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Hyperchill

Process Water Chillers



ENGINEERING YOUR SUCCESS.

Hyperchill

Precision Chilled Water

Parker Hyperchill water chillers celebrate a presence of over 30 years in the industrial chiller market. This experience has led to a range which not only offers all the advantages typically offered by a quality water chiller, but also adds significant benefits for the industrial user. As such Hyperchill combines advanced design solutions, such as energy saving scroll compressors and a sophisticated microprocessor, with unique features to meet the specific needs of industrial users: these include Hyperchill's extreme flexibility towards the varying working conditions typically found in industry.

The standard models are augmented by a wide range of options and accessories, which together ensure Hyperchill is the perfect solution to each and every industrial application. Hyperchill maximizes productivity and minimizes costs, as well as easing conformity to regulations on water quality. Hyperchill is the perfect solution to industrial chilled water needs.

Why an industrial chiller?

The use of cold water is very common in industry. The motives are obvious: cold water improves productivity, secures industrial processes and reduces costs. There are several methods of creating cold water, but water chillers are increasingly becoming the preferred solution. But why? Firstly, chillers always supply the exact water temperature requested, even with differing ambient conditions and differing load requests, thus ensuring optimum efficiency. Water has furthermore become a very precious, and costly, natural resource. Chillers, by operating in a closed circuit, continuously reutilize the same water, and thereby avoid unwanted water wastage. Add to this fact that a number of directives have recently emerged to safeguard both the quality of the water being utilized (for health reasons) as well as the discharging of impure water into the ambient (to protect the environment): closed circuit chiller operation greatly simplifies conformance to these regulations. The needs of industry are changing, and a water chiller increasingly satisfies these needs.



Benefits

- Increases productivity, reduces costs
- Optimizes industrial applications
- Adaptable to individual customer needs
- Accepts wide range of water temperatures and fluctuating water flows

Applications

- Food (beverage, confectionery, chocolate, processing, storage)
- Plastics (injection, blow molding, extrusion, film extrusion, thermoforming)
- Lasers (welding, profiling, cutting, optics, medical, marking, aesthetics)
- Printing and Graphics (manufacture, printing, cardboard, labels, plastic film)
- Chemical (petrochemical, paints, solvents, temperature control)
- Medical (imaging and oncology)
- Mechanical (welding, cutting, profiling, polishing, rolling, grinding)
- Other (wood, ceramics, gold & silver, biogas pharmaceutical, compressed air, textile)

Features and Benefits

Easy to Use



Hyperchill is an all-in-one solution, with all components packaged inside.

Compact dimensions and a low weight make it simple to position, while models from PCW020 can be installed outdoors.

Maintenance is facilitated by full frontal access, a removable tank and a condenser section which is isolated from the rest of the chiller (from PCW020).

Models PCW020 - 650 can be used in pressurized closed circuits, facilitating system design. (PCW007 - 010 must be specified when ordered).

Precise Control



Unlike traditional chillers, Hyperchill places the evaporator stage within the tank, with the temperature control sensor positioned on the water outlet: this guarantees a very accurate water outlet temperature control. Water temperature stability is further improved thanks to the oversized water tank.

An antifreeze thermostat and water level sensor secure continuous operation in all conditions, as does the internal water by-pass (standard on PCW013 - 650).

Economical & Environmentally Friendly



Hyperchill standardly uses environmentally friendly refrigerant R407C on all models: R407C is characterized by a very high efficiency, providing lower power consumption.

Compliant scroll compressors, which offer energy savings of around 20%, are fitted from PCW060.

Multiple compressors (from PCW210) ensure significant energy savings at partial loads.

Fail-safe Operation



Hyperchill operates continuously in all conditions and with all applications.

Multiple compressors and twin independent refrigeration circuits (from PCW210), with automatic rotation, offer increased peace of mind, as do an extensive list of safety devices.

The high working limits and (from PCW020) condenser pre-filter ensure that Hyperchill operates in all ambients.

When operating in closed circuits, Hyperchill avoids water fouling and the need for refilling.

Compliant scroll compressors

Hyperchill features advanced “compliant” scroll compressors (standard from PCW060). These offer significantly lower power consumption and a reduced refrigerant charge. The unique “compliant” technology offers extreme reliability and renders the compressor near indestructible. Compliant scroll compressors are also very user friendly, as they are extremely quiet and ensure the chiller requires no pre-heating. Furthermore, scroll compressors feature 50% fewer moving parts and emit lower vibration levels, thus increasing the chiller’s longevity.

Microprocessor control

All models standardly feature a microprocessor, offering ease of use, precise control and reliable operation. The advanced version, standard from (PCW040), offers a vast range of programming possibilities, allowing the chiller to be optimized for operation in even the most particular conditions. The microprocessor is standardly fitted with an interface for easy connection to be a centralized supervisor system. Remote control panels can be specified from PCW020.

Integral water tank

PCW007 - 650 are standardly supplied with an integral tank. The tank’s generous dimensions ensures precise water temperatures. The unique design places the evaporator (co-axial on PCW007 - 025, finned coil on PCW040 - 650) within the tank for steady temperature control, while the low water velocity configuration offers minimal pressure drops and virtually eliminates the risk of impurities blocking the water circuit.

The tank is removable, allowing easy maintenance.



Cleanable condenser pre-filter

A condenser pre-filter (standard from PCW020) improves chiller performance and reduces maintenance.

Flexibility of installation

Hyperchill standardly accepts water inlet temperatures up to 86°F (30°C) and delivers outlet temperatures down to 32°F (0°C)*. Inlet/outlet temperature differences of as much as 27°F (15°C) can be obtained. Hyperchill operates with ambient temperatures up to 113°F (45°C), even with high water temperatures and during start-up. Models from PCW020 can be installed outdoors. The water by-pass (standard on PCW013 - 650) guarantees fault-free generation with fluctuating water flows and facilitates chiller start-up.

(*with water/glycol mixture)

Peace of mind

Every single Hyperchill is extensively tested. Performance tests with water flow are combined with helium leak tests, water circuit tests, electrical tests, and tests of the microprocessor settings.

Integral Pump

PCW007 - 650 feature, as standard, a pump installed within the chiller itself. Twin pumps (from PCW080), or pumps with lower or higher available head pressures, are available on request. The water by-pass (standard on PCW013 - 650) protects the pump in fluctuating load conditions.



Options and Accessories

Centrifugal fan option (PCW040 - 650)

Designed for indoor installation, this version features fans which permit the condenser discharge air to be ducted.

Water-cooled option (PCW040 - 650)

In those cases where air-cooled models cannot be used, or a supply of warm water is desirable, Hyperchill offers water-cooled models featuring a shell & tube condenser and a pressostatic water control valve.

Special & multiple pumps

On request the standard pump can be substituted by pumps for either lower or high available head pressures (from PCW020). Furthermore, twin pumps can be installed on board (from PCW080), offering a stand-by capacity.

Low ambient option (from PCW020)

A 14°F (-10°C) ambient temperature version (0°F (-18°C) on PCW160 - 330) is available for operation in cold environments.

Low water temperature option (from PCW020)

This option allows operation with water outlet temperatures of as low as 14°F (-10°C).

Non-ferrous option (PCW020 - 650)

This version features a water side using non-ferrous materials, and is used in industries such as lasers.

Remote control kits (from PCW020)

Two remote control kits are offered. The base version features remote on/off switching and gives an on/off and general alarm signal. The advanced version allows the user to perform all operations available on the microprocessor.

Low noise option (from PCW020)

This version further reduces the standard models already impressively low noise levels.

Close control option

Used in applications such as lasers, where very precise outlet water temperatures are required (+/- 1°F (0.5°C)); this version features a twin hot gas by-pass system, enhanced condensing control, and a P+I control algorithm.

Other options

Transport wheels (PCW007 - 013)

Metal control panel cover (from PCW040)

Antifreeze heating for tank (PCW020 - 650)



internal pump



centrifugal fans



water-cooled version



remote control

Water fill kits

Two types of water fill kits are offered to assist in filling the fluid circuit and to compensate for any expansion of the circuit during operation. Each fill kit comes with a filter to reduce the potential of introducing mineral deposits to the fluid circuit.

Type 1: An atmospheric pressure version is available with either manual or automatic refilling. The manual version is built directly within the cabinet on the PCW007 - 013 models with the PCW020 - 650 provided as a separate kit. These kits are supplied with a 20 micron capsule filter. The recommended change out for the entire capsule is every 12 months.

Type 2: A pressurized / automatic fill version is intended for static pressures up to 87 psi (6 bar) for models PCW020 - 650 and is provided in two assemblies for site installation. This kit is supplied with a 20 micron filter assembly. The recommended change out for the filter element is every 6 - 12 months.

Type of water fill kit required is dependant on application.



Technical Data

MODEL	PCW	007	013	020	025	040	060	080	110	130	160	210	260	330	420	510	650	
Cooling capacity ⁽¹⁾																		
Air-cooled	BTU/h	6513	13379	18910	25267	37882	60989	78783	107869	128006	160021	212597	253498	326242	421329	513919	648981	
Water-cooled	BTU/h	CF	CF	CF	CF	CF	CF	CF	CF	CF	CF	CF	CF	CF	CF	CF	CF	
Power supply	V/ph/Hz	230/1/60										460/3/60						
Protection class	IP	IP33			IP44			IP54										
Compressors		hermetic, piston											hermetic compliant scroll					
Type		hermetic, piston											hermetic compliant scroll					
Compressors / circuits		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1 / 1	1/1	1/1	1/1	2/2	2/2	2/2	4/2	4 / 2	4/2
Total comp. nom. power ⁽³⁾	kW	0.6	1.4	1.8	2.3	3.6	5.1	6.6	8.9	11.9	14.6	18.3	23.9	29.3	37.2	47	63	
Axial fans																		
Quantity		1	1	1	1	1	1	1	2	2	3	3	3	3	2	2	3	
Total fan nominal power ⁽³⁾	kW	0.1	0.1	0.2	0.2	0.7	0.7	0.9	1.4	1.4	2.1	2.7	2.7	2.7	4.8	4.8	7.2	
Airflow	scfm	1350	1350	2590	2410	4180	4000	5410	7300	7060	10240	15000	14710	15540	27660	27070	38850	
Pumps																		
Type		Peripheral								Centrifugal								
Water flow (nom / max)	GPM	1.3	2.7	3.8	5.1	7.6	12.2	15.8	21.6	25.6	32.0	42.5	50.7	65.2	84.3	102.8	129.8	
P30 nominal power	hp	0.4	0.4	0.5	0.5	1.0	1.0	1.0	2.0	2.0	2.0	3.0	3.0	3.0	5.5	5.5	5.5	
P30 available head pressure	psi	44	42	49	41	45	44	41	51	48	45	44	44	41	49	48	44	
P50 nominal power	hp	0.9	0.9	1.0	1.0	2.0	2.0	2.0	2.5	2.5	2.5	5.5	5.5	5.5	10.0	10.0	10.0	
P50 available head pressure	psi	73	68	87	73	86	83	78	84	81	75	68	67	64	78	75	71	
Dimensions and weight																		
Depth	ins	20.9	20.9	38.6	38.6	44.2	44.2	65.0	65.0	65.0	85.6	85.6	85.6	85.6	118.1	118.1	128.7	
Width	ins	29.5	29.5	21.0	21.0	28.7	28.7	29.3	29.3	29.3	29.3	35.4	35.4	35.4	50.8	50.8	50.8	
Height	ins	31.5	31.5	48.3	48.3	53.5	53.5	53.5	53.5	53.5	53.5	76.9	76.9	76.9	89.4	89.4	89.4	
Connections in/out	in	1"	1"	1"	1"	1 1/4"	1 1/4"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	2"	2"	2"	2 1/2"	2 1/2"	2 1/2"	
Tank capacity	gal	6.0	6.0	12.0	12.0	32.0	32.0	48.0	48.0	66.0	80.0	132.0	132.0	132.0	264.0	264.0	264.0	
Weight (axial fan version) ⁽²⁾	lbs	230	240	370	400	550	595	840	904	950	1150	1765	1990	2205	3310	3970	4630	
Noise level																		
Sound pressure	dB (A)	52	52	53	53	50	50	52	52	52	55	58	58	58	62	62	64	

(1) At water in/out temperature = 55/45°F (12/7°C), glycol 0% , 95°F (35°C) ambient temperature air-cooled models

(2) Weights are inclusive of pallet and refrigerant charge.

(3) Compressor/s and fan/s absorbed power refers to the power usage ALL compressor/s installed in that model at the nominal thermal cooling capacity and ambient temperature.

Worldwide Filtration Manufacturing Locations

North America

**Compressed Air Treatment
Filtration & Separation/Balston**
Haverhill, MA
978 858 0505
www.parker.com/balston

**Finite Airtek Filtration
Airtek/domnick hunter/Zander**
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716 686 6400
www.parker.com/faf

Finite Airtek Filtration/Finite
Oxford, MI
248 628 6400
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www.parker.com/racor

Racor – Village Marine Tec.
Gardena, CA
310 516 9911
desalination.parker.com

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Hydraulic Filter**
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www.parker.com/hydraulicfilter

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domnick hunter Process Filtration**
Oxnard, CA
805 604 3400
www.parker.com/processfiltration

Europe

**Compressed Air Treatment
domnick hunter Filtration & Separation**
Gateshead, England
+44 (0) 191 402 9000
www.parker.com/dhfn

Parker Gas Separations
Etten-Leur, Netherlands
+31 76 508 5300
www.parker.com/dhfn

Hiross Zander
Padova Business Unit
Padova, Italy
+39 049 9712 111
www.parker.com/hzd

Hiross Zander
Essen Business Unit
Essen, Germany
+49 2054 9340
www.parker.com/hzd

**Engine Filtration &
Water Purification
Racor**
Dewsbury, England
+44 (0) 1924 487 000
www.parker.com/rfde

Racor Research & Development
Stuttgart, Germany
+49 (0)711 7071 290-10
www.parker.com/rfde

**Hydraulic Filtration
Hydraulic Filter**
Arnhem, Holland
+31 26 3760376
www.parker.com/hfde

Ujala Operation
Ujala, Finland
+358 20 753 2500
www.parker.com/hfde

Condition Monitoring Center
Norfolk, England
+44 1842 763 299
www.parker.com/hfde

**Process Filtration
domnick hunter Process Filtration**
Birtley, England
+44 (0) 191 410 5121
www.parker.com/processfiltration

Asia Pacific

Australia
Castle Hill, Australia
+61 2 9634 7777
www.parker.com/australia

China
Shanghai, China
+86 21 5031 2525
www.parker.com/china

India
Navi Mumbai, India
+91 22 651 370 8185
www.parker.com/india

Japan
Tokyo, Japan
+81 45 870 1522
www.parker.com/japan

Korea
Hwaseon-City
+82 31 359 0852
www.parker.com/korea

Singapore
Jurong Town, Singapore
+65 6887 6300
www.parker.com/singapore

Thailand
Bangkok, Thailand
+66 2 186 7000
www.parker.com/thailand

**Latin America
Parker Comercio Ltda.
Filtration Division**
Sao Paulo, Brazil
+55 12 4009 3500
www.parker.com/br

Pan American Division
Miami, FL
305 470 8800
www.parker.com/panam

Africa
Aeroport Kempton Park, South Africa
+27 11 9610700
www.parker.com/africa

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Parker Hannifin Corporation
Finite Airtek Filtration Division
4087 Walden Avenue
Lancaster, NY 14086
phone 716 686 6400
www.parkerprocesscooling.com

