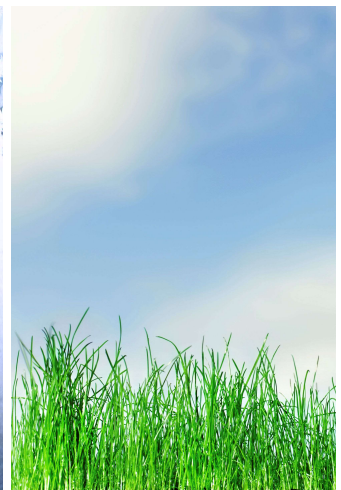
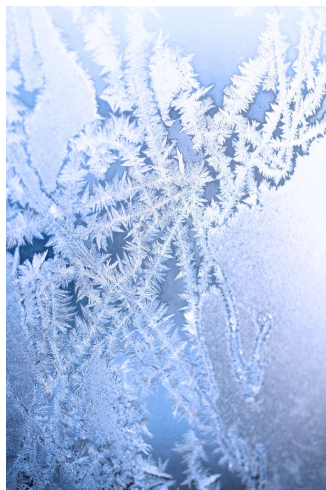




Product Guide

Inventive Engineering



Welcome to Arbe Integrated Engineering

Arbe Integrated Engineering offer a range of products and services for the HVAC building services industry, ranging from bare heat exchangers and storage cylinders to fully packaged plantrooms and associated equipment. With over 20 years of design experience, our design and technical team can offer a complete solution for a wide range of project requirements.

Seamless Integration:

With our next generation range of equipment, our products offer complete integration with renewable and future energies, ensuring all available energy is utilised, reducing fossil fuel usage. In addition, our HevaSys products offer a unique next generation range of equipment with integral BMS style controls that can be adapted to any installation and can provide a standalone management system for buildings where the heating and hot water generation is relatively small, such as a leisure centre or a school.

Inventive Engineering:

In addition to our standard equipment, including heat exchangers, storage calorifiers and packaged solutions, we also design and manufacture bespoke equipment to end user or consultant specifications and we carry out extensive research and development to invent new products and enhance current designs.

Application Solutions:

With our complete range of products, we have solutions to cover most applications. With our ability to carry out complete bespoke design, we have a solution for each and every project requirement.

Our end users include:

- Hotels
- Schools & Universities
- Leisure Centres, Gyms & Sports Centres
- Hospitals & Health Centres
- Factories and Commercial Premises

Domestic Hot Water Systems

Our calorifiers, cylinders and packages are suitable for both vented and unvented systems when utilising the correct equipment.

We can supply the units for unvented (pressurised) systems with expansion vessels and cold feed kits, completely in accordance with water and building regulations. A typical cold feed kit consists of an isolating valve, strainer, pressure reducing/regulating valve and a check valve

For open vented systems, we can fit an open vent connection on top of the cylinder or it may be vented off the secondary flow pipework. We can provide full technical assistance where required.

Contents

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18-19	APK Plate Heat Exchangers
20	ABV Brazed Heat Exchangers
21	CT Corrugated Tube Heat Exchangers
22-23	HevaMod Packaged Plate Heat Exchangers
24-25	HevaPak Packaged Plate Heat Exchangers
26-27	HevaSteam Packaged Steam/Water Plate Heat Exchangers
28-29	ACR Condensate Recovery Units
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32	HevaBoost Cold Water Booster Sets & Pressurisation
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Key to Product Suitability



Suitable for Heating Systems



Suitable for Potable Systems



Suitable for Chilled Systems



Suitable for Steam Systems



Suitable for Renewable Systems



Suitable for Boosted Water Systems

Warranties

All stainless steel storage cylinders have a minimum 5 year warranty on the shell, covering against all manufacturing defects. If we supply controls & commissioning, this can be extended to 8 years! Items such as heater batteries and coils have a 3 year warranty and all gaskets have 12 months.

Please refer to our terms and conditions for further information on our warranties.



Storage Calorifiers

The Arbe AL series of storage calorifiers are used for the production of potable domestic hot water through a removable tube bundle type heat exchanger. There are 4 options for materials on the vessels and 2 options for heater battery materials, with copper and stainless steel. All vessels supplied with 50mm PLF insulation & a PVC jacket (100mm thick in the AL1000 and above). Non-sacrificial electronic anodes are supplied with our enamelled and galvanised steel storage calorifiers as standard.

The standard range of calorifiers covers capacities from 200 to 5000 litres, available both vertically or horizontally and are suitable for both water and steam primary mediums

We can also design and manufacture bespoke calorifiers up to 120,000 litre capacity to suit most applications

AL - Stainless steel AISI 316L shell, with a stainless steel AISI 316L removable U-tube heat exchanger

ALG - Enamelled steel shell with a stainless steel AISI 316L removable U-tube heat exchanger

ALZ - Galvanised steel shell, with a stainless steel AISI 316L removable U-tube heat exchanger

ALC - Copper-lined carbon steel, with a carbon steel shell and lined internally with copper, supplied with a stainless steel AISI 316L removable U-tube heat exchanger

Our storage calorifiers can be supplied with accessories either loose or factory fitted such as primary control packages and de-stratification pump sets



Energy Efficiency

All Arbe storage calorifiers are fully compliant with the latest Energy Efficiency Directive with improved energy efficiency classes, as shown on the table on the following page, compliant to Reg. 814/2013 (Dir. 2009/125/CE) with new legislation coming into force in September 2017

Warranty

All Arbe AL stainless steel storage calorifiers have a minimum 5 year warranty on the shell and 3 years on the heater battery, covering against all manufacturing defects. If we supply controls & commissioning, this can be extended to 8 years!



Storage Calorifiers

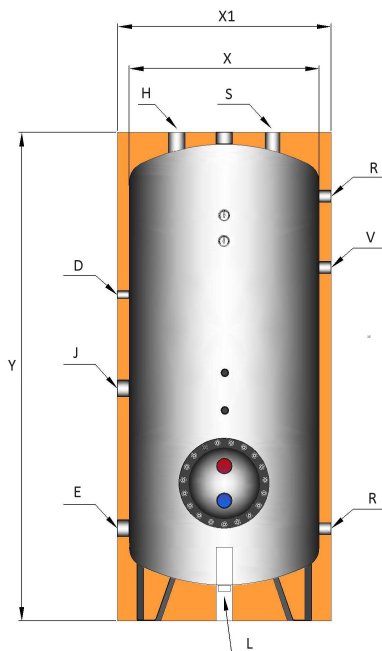
Please see details below for our stainless steel storage calorifiers. For the other calorifier versions with other shell materials, please refer to the Arbe storage calorifier brochure

Dimensions (Stainless Steel)		AL Capacity (Litres)											
		200	300	500	800	1000	1500	2000	2050	2500	3000	4000	5000
X1	mm	610	710	810	1000	1000	1200	1400	1300	1300	1350	1500	1700
X	mm	450	550	650	800	800	1000	1200	1200	1200	1250	1400	1600
Y	mm	1530	1590	1860	1960	2210	2250	2170	2270	2600	2800	2880	2970
Y1	mm	660	760	860	1100	1100	1360	1550	1460	1510	1550	1700	1890
Z	mm	1400	1450	1730	1930	2180	2170	2110	2200	2500	2700	2800	2850
A	BSP	1"	1"	1"	2"	2"	2"	2"	2"	2"	2"	2"	2"
B	BSP	1"	1"	1"	2"	2"	2"	2"	2"	2"	2"	2"	2"
C	BSP	1½"	1½"	1½"	2"	2"	2½"	2½"	2½"	3"	3"	3"	3"
D	BSP	¾"	¾"	¾"	¾"	¾"	¾"	¾"	¾"	¾"	¾"	¾"	¾"
E	BSP	1½"	1½"	1½"	2"	2"	2½"	2½"	2½"	3"	3"	3"	3"
F	BSP	½"	½"	½"	½"	½"	½"	½"	½"	½"	½"	½"	½"
G	BSP	½"	½"	½"	½"	½"	½"	½"	½"	½"	½"	½"	½"
H	BSP	1"	1"	1"	1"	1"	1"	1"	1"	1"	1"	1"	1"
J	BSP	2"	2"	2"	2"	2"	2"	2"	2"	2"	2"	2"	2"
L	BSP	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"
M	BSP	½"	½"	½"	½"	½"	½"	½"	½"	½"	½"	½"	½"
N	BSP	½"	½"	½"	½"	½"	½"	½"	½"	½"	½"	½"	½"
R	BSP	1"	1"	1"	1"	1"	1"	1"	1"	1"	1"	1"	1"
V	BSP	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"
Energy Efficiency Class ErP Compliant	Rating	B	B	B	C	C	C	C	-	-	-	-	-
	W	55	64	81	133	143	168	186	-	-	-	-	-

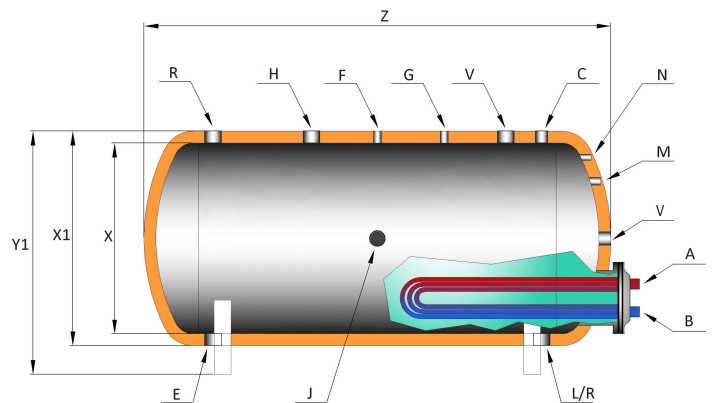
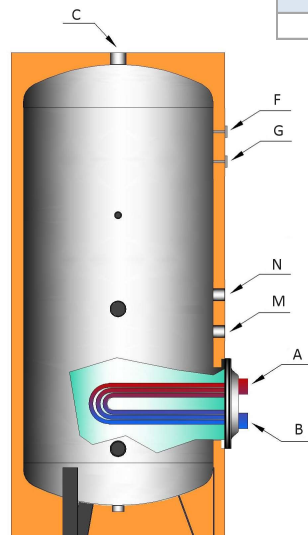
Connections

- | | |
|--------------------|--------------------------------|
| A Primary Inlet | J Immersion Heater |
| B Primary Outlet | L Drain |
| C Secondary Flow | M Control Sensor |
| D Secondary Return | N High Limit Thermostat |
| E Cold Feed | R De-Stratification Pump |
| F Thermometer | S Anti-Vacuum Valve (Optional) |
| G Pressure Gauge | V Anode |
| H Safety Valve | |

AL Design Details		
Characteristics	Standard	Optional
Tank Capacity	200 - 5000 Litre	
Arrangement	Vertical	
Tank Material	Stainless Steel 316L	Galvanised Steel Enamelled Carbon Steel Copper-Lined Carbon Steel
Coil Material	Stainless Steel 316L	Copper
Insulation	PLFH High Density Insulation & Cladding	Mineral Wool & Stucco or Aluzinc Cladding
Accessories	Standard	Optional
	Thermometer	Unvented Kit & Safety Valve
	Pressure Gauge	Immersion Heater
	Drain Valve	De-Stratification Pumpset
		Anode
Design Code		
European Pressure Equipment Directive 2014/64/CE		



Vertical Orientation



Horizontal Orientation

Indirect Storage Cylinders



The Arbe AB series of indirect cylinders are used for the production of potable domestic hot water through a fixed coil type heat exchanger. There are 2 options for materials on the vessels and either single or twin coil versions available. All vessels supplied with 50mm PLF insulation & a PVC jacket (100mm thick in the ABX800 and above). Aluminium cladding is available as an option. Sacrificial anodes are supplied with our enamelled steel storage cylinders as standard.

The standard range of indirect cylinders covers capacities from 150 to 2000 litres, available vertically for water primary medium

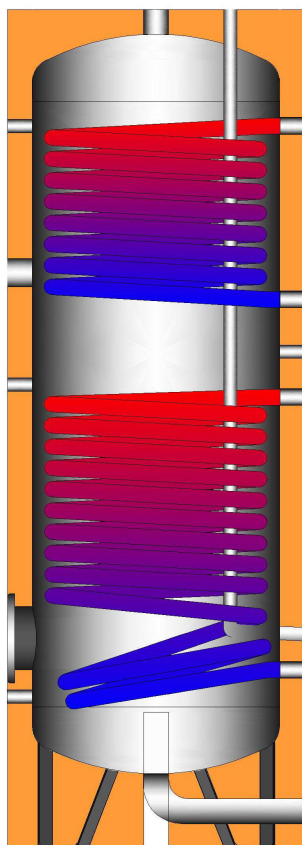
ABX - Stainless steel shell, AISI 316, with a fixed stainless steel coil(s)

ABG - Carbon steel shell, enamelled with the lining carried out in accordance with DIN4753

Our storage cylinders can be supplied with accessories either loose or factory fitted such as primary control packages and de-stratification pump sets

Renewable Energy

We can also supply our indirect cylinders with specially designed oversized lower coils for heat pump input



Energy Efficiency

All Arbe indirect storage cylinders are fully compliant with the latest Energy Efficiency Directive with improved energy efficiency classes, as shown on the table on the following page, compliant to Reg. 814/2013 (Dir. 2009/125/CE) with new legislation coming into force in September 2017



Warranty

All Arbe stainless steel storage cylinders have a minimum 5 year warranty on the shell, covering against all manufacturing defects. If we supply controls & commissioning, this can be extended to 8 years!

ABX Design Details		
Model	Maximum Temperature	Maximum Pressure
Shell - Secondary	99°C	8 BarG
Coil - Primary	99°C	10 BarG

ABG Design Details		
Model	Maximum Temperature	Maximum Pressure
Shell - Secondary	95°C	10 BarG
Coil - Primary	95°C	10 BarG



Indirect Storage Cylinders

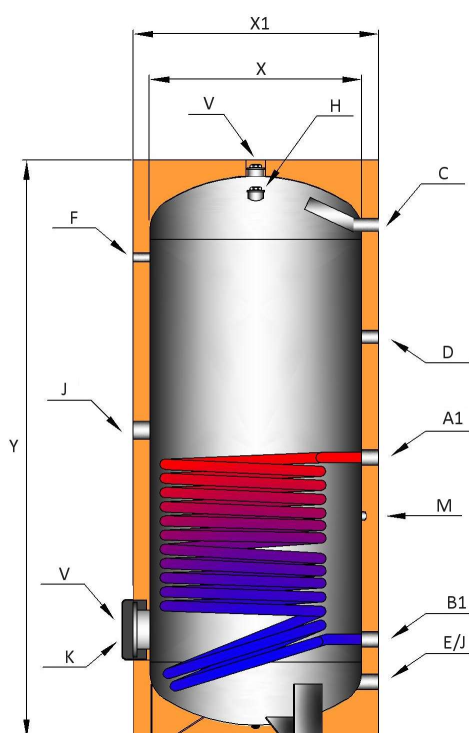
Please see details below for our stainless steel storage indirect cylinders. For the other versions with other shell materials, please refer to the Arbe indirect cylinder brochure

Dimensions		ABX Capacity (Litres)						
		200	300	500	800	1000	1500	2000
X1	mm	610	610	760	970	970	1200	1400
X	mm	500	500	650	790	790	1000	1200
Y	mm	1280	1670	1750	1830	2080	2290	2250
A	BSP	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"
B	BSP	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"
C	BSP	1"	1"	1"	1¼"	1¼"	1½"	1½"
D	BSP	¾"	¾"	¾"	¾"	¾"	¾"	¾"
E/L	BSP	1"	1"	1"	1¼"	1¼"	1¼"	1¼"
J	BSP	2"	2"	2"	2"	2"	2"	2"
K	mm	130	130	130	130	130	130	130
M	BSP	½"	½"	½"	½"	½"	½"	½"
V	BSP	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"
Coil Area (ADX1)	m ²	1.2	1.5	2.2	3.0	3.5	5.0	6.0
Lower Coil Area (ADX2)	m ²	1.0	1.5	2.0	2.5	3.0	5.0	6.0
Upper Coil Area (ADX2)	m ²	0.8	1.0	1.0	1.5	1.6	2.0	2.0
Energy Efficiency Class	Rating	C	C	C	C	C	C	C
ErP Compliant	W	67	81	102	113	121	143	169

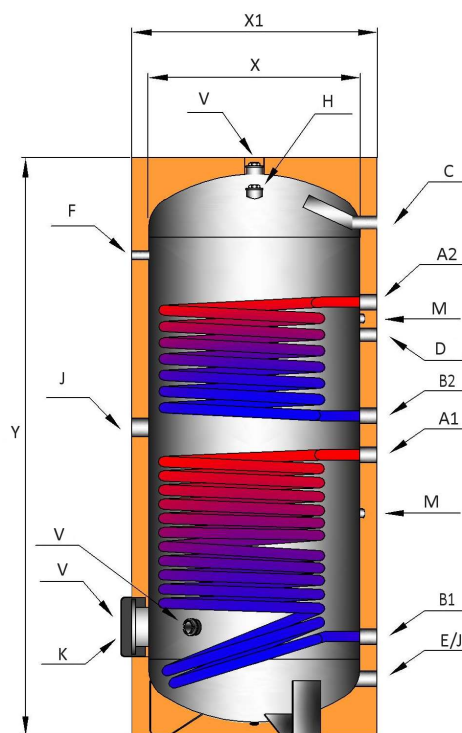
ABX Design Details		
Characteristics	Standard	Optional
Tank Capacity	200 - 2000 Litre	
Arrangement	Vertical	
Tank & Coil Material	Stainless Steel 316L	
Insulation	PLFH High Density Insulation & Cladding	
Accessories	Standard	Optional
	Thermometer	Unvented Kit & Safety Valve
	Drain Valve	Immersion Heater
		Anode
Design Code		
European Pressure Equipment Directive 2014/64/CE		

Connections

- A1 Lower Coil Primary Inlet
- B1 Lower Coil Primary Outlet
- A2 Upper Coil Primary Inlet
- B2 Upper Coil Primary Outlet
- C Secondary Flow
- D Secondary Return
- E/J Cold Feed / Drain
- F Gauge
- H Safety Valve
- J Immersion Heater
- K Inspection Opening
- M Sensor
- V Anode



Single Coil



Twin Coil



Direct Storage Cylinders

The Arbe AD series of direct cylinders are used for the storage of DHW & heating water, heated externally by heat sources such as plate heat exchangers, heat pumps, CHP units and solar thermal systems. All vessels supplied with 50mm PLF insulation & a PVC jacket (100mm thick in the ADX800 and above), but they can be factory fitted with mineral wool insulation and stucco aluminium or Aluzinc cladding, or without any insulation, if insulation is to be fitted on site. Sacrificial anodes are supplied with our enamelled and galvanised steel storage cylinders as standard.

There are 3 options for materials on the vessels.

ADX - Stainless steel shell, AISI 316

ADG - Carbon steel shell, enamelled with the lining carried out in accordance with DIN4753

ADZ - Galvanised steel shell

Our storage cylinders can be supplied with accessories either loose or factory fitted such as unvented kits and packaged with heat exchangers or other heat sources

Arbe also offer a direct cylinder for lighter applications such as for schools and hotels

ADXL - Duplex Stainless steel shell, for lighter applications



Energy Efficiency

All Arbe storage calorifiers are fully compliant with the latest Energy Efficiency Directive with improved energy efficiency classes, as shown on the table on the following page, compliant to Reg. 814/2013 (Dir. 2009/125/CE) with new legislation coming into force in September 2017

Warranty

All Arbe stainless steel storage cylinders have a minimum 5 year warranty on the shell, covering against all manufacturing defects. If we supply controls & commissioning, this can be extended to 8 years!

Model	Maximum Pressure	Maximum Temperature
ADX	6 BarG	99°C
ADG	6 BarG	70°C
ADZ	6 BarG	70°C



Direct Storage Cylinders

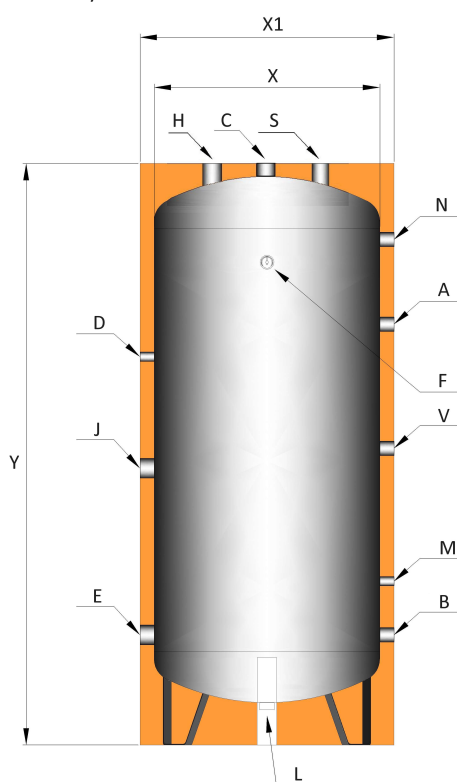
Please see details below for our stainless steel storage direct cylinders. For the other versions with other shell materials, please refer to the Arbe direct cylinder brochure

Dimensions		ADX Capacity (Litres)											
		200	300	500	800	1000	1500	2000	2050	2500	3000	4000	5000
X1	mm	550	650	750	1000	1000	1200	1400	1300	1300	1350	1500	1700
X	mm	450	550	650	800	800	1000	1200	1200	1200	1250	1400	1600
Y	mm	1510	1550	1840	1960	2210	2250	2170	2270	2600	2800	2880	2970
Y1	mm	660	760	860	1100	1100	1360	1550	1460	1510	1550	1700	1800
Z	mm	1400	1450	1730	1930	2180	2170	2110	2200	2500	2700	2800	2850
A	mm	1½"	1½"	1½"	2"	2"	2"	2"	2"	2"	2"	2"	2"
B	mm	1½"	1½"	1½"	2"	2"	2"	2"	2"	2"	2"	2"	2"
C	BSP	1½"	1½"	1½"	2"	2"	2½"	2½"	2½"	3"	3"	3"	3"
D	BSP	¾"	¾"	¾"	¾"	¾"	¾"	¾"	¾"	¾"	¾"	¾"	¾"
E	BSP	1½"	1½"	1½"	2"	2"	2½"	2½"	2½"	3"	3"	3"	3"
F	BSP	½"	½"	½"	½"	½"	½"	½"	½"	½"	½"	½"	½"
H	BSP	1"	1"	1"	1"	1"	1"	1"	1"	1"	1"	1"	1"
J	BSP	2"	2"	2"	2"	2"	2"	2"	2"	2"	2"	2"	2"
M	BSP	½"	½"	½"	½"	½"	½"	½"	½"	½"	½"	½"	½"
N	BSP	½"	½"	½"	½"	½"	½"	½"	½"	½"	½"	½"	½"
S	BSP	¾"	¾"	¾"	¾"	¾"	¾"	¾"	¾"	¾"	¾"	¾"	¾"
V	BSP	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"
Energy Efficiency Class ErP Compliant	Rating	B	B	C	C	C	C	C	-	-	-	-	-
	W	55	68	93	115	128	153	176	-	-	-	-	-

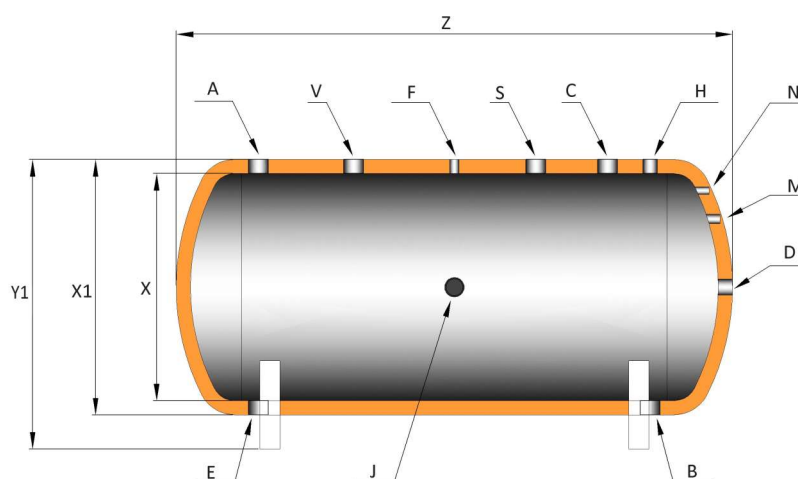
Connections

- | | |
|-------------------------|--------------------------------|
| A Flow from Heat Source | J Immersion Heater |
| B Return to Heat Source | L Drain |
| C Secondary Flow | M Sensor |
| D Secondary Return | N Sensor |
| E Cold Feed / Drain | S Anti-Vacuum Valve (Optional) |
| F Gauge | V Anode |
| H Safety Valve | |

ADX Design Details		
Characteristics	Standard	Optional
Tank Capacity	200 - 5000 Litre	
Arrangement	Vertical	
Tank Material	Stainless Steel 316L	
Insulation	PLFH High Density Insulation & Cladding	
Accessories	Standard	Optional
	Thermometer	Unvented Kit & Safety Valve
	Drain Valve	Immersion Heater
		Anode
Design Code		
European Pressure Equipment Directive 2014/64/CE		



Vertical Orientation



Horizontal Orientation

StorPlate SPP Semi-Instantaneous Water Heaters



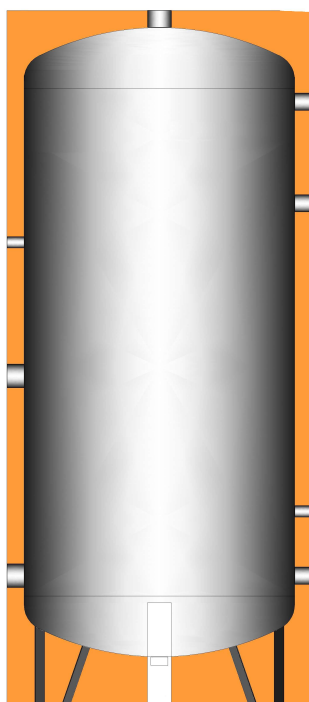
The Arbe SPP StorPlate series of semi-instantaneous water heaters are used for the production of DHW through an external gasketed plate heat exchanger & pump arrangement.

The SPP range of units have capacities from 200 litre to 5000 litre as standard. The heat outputs on this range start at 30 kW on all models with maximum outputs of 300 kW on the larger models, with other outputs available on request. The StorPlate SPP units can be supplied with factory fitted primary control systems with all controls and fixed or variable speed shunt pumps. The shell materials are stainless steel as standard with optional enamelled steel shells available

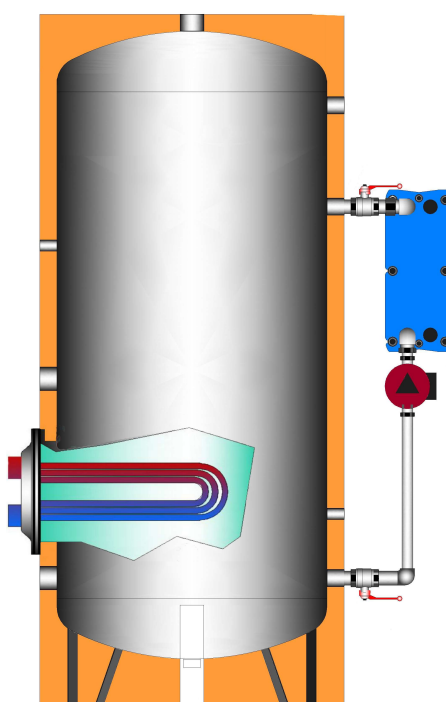
The SPP range of cylinders are also available with primary controls including the following options, both systems ensure compliance with G3 Building Regulations without the need for extra controls:

1. SPP - Standard StorPlate unit with no primary controls
2. SPPR - Standard StorPlate unit with a removable battery (solar or heat pump) no primary controls
3. SPPC - 3-port primary control valve and a fixed speed primary pump c/w PLC controls

The standard SPPC unit control panel is supplied with a programmable PLC controller with optional modules for BACnet, Trend & Modbus output & control. As standard, the unit is supplied with multiple outputs and the unit also has a pasteurisation setting available



StorPlate SPP



StorPlate SPPR



StorPlate SPPC



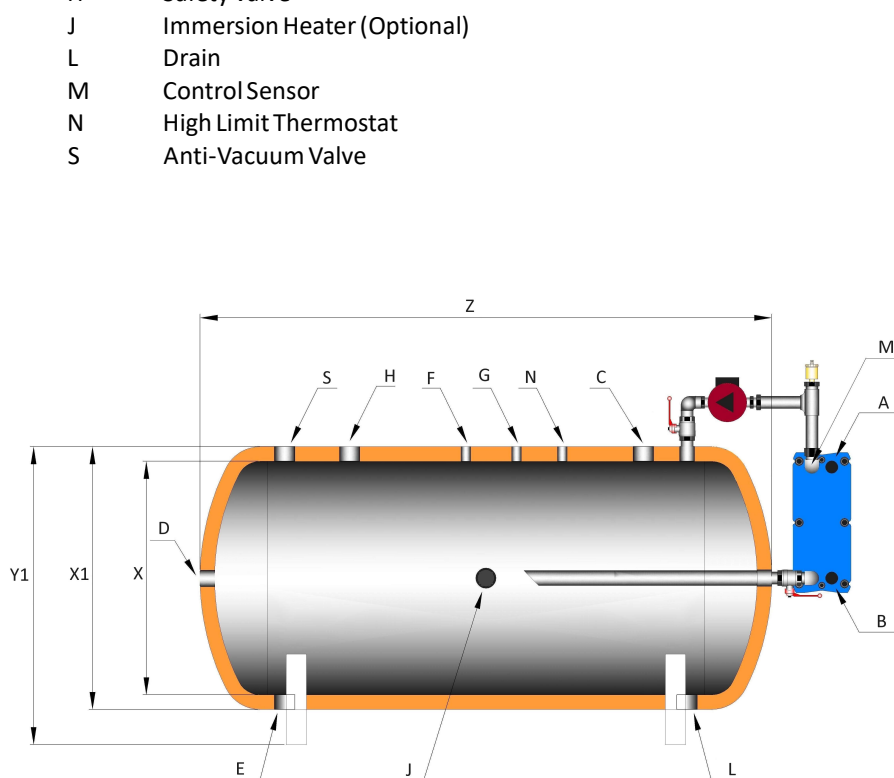
StorPlate SPP Semi-Instantaneous Water Heaters

Dimensions		SPP Capacity (Litres)											
		200	300	500	800	1000	1500	2000	2050	2500	3000	4000	5000
X1	mm	550	650	750	1000	1000	1200	1400	1300	1300	1350	1500	1700
X	mm	450	550	650	800	800	1000	1200	1200	1200	1250	1400	1600
Y	mm	1510	1550	1840	1960	2210	2250	2170	2270	2600	2800	2880	2970
Y1	mm	660	760	860	1100	1100	1360	1550	1460	1510	1550	1700	1890
Z	mm	1400	1450	1730	1930	2180	2170	2110	2200	2500	2700	2800	2850
A	BSP	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"
B	BSP	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"
C	BSP	1½"	1½"	1½"	2"	2"	2½"	2½"	2½"	3"	3"	3"	3"
D	BSP	¾"	¾"	¾"	¾"	¾"	¾"	¾"	¾"	¾"	¾"	¾"	¾"
E	BSP	1½"	1½"	1½"	2"	2"	2½"	2½"	2½"	3"	3"	3"	3"
F	BSP	½"	½"	½"	½"	½"	½"	½"	½"	½"	½"	½"	½"
G	BSP	½"	½"	½"	½"	½"	½"	½"	½"	½"	½"	½"	½"
H	BSP	¾"	¾"	¾"	¾"	¾"	¾"	¾"	¾"	¾"	¾"	¾"	¾"
J	BSP	2"	2"	2"	2"	2"	2"	2"	2"	2"	2"	2"	2"
L	BSP	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"
M	BSP	½"	½"	½"	½"	½"	½"	½"	½"	½"	½"	½"	½"
N	BSP	½"	½"	½"	½"	½"	½"	½"	½"	½"	½"	½"	½"
S	BSP	¾"	¾"	¾"	1"	1"	1"	1"	1"	1"	1"	1"	1"
Energy Efficiency Class ErP Compliant	Rating	B	B	C	C	C	C	C	-	-	-	-	-
	W	55	68	93	115	128	153	176	-	-	-	-	-

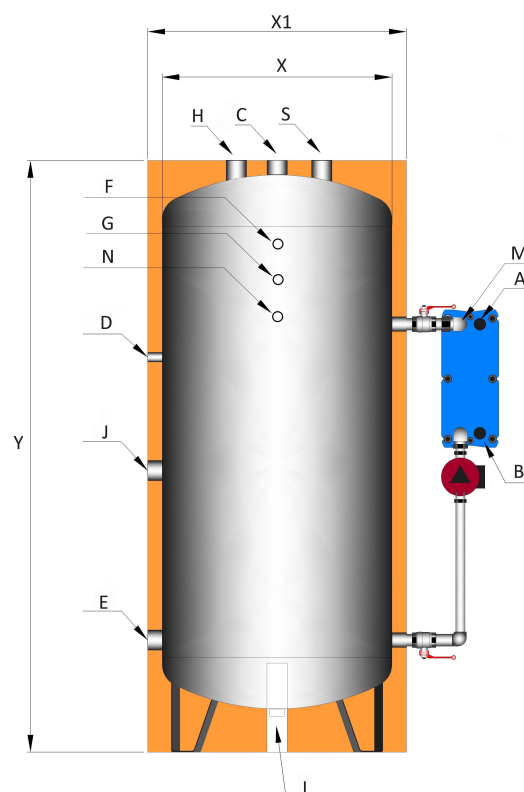
Connections

- A Primary Flow
- B Primary Return
- C Secondary Flow
- D Secondary Return
- E Cold Feed
- F Thermometer
- G Pressure Gauge
- H Safety Valve
- J Immersion Heater (Optional)
- L Drain
- M Control Sensor
- N High Limit Thermostat
- S Anti-Vacuum Valve

Model	Maximum Temperature	Maximum Pressure
SPPC		
Secondary Side	99°C	6 BarG
Primary Side	110°C	16 BarG



Horizontal Orientation



Vertical Orientation



StorPlate SPP-PS Instantaneous Hot Water Heaters

The Arbe SPP-PS StorPlate series of instantaneous water heaters are used for the production of DHW through an external gasketed plate heat exchanger, pump and controls arrangement. The unit has been designed to offer instantaneous domestic hot water whilst having primary storage to cover for any peak demands.

The standard SPP-PS range of units have capacities from 1000 litre to 5000 litre as standard. The heat inputs on this range start at 50 kW on all models with maximum inputs of 500 kW on the larger models, with other outputs and capacities available on request.

The StorPlate SPP-PS units are supplied with factory fitted primary control systems with all controls and high efficiency primary shunt pump, primary control valve and a programmable PLC control system,. The shell materials are carbon steel as standard with optional stainless steel shells available. All our units are compliant with L8 & The Pressure Equipment Directive

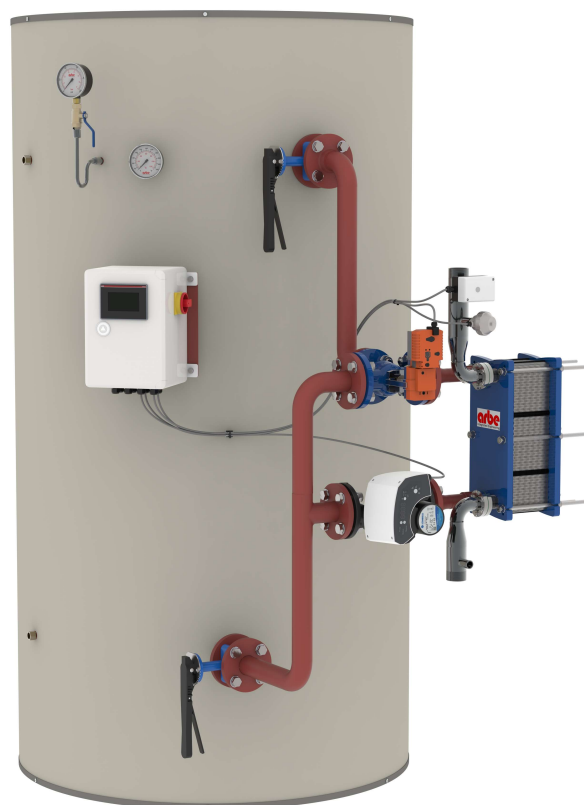
1. SPP-PS - Standard Direct StorPlate unit with primary controls
2. SPP-PSIND - Standard Indirect StorPlate unit with main primary heater battery and primary controls
3. SPP-PS-N - As our standard StorPlate SPP-PS unit but with a separate high limit valve installed
4. SPP-PSIND-N - Standard Indirect StorPlate unit with main primary heater battery and primary controls, supplied with a separate high limit valve installed

The units are supplied as either:

1. Direct - Fed from an external boiler and taking heat from a boiler or heat recovery system to charge the primary store
2. Indirect - The primary vessel is heated indirectly via the vessel mounted heater battery. This can be fed from a primary water medium with a temperature higher than 95 DegC or from steam, with steam pressures up to 12 BarG as standard

Our indirect systems can also be used to feed LTHW systems from the vessel, which would be incorporated into the design, negating the need for a separate heating package.

We can supply all necessary equipment for the primary heat input system and can assist with any system integration with existing circuits.



StorPlate SPP-PS

StorPlate SPP-PS Instantaneous Hot Water Heaters



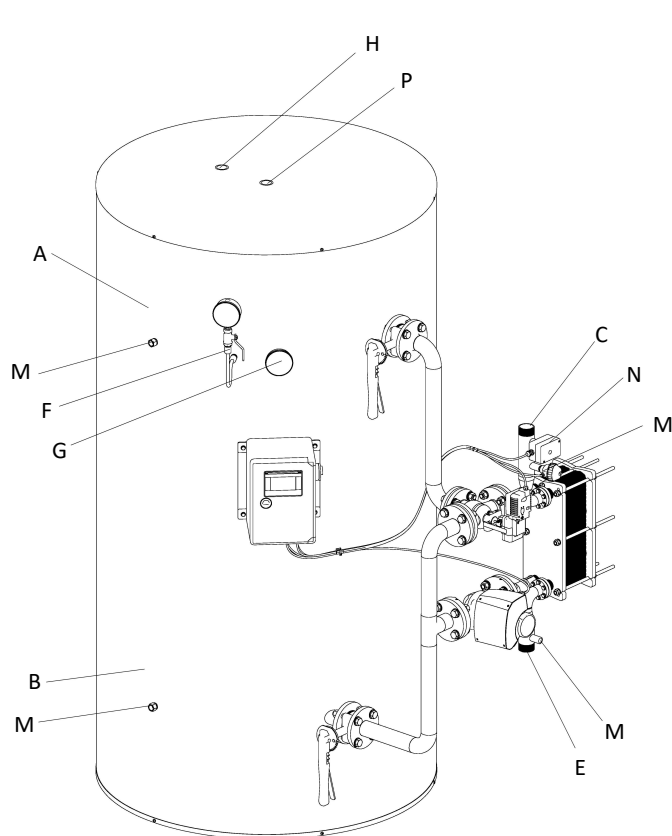
Dimensions		SPP-PS Type A Capacity (Litres)					
		500	1000	2000	3000	4000	5000
Overall Width	mm	1575	1725	2025	2175	2325	2500
Overall Depth	mm	1200	1400	1500	1650	1800	2000
Overall Height	mm	1630	2060	2460	2840	2920	3010
Energy Efficiency Class	Rating	C	C	C	-	-	-
ErP Compliant	W	81	128	176	-	-	-

Dimensions		SPP-PS Type B Capacity (Litres)					
		500	1000	2000	3000	4000	5000
Overall Width	mm	1675	1825	2125	2275	2425	2600
Overall Depth	mm	1400	1500	1600	1750	1950	2200
Overall Height	mm	1630	2060	2460	2840	2920	3010
Energy Efficiency Class	Rating	C	C	C	-	-	-
ErP Compliant	W	81	128	176	-	-	-

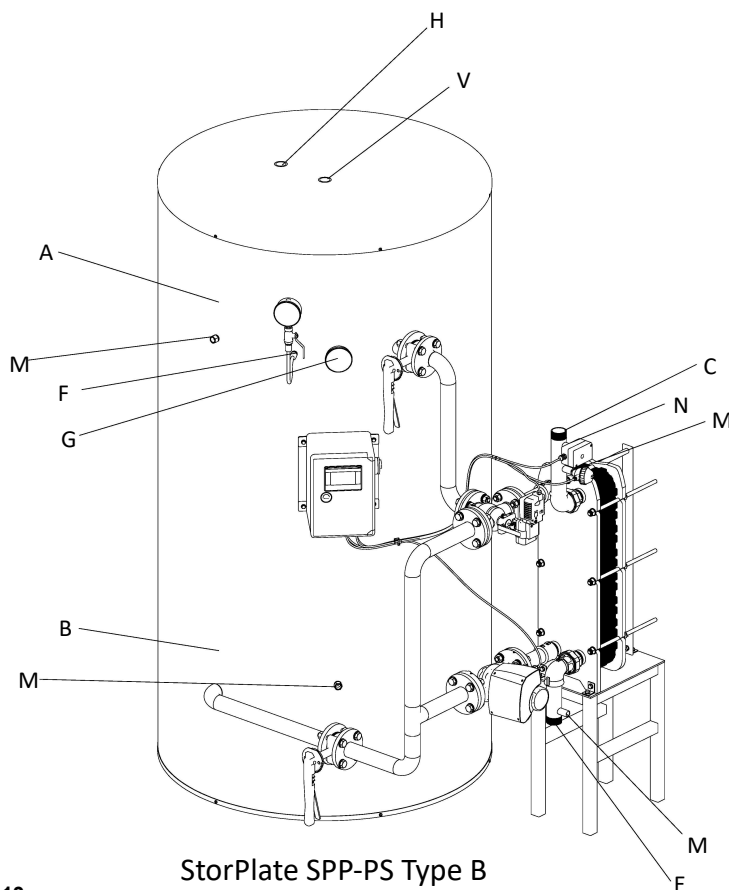
Connections

- A Primary Flow
- B Primary Return
- C Secondary Flow
- E Cold Feed
- F Thermometer
- G Pressure Gauge
- H Safety Valve
- J Immersion Heater (Optional)
- L Drain
- M Control Sensor
- N High Limit Thermostat
- P Vent

Model	Maximum Temperature	Maximum Pressure
SPP-PS (Direct) Secondary Side	95°C	10 BarG
Primary Side	110°C	6 BarG
SPP-PSIND (Indirect) Secondary Side	95°C	10 BarG
Primary Side (Shell)	110°C	6 BarG
Primary Side (Battery)	191.6°C	12 BarG



StorPlate SPP-PS Type A



StorPlate SPP-PS Type B

Thermal Stores



Arbe Integrated Engineering offer various type of thermal stores to suit multiple applications. These are split into 3 types:

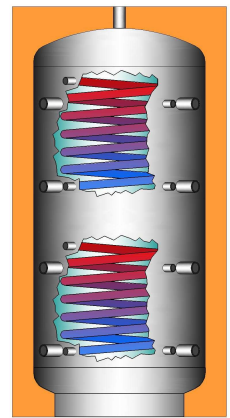
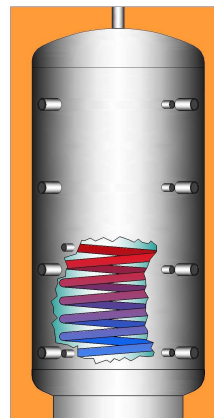
AF - Traditional thermal stores with multiple connections to suit various system designs. The AF range of vessels are bespoke to each application



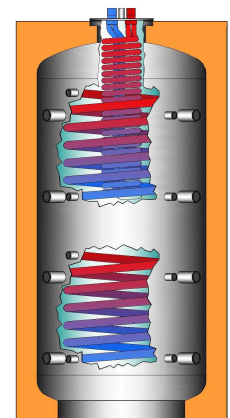
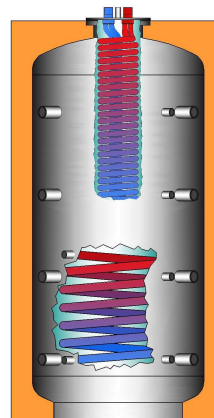
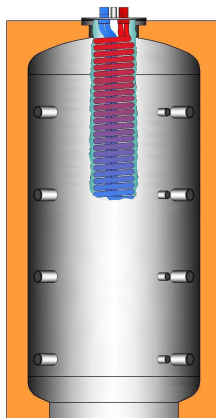
Each vessel is supplied with 4 off system connections and other connections as listed. The vessels can also be supplied with 3 off sensor connections for use with equipment such as CHP units or biomass boilers

AF – Carbon steel shell
AFZ – Galvanised steel shell
AFS – Stainless steel shell

AF-PV - Thermal stores for systems with various heat input circuits, available as a standard design. The vessels are carbon steel as standard. Please refer to product brochure for further details.



AF-RM - Multi-functional vessel with various heat inputs and DHW production for small systems. The vessels are carbon steel as standard. Please refer to product brochure for further details.

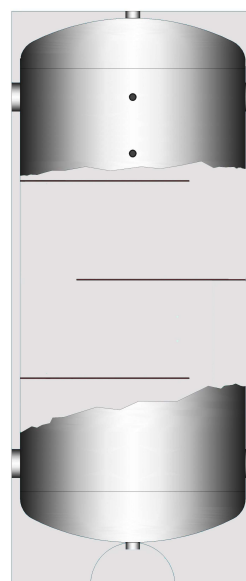
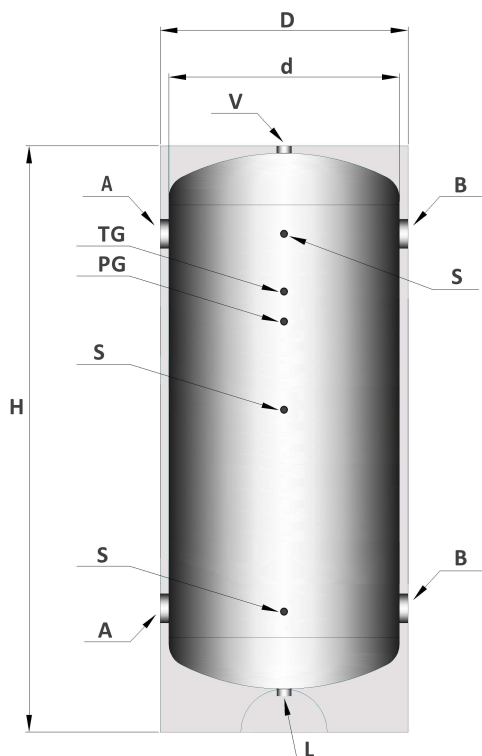




Thermal Stores



Energy Efficiency Class	AF Capacity (Litres)							
	100	200	300	500	800	1000	1500	2000
Rating	B	B	B	C	C	C	C	C
W	50	55	68	93	115	128	153	176



AF VESSEL WITH
BAFFLE PLATES



AF VESSEL WITH
PERFORATED PLATE

AF Capacity (Litres)	Dimensions & Connection Sizes											
	D	d	H	L	H1	A	B	S	TG	PG	L	V
100	510	400	1000	855	580	1"	1"	½"	½"	½"	1¼"	½"
200	560	450	1400	1240	630	2"	2"	½"	½"	½"	1¼"	½"
300	660	550	1420	1260	730	2"	2"	½"	½"	½"	1¼"	½"
500	760	650	1660	1520	830	DN65	DN65	½"	½"	½"	1¼"	½"
800	910	800	1820	1645	980	DN80	DN80	½"	½"	½"	1¼"	½"
1000	1000	800	2070	1895	980	DN100	DN100	½"	½"	½"	1¼"	½"
1500	1150	950	2450	2295	1180	DN100	DN100	½"	½"	½"	1¼"	½"
2000	1300	1100	2570	2325	1330	DN100	DN100	½"	½"	½"	1¼"	½"
2500	1450	1250	2600	2435	1480	DN100	DN100	½"	½"	½"	1¼"	½"
3000	1450	1250	2800	2635	1480	DN100	DN100	½"	½"	½"	1¼"	½"
3500	1600	1400	2550	2375	1630	DN150	DN150	½"	½"	½"	1¼"	½"
4000	1600	1400	2880	2705	1630	DN150	DN150	½"	½"	½"	1¼"	½"
4500	1800	1600	2650	2475	1830	DN150	DN150	½"	½"	½"	1¼"	½"
5000	1800	1600	2960	2785	1830	DN150	DN150	½"	½"	½"	1¼"	½"
6000	2000	1800	2850	2675	2030	DN150	DN150	½"	½"	½"	1¼"	½"
7000	2000	1800	3250	3075	2030	DN150	DN150	½"	½"	½"	1¼"	½"
8000	2200	2000	3160	2985	2230	DN150	DN150	½"	½"	½"	1¼"	½"
9000	2200	2000	3380	3205	2230	DN150	DN150	½"	½"	½"	1¼"	½"
10000	2400	2200	3180	3005	2430	DN150	DN150	½"	½"	½"	1¼"	½"

Chilled Water Vessels



The AV Range of vessels are primarily for use on chilled water systems, supplied pre-insulated and are designed for single circuit systems, for inertia purposes to increase the system volume and for dual circuits where a peak load needs to be covered. The range covers capacities from 200 litres to 5,000 litres. The shell is manufactured from mild steel as standard, but galvanised steel and stainless steel vessels are also available. Vessels are available vertically or horizontally. There are 4 models that offer variations such as a vessel with baffle plates, a perforated divider plate or with sparge pipes for even distribution of water, and material options

AVT – Carbon steel shell, open vessel

AVZ – Galvanised steel shell, open vessel

AVS – Carbon steel shell, with perforated central divider plate

AVP – Carbon steel shell, with multiple flow divider plates

AVX – Stainless steel shell, AISI 316



Connections

E	Inlet
U	Outlet
T	Thermometer
SD	Sensor
SF	Vent
S	Drain

Insulation

100 to 1000 litre vertical:	30mm hard foam polyurethane
1500 to 5000 litre vertical:	20mm closed cell elastomer
100 to 5000 litre horizontal:	20mm closed cell elastomer

Casing

Standard:	PVC cladding with zipper fastening
Optional:	Stucco Aluminium or Aluzinc casing

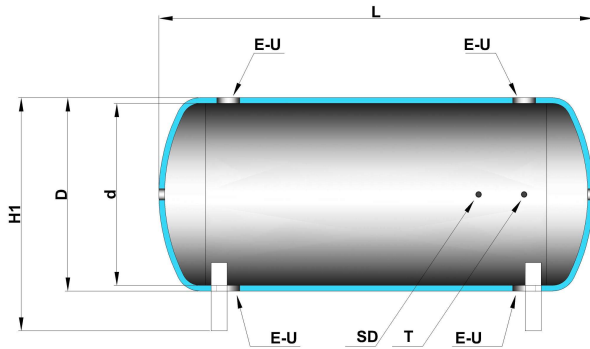
Model	Maximum Pressure	Maximum Temperature
AVT	6 BarG	-10/50 DegC
AVZ	6 BarG	-10/50 DegC
AVX	6 BarG	-10/45 DegC
AVP	6 BarG	-10/50 DegC
AVS	6 BarG	-10/50 DegC

Dimensions (AVT/AVZ Carbon Steel)		AVT & AVZ Capacity (Litres)											
		100	200	300	500	800	1000	1500	2000	2500	3000	4000	5000
D	mm	460	510	610	710	860	860	1000	1150	1300	1300	1450	1650
d	mm	400	450	550	650	800	800	950	1100	1250	1250	1400	1600
H	mm	1000	1400	1420	1660	1820	2070	2450	2500	2600	2800	2880	2960
L	mm	855	1240	1260	1520	1645	1895	2295	2325	2435	2635	2645	2765
H1	mm	580	630	730	830	980	980	1180	1330	1480	1480	1680	1880
E-U	BSP	1½"	2"	2½"	3"	3"	3"	3"	3"	3"	4"	4"	4"
T / SD	BSP	½"	½"	½"	½"	½"	½"	½"	½"	½"	½"	½"	½"
SF / S	BSP	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"

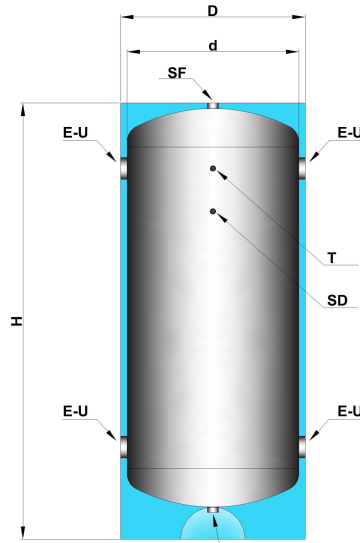
Dimensions (AVS/AVP Carbon Steel)		AVS & AVP Capacity (Litres)											
		100	200	300	500	800	1000	1500	2000	2500	3000	4000	5000
D	mm	-	-	610	710	860	860	1000	1150	1300	1300	1450	1650
d	mm	-	-	550	650	800	800	950	1100	1250	1250	1400	1600
H	mm	-	-	1420	1660	1820	2070	2450	2500	2600	2800	2880	2960
E-U	BSP	-	-	2½"	3"	3"	3"	3"	3"	3"	4"	4"	4"
T / SD	BSP	-	-	½"	½"	½"	½"	½"	½"	½"	½"	½"	½"
SF / S	BSP	-	-	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"

Dimensions (AVX Stainless Steel)		AVX Capacity (Litres)											
		100	200	300	500	800	1000	1500	2000	2500	3000	4000	5000
D	mm	460	510	610	660	860	860	990	1140	1140	1290	1440	1640
d	mm	400	450	550	600	800	800	950	1100	1100	1250	1400	1600
H	mm	970	1395	1440	1880	1870	2120	2385	2430	2730	2750	2810	2840
L	mm	900	1325	1370	1810	1770	2020	2285	2330	2610	2630	2960	2720
H1	mm	580	630	730	830	1080	1080	1180	1330	1480	1480	1680	1880
E-U	BSP	1½"	2"	2½"	3"	3"	3"	3"	3"	3"	4"	4"	4"
T / SD	BSP	½"	½"	½"	½"	½"	½"	½"	½"	½"	½"	½"	½"
SF / S	BSP	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"

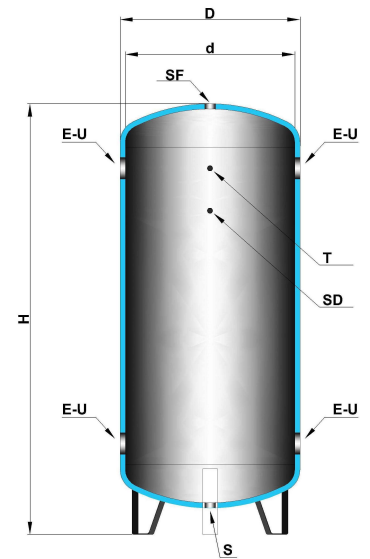
Chilled Water Vessels



AVT, AVZ & AVX - Horizontal



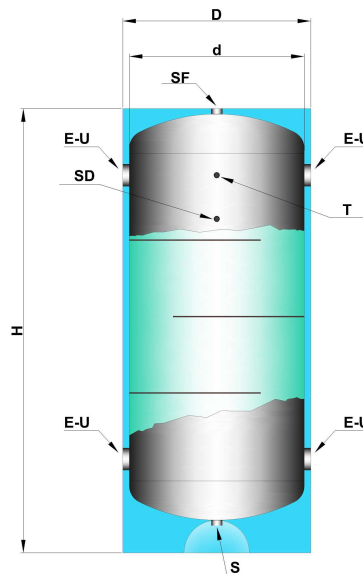
AVT, AVZ & AVX - Vertical
300 to 1000 Litre



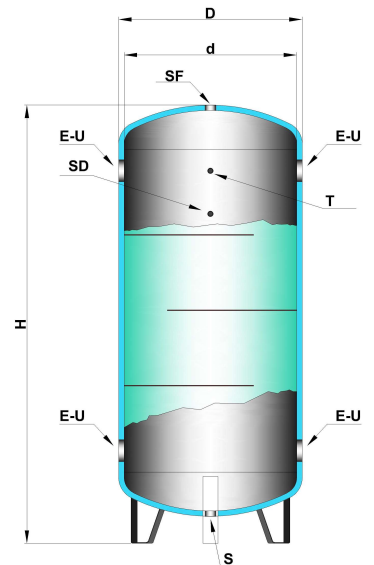
AVT, AVZ & AVX - Vertical
1500 to 5000 Litre



500 Litre AVS Vertical
Vessel with Polyurethane
Insulation & Aluminium Cladding



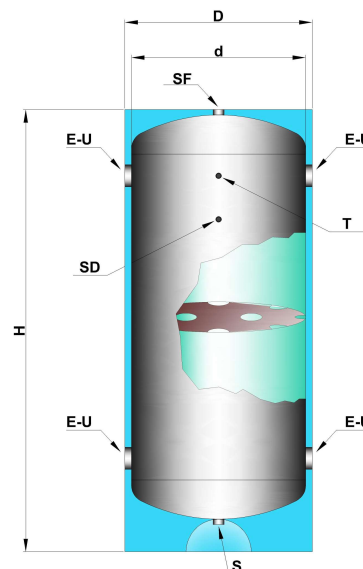
AVS Vertical
300 to 1000 Litre



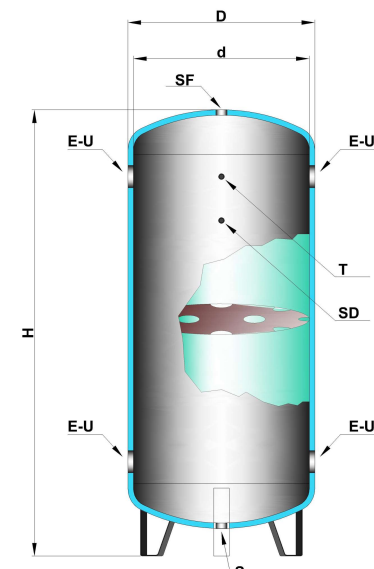
AVS Vertical
1500 to 5000 Litre



1500 Litre AVS Vertical
Vessel with Closed-Cell
Elastomer Insulation



AVP Vertical
300 to 1000 Litre



AVP Vertical
1500 to 5000 Litre

Plate Heat Exchangers



Arbe Integrated Engineering offer a range of heat exchangers for various applications in various forms. Our APS range of plate heat exchangers offer the perfect heat transfer solution giving optimum performance and high quality products. High performance plate heat exchangers consist of a number of formed, sealable heat exchanger plates. The alternating pressed plate sequence cause highly turbulent flow behaviour, optimal self-cleaning effect and high heat transfer. We have many years experience in the design and supply of heat exchangers, as stand-alone items or as a packaged unit supplied with integral equipment and controls, such as pumps, control valves and factory wired control panels.

Our complete expertise in the industry guarantees that our products will fulfill your requirements with our design excellence and high quality products.

Primary Heat Sources

We have products to suit every primary heating medium including:

LTHW / LPHW – Primary circuits with a maximum temperature of 85-90°C

MTHW – Primary circuits with a maximum temperature of 120°C

HTHW – Primary circuits with a water temperature above 150°C

Steam – To suit steam pressures up to 20 BarG (requiring specialised controls by Arbe)

Condensate – Condensate drains from other steam equipment can be used to preheat water and also can cool condensate down to workable levels

Waste Heat – Heat from processes such as CHP or flue gases can be utilised to heat domestic water, either as a preheat or if the heat load and temperatures are sufficient, as the primary heat source

Solar – Heat from solar thermal panels, from either secondary or primary fed circuits - see the Arbe solar brochure for further details

Secondary Heat Sources

DHW – Secondary circuits with a maximum temperature of 65°C, suitable for potable water systems. Higher temperatures would not be recommended in potable water systems unless for process applications such as wash down

LTHW / LPHW – Primary circuits with a maximum temperature of 85-90°C

MTHW – Primary circuits with a maximum temperature of 120°C

Insulation

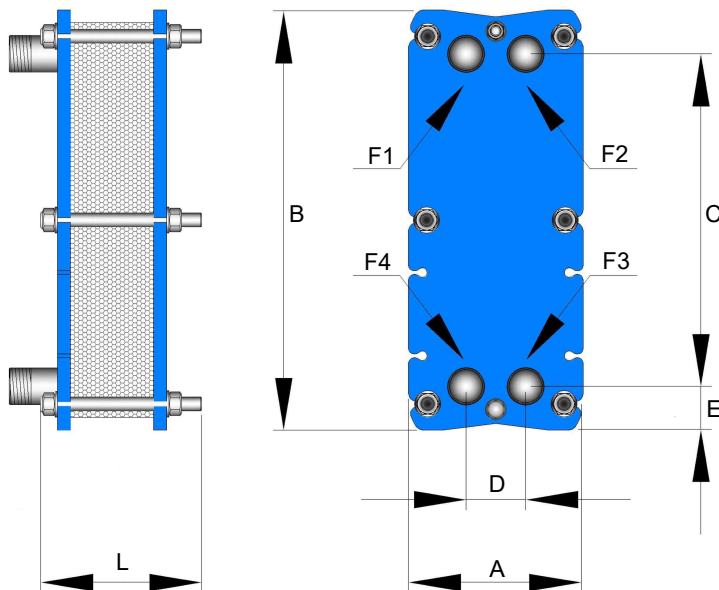
Our plate heat exchangers can be supplied with either insulation boxes or bags.





Plate Heat Exchangers

Model	Dimensions (mm)					Maximum Pressure (BarG)	Connection Size
	A	B	C	D	L		
APK032-480	200	480	380	68	240, 340 or 420	16	1½" BSP
APK032-756	200	756	656	70	240, 340 or 420	16	1½" BSP
APK050-605	303	605	394	126	400 or 700	16	2" BSP
APK050-906	303	906	694	126	400 or 700	16	2" BSP
APK050-1193	303	1193	894	126	400 or 700	16	2" BSP
APK065-982	395	982	700	192	400, 700 or 1100	16	DN65
APK065-1332	395	1332	1050	192	400, 700 or 1100	16	DN65
APK100A-1082	460	1082	719	225	400, 700, 1100 or 1400	16	DN100
APK100B-1082	460	1082	719	225	400, 700, 1100 or 1400	16	DN100
APK100-1727	460	1727	1365	296	700, 1100 or 1400	16	DN100
APK150-1545	608	1545	890	296	635, 1115, 1645 or 2145	16	DN150
APK150-1947	608	1947	1292	296	635, 1115, 1645 or 2145	16	DN150
APK150-2350	608	2350	1694	296	635, 1115, 1645 or 2145	16	DN150



Our APK heat exchangers can be supplied with feet, support brackets (depending on the model) and insulation jackets.



Brazed Heat Exchangers



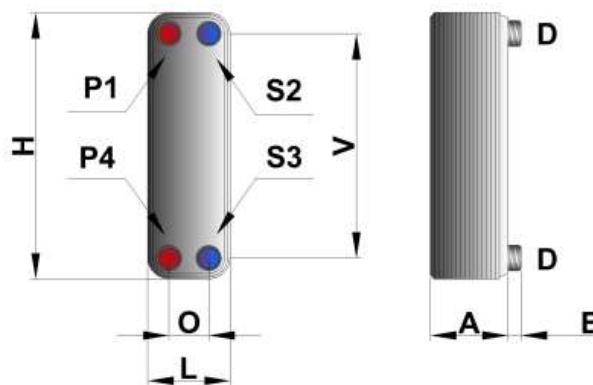
Arbe Integrated Engineering offers a range of brazed heat exchangers for various applications in various forms. Our PB range of brazed heat exchangers offer an optimum heat transfer solution and a high quality product. Brazed heat exchangers are ideal for low duty applications, or applications with a wide temperature range. High performance plate heat exchangers consist of a number of formed and fixed heat exchanger plates. The alternating pressed plate sequence cause highly turbulent flow behaviour, optimal self-cleaning effect and high heat transfer.

We have many years experience in the design and supply of heat exchangers, as stand-alone items or as a packaged unit supplied with integral equipment and controls, such as pumps, control valves and factory wired control panels.

Our complete expertise in the industry guarantees that our products will fulfill your requirements with our design excellence and high quality products.

Summary

- Pressure from vacuum up to 40 BarG
- High heat transfer coefficient
- Compact design
- Low pressure drop
- Heat transfer surfaces from 0.14 - 58m²
- Usable in temperatures from -100°C to 250°C
- Low algorithmic temperature differences
- Low weight compared to tubular heat exchangers
- Good self-cleaning due to high velocities
- Can be used as a heat exchanger, condenser or evaporator



Model	Dimensions (mm)					Area m ²	Connection Length	Connection Size (BSP)	Maximum Temperature (DegC)	Maximum Pressure (BarG)	Weight Empty (kg)
	H	L	O	V	A						
ABV15	200	90	46	159	7 + (np x 2.3)	0.015 x (np - 2)	20	¾"	200	30	1 + (np x 0.08)
ABV26	310	111	50	250	9 + (np x 2.4)	0.026 x (np - 2)	20	1"	200	30	1.3 + (np x 0.13)
ABV50	525	111	50	466	10 + (np x 2.4)	0.05 x (np - 2)	20	1"	200	30	2 + (np x 0.23)
ABV95	616	191	92	519	11 + (np x 2.8)	0.095 x (np - 2)	20	2"	200	30	7.8 + (np x 0.44)

CT Corrugated Tube Heat Exchangers



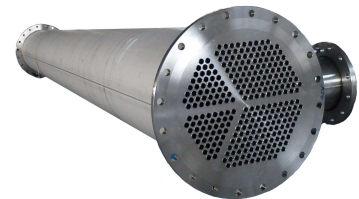
The Arbe range of CT corrugated tube heat exchangers offer a compact and economical solution for heat transfer requirements. Used to provide heat generation in process and building services applications, the CT range is a simple solution to any project specifications, which can be adapted to suit specific requirements with equipment to form part of a complete bespoke package. The CT range is ideal for steam applications with high steam pressures and also superheated steam systems and can be supplied as part of a complete package, the HevaSteam-S unit, supplied with all necessary steam controls and condensate handling equipment

Our complete expertise in the industry guarantees that our products will fulfill your requirements with our design excellence and high quality products.

Heat Sources

We have products to suit every primary and secondary heating mediums including:

- **Steam**
- **LTHW / LPHW**
- **MTHW**
- **HTHW**
- **Condensate**
- **Solar**

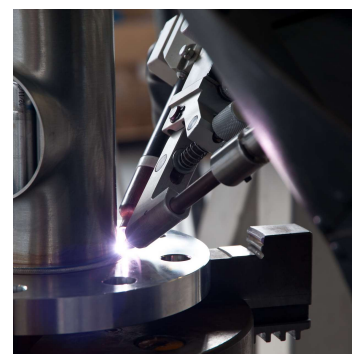


Sizes

Our units are designed for each application and standard sizes are available from 60mm o/d to 273mm o/d with lengths ranging from 1000mm to 6000mm. The units can be packaged together in series or parallel depending on the application within a purpose built stainless steel frame

Summary

- Pressure from vacuum up to 16 BarG as standard, higher pressures on request
- High heat transfer coefficient
- Compact design
- Low pressure drop
- Heat transfer surfaces from 0.14 - 58m²
- Usable in temperatures up to 210°C
- Low algorithmic temperature differences
- Good self-cleaning due to high velocities
- Can be used as a heat exchanger, condenser or evaporator



HevaMod Heat Exchanger Packages



Our HevaMod range of heat exchanger packages are designed with the customer in mind, offering various options to suit each application. The units are supplied as standard with gasketed plate heat exchangers and range from 50 kW up to 2,000 kW as standard, with larger units available if required. The HevaMod units are designed to operate with a primary water medium and have the following options:

HM - 3 port primary control valve and fixed speed pump (single or twin head)

HME - Variable speed primary pump c/w shut-off valve

HMP - 2 or 3 port primary control valve with no pump

The Arbe range of HevaMod packaged plate heat exchangers offer a compact and economical solution for heat transfer requirements. Used to provide heat generation in addition to providing pressure breaks in a system, the HevaMod range is a simple solution to any project specifications, which can be adapted to suit specific requirements with additional equipment integrated within the package.

- Dedicated ranges for domestic hot water production, heating water production (LTHW, MTHW & HTHW) & chilled water production
- Standard units with duties from 30 kW to 2000 kW, with special models available up to 10,000 kW
- Standard units with a programmable PLC controller with optional modules for BACnet, Trend & MODbus output & control
- As standard, the unit is supplied with multiple outputs and the unit also has a pasteurisation setting available
- Small unit size with high heat transfer capacity
- High resistance to pressure and temperature fluctuations
- Cost efficiency
- Stainless steel connections
- Easy installation

Applications:

- Domestic hot water
- Heating systems (LTHW, MTHW & HTHW)
- Cooling systems
- Solar and Geothermic Heating
- Industrial Process Heat recovery
- Condensers and evaporators in refrigeration systems
- Oil coolers
- Close approach fluid-to-fluid heat transfer

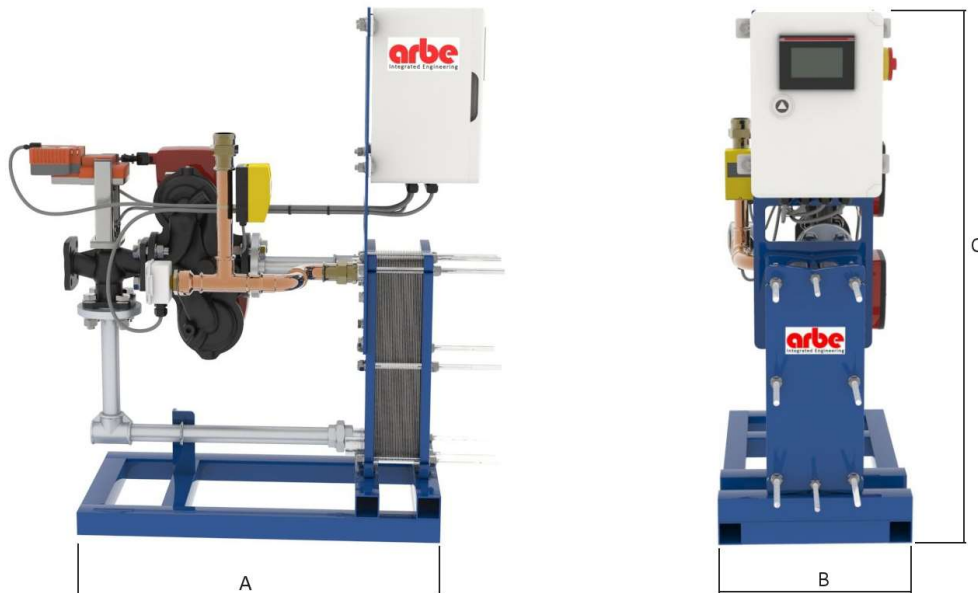


Twin Primary - Single Secondary



Single Primary - No Secondary

HevaMod Heat Exchanger Packages



Model	Duty kW	Primary Flow Litres/Second	Secondary Flow Litres/Second	Pri Excess Pump Pressure	Sec. Pressure Drop (kPa)	Dimensions		
						A	B	C
HM50-*P*S	50	0.40	0.24	18.0	3.9	900	550	1075
HM75-*P*S	75	0.60	0.36	16.0	4.8	900	550	1075
HM100-*P*S	100	0.79	0.48	15.0	5.3	900	550	1075
HM125-*P*S	125	0.99	0.60	16.0	5.8	900	550	1075
HM150-*P*S	150	1.19	0.72	15.0	6.2	900	550	1075
HM200-*P*S	200	1.59	0.96	18.0	6.8	900	550	1075
HM250-*P*S	250	1.99	1.19	20.0	7.4	900	550	1075
HM300-*P*S	300	2.38	1.43	19.0	8.5	900	550	1075
HM350-*P*S	350	2.78	1.67	22.0	9.1	900	550	1075
HM400-*P*S	400	3.18	1.91	16.0	19.0	900	550	1075
HM450-*P*S	450	3.57	2.15	16.0	18.2	1100	650	1450
HM500-*P*S	500	3.97	2.39	18.0	18.6	1100	650	1450
HM600-*P*S	600	4.77	2.87	20.0	17.6	1100	650	1450
HM700-*P*S	700	5.56	3.34	15.0	19.8	1100	650	1450
HM800-*P*S	800	6.36	3.82	16.0	19.6	1100	650	1450
HM900-*P*S	900	7.15	4.30	18.0	19.2	1100	650	1450
HM1000-*P*S	1000	7.94	4.78	19.0	19.3	1100	650	1450
HM1100-*P*S	1100	8.74	5.25	22.0	19.4	1400	800	1600
HM1250-*P*S	1250	9.93	5.97	21.0	18.6	1400	800	1600
HM1500-*P*S	1500	11.92	7.17	20.0	19.4	1400	800	1600
HM1750-*P*S	1750	13.90	8.36	16.0	18.0	1400	800	1600
HM2000-*P*S	2000	15.89	9.55	18.0	18.5	1400	800	1600

Selection

*P*S - Refers to pump selection

* - 0=no secondary pump : 1=single secondary pump : 2=twin secondary pump

* - 0=no primary pump : 1=single primary pump : 2=twin primary pump



HevaPak Bespoke Heat Exchanger Packages

Arbe design and manufacture various types of HevaPak HPDH district heating substations for various clients. The systems can be supplied with our own control systems or site specific control packages as required.

Applications:

- HevaPak-DH - District Heating systems
- HevaPak-PW - Domestic Hot Water
- HevaPak-CH - Chilled Water & Cooling systems
- Hevapak-HR - Heat Recovery Systems

HevaPak-DH - District Heating systems

Arbe design and manufacture various types of HevaPak DHS district heating substations for various clients. The systems can be supplied with our own control systems or site specific control packages as required. Our HevaPak-DH packages are supplied as standard with full certification where required and a documentation pack which includes as a minimum:

- Material certification
- Welder approval certification
- Weld procedure certification
- Full PED/CE certification for the packages
- Full operating and maintenance manuals

HevaPak DHS packaged plate heat exchangers are designed and manufactured to the latest standards and are fully compliant with the Pressure Equipment Directive.

Arbe have supplied various district heating substations for various clients including local government subsidiaries and national waste and environmental companies.





HevaPak Bespoke Heat Exchanger Packages

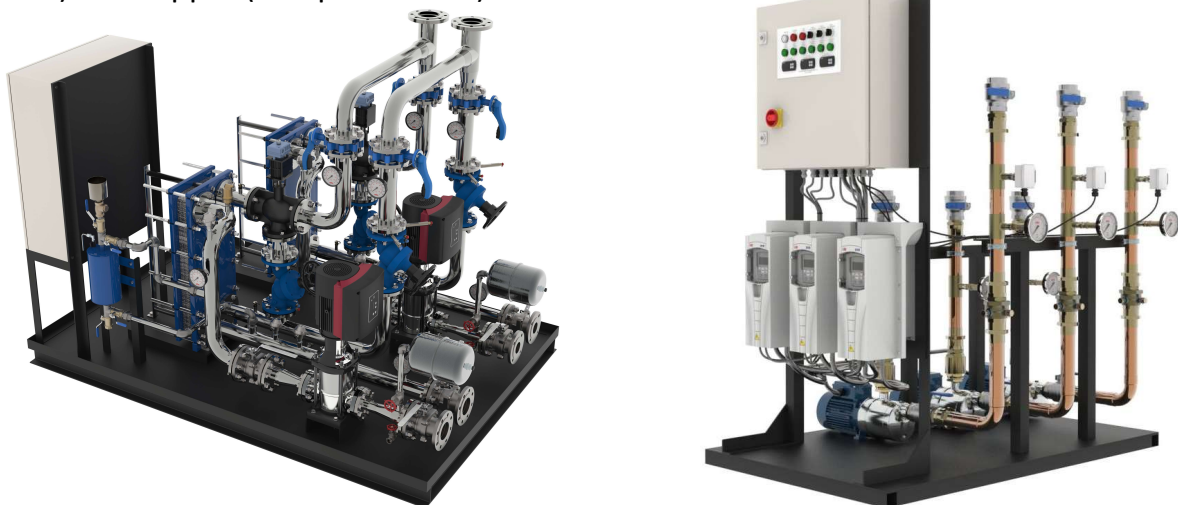
HevaPak-PW - Domestic Hot Water

Our HevaPak-PW packages are bespoke for the application and are supplied with all required/specified equipment, such as control valves, pumps, valving and controls. These are designed specifically for potable water systems. The packages are manufactured from materials suitable for the application. These include stainless steel (crimp, welded or screwed) and copper (crimp or brazed), with primary materials to suit the specification.



HevaPak-CHW - Chilled Water

Our HevaPak-CHW packages are designed for installation on chilled water systems and bespoke for the application. The packages are supplied with all required/specified equipment, such as control valves, pumps, valving and controls. These are designed specifically for chilled water systems and supplied with bundled bases with drain connections. The packages are manufactured from materials suitable for the application. These include stainless steel (crimp, welded or screwed) and copper (crimp or brazed).



All our packages are supplied plug-and-play and can be fully commissioned by our engineers after installation on site. All required certification and operating & maintenance manuals are supplied for each package.

HevaSteam Heat Exchanger Packages



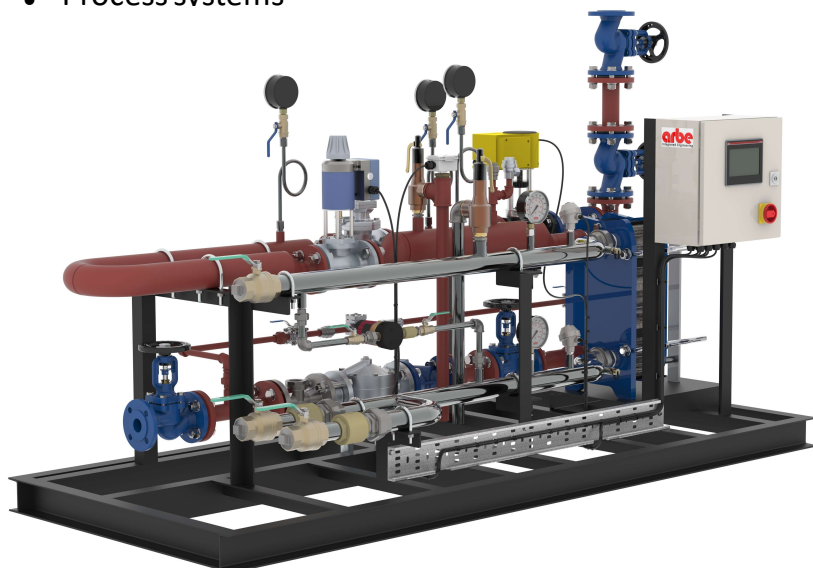
The Arbe range of HevaSteam packaged steam/water heat exchangers offer a compact and economical solution for heat transfer requirements. The HevaSteam unit is a self-contained unit, with all the required equipment and controls to ensure safe & efficient operation. The unit is supplied with a steam trapping system as standard for condensate control, but can also be supplied with steam pumps, both mechanically and electrically operated.

- Dedicated ranges for domestic hot water production & heating water production (LTHW, MTHW & HTHW)
- Standard units with primary duties from 35 kW to 11,000 kW, with special models available up to 30,000 kW
- Standard units with PID controllers, with BACnet control options and PLC controls & touch-screen technology also available
- Control options with tight temperature tolerance for critical process operations
- Available with either APK plate heat exchangers or CT shell & tube heat exchangers
- Small unit size with high heat transfer capacity
- High resistance to pressure and temperature fluctuations
- Cost efficiency
- Stainless steel connections
- Easy installation



Applications:

- Domestic hot water
- Heating systems (LTHW, MTHW & HTHW)
- Process systems



HevaSteam Heat Exchanger Packages



Selection:

Use the table below to select a unit based on the kW output required and the available steam pressure of the unit.

Example: You have a requirement for 450 kW and have a steam pressure available at 3 BarG (4 BarA), the unit you need to select would be a HS-G

HevaSteam Model	Steam Inlet Size	Steam Pressure at Inlet to Package								
		2	3	4	5	6	7	8	9	10
HS-A	DN20	35	45	55	65	75	85	95	105	115
HS-B	DN25	50	65	80	95	110	125	140	155	170
HS-C	DN32	85	110	135	160	185	210	235	260	285
HS-D	DN40	130	165	200	235	270	305	340	375	420
HS-E	DN50	215	265	315	365	415	465	515	565	615
HS-F	DN65	340	440	540	640	740	840	940	1040	1140
HS-G	DN80	480	615	750	885	1020	1155	1290	1425	1560
HS-H	DN100	875	1080	1285	1490	1695	1900	2105	2310	2515
HS-J	DN125	1300	1660	2020	2380	2740	3100	3460	3820	4180
HS-K	DN150	1910	2450	2990	3530	4070	4610	5150	5690	6230
HS-L	DN200	3400	4350	5300	6250	7200	8150	9100	10050	11000

Other selection requirements

To complete the coding designation of the package, the following also needs to be stipulated:

Secondary Medium: “-D-” (domestic hot water) or “-H-” (heating water)

Control valve: “-E-” (electrically actuated) or “-P-” (pneumatically actuated)

Condensate Control: “-ST-” (steam trap) or “-PT-” (pump/trap)

Example: From the HS-G unit selected above, the package is for domestic hot water and there is an 18 metre back pressure on the condensate thus requiring a pump/trap, so the selection would be an HS-G-D-E-PT.

Notes:

- Our standard units are supplied with plate heat exchangers but shell & tube can be supplied
- All domestic hot water system packages are supplied with fast-acting electromagnetic control valves when not using pneumatically actuated valves
- All domestic hot water packages are also fitted with overheat protection systems to ensure safe operation

Please contact our technical office for dimensional and layout details

ACR Condensate Recovery Units



The Arbe range of ACR condensate recovery packages offer a compact solution for the collection of condensate from various systems. The product range offers a solution with the capability of handling up to 10,000 kg/hour of condensate as a standalone package. The tank, pumps and pipework are all manufactured from stainless steel and are designed for a long life.

Our range of ACR condensate recovery units are designed and manufactured to the latest standards and are fully compliant with the Pressure Equipment Directive

- Dedicated range of units with bespoke units available
- Available as single or twin pump units with duty/standby or cascade operation
- Standard range of units with fixed speed pumps but units are available with variable speed operation
- Standard range of units can handle up to 10,000 kg/hour of condensate and discharge at up to 4.5 BarG with higher capacities and pressures available
- Controls package with volt free alarms and also a remote enable facility
- Units supplied as standard with level sight glass and protection tube
- Can handle condensate up to 98 DegC
- Easy installation

Applications

- Boiler condensate systems
- Process condensate systems

Control Options

Arbe can supply the packages with variable speed pump control, via our HevaSys controls system. This is PLC Based bespoke software, controlled via a package mounted pressure transducer, with programmable pressure setting.



ACR Condensate Recovery Units

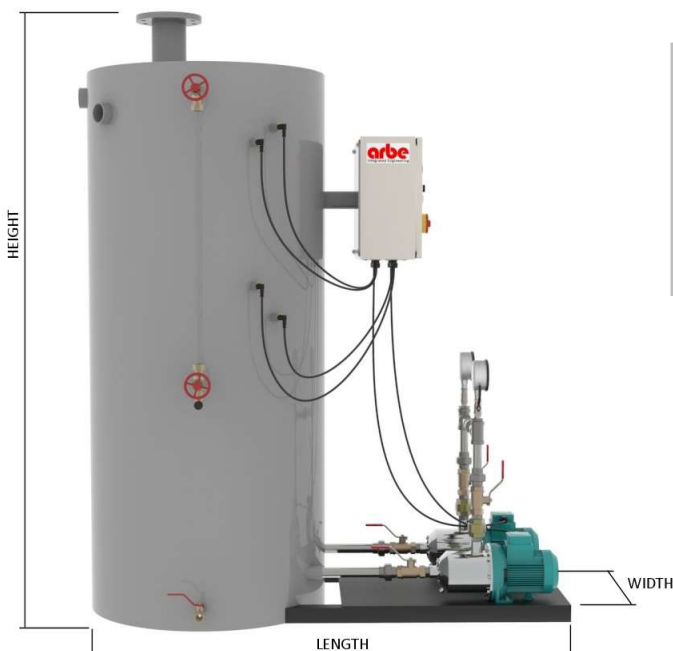


Options

- Full ATEX design & manufacture c/w full certification
- Unit supplied in housings, both part and complete for external installation
- Bespoke material and component design to suit site and specifications



Unit Reference	Flowrate		Head Output (Metres)	Package Dimensions		
	(kg/Second)	(kg/Hour)		Length (mm)	Width (mm)	Height (mm)
ACR1500-15 to 45	0.4	1,500	15 to 45	1275	800	1550
ACR2500-15 to 45	0.7	2,500	15 to 45	1375	900	1600
ACR5000-15 to 45	1.4	5,000	15 to 45	1670	1100	1650
ACR7500-15 to 45	2.1	7,500	15 to 45	1950	1300	2000
ACR10000-15 to 45	2.8	10,000	15 to 45	2050	1400	2200



Unit Series	Connections		
	Inlet	Outlet	Vent
ACR1500	1 x 2" BSP	1" BSP	DN100 PN16
ACR2500	1 x 2" BSP	1" BSP	DN100 PN16
ACR5000	1 x 2" BSP	1.1/2" BSP	DN100 PN16
ACR7500	2 x 2" BSP	2" BSP	DN150 PN16
ACR10000	2 x 2" BSP	2" BSP	DN150 PN16

AMF & AMF-M Air & Dirt Separators



Removal of air and dirt from heating and cooling systems improves life longevity and efficiency.

The Arbe range of air and dirt separators offer a complete solution for various applications where dirty water may be possible. The units have been designed to remove the dirt particles and sludge from heating and cooling systems, reducing damage and premature wear on all the system accessories such as boilers, chillers, pumps and heat exchangers

There are 2 options available with the units

- **AMF** - Air & dirt separator removing air from the system and filtering dirt and sludge
- **AMF-M** - As the AMF but with additional magnets installed for extra protection in particularly old heating systems



The AMF & AMF-M can be installed to remove the requirement for a separation plate heat exchanger in heating systems such as where a new boiler system has been installed. This reduces on installation costs and time as it negates the need for extra pumps, valving and pressurisation equipment. It also reduces the footprint of the new installation. Maintenance of the system is also made easier as the unit can be easily dismantled to clean the filters and magnets, unlike a plate heat exchanger where specialist engineers may be required to dismantle, clean and re-assemble the unit.

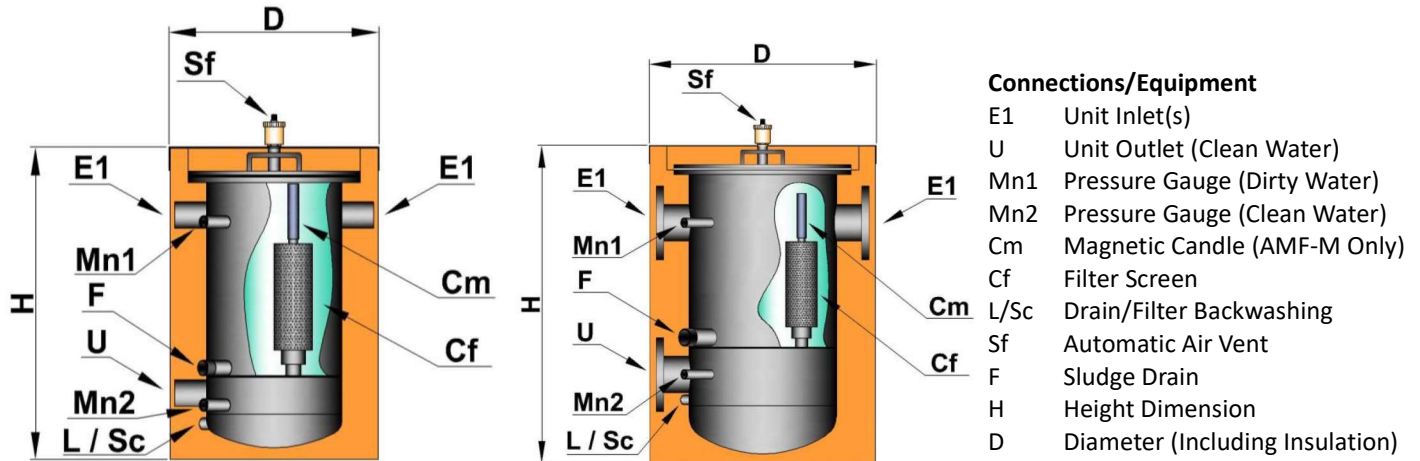
The unit is supplied with a pair of pressure gauges for manual checking of the pressure drop across the unit, which gives a visual indication that the unit requires cleaning. A pressure differential switch may also be fitted to give an automatic indication of blockage

Characteristics	Standard	Optional
Capacity	40 - 430 Litres	
Orientation	Vertical	
Material	Carbon Steel	Stainless Steel AISI 316L
Internal Coating	None - Self Colour	
External Coating	Anti-Rust Primer	
Insulation	DN40,50 & 65 - 80mm Hard Foam PU Injected DN80, 100, 125, 150 & 200 - 105mm Hard Foam PU Injected Density: 40-42 kg/m3, Av. Conductivity 0.019 W/mK - 45 DegC (CFC & HCFC Free)	
Cladding	Stucco Aluminium Cladding	High Strength Removable PVC
Accessories	Standard	Optional
	Clean Side Pressure Gauge Dirty Side Pressure Gauge Automatic Air Vent	Flanged Connections (DN40 & DN50) Plugs / Blank Flanges, Bolts & Gaskets Drain Valve Spare Filter Screens & Magnets Differential Pressure Switch

AMF & AMF-M Air & Dirt Separators



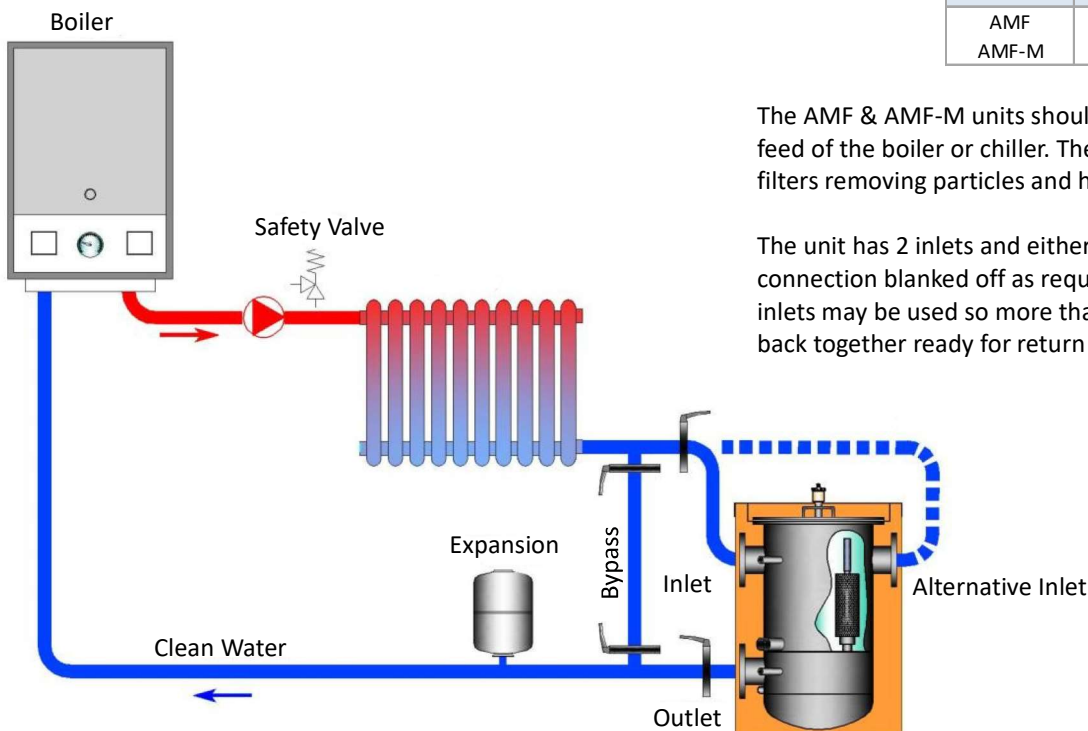
Dimensions



Dimensions		AMF & AMF-M Size							
		40	50	65	80	100	125	150	200
Connection Size	DN	40	50	65	80	100	125	150	200
Connection Type		BSP F	BSP F	PN16	PN16	PN16	PN16	PN16	PN16
Maximum Flowrate	m ³ /Hr	15	20	30	40	70	120	150	200
D	mm	460	460	510	610	610	710	940	940
H	mm	673	798	805	857	857	992	1025	1275
L/Sc	BSP	½"	½"	½"	½"	½"	½"	¾"	¾"
F	BSP	1"	1"	1"	1½"	2"	2"	2½"	2½"
Capacity	Litres	40	48	66	91	91	166	334	430
Quantity of Filters	Qty	3	4	4	6	7	9	13	16
Quantity of Magnets (AMF-M)	Qty	3	4	5	6	7	9	13	16

Installation

Model	Maximum Temperature	Maximum Pressure
AMF	110°C	6 BarG
AMF-M	110°C	6 BarG



The AMF & AMF-M units should be installed in the return feed of the boiler or chiller. The water is forced through the filters removing particles and heavy sludge from the water

The unit has 2 inlets and either can be used, with the other connection blanked off as required. In some cases, both inlets may be used so more than one system can be piped back together ready for return to the boiler

Pressurisation & Booster Sets



The Arbe range of pressurisation units and booster sets offer a complete solution for potable, chilled and heating systems

Cold Water Booster Sets - The HevaBoost range

Arbe Integrated Engineering manufacture one of the most comprehensive range of booster sets available in the market today. With the increased demand for more water, constant pressure and the Water Authorities only having to guarantee a pressure of 1 bar at a simultaneous flow of 9 litres/minute, buildings of three storeys or more will require a booster set for domestic water supply. We provide solutions to all types of installation from commercial to large industrial applications. Models vary from a single pump, constant speed set, to a six pump, variable speed, inverter controlled set and a range of fire hose reel sets compliant with BSEN12845:2004. Also available is a standard range of booster sets with cold water break tanks up to 20,000 litres (larger available upon request).



Single & Twin Pump Pressurisation Units - The HevaPress Range

Arbe Integrated Engineering offer one of the most comprehensive range of pressurisation units available in the market today. With a model to suit any application and budget, we can ensure a high quality and correctly selected unit. We offer single & twin pump sets and also dual circuit sets so a single pressurisation unit can control 2 separate circuits.



Run-Around Coil Units - The HevaCoil Range

Arbe Integrated Engineering design and manufacture the HevaCoil range of pressurisation units. The units typically consist of a base plate style pressurisation set with high/low pressure switches, system expansion vessel, system circulating pump and interconnecting pipework fully assembled on a common base plate.



Spill-Back Pressurisation Units - The HevaSpill Range

Arbe Integrated Engineering design and manufacture specialist spill-back systems. For larger systems, it is usually not viable to fit multiple expansion vessels with the added difficulty of setting up the pressures. For these systems, we offer a HevaSpill spill-back unit specifically designed for each application. Our spill back systems can also be supplied fully integrated with our heat exchanger and heating pump skid assemblies if required, fully factory built, giving a complete offsite solution. Our units are suitable for temperatures of up to 130 DegC, making it an ideal solution for most applications. The spill tanks can be manufactured from carbon or stainless steel with tanks floor mounted or available on stands. Our unit as standard is supplied with twin pumps, duty/standby operation, with each pump selected to suit the specific application. Other pump arrangements can be supplied as required.

Renewable Energies



Arbe Integrated Engineering offers both supply of solar, heat pump & biomass equipment and full design, supply & installation of associated packages. We have many years experience in renewable energy systems, putting us at the forefront of the technology. Our in-depth understanding gives us the edge in innovative design of solar, heat pump and biomass packages, integrating with new and existing building services HVAC systems to offer the best solution for each application

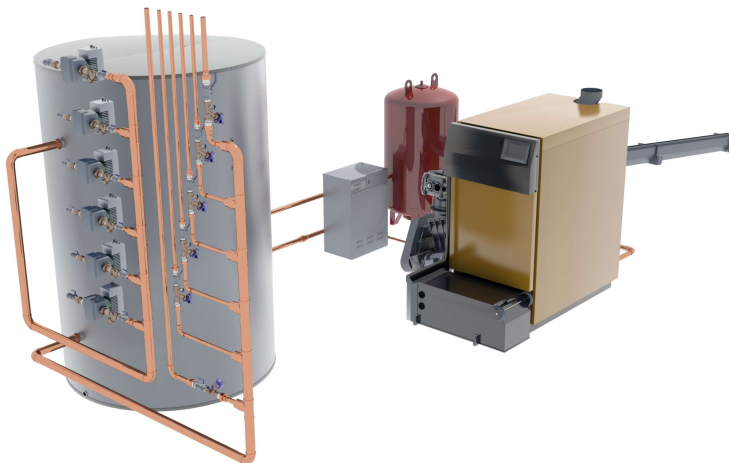
Complete Solar Design, Supply & Install

We design and supply full solar systems for commercial and industrial applications using either flat plate or evacuated tube panels, with full integration into existing hot water systems or complete supply and installation of new systems



Complete Biomass Boiler System Design, Supply & Install

We design and supply full biomass systems using wood pellet or wood chip as the fuel. Our systems are bespoke to each application and can range from a new boiler and thermal store to a complete heating system. With over 20 years in the design and manufacture of boiler and heat exchanger systems, we are able to offer complete turnkey solutions for both hot water and steam systems utilising the latest biomass technology. With either full new systems, or complete integration into existing systems, our services can guarantee a high quality and competitive solution. Our expertise in boiler and heating systems give peace of mind in both commercial and industrial applications.



Complete CHP System Design, Supply & Install

Arbe design and install gas fired CHP systems ranging from 19 to 2000 kWe and above. Our systems includes all design and installation of the necessary controls, pumps and equipment, and the thermal stores. We also arrange G59 connection and certification as part of the project



Heat Recovery Systems



Arbe Integrated Engineering offer a range of solutions for heat recovery, offering products to be installed in such systems or even fully installed packages. Cost-effective heat recovery is readily available on various sources of heat such as from ovens, furnaces and kilns, chillers and air compressors. Energy usage from the recovered heat can be utilised for various applications, such as potable hot water production, or preheating of, heating systems, low, medium & high temperature, chilled water systems & electricity generation.



Oven Heat Recovery

Arbe offer systems to recover heat from bakeries and other commercial food manufacturing applications. Our system consists of a heat recovery heat exchanger, fan, dampers and controls system. We offer a full install and commissioning service to ensure the system operates at its optimum setting.

- Up to 15-20% of the wasted heat can be recovered through our system which can be used for various applications such as:
- Heating (Space Heating and Process Systems)
- Cooling (Air Conditioning and Process Systems)
- Potable Hot Water Systems
- Electrical Generation

By installing our heat recovery system, we can offer good savings on energy and reduce carbon emissions. The flue gas heat recovery system can ensure that the needed draught is available to ensure energy efficient baking results every day, irrespective of the external issues that buildings suffer due to weather changes, giving a double positive outcome on the install.



Heat Recovery Systems



Air Compressor Heat Recovery

Arbe offer systems to recover heat from air compressors, ready for use in space heating or domestic hot water. In oil-cooled compressors, we can offer packages that recover up to 94% of the energy used to produce compressed air. This can be in the form of hot water up to 70 DegC which is stored in an Arbe AF thermal store. From here, it can then be utilised in a space heating system, with it pumped throughout a building to fan coil units to replace gas or oil fired space heaters, or it can be transferred into a potable hot water system, either as a preheat on larger systems or as the main heat source.

A typical heat recovery system for a compressor can have a quick pay back on capital investment, starting at around 1-1.5 years on a DHW system and a maximum of 3 years on a full heating system. This includes installation of new fan coil units and necessary controls to ensure correct operation. A typical DHW installation would include controls and an indirect cylinder for pre heating.



Chiller Heat Recovery

There are a few different type of chillers on the market that heat can be recovered from. The heat utilisation is dependent on the temperatures available as it can vary from 30 DegC up to 90 DegC. Our HevaPak HRU has been designed to operate with chillers to recover as much heat as possible, with the heat used to either preheat domestic hot water, or for space heating using low temperature heat emitters.

Our HevaPak HRU systems offer a complete solution and are supplied with all necessary equipment and controls to operate correctly. The packages are usually supplied with PLC controls system with touch-screen technology to give full information on the operating parameters and settings. A system can also be designed and manufactured for potable water applications, where domestic hot water can be heated in a stainless steel storage cylinder prior to being heated by a primary source such as a plate heat exchanger or a coil etc.



Bespoke Engineering



Arbe Integrated Engineering offer engineering solutions in various forms from packaged solutions to specialised heat exchangers for the HVAC Building Services sectors and the process and food industries. Our design team are capable of taking enquiries & projects from the initial specifications to finished designs and manufacture.

Plant Room Design

Arbe design and manufacture plantrooms for various applications, from steam to simple LTHW boiler plantrooms, such as schools, hotels, leisure facilities and large domestic houses. Our team utilises the latest software for design and also design realisation, giving realistic 3D imagery for visualising our systems.



We also design and install bespoke systems for superheated steam applications such as the one below for a wood chip manufacturing facility in Staffordshire.

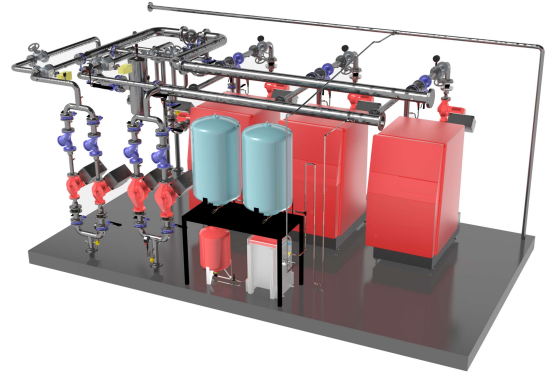


Bespoke Engineering



Packaged plantrooms

Arbe Integrated Engineering offer full factory built packaged plantrooms for heating and cooling systems with a choice of building finish to suit each application, such as a steel housing with Kingspan panel finish, or a GRP housing with various finish and textures available. Our full 3D design department provide full drawings suitable for insertion into BIM drawings and other project drawings.



Skid mounted factory packaged boilers encompassing all HVAC equipment

In addition to packaged plantrooms, we can also offer packaged skid units incorporating any required equipment for heating and cooling systems, both fabricated off-site in our manufacturing facility, or on site where required.



Specialist packages for process, food & pharmaceutical industries

Arbe Integrated Engineering design and manufacture specialist package for process, food and pharmaceutical applications, such as steam heat exchanger systems, thermo-compressors and condensate recovery packages, with full design appraisal and certification in accordance with PD5500, ASME & ATEX.



Our HevaSteam packages can be manufactured completely from stainless steel or other materials to suit specific applications. Our controls can be supplied for ATEX zones if required along with control valves and other equipment.



Bespoke Engineering



Heat Exchangers

Arbe Integrated Engineering manufacture specialist bespoke heat exchangers, manufactured from carbon steel, stainless steel, brass and titanium. We have the ability to manufacture in accordance with the requisite design code, such as ASME & TEMA. We have many heat exchanger installations throughout the industry, including heavy fuel oil suction heaters supplied for a new power station project in Egypt.



Heat Exchanger Packages

We can design and manufacture specialist heat exchanger packages where recovered heat can be used in conjunction with other heat sources, such as on our HevaCombi package which has been designed to have both a primary boiler input and a CHP or solar primary input to preheat the domestic hot water in the secondary side, with all circuits balanced for optimisation.



Specialised heat exchangers for waste water and exhaust heat recovery

The Arbe Unihex range of heat-exchange equipment is designed to offer one-stop complete solutions in efficient heat transfer situations. The Unihex AUH is leading technology, offering major savings, preventing energy being literally poured down the drain, released into the atmosphere or pushed out of a chimney - both environmentally and financially. Each system is individually designed as required. No two situations are identical, the demands of process as well as limitations of space vary from system to system, even within the same plant our expertise ensures the correct results for you.



Bespoke Engineering

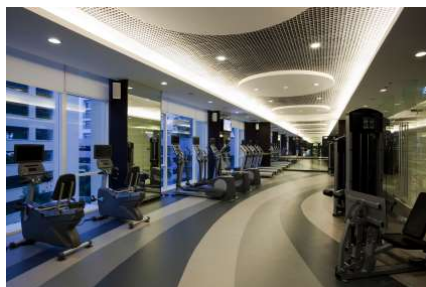
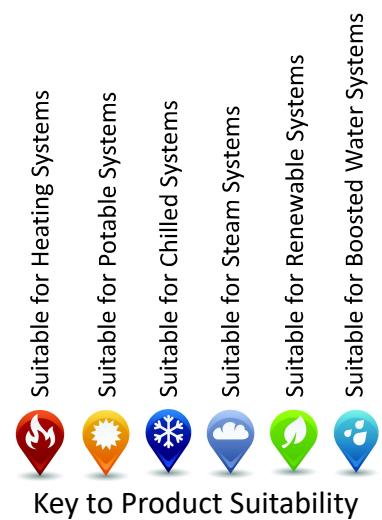


Packaged plantrooms

Arbe Integrated Engineering offer full factory built solutions for systems and packages that are fitted within bespoke GRP solutions. This offers our clients flexibility and solutions for applications where an external installation is required but the equipment is unsuitable for this. It can also free up space within a factory or warehouse that can be utilised for other purposes. Each housing is designed to suit the application, such as dimensionally, shape, number of doors and louvres etc. Applications include:

- Full packaged plantrooms
- Condensate recovery units
- Pump housings
- Chilled water buffer vessels and systems
- External gas and water stations.





Design | Supply | Manufacture | Install | Commission

DHW & LTHW Generation
 Booster Sets & Pressurisation
 Steam Packages & Equipment
 Condensate Removal & Recovery

Heat Exchangers
 Package Plantrooms
 Gas & Biomass Boilers
 CHP & Heat Recovery

Solar Energy
 Chillers & Heat Pumps
 Buffer Vessels
 Complete HVAC Integration



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