Cetetherm

MADE IN FRANCE

Cetetherm AquaFirst

A newly designed domestic hot water unit to save time and money

WRAS APPROVED PRODUCT
CERTIFICATION MARK

APPLICATIONS

AquaFirst is an "easy to select" product designed to provide Domestic Hot Water (DHW) from 50kW up to 1000kW for:

- apartment blocks
- commercial centers
- hotels
- office building
- public buildings
- factories.

KEY BENEFITS

- Easy and simple to select
  - 16 Direct versions: no storage tank required
  - 24 Indirect versions: to be combined with a DHW storage tank
- Low energy class A pump(s) on primary
- Reduced risk of limescale build up
- Hot water in a split second thanks to 15 seconds fast response control valves
- Network capable controller (ModBus)
- Robust components
- Drinking water material conformity thanks to stainless steel 316 plates & EPDM FF clip-on gaskets
- Possibility to increase capacity by adding plates
- Quick and easy maintenance

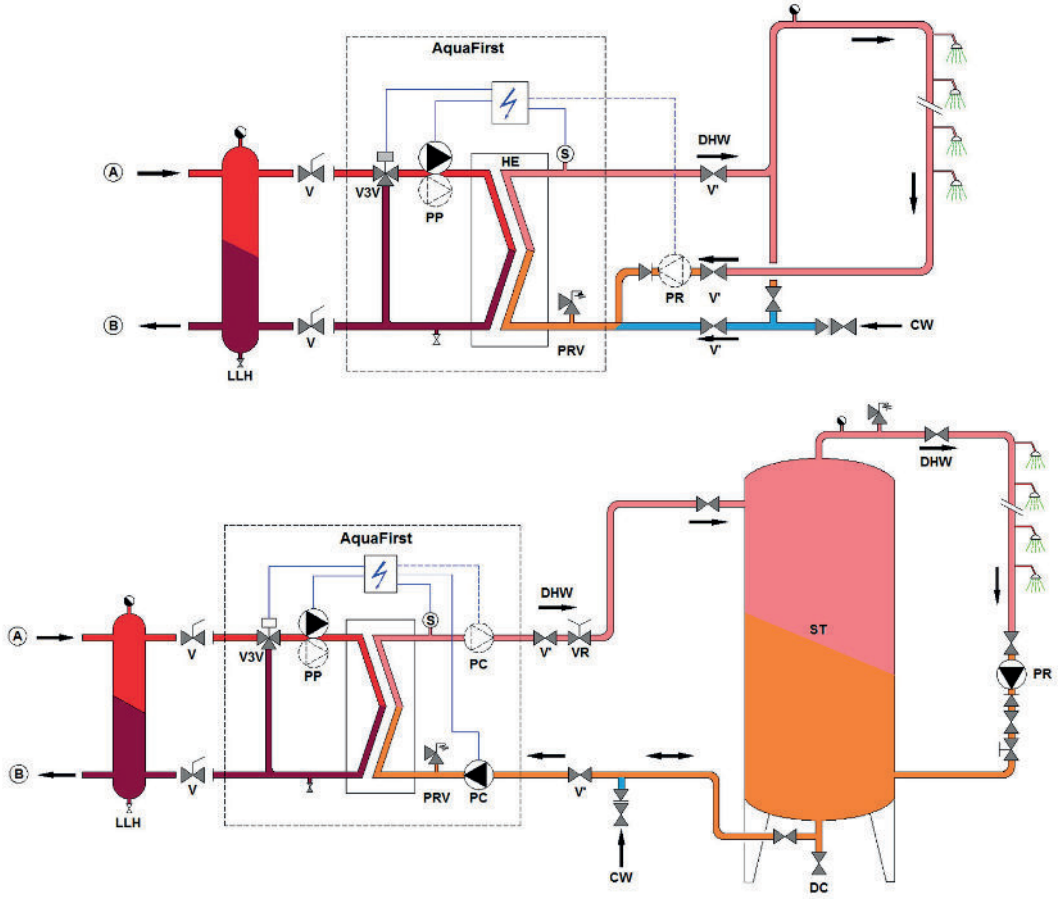
WORKING PRINCIPLE

In the tap water system, energy is exchanged through a heat exchanger from the primary to the DHW side. On the primary side, the Cetetherm AquaFirst has to be fed by a heating source that can be provided for example by a local boiler, a primary tank or a solar system. The temperature of the water entering the heat exchanger on the primary side is adapted to meet the demand detected on the domestic side. The mixing valve eliminates thermal shock in the heat exchanger and reduces the potential build-up of lime-scale on the secondary side.

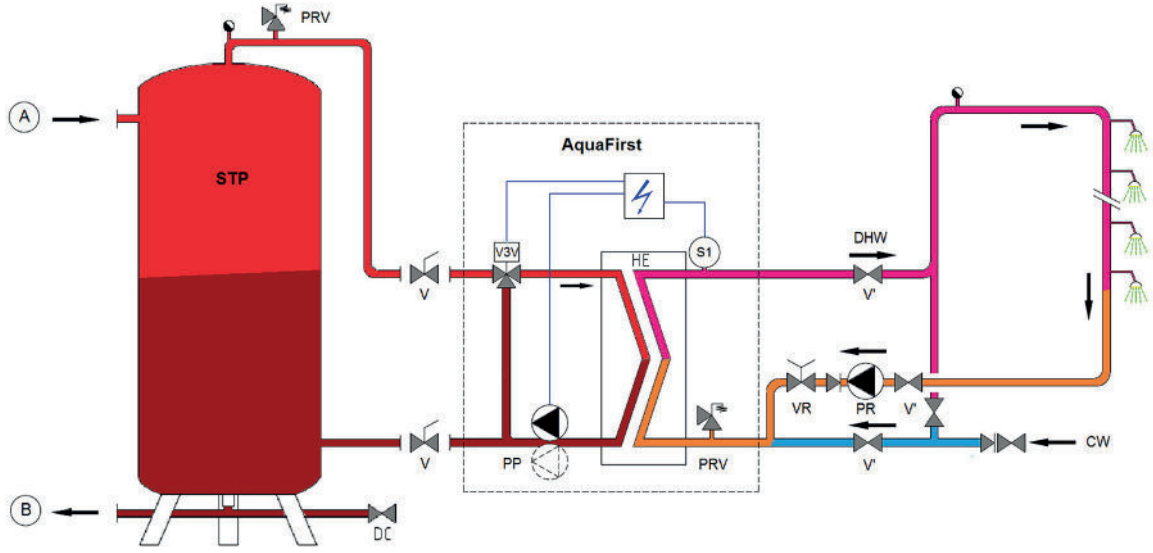
On the secondary side, Cetetherm AquaFirst Direct is connected to the main water circuit and provides domestic hot water to the distribution pipe-work when there is demand. A circulation pump - which is usually used to limit the time needed to deliver domestic hot water to the tap at the right temperature - maintains a minimum flow rate through the heat exchanger and through the distribution pipe-work.

For Cetetherm AquaFirst Indirect a charging pump maintains - thanks to a constant flow rate -the supply of energy to the storage tank and the DHW network. This storage tank ensures DHW supply is met during peak demand periods.

FLOWCHART AQUAFIRST DIRECT & INDIRECT



FLOWCHART AQUAFIRST WITH PRIMARY TANK



A	Primary inlet
B	Primary outlet
CW	Cold water inlet
DC	Draining valve
DHW	Domestic Hot Water
HE	Heat exchanger (PHE)
PC	Charging pump (one or two)
PP	Primary pump (single or double)
PR	Recycling pump (on installation)
PRV	Pressure relief valve
S	DHW temperature sensor
ST	Storage tank (Buffer vessel)
V	Manual gate valve
VR	Balancing valve
V3V	Mixing 3-port control valve with actuator
STP	Primary Storage Tank

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QUICK SELECTION TABLE 1 – DIRECT VERSION

Primary	Prim. 90°C	Secondary		Prim. 82°C	Secondary		Prim. 80°C	Secondary		Prim. 70°C	Secondary		Prim. 65°C	Secondary		Partnumber	
flow rate m3/h	cap. kW	flow rate L/sec	pres. drop kPa	cap. kW	flow rate L/sec	pres. drop kPa	cap. kW	flow rate L/sec	pres. drop kPa	cap. kW	flow rate L/sec	pres. drop kPa	cap. kW	flow rate L/sec	pres. drop kPa	single pump	double pump
Secondary: 10 - 55°C / free pressure available on primary: 5 Kpa																	
1.1	45	0.2	23	35	0.2	15	35	0.2	15	22	0.1	6	17	0.1	2	FI2007IS	FI2007ID
2.9	135	0.7	30	110	0.6	20	105	0.6	19	75	0.4	10	57	0.3	6	FI2017IS	FI2017ID
5.2	250	1.3	39	210	1.1	28	195	1.0	25	140	0.8	13	108	0.6	8	FI4027IS	FI4027ID
6.3	360	1.9	30	305	1.6	23	285	1.5	20	210	1.1	11	165	0.9	7	FI4045IS	FI4045ID
9.5	420	2.2	40	340	1.8	26	320	1.7	24	220	1.2	11	170	0.9	7	FI6113IS	FI6113ID
12	600	3.2	32	470	2.5	20	470	2.5	20	330	1.8	10	260	1.4	7	FI6123IS	FI6123ID
14	800	4.2	17	680	3.6	12	650	3.5	12	470	2.5	6	370	2.0	4	FI8031IS	FI8031ID
15.3	1000	5.3	10	850	4.5	7	800	4.3	7	600	3.2	7	485	2.6	3	FI8055IS	FI8055ID
Secondary: 10°C - 60°C / free pressure available on primary: 5 Kpa																	
1.1	40	0.2	15	30	0.2	9	30	0.2	9	18	0.1	4	12	0.1	2	FI2007IS	FI2007ID
2.9	125	0.6	21	100	0.5	14	95	0.5	13	60	0.3	5	42	0.2	3	FI2017IS	FI2017ID
5.2	235	1.1	29	190	0.9	19	175	0.8	16	115	0.6	8	80	0.4	4	FI4027IS	FI4027ID
6.3	340	1.6	23	280	1.4	16	260	1.3	14	175	0.8	7	125	0.6	4	FI4045IS	FI4045ID
9.8	400	1.9	29	320	1.5	19	295	1.4	16	185	0.9	7	120	0.6	3	FI6113IS	FI6113ID
12.2	565	2.7	23	460	2.2	16	430	2.1	14	260	1.2	5	180	0.9	3	FI6123IS	FI6123ID
14.3	770	3.7	13	640	3.1	9	600	2.9	8	400	1.9	4	280	1.3	2	FI8031IS	FI8031ID
15.4	950	4.6	7	790	3.8	6	750	3.6	5	520	2.5	3	380	1.8	2	FI8055IS	FI8055ID

QUICK SELECTION TABLE 2 – INDIRECT VERSION

Primary	Prim. 90°C	Secondary		Prim. 82°C	Secondary		Prim. 80°C	Secondary		Prim. 70°C	Secondary		Prim. 65°C	Secondary		Partnumber *		
flow rate m3/h	cap. kW	flow rate L/sec	free pres. kPa	cap. kW	flow rate L/sec	free pres. kPa	cap. kW	flow rate L/sec	free pres. kPa	cap. kW	flow rate L/sec	free pres. kPa	cap. kW	flow rate L/sec	free pres. kPa	single/ single pumps	double/ single pumps	double/ double pumps
Secondary: 10 - 55°C / free pressure available on primary: 5 Kpa																		
1.1	45	0.2	50	35	0.2	59	35	0.2	59	22	0.1	69	17	0.1	73	FI2007SS	FI2007DS	FI2007DD
2.9	135	0.7	36	110	0.6	48	105	0.6	49	75	0.4	61	57	0.3	66	FI2017SS	FI2017DS	FI2017DD
5.2	250	1.3	14	210	1.1	30	195	1.0	35	140	0.8	52	108	0.6	60	FI4027SS	FI4027DS	FI4027DD
6.3	360	1.9	9	305	1.6	23	285	1.5	29	210	1.1	47	165	0.9	55	FI4045SS	FI4045DS	FI4045DD
9.5	390	2.1	5	340	1.8	16	320	1.7	21	220	1.2	46	170	0.9	55	FI6113SS	FI6113DS	FI6113DD
12	470	2.5	5	470	2.5	5	470	2.5	5	330	1.8	34	260	1.4	45	FI6123SS	FI6123DS	FI6123DD
13.1	700	3.7	5	680	3.6	7	650	3.5	13	470	2.5	49	370	2.0	65	FI8031SS	FI8031DS	FI8031DD
15.3	750	4.0	5	750	4.0	5	750	4.0	5	600	3.2	27	485	2.6	50	FI8055SS	FI8055DS	FI8055DD
Secondary: 10°C - 60°C / free pressure available on primary: 5 Kpa																		
1.1	40	0.2	59	30	0.2	65	30	0.2	65	18	0.1	71	12	0.1	74	FI2007SS	FI2007DS	FI2007DD
2.9	125	0.6	47	100	0.5	55	95	0.5	57	60	0.3	68	42	0.2	71	FI2017SS	FI2017DS	FI2017DD
5.2	235	1.1	28	190	0.9	43	175	0.8	47	115	0.6	60	80	0.4	67	FI4027SS	FI4027DS	FI4027DD
6.3	340	1.6	23	280	1.4	37	260	1.3	41	175	0.8	56	125	0.6	64	FI4045SS	FI4045DS	FI4045DD
9.8	400	1.9	11	320	1.5	30	295	1.4	36	185	0.9	56	120	0.6	65	FI6113SS	FI6113DS	FI6113DD
12.2	520	2.5	5	460	2.2	16	430	2.1	22	260	1.2	51	180	0.9	60	FI6123SS	FI6123DS	FI6123DD
14.3	770	3.7	5	640	3.1	30	600	2.9	37	400	1.9	66	280	1.3	80	FI8031SS	FI8031DS	FI8031DD
15.4	820	3.9	5	790	3.8	8	750	3.6	16	520	2.5	53	380	1.8	70	FI8055SS	FI8055DS	FI8055DD

* Charging pump(s) limited use: PH 6-9 and TH < 25°TH or 14°dH. Beyond these values please consult Cetetherm.

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STANDARD FEATURES

Heat exchanger	• Plates & Gasket heat exchanger - Corrosion resistant stainless steel 316 plates - EPDMFF clip-on gaskets • EPP insulation
Control system	• 3-port mixing electronic control valve • 24V 0-10V, 15 second speed actuator • ModBus RTU RS 485 Controller • Multi functional IP54 control box • NTC20K temperature sensors on secondary outlet with stainless steel sleeve
Pumps	• Primary class A flooded rotor Pumps pump: single or double head • Stainless steel charging flooded rotor pump: single or double head for Indirect solutions
Valves	• Drain valve (primary) • Pressure relief valve (secondary)

DESCRIPTION TABLE

Primary	Primary side			Heat exchanger		Secondary side		Electrical consumption		Dimensions	Weight
	Pump(s) Magna1	Control valve HNW V5833	Actuator	Number	Type	Pump(s)	Safety valve Barg	Pmax (W)	Imax (A)	L x W x H (mm)	(kg)
FI2007IS	single 32-40	DN32 Kvs 16	HNW ML7430E	7	M3H	-	10	85	1.2	492 x 326 x 1025	57
FI2017IS				17							60
FI4027IS	single 32-80			27				165	1.8		62
FI4045IS				45							64
FI2007ID	double 32-40	DN32 Kvs 16	HNW ML7430E	7	M3H	-	10	85 / 160*	1.2 / 1.8*	485 x 407 x 1025	66
FI2017ID				17							69
FI4027ID	double 32-80			27				165 / 315*	1.8 / 3*		71
FI4045ID				45							73
FI2007SS	single 32-40	DN32 Kvs 16	HNW ML7430E	7	M3H	UPS32-80N	10	305	2.2	492 x 326 x 1025	63
FI2017SS				17							66
FI4027SS	single 32-80			27				385	2.8		68
FI4045SS				45							70
FI2007DS	double 32-40	DN32 Kvs 16	HNW ML7430E	7	M3H	UPS32-80N	10	305 / 385*	2.2 / 2.8*	485 x 533 x 1025	70
FI2017DS				17							74
FI4027DS	double 32-80			27				385 / 535*	2.8 / 4.1*		77
FI4045DS				45							79
FI2007DD	double 32-40	DN32 Kvs 16	HNW ML7430E	7	M3H	2x UPS32-80N	10	305 / 380* / 600**	2.2 / 2,8* / 3.8**	485 x 533 x 1025	76
FI2017DD				17							80
FI4027DD	double 32-80			27				385 / 535* / 755**	2.8 / 4.1* / 5**		83
FI4045DD				45							85

* with booster function activated

** with safety function activated

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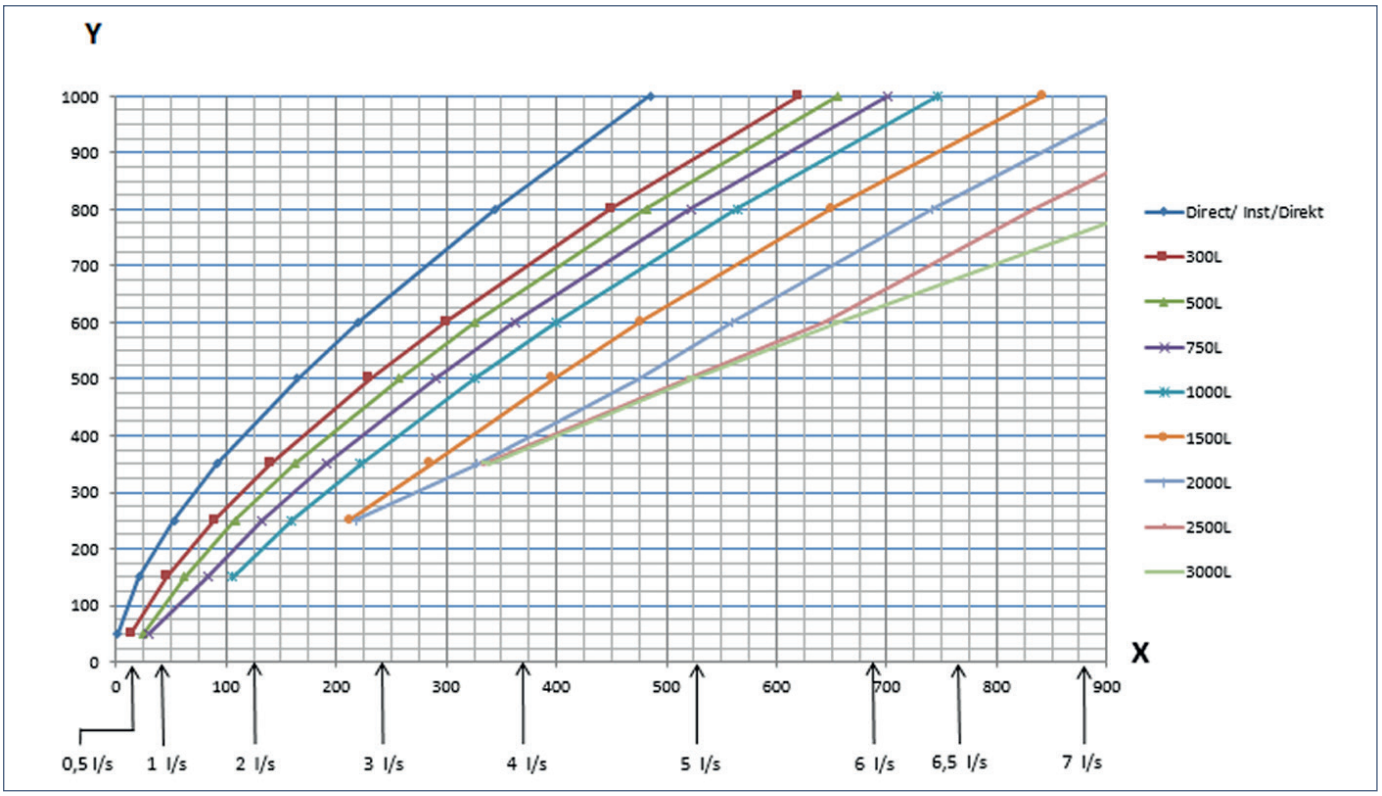
Primary	Primary side			Heat exchanger		Secondary side		Electrical consumption		Dimensions	Weight
	Pump(s) Magna1	Control valve HNW V5833	Actuator	Number	Type	Pump(s)	Safety valve Barg	Pmax (W)	Imax (A)	L x W x H (mm)	(Kg)
FI6113IS	single 40-60	DN40 Kvs25	HNW ML7430E	13	M6M ML/MH	-	10	210	2.2	843 x 326 x 1365	155
FI6123IS				23							163
FI8031IS	single 40-100			31				385	2.2		178
FI8055IS				55							199
FI6113ID	double 40-60	DN40 Kvs25	HNW ML7430E	13	M6M ML/MH	-	10	210 / 405*	2.2 / 3.8*	846 x 504 x 1365	164
FI6123ID				23							173
FI8031ID	double 40-100			31				385 / 755*	2.2 / 3.9*		196
FI8055ID				55							217
FI6113SS	single 40-60	DN40 Kvs25	HNW ML7430E	13	M6M ML/MH	UPS32-80N	10	430	3.15	843 x 350 x 1365	160
FI6123SS				23							169
FI8031SS	single 40-100			31		UPS32-100N		730	3.7		186
FI8055SS				55							207
FI6113DS	double 40-60	DN40 Kvs25	HNW ML7430E	13	M6M ML/MH	UPS32-80N	10	430 / 625*	3.15 / 4.7*	846 x 504 x 1365	170
FI6123DS				23							179
FI8031DS	double 40-100			31		UPS32-100N		3.7 / 5.5*	2.2 / 3.9*		204
FI8055DS				55							225
FI6113DD	double 40-60	DN40 Kvs25	HNW ML7430E	13	M6M ML/MH	2x UPS32-80N	10	430 / 625*/ 845***	3.15 / 4.7* / 5.7**	846 x 504 x 1365	176
FI6123DD				23							184
FI8031DD	double 40-100			31		2x UPS32-100N		730 / 1100* / 1445**	3.7 / 5.5* / 6.9**		211
FI8055DD				55							233

* with booster function activated

** with safety function activated

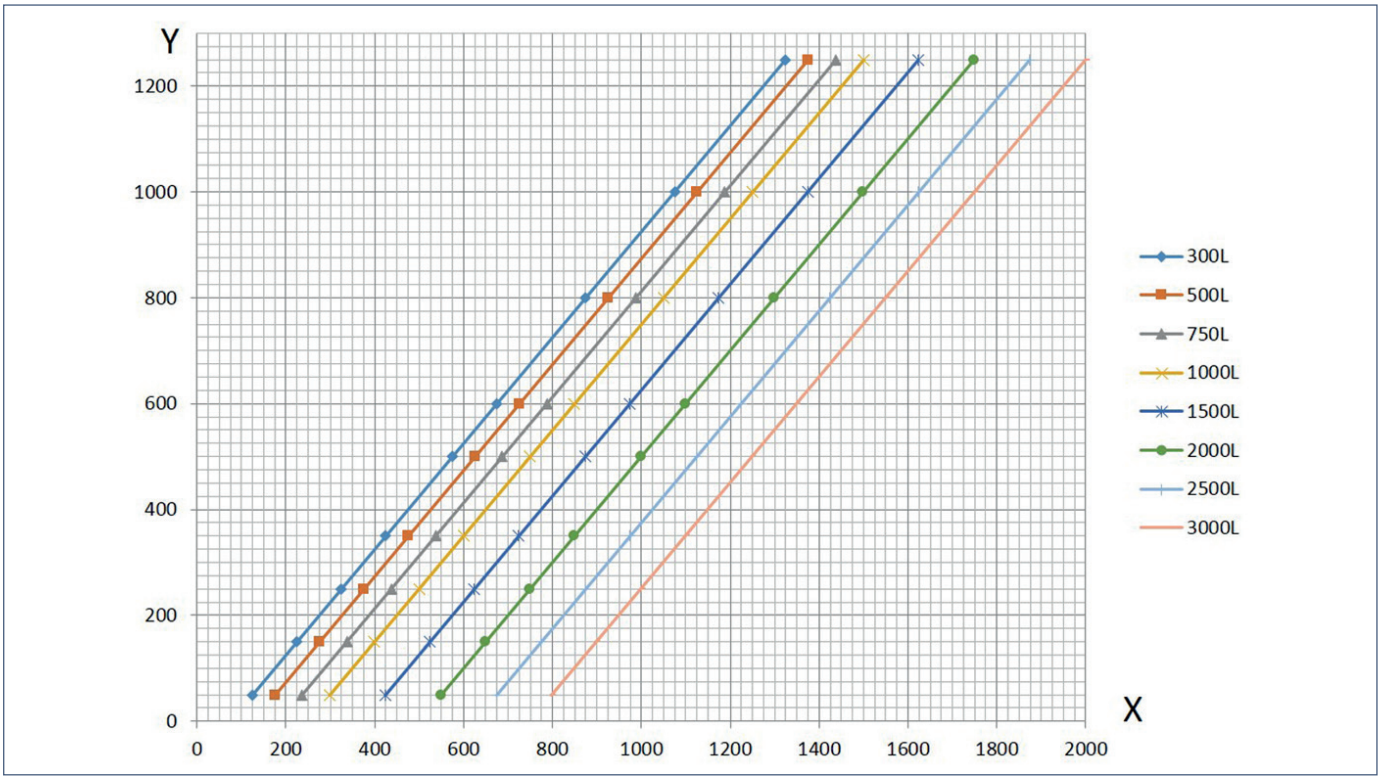
Operating limits	Primary	Secondary
Maximum operating pressure bar	10	10
Maximum operating temperature °C	110	100

SELECTION CHART AQUAFIRST (DHW FLOW RATE: 10 - 60°C)



Y Capacity in Kw X Number of 3-4 rooms apartments or Liters/second

SELECTION CHART AQUAFIRST WITH PRIMARY VESSEL (DHW OUTLET: 60°C)



Y Required boiler power in Kw X Required power for Direct domestic hot water unit in Kw

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