

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.

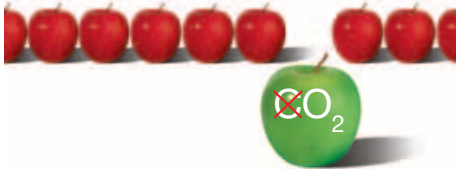


Process cooling applications:

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

Philosophy

Parker Hiross specialises in cooling, purification, and separation technologies, where compressed air and gas purity, product quality, technological excellence and global support are paramount. We design and manufacture compressed air treatment products and cooling equipment for many key industries where ease of integration, low cost of ownership and energy saving can make the difference. Parker Hiross has been supplying industry with high efficiency products with low lifetime costs and reduced CO₂ emissions since 1964. Our philosophy 'to stand out from the crowd' is our credo, encouraging our employees to achieve continuous improvement and satisfy customer expectations.



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 (from ICE076)
- 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 (from ICE022)

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

Microprocessors: allow complete control of the unit parameters. Proprietary software from ICE015 onwards allows a wide range of programming and remote monitoring options.

Compliant scroll compressors: (from ICE022 onwards) 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: (from ICE010 onward) 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 (ICE 015-230): ideal for installation in enclosed environments. Can be ducted for air venting or heat recovery.
- **Water cooled** (ICE 015-230 alternative to the air cooled versions): Shell&tube condensers with pressostatic valves.

- **Low ambient** temperature (from ICE007 onwards): additional condensing control for continuous operation in cold ambients (negative temperature). Available for air cooled, axial fan units.
- **Low water** temperature (from ICE007 onwards): for negative water temperature control, down to -10 °C. (Low

ambient temperature option recommended).

- **Precision control** (ICE 015-ICE230): for precise water temperature control ($\pm 0,5$ °C)
- **Non ferrous** (from ICE007 onwards): 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 (from ICE007 onwards): 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.

- **Wheels** (ICE005 - ICE010): for ease of transport.
- **Water filters** for circuit cleanliness and machinery protection.



Technical data

Model ICE		003	005	007	010	015	022	029	039	046	057	076	090	116	150	183	230	310	360		
Cooling capacity ¹	kW	2,5	5,1	7,0	9,5	14,3	21,8	28,1	38,2	45,2	56,4	76,0	90,2	115,5	149,2	182,3	228	309	360		
Compressor abs. power ¹	kW	0,7	1,4	2,0	2,3	3,4	5,2	5,7	7,7	10,1	12,3	15,4	20,3	24,9	30,8	40,1	51,4	65	82		
Cooling capacity ²	kW	1,7	3,7	5,0	6,7	10,0	15,9	21,2	27,7	33,0	40,8	55,2	65,8	84,2	108	133	166	231	262		
Compressor abs. power ²	kW	0,67	1,3	1,9	2,1	3,2	5,5	6	8,2	10,3	13,1	16,4	21,1	26,2	32,5	41,3	54,6	65	85		
Power supply	V/ph/Hz	230/1/50		400/3/50 no neutral																	
Protection index		33			44			54													
Refrigerant		R407C																			

Compressors

Type	hermetic pistons									hermetic scroll									
Compressors/circuits	1/1									2/2			4/2						
Max abs. power - 1 comp.	kW	0,7	1,5	1,8	3	5,8	6,9	7,8	11,1	13,7	16,8	11,1	13,7	16,8	11,1	13,7	16,8	23,3	28,7

Axial fans

Quantity	n°	1			2			3			2		3		4				
Max abs. Power - 1 fan	kW	0,12	0,12	0,14	0,14	0,61	0,61	0,78	0,61	0,61	0,61	0,78	0,78	0,78	2	2	2	2	2
Air flow	m³/h	2300	2300	4400	4100	7100	6800	9200	12400	12000	17400	25500	25000	26400	47000	46000	66000	88000	88000

Centrifugal fans

Quantity	N°	1			2			3			3			N.A.
Max abs. Power - 1 fan	kW	N.A.												
Air flow	m³/h	7100	6800	9200	12400	12000	17400	25500	25000	26400	47000	46000	66000	
Head pressure	Pa	140	130	200	180	160	200	100	100	100	180	180	130	

Water cooled version

Condenser water flow	m³/h	N.A.												1,3		1,9		2,4		4,0		5,6		8,0		11,1		11,5		16,6		19,2		31,0		33,0		N.A.
Condensers connections	in	N.A.												1"	1"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/2"	N.A.					

Pump P30

Max abs. power	kW	0,4	0,4	0,5	0,5	1,1	1,3	1,3	1,3	2,3	2,3	2,5	2,7	2,7	4,5	4,5	4,5	8,4	8,4
Water flow (nom/max) ¹	m³/h	0,43/2,4	0,88/2,4	1,2/3	1,6/3	2,3/6	3,7/9,6	4,8/9,6	6,6/9,6	7,8/18	9,7/18	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	36/5	29/5	36/8	30/8	29/21	28/17	27/17	24/17	28/22	27/22	23/13	28/16	25/16	34/20	32/20	26/20	26/19	23/19
Water flow (nom/max) ²	m³/h	0,29/2,4	0,64/2,4	0,86/3	1,2/3	1,6/6	2,7/9,6	3,6/9,6	4,8/9,6	5,7/18	7,0/18	9,5/31	11/27	14/27	18/50	23/50	29/50	40/90	45/90
Head pressure (nom/min) ²	m H ₂ O	38/5	33/5	42/8	36/8	30/21	29/17	28/17	27/17	28/22	28/22	23/13	32/16	30/16	36/20	35/20	32/20	37/19	35/19

Dimensions and weight

Width	mm	530	530	980	980	1090	1090	1650	1650	1650	2200	2200	2200	2200	3000	3000	3260	4200	4200
Depth	mm	750	750	534	534	744	744	744	744	744	898	898	898	1287	1287	1287	1500	1500	
Height	mm	800	800	1228	1228	1358	1358	1358	1358	1358	1984	1984	1984	2298	2298	2298	2240	2240	
Connections in/out	in	1"	1"	1"	1"	1 1/4"	1 1/4"	1 1/2"	1 1/2"	1 1/2"	2"	2"	2"	2 1/2"	2 1/2"	2 1/2"	4"	4"	
Tank capacity	l	25	25	45	45	120	120	180	180	250	300	500	500	1000	1000	1000	400	400	
Weight (axial)	kg	105	110	170	180	250	270	380	410	430	520	800	900	1000	1500	1800	2100	2900	3100
Weight (centrif.)	kg	N.A.			280	300	410	450	480	610	950	1050	1150	1700	2000	2300	N.A.		
Weight (water cooled)	kg	N.A.			250	260	380	410	430	520	800	900	1000	1500	1800	2100	N.A.		

Noise level

Sound pressure (axial) ³	dB(A)	52	52	53	53	50	50	53	52	52	56	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) at water in/out temperature = 12/7°C, glycol 0%, 32°C ambient temperature (air-cooled models)
- 3) referred to axial fan version in free field conditions at a distance of 10m from unit, measured on condenser side, 1m from ground.

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				
		0,72	0,86	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.

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