Superior
COOLING SYSTEMS

LIQUID PROCESS CHILLERS

SUPERIOR COOLING SYSTEMS PRESENTS

The Benefits of Process Fluid Chillers

Save Water and Money

Running city or well tower water through your equipment and down the drain is a tremendous waste and an environmental issue. If your equipment requires 6 gallons per minute of water flow, 24 hours per day, 7 days per week, 52 weeks per year, you can potentially buy 3,144,960 gallons of water to send down the drain.

Water is scarce and expensive to buy and treat before disposal if permitted. Drought conditions and regional restrictions make it necessary to conserve whenever possible. Superior Chillers will easily pay for themselves if compared to purchased tap water and sewage.

ANNUAL COST FOR WATER AND SEWER BASED ON 3,000,000 GALLONS PER YEAR.
Cost figures calculated with current available information, and do not reflect any other services.

Manchester, NH	$ 9,545	Chicago, IL	$ 5,649
Washington, D.C.	$12,649	Detroit, MI	$ 5,494
New Britain, CT	$ 4,364	New York, NY	$10,499
Birmingham, AL	$11,751	Seattle, WA	$14,900
Los Angeles, CA	$13,371	Phoenix, AZ	$ 7,711
Houston, TX	$19,278	Louisville, KY	$ 9,612

Chillers Will Protect Water Cooled Equipment and Instrumentation

The coolants recirculated are free from minerals, organic matter, rust or any number of pollutants. The temperature, flow and pressure of your coolant can now be controlled within the recommended operation conditions to eliminate equipment failure and costly downtime.

Improve Product Quality

The material or equipment to be cooled will offer cooling requirements for optimum product quality. A Chiller will control temperature, flow, pressure and contamination to obtain consistent high quality products.

Increase Production

A Chiller will control temperature, flow and pressure of the fluid coolant to optimize performance of the process. The process operating within design conditions will increase production by reducing scrap and downtime.

Applications

To control temperature of process fluids through heat exchangers or cooling coils eliminating tap or building water which eventually deposit minerals, organic matter, and rust restricting fluid flow increasing pressure drop and operating expense.

EXAMPLES:

- Injection & blow molding
- Welding equipment
- Machine tool coolants
- Vacuum systems
- Laser cooling
- Food processing
- Compressed air/gas cooling
- Electrical generators
- Vapor recovery and solvent condensation
- Chemical / pharmaceutical processing
- Printing and etching equipment
- Food distribution and freezing

Unique Design Features

Cylinder unloading capacity reduction standard on model SPC-1800 thru SPC-9600 W/A

CAPACITY CONTOL PERFORMANCE FEATURES

	4 CYLINDER COMPRESSOR	6 CYLINDER COMPRESSOR	
STEPS OF UNLOADING	1	1	2
% REDUCTION IN CAPACITY	50%	33 1/3%	66 2/3%
% REDUCTION IN POWER (KW)	43%	28%	56%

- Cylinder unloading equals greater capacity control and lower operating cost. Capacity reduction is accomplished by unloading cylinders on various compressors in response to the evaporator pressure/temperature.
- Cylinder unloading will offer more continuous running of the refrigerant compressor maintaining stable operating temperatures and greatly reducing unnecessary wear and tear from compressor cycling during reduced loading.

Environmentally Friendly Refrigerant Design

- Superior Cooling is a leader in CFC elimination, the chillers designed and built incorporate the least damaging refrigerants available.
- The SPC-60-120A/W contain absolutely no cfcs. The SPC-180-9600W/A utilize an HCFC22, which is EPA approved and universally accepted as an environmentally friendly alternative.
- Superior Cooling will offer CFC free designs for every Chiller offered in our catalog as an option.

Stainless Steel Centrifugal Process Pumps

- The rugged stainless steel process pumps are designed for continuous duty and long lasting performance.
- The stainless steel pumps will provide material conformance for corrosion and most severe application requirements.

Commitment To Quality

- The Superior Cooling liquid process chillers are built for maximum efficiency, from its industrial construction to its reliable individual components.
- Each chiller is completely load tested in our factory checking, calibration of all components to ensure maximum performance and reliable service.
- All Superior Cooling Chillers are warranted for two years against failure due to faulty workmanship or material when used in accordance with owners instructions.

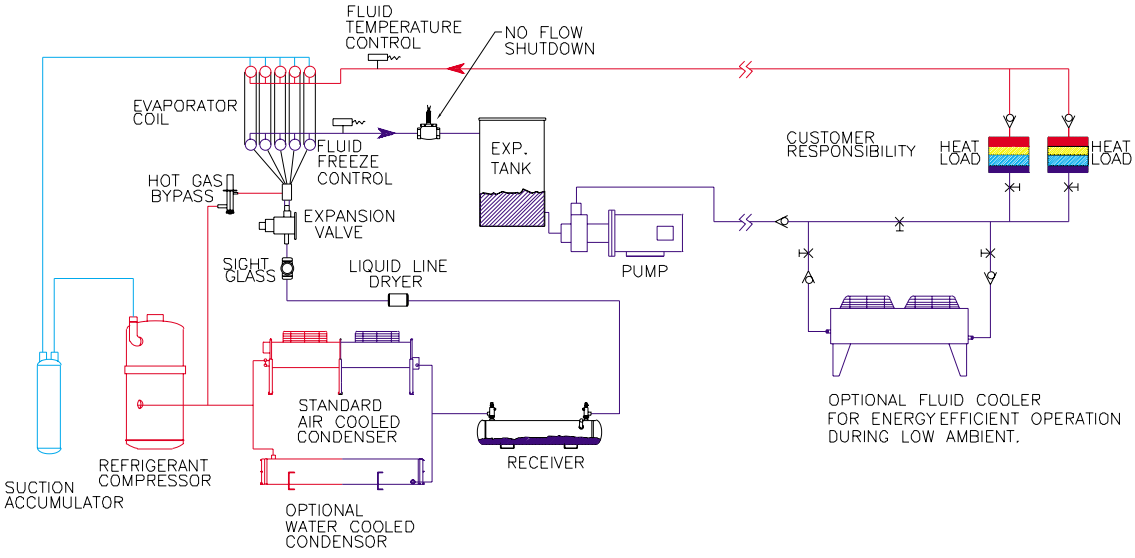
Self-Contained Industrial Process Chillers
(MODEL SPC-60 THRU 1200A/W)

- A complete industrial range of portable, stationary air-cooled, or optional water-cooled fluid chillers with all NEMA ratings.
- The chillers deliver a precise, reliable liquid flow across a wide range of process and ambient temperatures.
- They require only electrical power, fluid connections and a water make-up line when applicable.
- This package includes a refrigerant compressor, condenser, high pressure receiver, evaporator, and control panel all piped, wired and mounted within a structural steel cabinet.
- The compressor is a heavy duty maintenance free welded hermetic designed for long service life.
- The standard condenser for this series is integral and fan cooled.
  - Optional water-cooled condensers provide exceptional heat transfer, low water pressure drop and a cleanable tube-in-tube design.
  - The coaxial evaporators are designed with a rugged carbon steel outer tube and a highly enhanced copper curponickel inner tube for optimal performance.

Standard Instrument and Safety Features:

- Refrigerant Analyzer Gauge
- Refrigerant Discharge Gauge
- Fluid Outlet Pressure Gauge
- Main "Power On" Indicator
- "Chiller On/Off" Switch
- "Chiller On" Indicator
- Ref. Low Pressure Shutdown
- Ref. High Pressure Shutdown
- Digital Temp. Control ± 2°F
- Digital Temp. Display ± 2°F
- Thermostatic Expan. Valve
- Hot Gas Capacity Control Comp.
- Independent Freeze Control
- No Fluid Flow Shutdown
- Refrigerant Indicating Sight Glass
- Nema Type 12 Industry Standard

SPC-60 A/W
THRU
SPC-1200 A/W



Selection Procedure

To properly select a Superior Packaged Liquid Chiller without published heat rejection or cooling requirements the following information is required: (one ton of cooling equals 12,000 btuh)

1. Type of fluid and specific heat of that fluid. The specific heat of water is one (1).
2. Required coolant flow through equipment or over product to be cooled.
3. Optimum entering fluid temperature and measured temperature rise through process.

Sample Selection To Calculate Heat Load

GIVEN: Cool 5 gpm of water from 70°F to 60°F or heat to be rejected equals 25,000 btuh (2.08 tons)
SOLUTION: Heat Removal (BTUH) = Gallons Per Min. x 500 x Sp. Heat x Temperature Rise
CALCULATE: 25,000 BTUH Cooling Requirements = 5 GPM x 500 x 1 x 10°F
SELECTION: The Model SPC-240A/W is ideal for this cooling example with a capacity of 25,300 BTUH @ 60°F

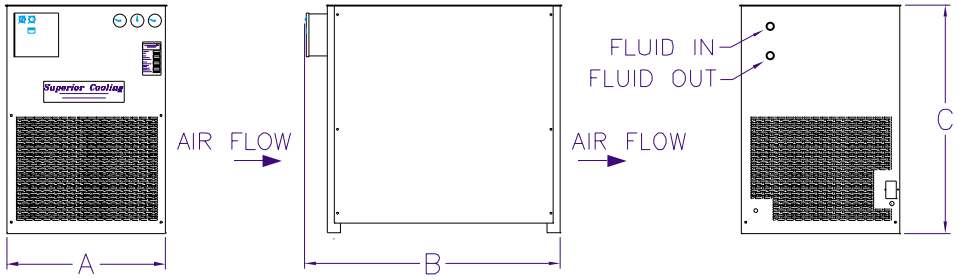
Fluid Chillers Series SPC-60-1200A/W

MODEL NO. SPC A/W	60 A	90A	120A	180A	240A	360A	480A	720A	900A	1200A
Capacity in BTU/HR @ Specified Fluid Discharge Temperature (1 Ton Equals 12,000 BTU/HR)										
4.4°C / 40°F	5,675	6,490	9,825	15,900	19,550	31,738	43,813	58,625	70,450	93,800
10°C / 50°F	6,200	7,080	10,800	17,400	21,400	34,625	47,600	64,750	77,150	102,700
15.6°C / 60°F	7,300	8,335	12,950	20,600	25,300	37,350	54,250	77,500	90,900	121,500
Product Specifications										
Ref. Compressor H.P.	0.6	0.75	1	1.75	2	3	4	6	7.5	10
Fluid Process Connection	1" NPT	1" NPT	1" NPT	1" NPT	1" NPT	1" NPT	1" NPT	1.5" NPT	1.5" NPT	1.5" NPT
FLA @ 120-1-60	12.7	14.4	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
FLA @ 230-1-60	6.4	7.7	8.1	n/a	n/a	n/a	n/a	n/a	n/a	n/a
FLA @ 230-3-60	n/a	n/a	n/a	8.5	10.2	15.1	19.4	25.5	32	41.5
FLA @ 460-3-60	n/a	n/a	n/a	4.5	4.8	7.2	9.7	12.5	14.5	19
Dimensions A x B x C Ins.	25x41x34	25x41x34	25x41x34	25x41x34	32x45x46	32x45x46	35x56x60	35x56x60	35x56x60	35x56x60
Shipping Weight Lbs.	250	275	300	325	600	750	950	1200	1400	1500
Optional Accessories Specifications										
Required GPM @ 60°F	1.46	1.67	2.59	4.12	5.06	7.47	10.85	15.50	18.18	24.30
Pump H.P	1/3	1/3	1/3	3/4	3/4	3/4	3/4	3/4	1-1/2	1-1/2
Head & Pump Press (PSIG)	37',16	37',16	37',16	80',35	79',34	78',34	75',32	70',30	73',32	70',30
Expansion Tank (Gal.)	6	6	6	6	6	6	10	10	10	10

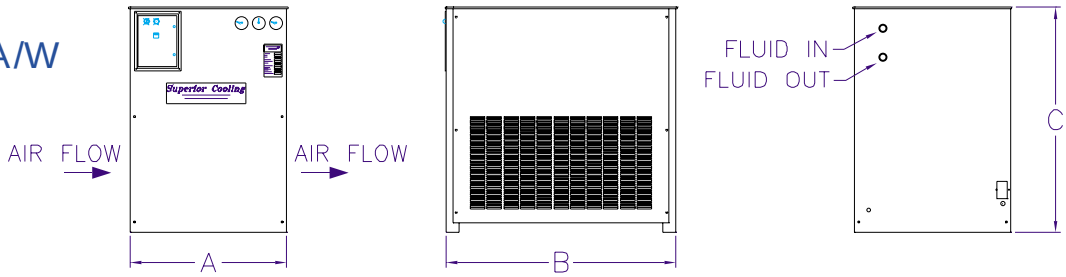
NOTES:

1. Air cooled chiller capacities are based on 95°F ambient air. Water cooled capacities assume 85°F tower water.
2. Process pump selections are based on 2.4 GPM per ton (1 Ton = 12,000 BTUH).
3. Add 7% to the listed air cooled capacity if water cooled capacity is unlisted.
4. Dimensions subject to change without notice.
5. Hermetic compressors are standard.

SPC-60-180A/W



SPC-240-1200A/W



Self-Contained Industrial Process Chillers

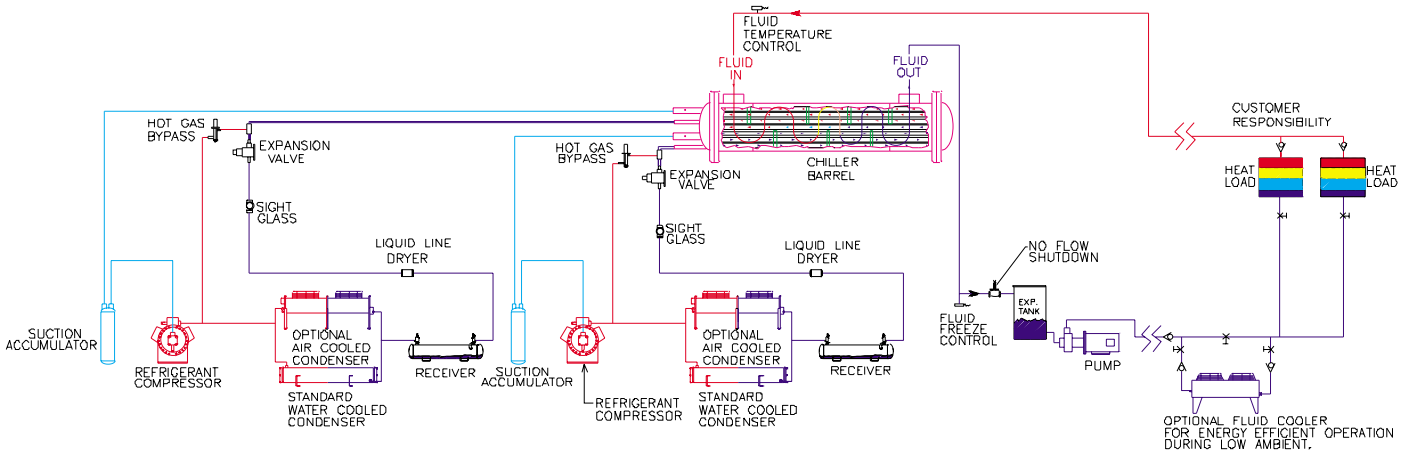
(MODEL SPC-1800 THRU 9600 W/A)

- A complete industrial range of water cooled, optional air-cooled, and remote air-cooled fluid chillers with all electrical NEMA ratings.
- The chillers deliver a precise, reliable liquid flow across a wide range of process and ambient temperatures.
- They require only electrical power, fluid connections and a water make-up line when applicable.
- This package includes a refrigerant compressor, condenser, high pressure receiver, evaporator, and control panel all piped, wired and mounted within a structural steel frame.
- The compressor is a heavy duty maintenance free semi-hermetic designed for long service life.
- The standard water-cooled condensers provide exceptional heat transfer, low water pressure drop and cleanable shell-in-tube design.
- Optional fan-cooled condensers provide operational economy.
- The serviceable chiller barrels are designed with a rugged carbon steel outer shell and a highly enhanced copper inner tube for optimal performance.

Additional Features and Standard Instruments:

- Refrigerant Analyzer Gauge
- Refrigerant Discharge Gauge
- Fluid Outlet Pressure Gauge
- Main “Power On” Indicator
- “Chiller On/Off” Switch
- “Chiller On” Indicator
- Ref. Low Pressure Shutdown
- Ref. High Pressure Shutdown
- Low Oil Pressure Shutdown
- Independent Freeze Control
- No Fluid Flow Shutdown
- Suction Line Heat Exchanger
- Suction Line Accumulator
- Cond. Water Regulating Valve
- Cond. Fan Cycling Control
- Nema 12 Industrial Standard
- Digital Temp. Control ± 2°F
- Digital Temp. Display ± 2°F
- Thermostatic Expansion Valve
- Capacity Control By Cylinder Unloading
- Hot Gas Bypass Capacity Control
- Refrigerant Indicating Sight Glass
- Crankcase Oil Sight Window
- Overcurrent And Overtemp. Protection

SPC-1800 THRU SPC-9600W/A
PROCESS DIAGRAM DUAL CIRCUIT DISPLAYED



Single Circuit Fluid Chillers Series SPC-1800 Thru 4800 W/A

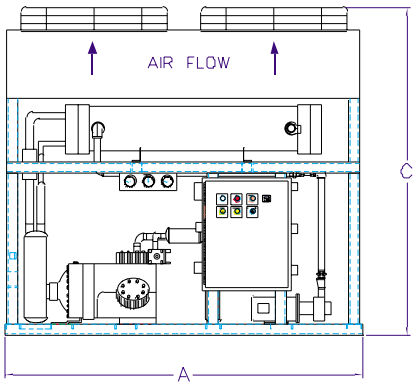
MODEL NO. SPC A/W	1800W	1800A	2400W	2400A	3000W	3000A	3600W	3600A	4800W	4800A
Capacity in BTU/HR @ Specified Fluid Discharge Temperature (1 Ton Equals 12,000 BTU/HR)										
4.4°C / 40°F	169,574	148,575	219,182	186,751	296,456	254,676	323,935	282,472	425,321	374,891
10°C / 50°F	191,436	168,520	248,613	214,403	336,637	290,934	365,293	321,320	479,115	424,349
15.6°C / 60°F	239,214	212,179	312,023	274,157	424,964	370,899	454,307	405,094	596,115	532,070
Product Specifications										
Ref. Compressor H.P.	15	15	20	20	25	25	30	30	40	40
Fluid Process Conn.	2" NPT	2" NPT	2" NPT	2" NPT	2.5" NPT	2.5" NPT	2.5" NPT	2.5" NPT	3" NPT	3" NPT
FLA @ 460-3-60	19.45	27.95	26.05	37.35	34.1	47.6	40.1	52.75	58.35	76.9
Dimensions A x B x C Ins.	85x50x60	85x55x94	85x50x60	108x55x94	90x50x60	108x55x94	95x50x65	108x55x96	95x55x70	145x55x96
Shipping Weight Lbs.	2,100	2,500	2,400	2,900	3,100	3,700	3,500	4,100	4,100	5,000
Optional Accessories Specifications										
GPM @ 60°F & 10°F Drop	47,84	42.44	62.40	54.83	84.99	74.18	90.86	81.02	119.22	106.41
Pump Horse Power	3	3	3	3	3	3	5	5	5	5
Head & Pump Press (PSIG)	115',50	118',51	105',45	110',48	90',39	98',42	135',58	142',61	105',45	115',50
Expansion Tank (Gal.)	30	30	45	45	60	60	60	60	60	60

Dual Circuit Fluid Chillers Series SPC-3800 Thru 9600 W/A

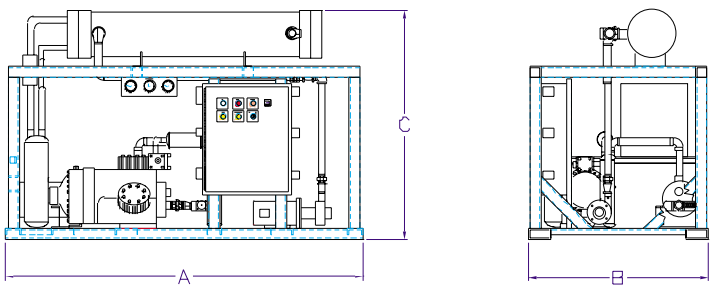
MODEL NO. SPC A/W	3800W	3800A	5000W	5000A	6700W	6700A	7300W	7300A	9600W	9600A
Capacity in BTU/HR @ Specified Fluid Discharge Temperature (1 Ton Equals 12,000 BTU/HR)										
4.4°C / 40°F	339,149	297,150	438,364	373,502	592,911	509,352	647,869	564,944	850,643	749,781
10°C / 50°F	382,873	337.040	497.225	428.806	673,274	581,869	730,586	642,640	958,230	848,698
15.6°C / 60°F	478,428	424,357	624,045	548,313	849,928	741,799	908,614	810,189	1,192,230	1,064,139
Product Specifications										
Ref. Compressor H.P.	(2) 15	(2) 15	(2) 20	(2) 20	(2) 25	(2) 25	(2) 30	(2) 30	(2) 40	(2) 40
Fluid Process Conn.	2.5" NPT	2.5" NPT	3" NPT	3" NPT	4" FLG	4" FLG	4" FLG	4" FLG	4" FLG	4" FLG
FLA @ 460-3-60	38.9	55.9	52.1	74.7	68.2	95.2	80.2	105.5	116.7	153.8
Dimensions A x B x C Ins.	90x75x70	75x102x96	90x75x70	108x102x96	98x80x70	108x102x96	98xx85x75	108x102x96	98x90x80	156x102x96
Shipping Weight Lbs.	4,000	4,800	4,600	5,500	5,900	7,000	6,700	7,800	7,800	9,500
Optional Accessories Specifications										
GPM @ 60°F & 10°F Drop	95.69	84.87	124.81	109.66	169.99	148.36	181.72	162.04	238.45	212.83
Pump Horse Power	5	5	5	5	7.5	7.5	7.5	7.5	10	10
Head and Pump Press (PSIG)	125'.54	123',53	98',42	116',50	108',47	112',48	102',44	115',50	112',48	125',54
Expansion Tank (Gal.)	60	60	60	60	75	75	75	75	90	90

NOTES:

1. Air cooled chiller capacities are based on 95°F ambient air. Water cooled capacities assume 85°F tower water.
2. Process pump selections are based on 2.4 GPM per ton (1 Ton = 12,000 BTUH).
3. Dimensions subject to change without notice.



SPC-1800-9600A



SPC-1800-9600W

Superior Options & Custom Configurations

- NEMA Ratings 4, 4X and 7
- Low Temperatures Chillers
- Low Ambient Chillers
- Ambient Filter Packages
- Ozone Friendly Refrigerant
- Stainless Steel Fluid Circuit
- High Temperature Chillers
- Remote Air-Cooled Condenser
- Automatic Fluid Make-Up
- Audio Or Indicating Alarms
- Duplex Pump Packaging
- High Ambient Chillers
- Remote Alarm Indication
- Mounted Swivel Casters
- Low Fluid Level Indication

Other Associated Products Offered by Superior Cooling

DRY FLUID COOLER
DRY BULB SYSTEMS

EVAPORATIVE FLUID COOLER
WET BULB BASED SYSTEM

OPEN TOWERS AND
CUSTOM SYSTEMS

PUMP PACKAGE
THE HEART OF THE SYSTEM

DISTRIBUTED BY:

Superior COOLING SYSTEMS

A Division of

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