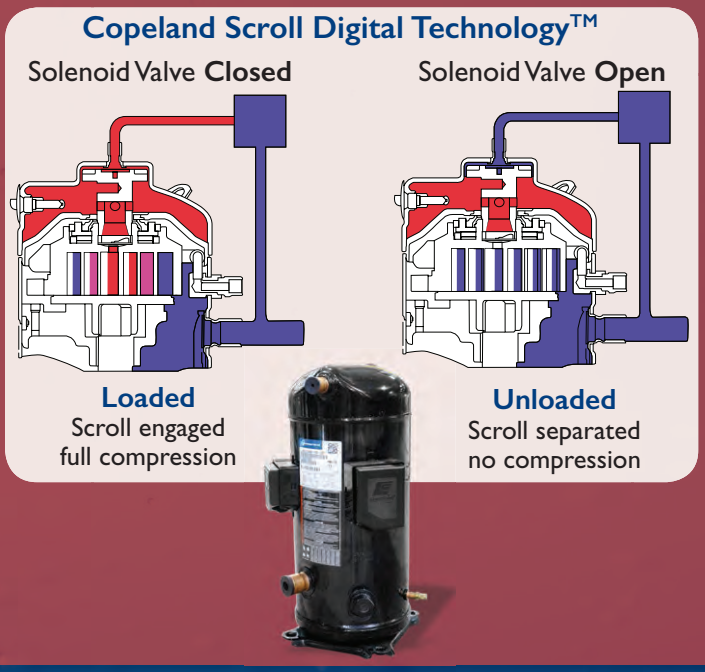
Standard for 2 to 40 ton models

Digital Scroll Technology

Nominal 5, 10 & 15 ton units include a Copeland Scroll Digital Compressor™. The compressor is controlled by Advantage's MGD advanced microprocessor control instrument. It uses a simple and effective method to modulate chiller capacity from 20 - 100%, giving unparalleled energy efficient performance in the modulation field.

The Copeland Scroll Digital™ Compressor operates in two stages - the loaded state, when the control solenoid valve is normally closed and unloaded state, when the control solenoid valve is open. During the loaded state, the compressor operates like a standard scroll compressor and delivers full capacity and mass flow. During the unloaded state, there is no mass flow through the compressor so no cooling takes place.

By controlling the amount of time that the compressor is in the loaded and unloaded state, the Advantage MGD control instrument can effectively and efficiently modulate the chiller capacity from 20 to 100%. This saves energy, reduces compressor starts and stops promoting longer compressor life while providing stable cooling fluid temperatures.



Durably Constructed With Quality Components

CONSTRUCTION

- Heavy-duty frame
- Easy access enclosure panels
- Durable casters

RUGGED REFRIGERATION CIRCUIT

- Reciprocating, scroll or digital scroll compressors
- Environmentally-friendly refrigerant
- High-efficiency evaporators
- High & Low refrigerant pressure limit settings
- Standard High & Low refrigerant pressure display on MG control instrument 2-40 ton models

AIR-COOLED UNITS

- Generously sized finned tube construction with fans or blowers for air movement
- Remote outdoor condenser (RC models)

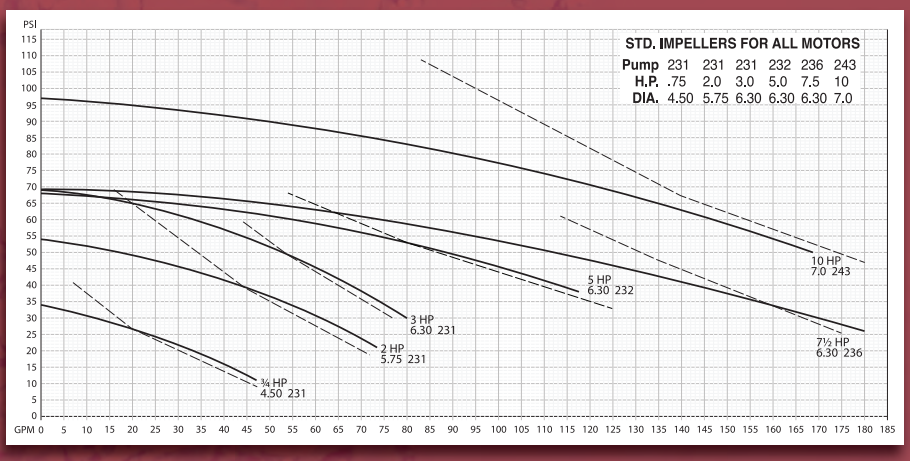
WATER-COOLED UNITS

- High efficiency cleanable condenser
- Water regulator valve to maintain proper refrigerant pressure

HIGH PERFORMANCE WATER CIRCUIT

- Pumps produce ideal water flow promoting optimal heat transfer
- Lifetime, non-rusting, vented, water reservoir
- All non-ferrous wetted surfaces on standard units
- Standard auto water make-up on 4-40 ton models
- Digital water pressure readout provided on models with MG control instrument
- High water temperature shut down feature on models with MG control instrument

Pump Performance Curves



Chiller Options

ALARMS

- High water temperature & low water pressure audible or audible/visual alarm (1/4-1.5 ton models with M1 instrument)
- High dB audible or audible/visual alarm (2-40 ton models with MG instrument)

OVERHEAD PIPING KIT

- Prevents the chiller reservoir from over flowing on shutdown due to backflow from overhead piping

REVERSE FLOW CIRCUIT

- Reverse flow circuits are used on open processes where an external reservoir is used

AUTOMATIC LOW FLOW BYPASS

- Maintain proper evaporator flow when the process flow is below the minimum evaporator flow requirement

LARGER PROCESS PUMPS

- Optional pumps enable the chiller to provide greater flow and/or pressure

ELECTRICAL SYSTEM OPTIONS

- UL508A enclosed electrical panel
- Emergency stop operator
- Control instrument upgrades
- Disconnect switch

CONDENSER PROTECTION

- With screen and air filter

BAG FILTER OR STRAINER

- Protects water system from debris

CCPR VALVE

- For fluid temperatures from 65°F to 80°F, 1/4-1.5 ton models

LOWER ENCLOSURE PANELS

- 1/4-1.5 ton models

PROCESS LINE SHUT-OFF VALVES

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Specifications – Air-Cooled 1/4 - 40 Tons

	Model[1] M1/M1D/MG/MGD	.25A	.33A	.5A	.75A	1A	1.5A	2A	3A	4A	5A	7.5A	10A	15AF	15AB	20AF	20AB	25A	30A	40A*
Capacity @ 50°F LWT	Tons[2]	.29	.39	.50	.75	1	1.5	2	2.9	4	4.9	7.2	9.8	14.5	14.5	18.5	18.5	23.1	30	36.7
	Kilowatts[2]	1	1.36	1.75	2.53	3.5	4.73	7.0	10.8	14.0	17.2	25.3	34.4	50.9	50.9	65.0	65.0	81.0	105.3	128.8
Compressor	Horsepower	.25	.33	.50	.75	1	1.5	2	3	4	5	7½	10	15	15	20	20	25	30	2@20
	Type[3]	R	R	R	R	SC	SC	SC	SC	SC	DSC	SC	DSC	DSC	DSC	SC	SC	SC	SC	TSC
Refrigerant	Type	134A	134A	134A	134A	134A	134A	410A	410A	410A	410A	410A	410A	410A	410A	410A	410A	410A	410A	410A
Air-Cooled Condenser	Type[6]	F	F	F	F	F	F	F	F	F	F	F	F	F	B	F	B	B	B	–
	CFM x 1000	.25	.33	.45	.65	.71	1.1	2	3	5	5	10	10	15	15	20	20	20	30	–
	Static Pressure[7]	–	–	–	–	–	–	–	–	–	–	–	–	–	1.35	–	1.35	1.35	1.35	–
	Ambient[11]	90	90	90	90	90	90	95	95	95	95	95	95	95	95	95	95	95	95	95
Process Pump	Horsepower	⅓	⅓	⅓	⅓	½	½	¾	¾	¾	2	2	2	3	3	3	3	5	5	7½
	Gallons/Minute	.7	.9	1.2	1.8	2.4	3.6	4.8	7.2	9.6	12	18	24	36	36	48	48	60	72	92
	PSI[8]	60	60	60	60	60	60	32	30	30	52	50	48	55	55	50	50	59	57	61
	Type[4]	P	P	P	P	P	P	C	C	C	C	C	C	C	C	C	C	C	C	C
	Construction[5]	B	B	B	B	B	B	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS
Tank Capacity (gallons)	Holding	4	4	4	4	4	4	7½	7½	25	25	25	25	65	65	65	65	65	65	65
	Auto Make-Up[13]	0	0	0	0	0	0	0	S	S	S	S	S	S	S	S	S	S	S	S
Connection Sizes (inches, NPT)	Process (to/from)	½	½	½	½	½	½	¾	1	1¼	1¼	1¼	1¼	2	2	2	2	2	2	2½
	Make-Up	–	–	–	–	–	–	–	–	–	½	½	½	½	½	½	½	½	½	½
Full Load[12] Amperage	115/1/60	13	15	17	21	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	230/1/60	–	–	–	11	15	20	–	–	–	–	—	–	–	–	–	–	–	–	–
	230/3/60	–	–	–	–	–	–	17	20	24	34	48	56	86.6	87	105	120	150	200	–
	460/3/60	–	–	–	–	–	–	8.5	10	12	17	24	28	43.3	44	52.2	60	75	100	–
	575/3/60	–	–	–	–	–	–	–	7.5	9	14	19	23	35	31	42	48	60	80	–
Dimensions[15] (inches)	Height	33	33	33	33	37	37	30	43	60	60	60	60	65	96	66	96	96	96	–
	Width	18	18	18	18	19	19	37	34	34	34	34	34	58	58	59	58	58	58	–
	Depth	24	24	24	24	25	25	24	40	40	40	56	56	64	70	58	70	70	70	–
Weight (lbs.)	Shipping[14]	250	250	250	265	345	350	415	800	975	975	1,100	1,100	1,800	2,300	2,000	2,600	3,200	3,400	2,500

* Available configured with remote condenser only.

Remote Air-Cooled Condenser†

	Model[1] M1/M1D/MG/MGD	5A-RC	7.5A-RC	10A-RC	15A-RC	20A-RC	25A-RC	30A-RC	40A-RC
Chiller Dimensions[15] (inches)	Height	40¼	40¼	40¼	58	58	58	58	58
	Width	35	35	35	35	35	35	35	35
	Depth	56½	56½	56½	77½	77½	77½	77½	101½
Chiller Full Load[12] Amperage	230/3/60	30	40	48	78	76	106	134	180
	460/3/60	15	20	24	35	38	53	67	90
Condenser Dimensions[15] (inches)	Height	39	54	54	54	54	54	54	54
	Width	28	45	45	45	45	45	45	45
	Depth	42	60	60	115	115	170	170	170
Condenser Full Load[12] Amperage	230/3/60	5.2	5.2	5.2	12	12	18.4	18.4	18.4
	460/3/60	2.3	2.3	2.3	5.5	5.5	8.5	8.5	8.5
Condenser Air Flow	Fan Quantity	1	1	1	2	2	3	3	3
Chiller/Condenser Weight (lbs.)	Shipping[14]	900/355	900/355	1,000/380	1,800/680	1,900/740	2,100/1,050	2,200/1,150	2,500/1,200
Factory ID		008	014	017	025	032	041	050	056

† Remote Air-Cooled Condensers (RC) are used in conjunction with Air-Cooled Maximum Chillers from 5 - 40 tons indicated by the model code to the left of the hyphen in the first row of this table. For chiller specifications with the indicated model, please see table at top of this page.