Hydronic Kits
HP 2.0



HP 2.0
Hydronic system

The HP 2.0 units are hydraulic stations meant to reduce the set-up time of the conditioning and cooling devices. They can be linked to any kind of water cooler.

Standard equipment

Fluid types:
- water
- Ethylene glycol up to 40%
- Propylene glycol up to 40%

Insulation: anti-condensate elastomer
Pumps: 1 or 2
Execution: Layout 1
Inverter: with or without

Standard equipment usage limit

Fluid temperature	Environment temp.	Max. pressure
5°C / +60°C	10°C / +40°C	3 bar

Special equipment usage limit available on configurator (see page 108)

Fluid temperature	Environment temp.	Max. pressure
-20°C / +60°C	-20 / +40°C	3 bar

The HP unit has:

- piping insulated with anti-condensate elastomere
- Single or double centrifugal pump with shut-off valve
- Safety valve
- Deaerator
- Fill-up/drain valve
- Base and self-supporting panels made of galvanized and coated steel sheets, suitable for outdoor installations
- Panels that can be quickly and easily removed
- Easy and quick access to the switchboard
- Switchboard (standard or with inverter)

The broad range of combinations offers a solution for every single type of installation.
Expansion vessel available on request.

Accessories: See pag. 140 for the list of available accessories

Start-up: the first start-up is recommended. See page 361



Upon request, it is possible to produce versions with special equipment to operate at temperatures and pressures outside the standard usage limits. These equipments include, for example, increased insulation, antifreeze kits, pumps for low temperature operation, stainless steel connections.

Standard switchboard

Switchboard with possibility to alternate pumps with every start-up (2 pumps version), to start-up the backup pump in case of breakdown (2 pumps version), magnetothermic protection, free contacts to detect alarms and turned-on pumps, free contact to control remotely on/off pumps, protection category IP55.
Electric data: 400V/3/50Hz

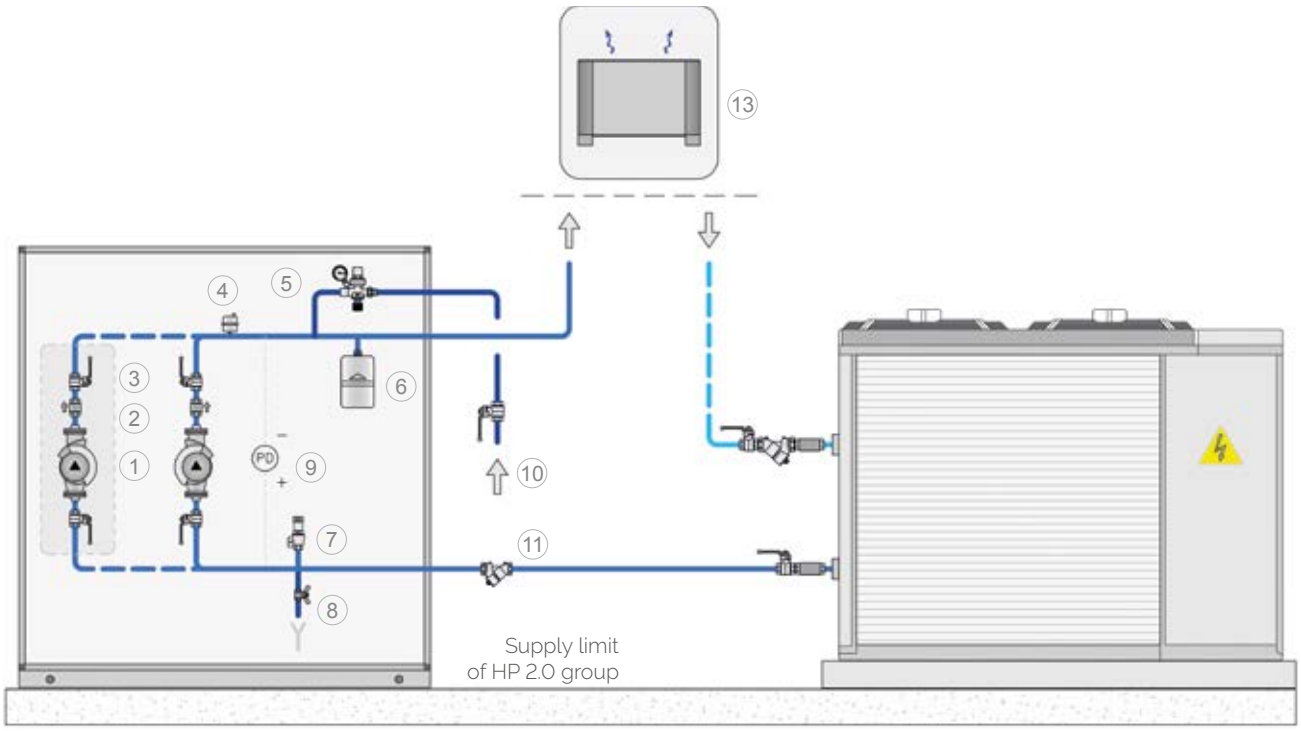
Standard switchboard with inverter

Each pump can be managed by an inverter. Units equipped with inverters have a pressure transducer which communicates with the inverter through a 4-20 mA signal. All adjustment parameters are pre-loaded during the test run at the company. The user must choose only the desired pressure value set point.
It is possible to remotely control pump 1 and 2. Free contacts available used to verify pumps status.

HP 2.0 hydronic systems: hydraulic chart

Features: Hydronic kit, chiller and plant connected in series, hence the water flow is constant throughout the plant.

NOTE: All HPT Fiorini standard kit kits are designed according to the following chart.

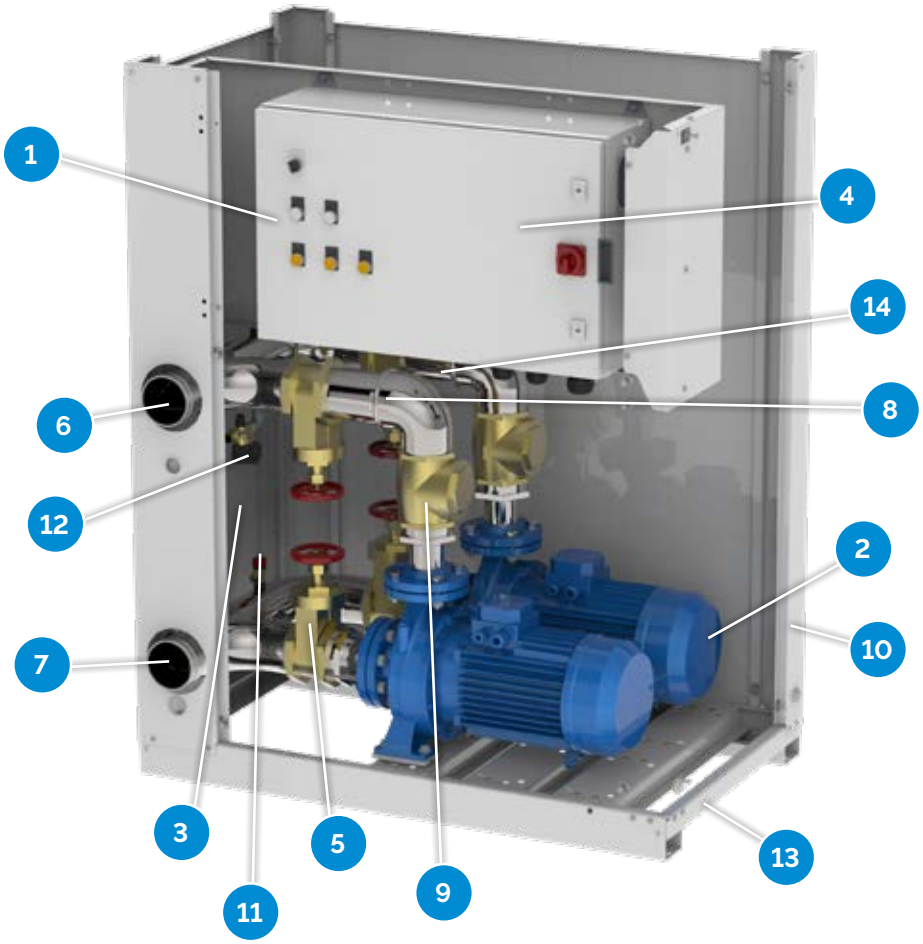


HP 2.0 Group

Legend

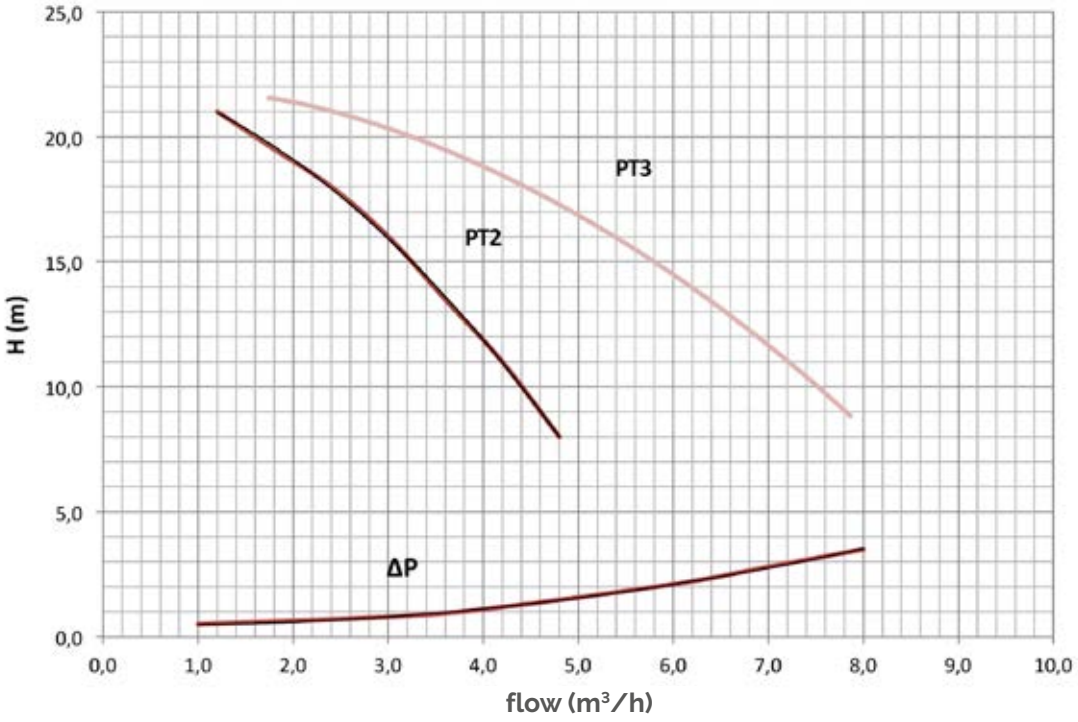
1. Circulator
2. Shut-off valve (only version with 2 pumps)
3. On-off valve
4. Deaerator
5. Automatic filling unit
6. Expansion vessel (optional)
7. Safety valve
8. Drain
9. Differential pressure switch (optional)
10. Inlet returning fluid
11. Y filter. Optional, supplied non-assembled
12. Chiller
13. Device

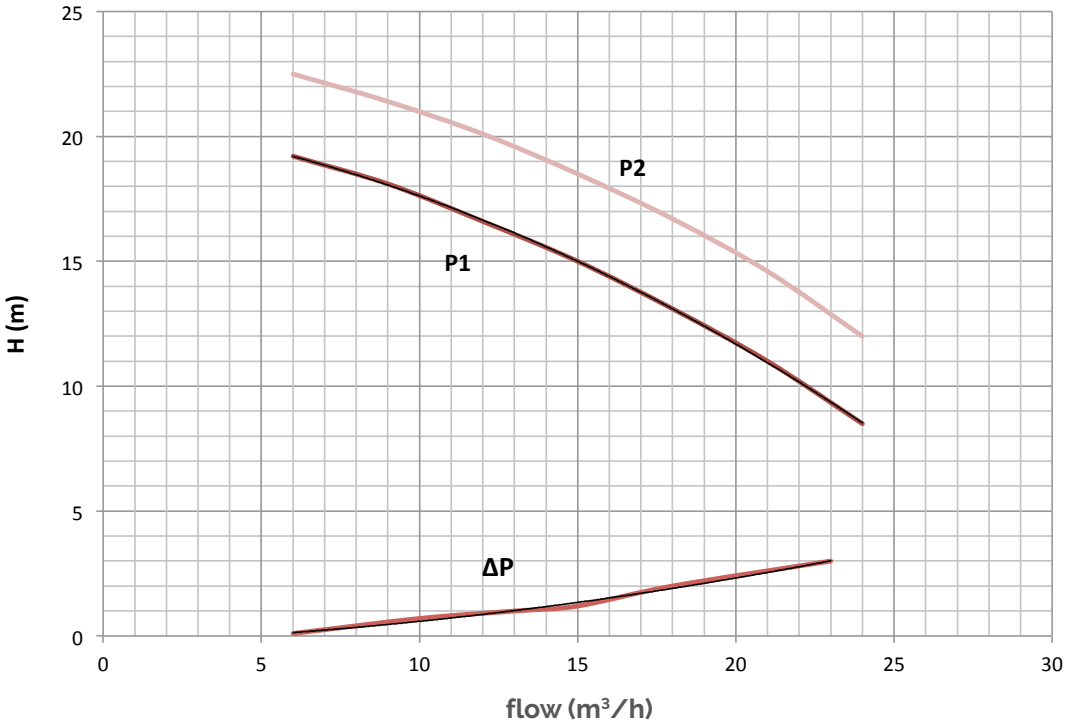
HP 2.0 hydronic system: components



Components	
1	Switchboard
2	Circulation pump (version with double pump, optional)
3	Removable bolted panel
4	Hinged panel
5	Shut-off valve
6	Water outlet
7	Water inlet
8	Pressure transmitter (only version with inverter)
9	Check valve (only version with double pump)
10	Ventilation grid
11	Safety valve
12	Automatic filling unit
13	Base
14	Deaerator

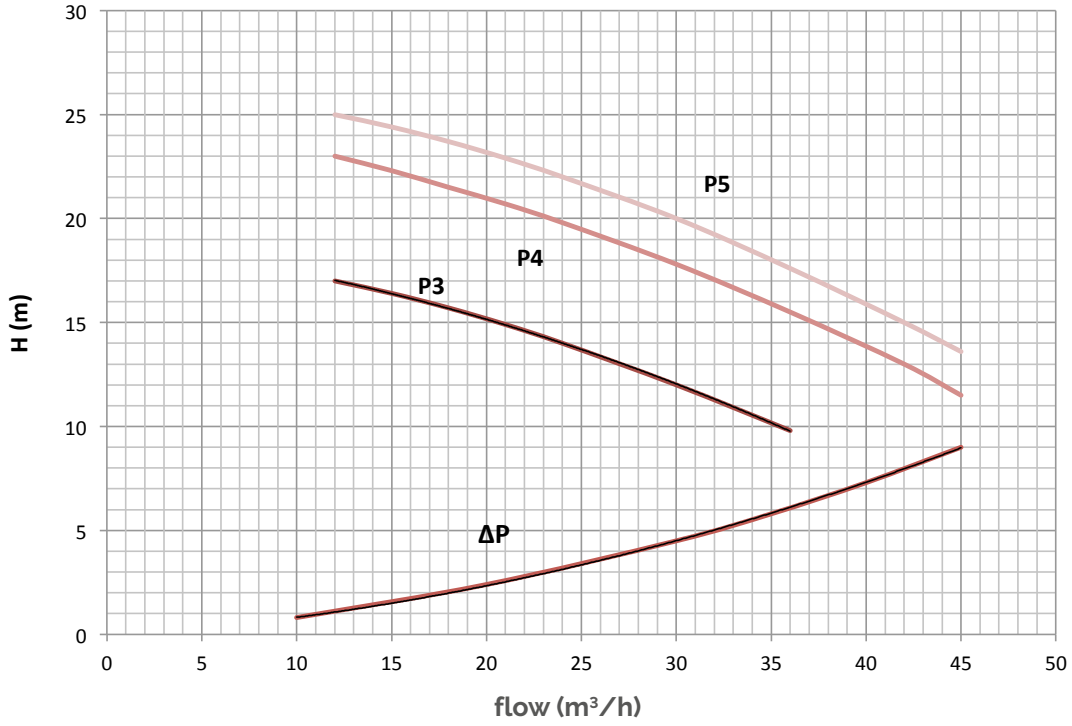
HP 2.0 Hydronic systems
Prevalence and pressure loss curve

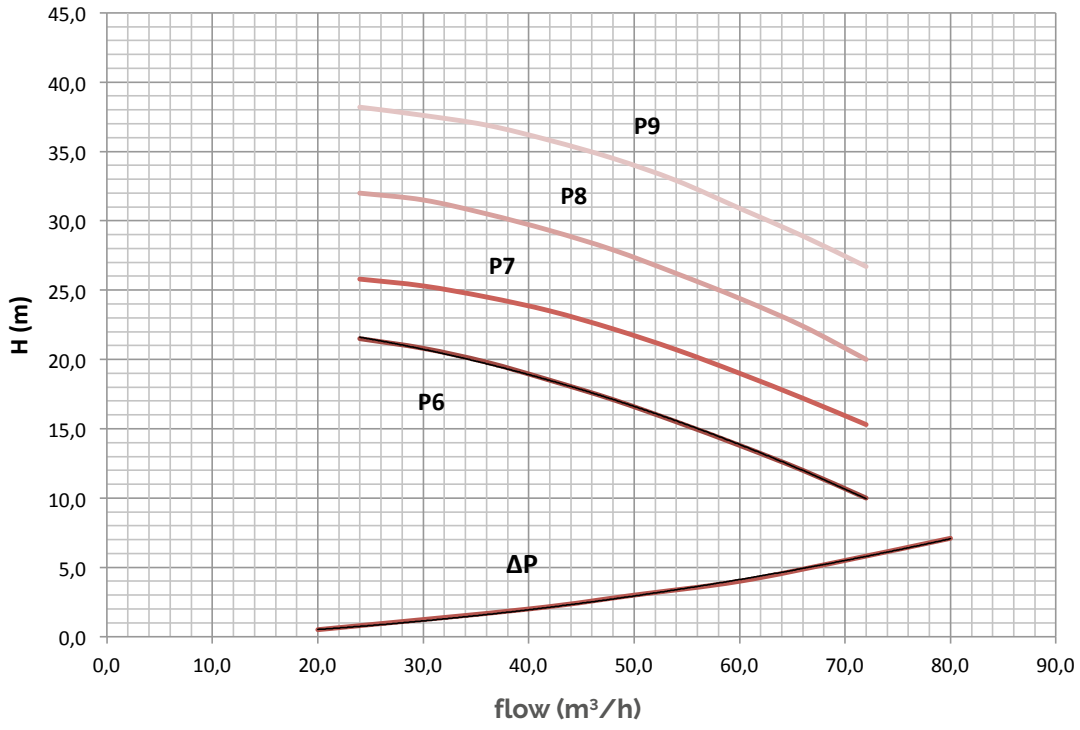




ΔP: Pressure drop HP unit

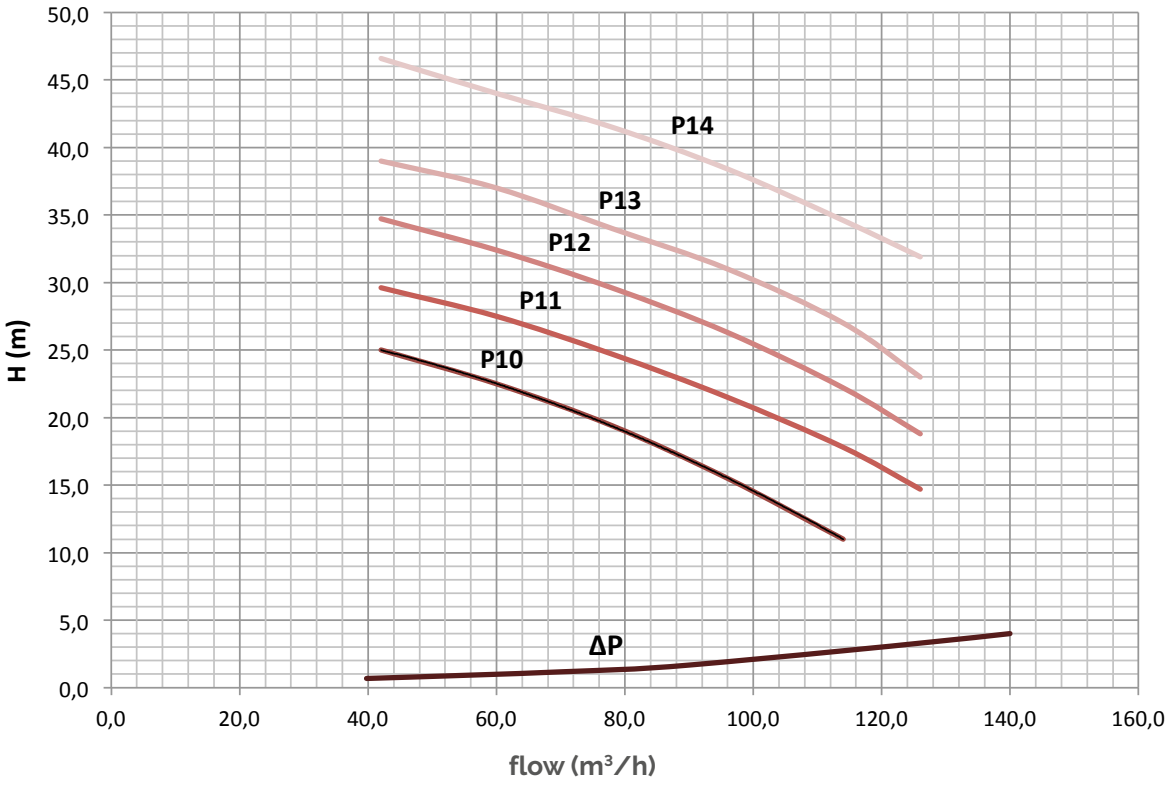
HP 2.0 Hydronic systems
Prevalence and pressure loss curve

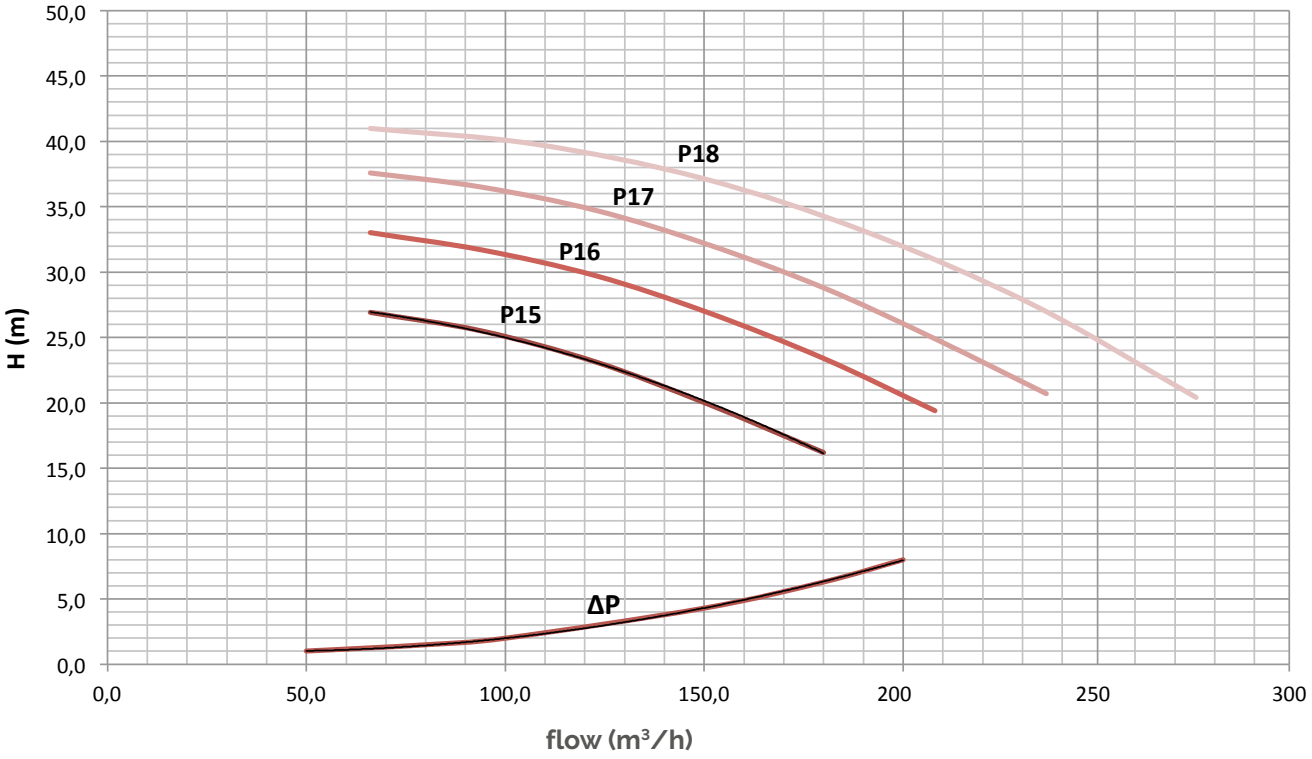




ΔP: Pressure drop HP unit

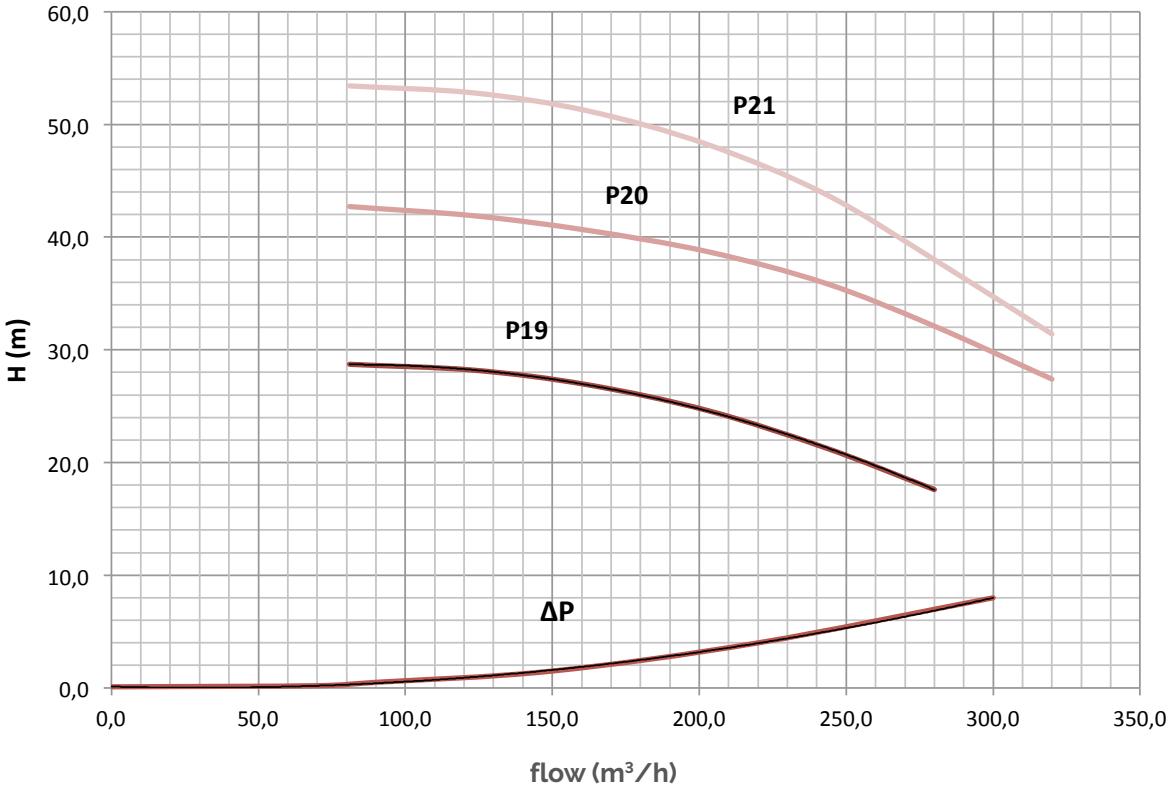
HP 2.0 Hydronic systems
Prevalence and pressure loss curve





ΔP: Pressure drop HP unit

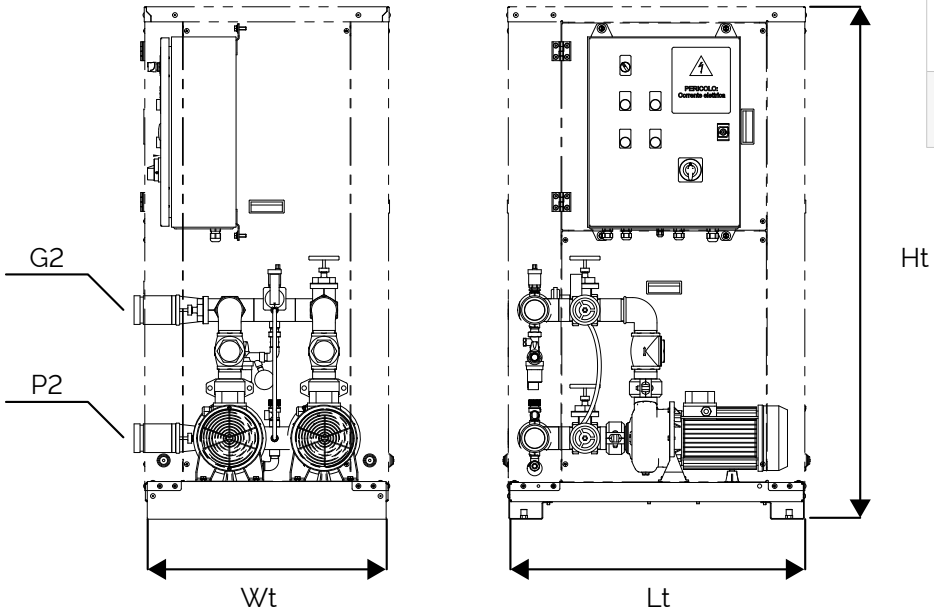
HP 2.0 Hydronic systems
Prevalence and pressure loss curve



ΔP: Pressure drop HP unit

HP 2.0 hydronic system: dimensions

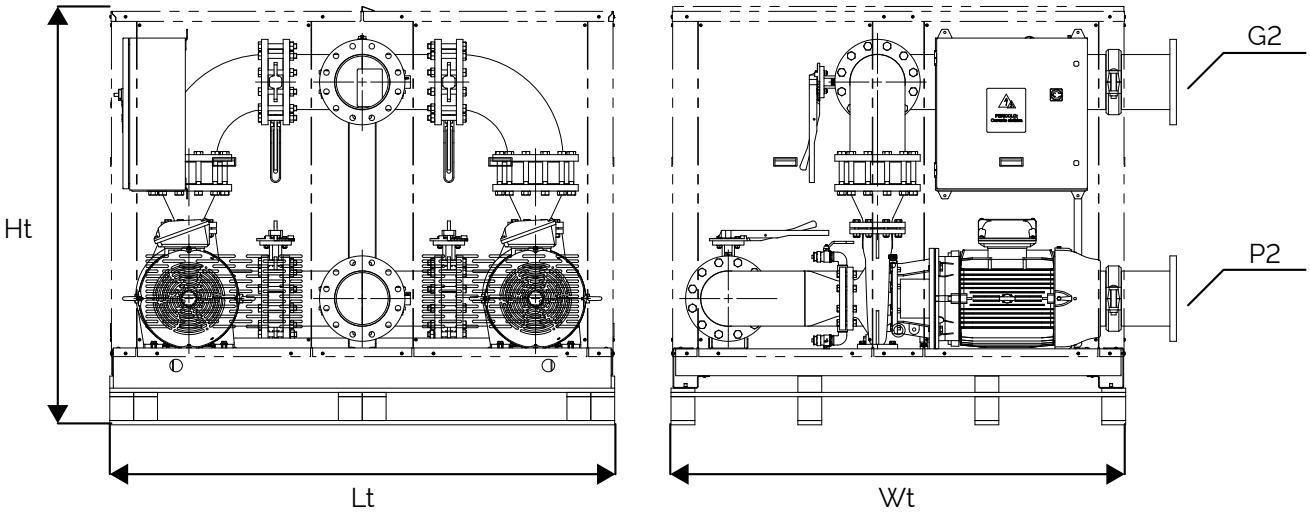
Layout of pump models PT2, PT3, from P1 to P18



Couplings legend

G2	To plant Grooved connection
P2	From energy source Grooved connection

Layout of pump models from P19 to P21



	1 pump Dimensions			2 pumps (1 redundant) Dimensions				
Pump model	**Lt mm**	**Wt mm**	**Ht mm**	**Lt mm**	**Wt mm**	**Ht mm**	**G2 inch**	**P2 inch**
PT2-PT3	790	650	1360	790	650	1360	1"1/2	1"1/2
P1-P2-P3-P4-P5	790	650	1360	790	650	1360	2"1/2	2"1/2
P6-P7-P8-P9	1200	790	1360	1200	790	1360	3"	3"
P10-P11-P12-P13-P14-P15-P16-P17-P18	1280	790	1360	1280	790	1600	4"	4"
P19-P20-P21	1300	1800	1560	2000	1800	1575	DN 200 UNI PN16	DN 200 UNI PN16

HP 2.0 hydronic systems: technical information

			1 pump			2 pumps (1 redundant)		
Pump model	F.L.I kW	F.L.A. (400/3/50) A	Code	Price	Weight kg	Code	Price	Weight kg
PT2*	0,45	1,3	838060261X		100	838060262X		114
PT3*	0,45	1,3	838060263X		100	838060264X		114
P1	1,1	3,3	838060129X		129	838060119X		150
P2	1,5	3,8	838060130X		130	838060120X		151
P3	1,5	3,8	838060131X		131	838060121X		153
P4	2,2	4,7	838060132X		135	838060122X		157
P5	3	6,4	838060133X		137	838060123X		163
P6	3	6,1	838060107X		183	838060193X		256
P7	4	8,7	838060108X		190	838060194X		272
P8	5,5	10,4	838060109X		208	838060195X		311
P9	7,5	13,6	838060110X		224	838060196X		343
P10	5,5	10,4	838060111X		215	838060197X		323
P11	7,5	13,6	838060112X		231	838060198X		355
P12	9,2	17,2	838060235X		284	838060236X		407
P13	11	21,3	838060183X		284	838060217X		412
P14	15	27,7	838060184X		309	838060218X		503
P15	11	20,2	838060227X		279	838060228X		460
P16	15	26,6	838060185X		316	838060219X		549
P17	18,5	33	838060186X		319	838060220X		569
P18	22	40,4	838060187X		340	838060221X		587
P19	18,5	33	838060229X		903	838060230X		1265
P20	30	53,5	838060231X		1030	838060232X		1519
P21	37	65,6	838060233X		1055	838060234X		1557

Pve (bar) 1,5 Ps (bar) 3 T min (°C) 0
Nominal conditions for the sizing of the expansion vessels: 4-40°C 100% water head 10 mwc and pre-charge 1.5 bar. In design conditions different from the nominal ones it is necessary to check the volume of the expansion vessels.
*** PT2 and PT3 available in single-phase version on request**

Legend

F.L.I. Max absorbed power
F.L.A. Max absorbed current
Pve Preload of expansion vessel
Ps Max operating pressure
Tmin Min temperature of the liquid

HP 2.0 hydronic systems: technical information

			1 pump			2 pumps (1 redundant)		
Pump model	F.L.I kW	F.L.A. (400/3/50) A	Code	Price	Weight kg	Code	Price	Weight kg
PT2*	0,45	1,3	838060290X		100	838060291X		114
PT3*	0,45	1,3	838060269X		100	838060278X		114
P1	1,1	3,3	838060161X		129	838060095X		150
P2	1,5	3,8	838060162X		130	838060096X		151
P3	1,5	3,8	838060163X		131	838060097X		153
P4	2,2	4,7	838060164X		135	838060099X		157
P5	3	6,4	838060165X		137	838060100X		163
P6	3	6,1	838060171X		183	838060205X		256
P7	4	8,7	838060172X		190	838060206X		272
P8	5,5	10,4	838060173X		208	838060207X		311
P9	7,5	13,6	838060174X		224	838060208X		343
P10	5,5	10,4	838060175X		215	838060209X		323
P11	7,5	13,6	838060176X		231	838060210X		355
P12	9,2	17,2	838060250X		284	838060254X		407
P13	11	21,3	838060141X		284	838060151X		412
P14	15	27,7	838060142X		309	838060152X		503
P15	11	20,2	838060251X		279	838060255X		460
P16	15	26,6	838060143X		316	838060153X		549
P17	18,5	33	838060144X		319	838060154X		569
P18	22	40,4	838060145X		340	838060155X		587
P19	18,5	33	838060292X		903	838060296X		1265
P20	30	53,5	838060293X		1030	838060297X		1519
P21	37	65,6	838060295X		1055	838060299X		1557

Pve (bar) 1,5 Ps (bar) 3 T min (°C) 0
Nominal conditions for the sizing of the expansion vessels: 4-40°C 100% water head 10 mwc and pre-charge 1.5 bar. In design conditions different from the nominal ones it is necessary to check the volume of the expansion vessels.
*** PT2 and PT3 available in single-phase version on request**

Legend

F.L.I. Max absorbed power
F.L.A. Max absorbed current
Pve Preload of expansion vessel
Ps Max operating pressure
Tmin Min temperature of the liquid

Hydronic systems
HP 2.0: accessories

1 Programmable timer for alternating pumps

In the dual pump configuration, the timer can be used to handle alternating pump operation at specified time intervals. Without the timer, the alternating pump operation occurs at each startup of the group. Default alternation every 48 hours programmable.

* **WARNING:** If the system operates 24 hours a day, 7 days a week, the pump alternation is not guaranteed by the standard group. In this case, we recommend the use of this accessory.

Code	Description	Price
838081104X	TIMER OPTION 48H	

2 Differential pressure switch

Security device that allows you to verify that there is flow inside the system. The device generates an alarm signal but does not automatically stop the machine.

Code	Description	Price
838081000X	DIFFERENTIAL PRESSURE SWITCH	

3 Anti-vibrating feet

Set of anti-vibrating feet to be placed on the machine's support points. The feet are supplied disassembled.

Code	Description	Price
838080861X	ANTI-VIBRATING FOR HP PT2/PT3 AND FOR P1 A P18	
838081286X	ANTI-VIBRATING FOR HP P19/P20/P21	

4 Expansion vessel kit

Code	Description	Compatible with	Price
838081187X	EXPANSION VESSEL 12L INNER	HP 2.0 UP TO P18	
838081195X	EXPANSION VESSEL 25L INNER	HP 2.0 UP TO P18	
838081480X	EXPANSION VESSEL 2x25L INNER	HP 2.0 UP TO P18	
838081616X	EXPANSION VESSEL 3x25L INNER	HP 2.0 UP TO P18	
838081234X	EXPANSION VESSEL 2x25L INNER	HP 2.0 FOR P19/P20/P21 VERSIONS	

5 Manometer kit

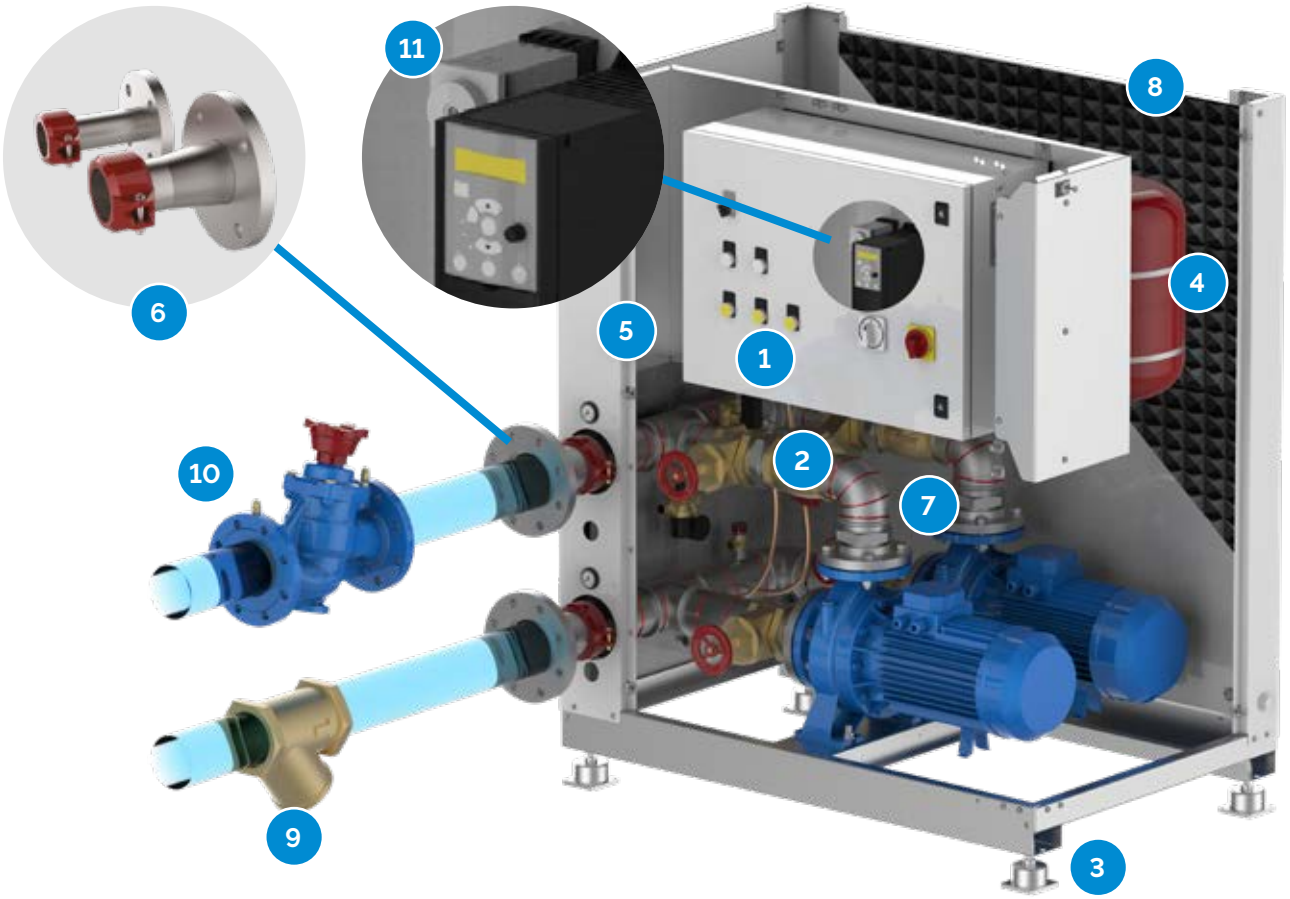
Code	Description	Price
838081583X	MANOMETER KIT	

6 Transformation of painted grooved connections

They transform the grooved connections into UNI-EN PN 16 flanged connections. A version with the same diameter and one with a larger diameter is available. The codes and prices below are for single piece.

Original conncetion Grooved (Victaulic)	Transformed connection UNI-EN PN 16	Code	Price
1"1/2	DN40	838081247X	
	DN50	838081248X	
2"	DN50	838081249X	
	DN65	838081250X	
2"1/2	DN65	838081251X	
	DN80	838081252X	
3"	DN80	838081253X	
	DN100	838081254X	
4"	DN100	838081255X	
	DN125	838081256X	





7 **Antifreeze kit (special version)** The kit provides protection against freezing by means of a heating cable wound around piping. The kit also includes a bi-thermostatic antifreeze adjustment (-35 / + 35 ° C) and is supplied assembled, wired and tested.
see page: 150

8 **Soundproof coating (special version)**
The soundproofing is available, which attenuates the sound level of the machine significantly.
see page: 150

9 **Filter (special version)**
Mesh filter, with 1000 micron holes, can be placed outside the unit to protect the pumps from any impurities in the equipment.
see page: 150

10 **Balancing valves (special version)**
Valve can be connected externally to balance the flow within the circuit.
see page: 150

11 **Standard switchboard with BMS**
Integration of BMS module to control remotely pumps and availability to check pump status remotely (pump on and/or alarms). In the case of application with an inverter, it is also possible to vary the pressure set point. Communication protocol Modbus through serial port RS-485.

Wooden box packing (special version)
Extra protective packing suitable for risky and long-distance transport.
see page: 150

Stainless steel execution
In projects where the fluid temperature is between -11°C and -20°C, the hydronic kits are produced in a special configuration by replacing the standard hydraulic components with components suitable for working at low temperatures by exploiting the characteristics of the stainless steel material.
see page: 150

Increased insulation
This increased insulation compared to the standard allows the use of the kit in particularly harsh temperature conditions (from +4°C to -20°C), avoiding the formation of ice or condensation.
see page: 150

Low temperature pump
In projects where the fluid temperature is between -11°C and -20°C, the standard pump is replaced with a special pump suitable for working in the aforementioned conditions.
see page: 150



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