

Hyperchill

Industrial Process Chillers for Precision Cooling



Extremely compact and easy to use, Hyperchill ensures an accurate control of water temperature. Each model is designed for safe and reliable operation in the most varied working conditions, thanks to the modern technical solutions used and the availability of a wide range of accessories and options. Each individual Hyperchill unit is extensively tested to guarantee efficient operation and reliability in all working conditions.



Product Features:

Complete solution, easy to install and manage

- Hydraulic circuit: water tank, immersed evaporator, pump with bypass provide a compact and easy to install solution.
- Electronic controllers with proprietary software provide access to all the parameters of the units and allow special management for any specific need.
- Available with remote monitoring.
- Completely configurable with many options and kits to fit many industrial applications needs.
- Condenser filters.
- Independent condensing plenum.
- Full access and easy service design.

High reliability and back-up eliminate downtime

- Large water tanks allow minimum compressor cycling and precise temperature control.
- Double independent fridge circuits.
- 2 compressors from ICE076 and 4 compressors from ICE150 with automatic rotation.
- Double stand-by water pumps available.
- Maximum ambient temperature up to 45 °C.

Lowest energy consumption in the market

- Oversized condensers and evaporators.
- Use of compliant scroll compressors.

Process cooling applications:

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|-----------------------|-------------------------------|----------------------------|
| • Laser Technology | • Coating Systems | • Food & Beverage Industry |
| • Extruders | • Chemical and Pharmaceutical | • Injection Moulding |
| • Surface Processing | • Plastics Processing | • Cutting Machine Tools |
| • Welding Engineering | • Thermoform Machines | • Electroplating Baths |
| • Blow Mould Machines | • Plasma Coating | • Bioenergy |
| • Printing Systems | • Medical Imaging | • Compressed Air |

Water and refrigerant manometers: permit full control of the working conditions.

Microprocessors: permit full control of the unit parameters. Proprietary software allows a wide range of programming and remote monitoring options.

Compliant scroll compressors: with less moving parts and compliant technology provide excellent efficiency, high reliability, and very low noise levels.

Air cooled with axial fans: suitable for outdoor installation, no need for protection.

Water pump (standard 3bar): different head-pressures available to meet the requirements of specific applications. Configurable as a twin-system for 100% back-up.



Mesh filters: condenser protection from dirt and contamination, reduces maintenance costs and the risk of downtime.

Evaporator: located inside the water tank - reduces the overall dimensions, increases the efficiency and improves temperature control.

Water by-pass: protects the pump and supplies constant flow to the evaporator avoiding alarms and freezing.

Water tank: generously dimensioned to guarantee high reliability and improved temperature control.

Versions:

- **Air cooled** with centrifugal fans (ICE076-230): ideal for installation in enclosed environments. Can be ducted for air venting or heat recovery.
- **Water cooled** (ICE076-230 alternative to the air cooled versions): Shell&tube condensers with pressostatic valves.

- **Low ambient** temperature additional condensing control for continuous operation in cold ambients (negative temperature). Available for air cooled, axial fan units.
- **Low water** temperature for negative water temperature control, down to -10 °C. (Low ambient temperature option recommended).

- **Precision control** (ICE076-ICE230): for precise water temperature control ($\pm 0,5$ °C)
- **Non ferrous** stainless steel tank, pump, and hydraulic components.
- **Bioenergy:** epoxy coating on all exposed copper as protection against aggressive environments.
- **Special and multiple pumps:** higher (P50-5bar) or lower (P15-1,5bar) head pressure available to suit different hydraulic circuits. Double stand-by pump for high reliability.
- **Antifreeze** heating avoids freezing when the unit is switched off and glycol is not used.



Options:

- **Water fill kits:** pressurized, automatic or ambient manual kits, for water filling in any installation.
- **Remote control kits:** base version for remote ON/OFF

- and general alarm monitoring. Advanced version for complete remote unit management.
- **Water filters** for circuit cleanliness and machinery protection.



Technical data

Model ICE		076	090	116	150	183	230	310	360
Cooling capacity ¹	kW	76,0	90,2	115,5	149,2	182,3	228	309	360
Compressor abs. power ¹	kW	15,4	20,3	24,9	30,8	40,1	51,4	65	82
SEPR ³		5,39	4,97	5,08	5,35	5,04	4,80	5,51	4,57
Power supply	V/ph/Hz	400/3/50 no neutral							
Protection index		54							
Refrigerant		R407C							

Compressors

Type	Hermetic scroll									
Compressors/circuits		2/2			4/2					
Max abs. power - 1 comp.	kW	11,1	13,7	16,8	11,1	13,7	16,8	23,3	28,7	

Axial fans

Quantity	n°	3			2		3	4	
Max abs. Power - 1 fan	kW	0,78	0,78	0,78	2	2	2	2	2
Air flow	m ³ /h	25500	25000	26400	47000	46000	66000	88000	88000

Centrifugal fans

Quantity	N°	3			3			N.A.	
Max abs. Power - 1 fan	kW	1,5	1,5	1,5	3	3	3		
Air flow	m ³ /h	25500	25000	26400	47000	46000	66000		
Head pressure	Pa	100	100	100	180	180	130		

Water cooled version

Condenser water flow	m ³ /h	11,1	11,5	16,6	19,2	31,0	33,0	N.A.	
Condensers connections	in	1 ¼"	1 ¼"	1 ¼"	1 ¼"	1 ¼"	1 1/2"		

Pump P30

Max abs. power	kW	2,5	2,7	2,7	4,5	4,5	4,5	8,4	8,4
Water flow (nom/max) ¹	m ³ /h	13/31	15/27	20/27	25/50	30/50	39/50	53/90	62/90
Head pressure (nom/min) ¹	m H ₂ O	23/13	28/16	25/16	34/20	32/20	26/20	26/19	23/19

Dimensions and weight

Width	mm	898	898	898	1287	1287	1287	1500	1500
Depth	mm	2200	2200	2200	3000	3000	3260	4200	4200
Height	mm	1984	1984	1984	2298	2298	2298	2240	2240
Connections in/out	in	2"	2"	2"	2 ½"	2 ½"	2 ½"	4"	4"
Tank capacity	l	500	500	500	1000	1000	1000	400	400
Weight (axial)	kg	800	900	1000	1500	1800	2100	2900	3100
Weight (centrif.)	kg	950	1050	1150	1700	2000	2300	N.A.	
Weight (water cooled)	kg	800	900	1000	1500	1800	2100		

Noise level

Sound pressure (axial) ²	dB(A)	58	58	58	62	62	64	65	65
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- 1) at water in/out temperature = 20/15 °C, glycol 0 %, either 25 °C ambient temperature (air-cooled models) or 25 °C condenser water inlet temperature with 35°C condensing temperature (water-cooled models).
- 2) referred to axial fan version in free field conditions at a distance of 10m from unit, measured on condenser side, 1m from ground.
- 3) Value calculated in accordance with the European regulation (EU) 2016/2281 with regards to Ecodesign requirements for high temperature process chillers;

As the manufacturer of process chillers delivering water at a design temperature of 15 °C, Parker Hannifin Manufacturing s.r.l., Gas Separation and Filtration Division EMEA, declares that Parker chillers are exempt from Ecodesign EU regulation 2016/2281.

Correction factors

A) Ambient temp. (air-cooled models) correction factor (f1)	°C	5	10	15	20	25	30	35	40	45
		1,05	1,05	1,05	1,05	1	0,95	0,89	0,83	0,77
B) Water outlet temperature correction factor (f2)	°C	5	10	15	20	25	30	35	40	45
		0,72	0,86	1	1	1	1	1	1	1
C) Glycol correction factor (f3)	%	0	10	20	30	40	50			
		1	0,99	0,98	0,97	0,96	0,94			
D) Condenser water inlet temp. (water-cooled models) correction factor (f4)	°C	20	25	30	35	40				
		1,05	1	0,95	0,9	0,85				

To obtain the required cooling capacity multiply the value at nominal conditions by the above correction factors (i.e. cooling capacity = Pxf1xf2xf3xf4, where P is the cooling capacity at conditions (1)).

Hyperchill, in its standard configuration, can operate up to ambient temperatures of max 45 °C and min. 5 °C and water temperatures of max 30 °C inlet and min. 0 °C outlet. The above correction factors are approximative: for a precise selection always refer to the software selection program.

Parker Worldwide

Europe, Middle East, Africa

AE – United Arab Emirates, Dubai

Tel: +971 4 8127100
parker.me@parker.com

AT – Austria, Wiener Neustadt

Tel: +43 (0)2622 23501-0
parker.austria@parker.com

AT – Eastern Europe, Wiener Neustadt

Tel: +43 (0)2622 23501 900
parker.easteurope@parker.com

AZ – Azerbaijan, Baku

Tel: +994 50 2233 458
parker.azerbaijan@parker.com

BE/LU – Belgium, Nivelles

Tel: +32 (0)67 280 900
parker.belgium@parker.com

BG – Bulgaria, Sofia

Tel: +359 2 980 1344
parker.bulgaria@parker.com

BY – Belarus, Minsk

Tel: +48 (0)22 573 24 00
parker.poland@parker.com

CH – Switzerland, Etoy

Tel: +41 (0)21 821 87 00
parker.switzerland@parker.com

CZ – Czech Republic, Klecany

Tel: +420 284 083 111
parker.czechrepublic@parker.com

DE – Germany, Kaarst

Tel: +49 (0)2131 4016 0
parker.germany@parker.com

DK – Denmark, Ballerup

Tel: +45 43 56 04 00
parker.denmark@parker.com

ES – Spain, Madrid

Tel: +34 902 330 001
parker.spain@parker.com

FI – Finland, Vantaa

Tel: +358 (0)20 753 2500
parker.finland@parker.com

FR – France, Contamine s/Arve

Tel: +33 (0)4 50 25 80 25
parker.france@parker.com

GR – Greece, Piraeus

Tel: +30 210 933 6450
parker.greece@parker.com

HU – Hungary, Budaörs

Tel: +36 23 885 470
parker.hungary@parker.com

IE – Ireland, Dublin

Tel: +353 (0)1 466 6370
parker.ireland@parker.com

IL – Israel

Tel: +39 02 45 19 21
parker.israel@parker.com

IT – Italy, Corsico (MI)

Tel: +39 02 45 19 21
parker.italy@parker.com

KZ – Kazakhstan, Almaty

Tel: +7 7273 561 000
parker.easteurope@parker.com

NL – The Netherlands, Oldenzaal

Tel: +31 (0)541 585 000
parker.nl@parker.com

NO – Norway, Asker

Tel: +47 66 75 34 00
parker.norway@parker.com

PL – Poland, Warsaw

Tel: +48 (0)22 573 24 00
parker.poland@parker.com

PT – Portugal

Tel: +351 22 999 7360
parker.portugal@parker.com

RO – Romania, Bucharest

Tel: +40 21 252 1382
parker.romania@parker.com

RU – Russia, Moscow

Tel: +7 495 645-2156
parker.russia@parker.com

SE – Sweden, Spånga

Tel: +46 (0)8 59 79 50 00
parker.sweden@parker.com

SK – Slovakia, Banská Bystrica

Tel: +421 484 162 252
parker.slovakia@parker.com

SL – Slovenia, Novo Mesto

Tel: +386 7 337 6650
parker.slovenia@parker.com

TR – Turkey, Istanbul

Tel: +90 216 4997081
parker.turkey@parker.com

UA – Ukraine, Kiev

Tel: +48 (0)22 573 24 00
parker.poland@parker.com

UK – United Kingdom, Warwick

Tel: +44 (0)1926 317 878
parker.uk@parker.com

ZA – South Africa, Kempton Park

Tel: +27 (0)11 961 0700
parker.southafrica@parker.com

North America

CA – Canada, Milton, Ontario

Tel: +1 905 693 3000

US – USA, Cleveland

Tel: +1 216 896 3000

Asia Pacific

AU – Australia, Castle Hill

Tel: +61 (0)2-9634 7777

CN – China, Shanghai

Tel: +86 21 2899 5000

HK – Hong Kong

Tel: +852 2428 8008

IN – India, Mumbai

Tel: +91 22 6513 7081-85

JP – Japan, Tokyo

Tel: +81 (0)3 6408 3901

KR – South Korea, Seoul

Tel: +82 2 559 0400

MY – Malaysia, Shah Alam

Tel: +60 3 7849 0800

NZ – New Zealand, Mt Wellington

Tel: +64 9 574 1744

SG – Singapore

Tel: +65 6887 6300

TH – Thailand, Bangkok

Tel: +662 186 7000

TW – Taiwan, Taipei

Tel: +886 2 2298 8987

South America

AR – Argentina, Buenos Aires

Tel: +54 3327 44 4129

BR – Brazil, Sao Jose dos Campos

Tel: +55 800 727 5374

CL – Chile, Santiago

Tel: +56 2 623 1216

MX – Mexico, Toluca

Tel: +52 72 2275 4200