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 (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.

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

Parker Hiross

ENGINEERING YOUR SUCCESS.

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 (ICE 029-230): ideal for installation in enclosed environments. Can be ducted for air venting or heat recovery.
- **Water cooled** (ICE 029-230 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** (ICE029-ICE230): for precise water temperature control (± 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		029	039	046	057	076	090	116	150	183	230	310	360
Cooling capacity[1]	kW	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	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	21,2	27,7	33,0	40,8	55,2	65,8	84,2	108	133	166	231	262
Compressor abs. power[2]	kW	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	400/3/50 no neutral											
Protection index		54											
Refrigerant		R407C											
Compressors													
Type		ermetic scroll											
Compressors/circuits		1/1				2/2			4/2				
Max abs. power - 1 comp.	kW	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	0,78	0,61	0,61	0,61	0,78	0,78	0,78	2	2	2	2	2
Air flow	m³/h	9200	12400	12000	17400	25500	25000	26400	47000	46000	66000	88000	88000
Centrifugal fans													
Quantity	N°	2			3				3			N.A.	
Max abs. Power - 1 fan	kW	1,1	1,1	1,1	1,1	1,5	1,5	1,5	3	3	3		
Air flow	m³/h	9200	12400	12000	17400	25500	25000	26400	47000	46000	66000		
Head pressure	Pa	200	180	160	200	100	100	100	180	180	130		
Water cooled version													
Condenser water flow	m³/h	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	1 ¼"	1 ¼"	1 ¼"	1 ¼"	1 ¼"	1 ¼"	1 ¼"	1 ¼"	1 ¼"	1 1/2"		
Pump P30													
Max abs.power	kW	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	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_2O	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	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_2O	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	1650	1650	1650	2200	2200	2200	2200	3000	3000	3260	4200	4200
Depth	mm	744	744	744	744	898	898	898	1287	1287	1287	1500	1500
Height	mm	1358	1358	1358	1358	1984	1984	1984	2298	2298	2298	2240	2240
Connections in/out	in	1 ½"	1 ½"	1 ½"	1 ½"	2"	2"	2"	2 ½"	2 ½"	2 ½"	4"	4"
Tank capacity	l	180	180	250	300	500	500	500	1000	1000	1000	400	400
Weight (axial)	kg	380	410	430	520	800	900	1000	1500	1800	2100	2900	3100
Weight (centrif.)	kg	410	450	480	610	950	1050	1150	1700	2000	2300	N.A.	
Weight (water cooled)	kg	380	410	430	520	800	900	1000	1500	1800	2100		
Noise level													
Sound pressure (axial)[3]	dB(A)	53	52	52	56	58	58	58	62	62	64	65	65

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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