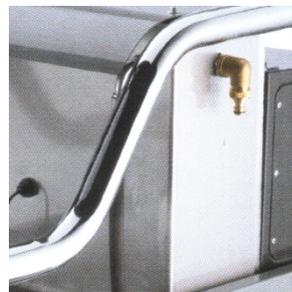




High Pressure Hydrostatic Applications

Efficient, Reliable, Cost Effective



ClimaControl System AC (Adiabatic Cooling) Series



Utilizes the principle of adiabatic cooling and ambient temperature management to optimize performance of air-cooled HVAC systems.

High Performance

- Immediate and consistent improvement on HVAC system efficiency.
- Effectively achieves **10% to over 20% savings** on HVAC system energy usage.

High Performance



High Reliability

- Robust, engineered and designed to operate 24/7.

High Reliability



Modular and Flexible

- Fit-for-purpose, designed for all variants of air-cooled HVAC systems.

Modular and Flexible



Reduced Maintenance / Wear-And-Tear

- No scaling, no rust.
- Reduces HVAC system operational mechanical parts wear-and-tear.
- Alleviates short-cycling issues.

Reduced Maintenance



Green

- Minimal incremental power consumption and feed water requirements.
- Recover and recycle condensate discharge for re-use (where sufficient).
- Lower noise from lower HVAC fan speeds (VSD type).

Green



Sensibly Reduce Temperature



Humidity Control



Ease of Maintenance



No Scale, No Rust



Reduce Noise





High quality, high reliability components and parts used.

Triplex Plunger Pump System



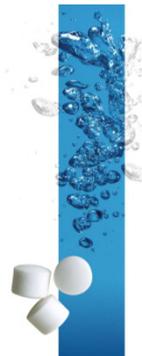
- High quality wet sump radially designed industrial grade full ceramic plungers.
- DNV HACCP seal packing to withstand 4800psi burst pressure.
- Water pressure 900–1200psi delivered to misting nozzles at ~20°C.

Piping, Fittings and Misting Nozzles



- Stainless steel ANSI316, brass alloy and hardened metals used.
- All components designed to withstand high water pressure and highly corrosion resistant.

Water Treatment System



- Controlled Release Technology – diffusion based solid chemistry (patented) delivering chemical treatment through osmotic pressure.
- Prevent formation of soluble compound deposits (rust and scaling).

Controls



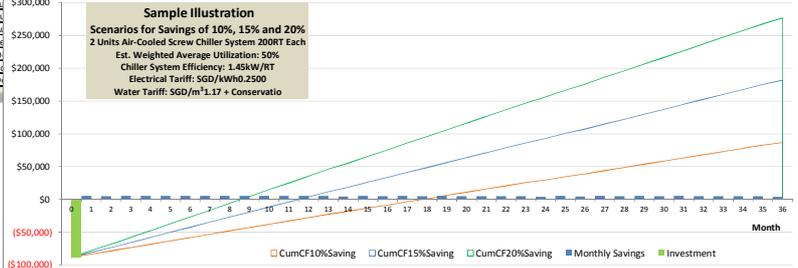
- High pressure electrical solenoid valves and control systems optimize operation of system.
- High pressure unloaders and safety relief valves in place to prevent occurrence of overpressure and hazardous hydro-based situations .



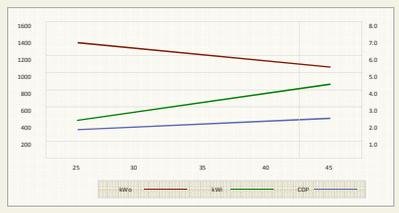
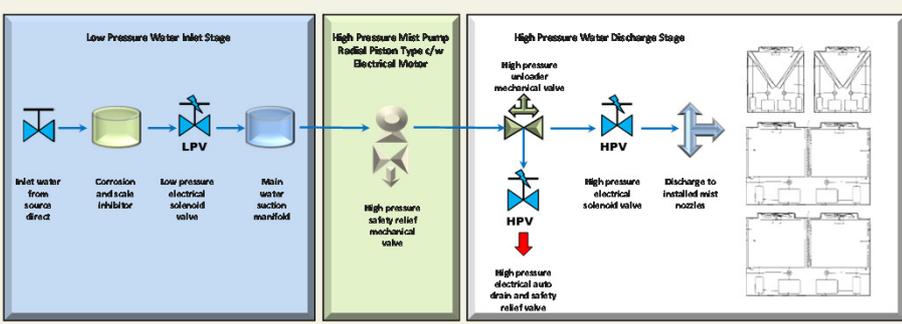
Immediate and consistent energy savings with highly attractive ROI.

- Simulation models used capable of calculating monthly projections for any evaluation period..
- Investment payback conservatively projected around **18 months +/- 6 months***.
- Energy efficiency ratio of incremental running costs vs. HVAC energy saved ranges from **1:6 to 1:12***.

CLIMACONTROL SYSTEM AC MONTHLY CALCULATIONS																		
Date	Project Operational Month	Monthly HVAC kWh Consumption	Monthly HVAC Power Cost	Monthly HVAC Power Savings	Monthly Pump + Motor Power Power Costs	Monthly Water Costs	Routine Maintenance Cost	Major Maintenance Cost	Water Treatment Consumables	Monthly Net Savings	Cost Of Installation	Operating Cash Flows	Cumulative Power Savings	Cumulative Incremental Costs	Cumulative Net Savings	Cumulative Installation Costs	Cumulative Net Operating Cash Flows	Payback On Investment
31-Dec-12	0	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$88,500	(\$88,500)	\$0	\$0	\$88,500	(\$88,500)		
31-Jan-13	1	215,216	\$53,804	\$5,380	\$105	\$119	\$0	\$0	\$0	\$5,157	\$0	\$5,157	\$5,380	\$223	\$5,157	\$88,500	(\$83,343)	2.89
28-Feb-13	2	194,389	\$48,597	\$4,860	\$95	\$107	\$0	\$0	\$0	\$4,658	\$0	\$4,658	\$10,240	\$425	\$9,815	\$88,500	(\$78,685)	3.83
31-Mar-13	3	215,216	\$53,804	\$5,380	\$105	\$119	\$0	\$0	\$0	\$5,157	\$0	\$5,157	\$15,621	\$649	\$14,972	\$88,500	(\$73,528)	4.77
30-Apr-13	4	208,274	\$52,068	\$5,207	\$101	\$115	\$0	\$0	\$0	\$4,991	\$0	\$4,991	\$20,202	\$865	\$19,337	\$88,500	(\$68,161)	5.72
31-May-13	5	215,216	\$53,804	\$5,380	\$105	\$119	\$0	\$0	\$0	\$5,157	\$0	\$5,157	\$26,208	\$1,088	\$25,119	\$88,500	(\$62,381)	6.66
30-Jun-13	6	208,274	\$52,068	\$5,207	\$101	\$115	\$0	\$0	\$0	\$4,991	\$0	\$4,991	\$31,415	\$1,305	\$30,110	\$88,500	(\$56,390)	7.60
31-Jul-13	7	215,216	\$53,804	\$5,380	\$105	\$119	\$0	\$0	\$0	\$5,157	\$0	\$5,157	\$36,795	\$1,528	\$35,267	\$88,500	(\$50,233)	8.54
31-Aug-13	8	215,216	\$53,804	\$5,380	\$105	\$119	\$0	\$0	\$0	\$5,157	\$0	\$5,157	\$42,375	\$1,752	\$40,623	\$88,500	(\$43,876)	9.49
30-Sep-13	9	208,274	\$52,068	\$5,207	\$101	\$115	\$0	\$0	\$0	\$4,991	\$0	\$4,991	\$47,382	\$1,968	\$45,414	\$88,500	(\$37,452)	10.43
31-Oct-13	10	215,216	\$53,804	\$5,380	\$105	\$119	\$0	\$0	\$0	\$5,157	\$0	\$5,157	\$52,763	\$2,191	\$50,571	\$88,500	(\$30,881)	11.37
30-Nov-13	11	208,274	\$52,068	\$5,207	\$101	\$115	\$0	\$0	\$0	\$4,991	\$0	\$4,991	\$57,970	\$2,407	\$55,562	\$88,500	(\$24,119)	12.31
31-Dec-13	12	215,216	\$53,804	\$5,380	\$105	\$119	\$0	\$0	\$0	\$5,157	\$0	\$5,157	\$63,250	\$2,631	\$60,619	\$88,500	(\$17,188)	13.26
31-Jan-14	13	215,216	\$53,804	\$5,380	\$105	\$119	\$0	\$0	\$60	\$5,097	\$0	\$5,097	\$68,730	\$2,914	\$65,816	\$88,500	(\$10,117)	14.21
28-Feb-14	14	194,389	\$48,597	\$4,860	\$95	\$107	\$308	\$0	\$60	\$4,290	\$0	\$4,290	\$73,590	\$3,484	\$70,106	\$88,500	(\$3,011)	15.15
31-Mar-14	15	215,216	\$53,804	\$5,380	\$105	\$119	\$0	\$0	\$60	\$5,097	\$0	\$5,097	\$78,970	\$3,768	\$75,202	\$88,500	(\$2,209)	16.10
30-Apr-14	16	208,274	\$52,068	\$5,207	\$101	\$115	\$308	\$0	\$60	\$4,623	\$0	\$4,623	\$84,177	\$4,352	\$79,825	\$88,500	(\$1,385)	17.04
31-May-14	17	215,216	\$53,804	\$5,380	\$105	\$119	\$0	\$0	\$0	\$5,097	\$0	\$5,097	\$89,538	\$4,835	\$84,702	\$88,500	(\$5,798)	17.99
30-Jun-14	18	208,274	\$52,068	\$5,207	\$101	\$115	\$308	\$0	\$0	\$4,623	\$0	\$4,623	\$94,765	\$5,220	\$89,545	\$88,500	\$1,045	18.94
31-Jul-14	19	215,216	\$53,804	\$5,380	\$105	\$119	\$0	\$0	\$0	\$5,097	\$0	\$5,097	\$100,145	\$5,503	\$94,642	\$88,500	\$6,142	19.89
30-Aug-14	20	208,274	\$52,068	\$5,207	\$101	\$115	\$308	\$0	\$0	\$4,623	\$0	\$4,623	\$105,525	\$5,694	\$99,831	\$88,500	\$11,331	20.84
31-Sep-14	21	215,216	\$53,804	\$5,380	\$105	\$119	\$0	\$0	\$0	\$5,097	\$0	\$5,097	\$110,920	\$5,884	\$105,036	\$88,500	\$16,531	21.79
30-Oct-14	22	208,274	\$52,068	\$5,207	\$101	\$115	\$308	\$0	\$0	\$4,623	\$0	\$4,623	\$116,315	\$6,074	\$110,241	\$88,500	\$21,741	22.74
31-Nov-14	23	215,216	\$53,804	\$5,380	\$105	\$119	\$0	\$0	\$0	\$5,097	\$0	\$5,097	\$121,710	\$6,264	\$115,446	\$88,500	\$26,951	23.69
30-Dec-14	24	208,274	\$52,068	\$5,207	\$101	\$115	\$308	\$0	\$0	\$4,623	\$0	\$4,623	\$127,105	\$6,454	\$120,651	\$88,500	\$32,161	24.64
31-Jan-15	25	215,216	\$53,804	\$5,380	\$105	\$119	\$0	\$0	\$0	\$5,097	\$0	\$5,097	\$132,500	\$6,644	\$125,856	\$88,500	\$37,371	25.59
30-Feb-15	26	194,389	\$48,597	\$4,860	\$95	\$107	\$308	\$0	\$60	\$4,290	\$0	\$4,290	\$137,895	\$6,834	\$131,061	\$88,500	\$42,581	26.54
31-Mar-15	27	215,216	\$53,804	\$5,380	\$105	\$119	\$0	\$0	\$0	\$5,097	\$0	\$5,097	\$143,290	\$7,024	\$136,266	\$88,500	\$47,791	27.49
30-Apr-15	28	208,274	\$52,068	\$5,207	\$101	\$115	\$308	\$0	\$0	\$4,623	\$0	\$4,623	\$148,685	\$7,214	\$141,471	\$88,500	\$53,001	28.44
31-May-15	29	215,216	\$53,804	\$5,380	\$105	\$119	\$0	\$0	\$0	\$5,097	\$0	\$5,097	\$154,080	\$7,404	\$146,676	\$88,500	\$58,211	29.39
30-Jun-15	30	208,274	\$52,068	\$5,207	\$101	\$115	\$308	\$0	\$0	\$4,623	\$0	\$4,623	\$159,475	\$7,594	\$151,881	\$88,500	\$63,421	30.34
31-Jul-15	31	215,216	\$53,804	\$5,380	\$105	\$119	\$0	\$0	\$0	\$5,097	\$0	\$5,097	\$164,870	\$7,784	\$157,086	\$88,500	\$68,631	31.29
30-Aug-15	32	208,274	\$52,068	\$5,207	\$101	\$115	\$308	\$0	\$0	\$4,623	\$0	\$4,623	\$170,265	\$7,974	\$162,291	\$88,500	\$73,841	32.24
31-Sep-15	33	215,216	\$53,804	\$5,380	\$105	\$119	\$0	\$0	\$0	\$5,097	\$0	\$5,097	\$175,660	\$8,164	\$167,496	\$88,500	\$79,051	33.19
30-Oct-15	34	208,274	\$52,068	\$5,207	\$101	\$115	\$308	\$0	\$0	\$4,623	\$0	\$4,623	\$181,055	\$8,354	\$172,701	\$88,500	\$84,261	34.14
31-Nov-15	35	215,216	\$53,804	\$5,380	\$105	\$119	\$0	\$0	\$0	\$5,097	\$0	\$5,097	\$186,450	\$8,544	\$177,906	\$88,500	\$89,471	35.09
30-Dec-15	36	208,274	\$52,068	\$5,207	\$101	\$115	\$308	\$0	\$0	\$4,623	\$0	\$4,623	\$191,845	\$8,734	\$183,111	\$88,500	\$94,681	36.04



*Note: Projections are indicative and are based on best estimates/generic assumptions on weighted average chiller system operation hours, kW/RT efficiency and electrical tariff, and may vary accordingly subject to site conditions, single and/or multiple variables such as change in utilization patterns, monetary/fiscal changes, inflation, ambient conditions and efficiency degradation.



Sample illustration of HVAC system cooling capacity, kW consumption and COP data based on varying ambient temperature

Specifications

		CCAC1511-3P/70	CCAC3015-3P/70	CCAC4018-3P/70	CCAC5526-3P/70	CCAC7542-3P/70
Pump and Motor System						
Power Input	hp	1.5	3.0	4.0	5.5	7.5
Electric Motor	Rpm	1450				
Voltage / Frequency	V / Hz	3 phase 380V- 415V 50 Hz				
Pressure	bar / psi	70 / 1000				
Flow Rate	litres/min	11	15	18	26	42
Maximum Number of Nozzles	#	125	170	205	290	470
Weight	kg	58.0	63.5	66.5	80.5	98.5
Pump Design	Crank shaft, brass head, 3 ceramic pistons, 24mm solid shaft					
Unloader Valve Design	Brass, 220bar / 3200psi, 30litres/min, 90°C (195°F)					
Pressure Gauge	Case and ring made of stainless steel AISI 304, temperature -20°C (-40°F) +80°C (170°F)					
Safety Devices						
Pump and Motor System	Autodrain purging system, pressure regulating valve, high water pressure cut-out					
Control Panel						
Casing	IP66, polyester					
Switches and Controls	Soft touch Power button, LCD display with back light, emergency cut-off switch, programmable on-off timer					
Nozzles, Connectors and Nozzle Holders						
Flow Rate	litres/hr	1.25				
Orifice Size	µm	150				
Mist Dissipation @ 70 bar	µm	15 - 20				
Anti-Drip Check Valve	Yes					
Thread	12/24UNC/2A					
Nozzles	Stainless steel orifice, nickel brass body, impeller plate, stainless steel spring, rubber ball seal, nick brass adaptor					
Connectors and Nozzle Holders	Compression fitting, brass					
Water Filtration and Treatment System						
Filter Cartridge	Polypropylene thread or carbon filter					
Filtration Level	µm	5	5	5	5	5
Corrosion and Scale Inhibitor	Diffusion-based coating technology based on osmotic pressure. Does not require pH altering additives to stabilize chemistries					
Usage	lbs/mth	3	3	5	5	5
Others						
High Pressure Piping	AUS 316 SS (stainless steel)					



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