

# Swimming Pool Heat Exchangers

BSP/PN6/10/16 Connections

Heat Transfer Technology from Bowman



**BOWMAN**<sup>®</sup>

A World Leader in Heat Exchanger Technology

# Bowman Dominates

## Swimming Pool Heat Exchangers

For boilers, solar panels and heat pumps

**The ultimate heat transfer performance for pools and spas**

When it comes to heat transfer solutions for your pool, Bowman delivers nothing less than optimum performance. Literally tens of thousands of our units are operating efficiently and reliably around the world, from spas and hot tubs to Olympic pools, in both commercial and domestic applications.

Whether your pool uses conventional heating or renewable energy, the unique design and technology of Bowman heat exchangers will help you achieve faster heat-up times while reducing your energy consumption, costs and CO<sub>2</sub> emissions.



### **Just some of the benefits of choosing a Bowman heat exchanger for your pool**

#### **Energy saving**

With more heat transfer tubes than most competitor products, Bowman units heat pools up to three times faster, reducing energy costs and saving money.

#### **Easy installation**

Our popular 5113 and 5114 units feature composite end covers and solvent weld connectors for easy installation directly into the pool pipework. Additionally many models feature an integral 7mm thermostat pocket.

#### **Simple to maintain**

An easily removable tubestack and end covers makes cleaning and maintenance procedures very simple and straightforward.

#### **Outstanding reliability**

With a choice of titanium, stainless steel or cupro-nickel tubestacks, there's a Bowman heat exchanger to suit any type of pool water. Designed and built to the highest quality standards, Bowman units provide outstanding levels of operational reliability and durability.

Titanium products in contact with pool water come with a 10 year anti-corrosion guarantee.



# in the Pool

## Solar and renewable energy

Many swimming pool owners and operators are switching to renewables to reduce energy costs and CO<sub>2</sub> emissions, whilst also improving their “green” credentials.

From the outside, one solar heat exchanger can look very like another. Open them up and you’ll see a major difference in design that will make a massive impact to your energy usage and pool heat-up times.

The multi-tube structure of a Bowman heat exchanger is specifically designed to work with the lower temperature water from solar heating panels. These units need significantly less energy to heat the pool and will achieve the required water temperature in around a third of the time of many competitor products.

This design also maximises the effectiveness of your pool’s solar collectors, enabling them to be used as the primary pool heat source for much longer throughout the year.

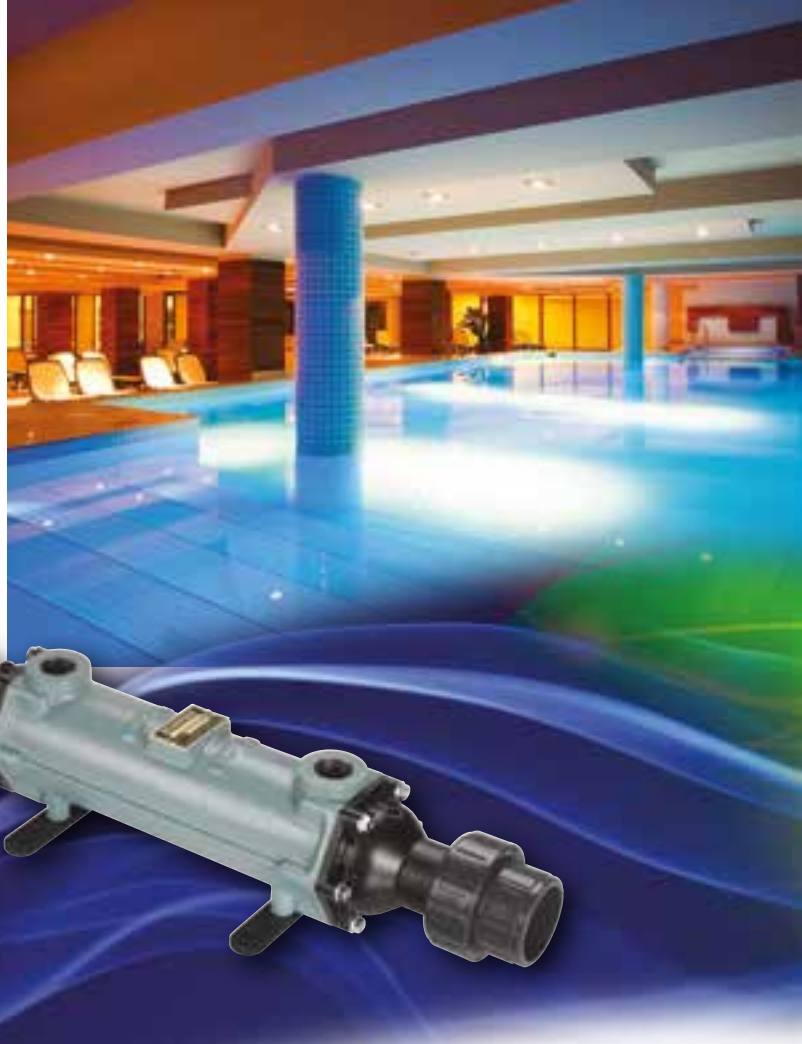
## Chillers

Bowman heat exchangers are also ideal for cooling pools in warmer climates via chiller system.



## Swimming Pool Heat Exchangers for use with boilers

The table below enables the selection of the appropriate heat exchanger and shows the output that can be achieved from our units with different boiler inlet temperatures and swimming pool sizes.



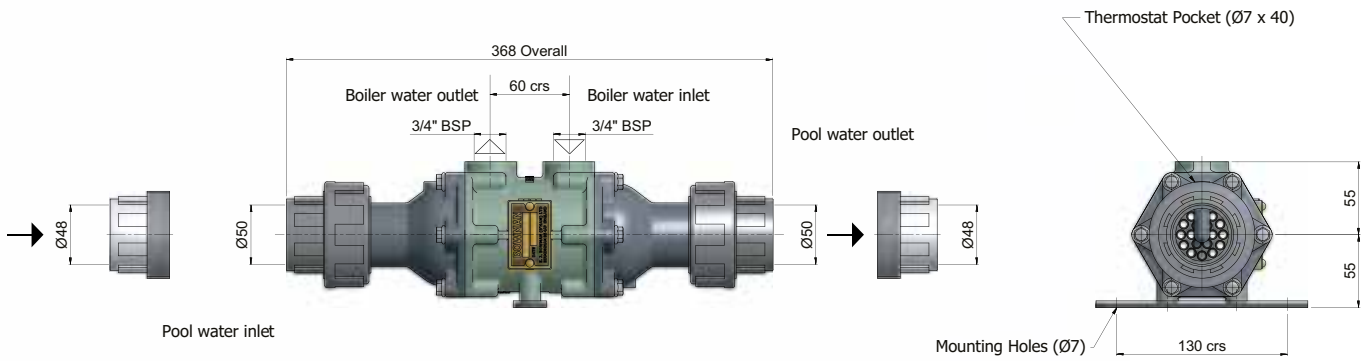
Type	Pool Capacity		Heat Transfer 82°C Boiler Water		Heat Transfer 60°C Boiler Water		Boiler Water Flow		Maximum Pool Water Flow		Weight kg
	m <sup>3</sup>	gal	kW	Btu/h	kW	Btu/h	m <sup>3</sup> /h	l/m	m <sup>3</sup> /h	l/m	
EC80-5113-1C	40	8,800	20	68,000	12	41,000	2.1	35	9.0	150	3.0
EC80-5113-1S/T*	50	11,000	25	85,000	16	55,000	3.0	50	12.0	200	3.0 / 2.7
EC100-5113-2C	80	18,000	40	135,000	22	75,000	2.4	40	10.2	170	4.5
EC100-5113-2S/T*	90	20,000	50	170,000	30	102,000	3.0	50	12.0	200	4.5 / 4.0
EC120-5113-3C	120	26,000	70	240,000	40	135,000	3.6	60	13.5	225	5.5
EC120-5113-3S/T*	130	28,500	76	260,000	44	150,000	3.6	60	15.0	250	5.5 / 4.9
FC100-5114-2C	170	37,000	100	340,000	55	190,000	5.4	90	21.0	350	8.8
FC100-5114-2S/T*	180	39,500	108	370,000	60	205,000	5.4	90	22.8	380	8.8 / 7.8
FG100-5115-2C	230	50,000	170	580,000	100	340,000	7.2	120	28.8	480	16
FG100-5115-2S/T*	250	55,000	190	650,000	110	376,000	8.4	140	33.0	550	16 / 14
FG160-5115-5S/T*	320	70,000	300	1,000,000	170	580,000	9.6	160	39.0	650	29 / 25
GL140-3708-2C	455	100,000	300	1,000,000	170	580,000	12.6	210	50.4	840	30
GL140-3708-2S/T*	478	105,000	320	1,100,000	180	615,000	13.5	225	54.0	900	30 / 27
GK190-5117-3C	660	145,000	556	1,900,000	310	1,060,000	19.2	320	75.0	1,250	57
GK190-5117-3T	750	165,000	630	2,150,000	360	1,230,000	21.6	360	96.0	1,600	51
JK190-5118-3C	1,000	220,000	780	2,660,000	440	1,500,000	28.6	475	114.0	1,900	85
JK190-5118-3T	1,230	270,000	960	3,280,000	540	1,840,000	37.5	625	150.0	2,500	76
PK190-5119-3C	1,500	330,000	1,055	3,600,000	585	2,000,000	44.0	730	175.0	2,900	120
PK190-5119-3T	1,680	370,000	1,170	4,000,000	650	2,200,000	49.2	820	216.0	3,600	106

\*Add the appropriate suffix indicating tube material when ordering these part numbers (C, S or T).  
C = Cupronickel S = Stainless steel T = Titanium

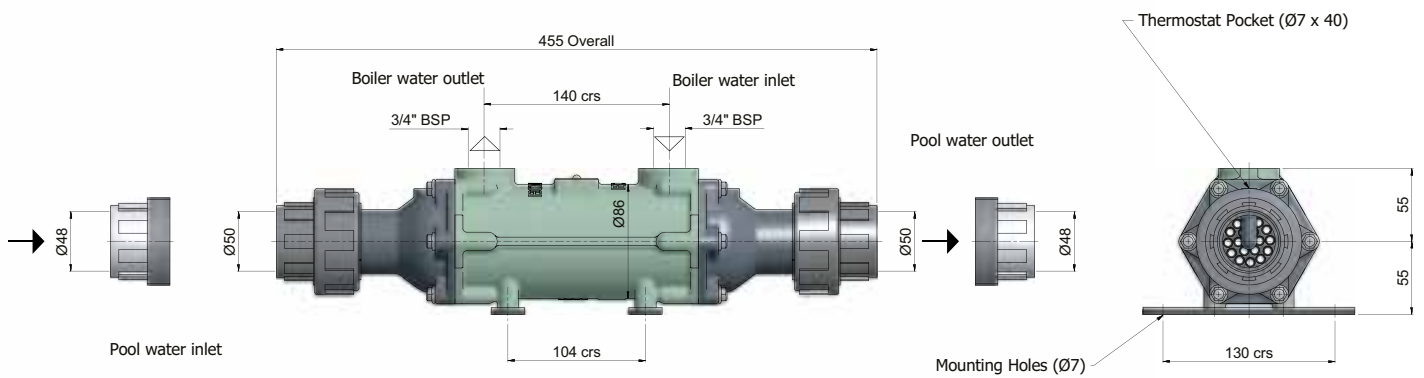
N.B. Stainless steel heat exchangers should not be used on pools fitted with chlorinators or salt water pools.

The performance capabilities of the heat exchangers are based on achieving a pool water temperature of 30°C.

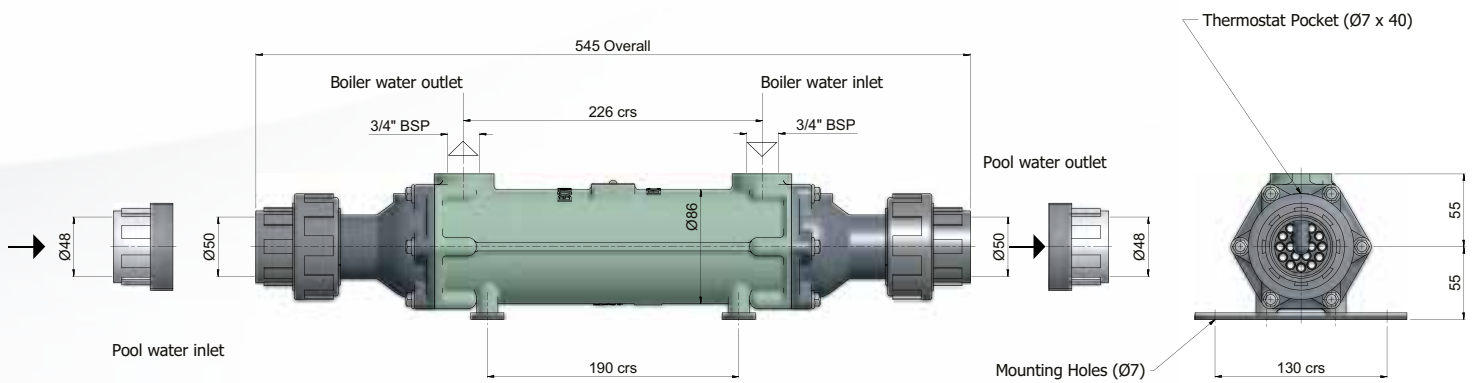
## EC80-5113-1



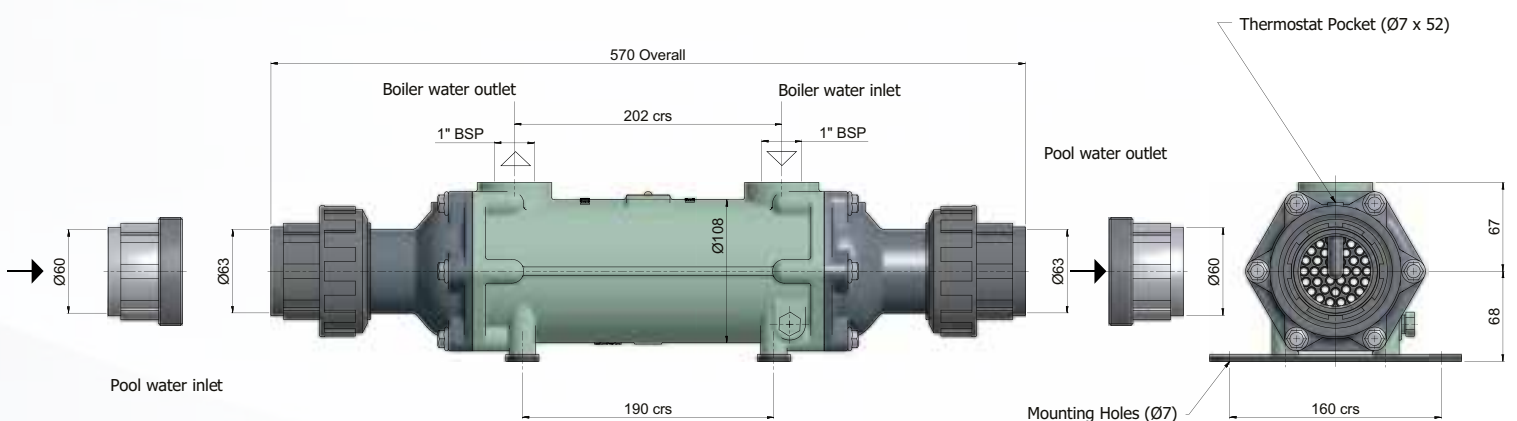
## EC100-5113-2



## EC120-5113-3

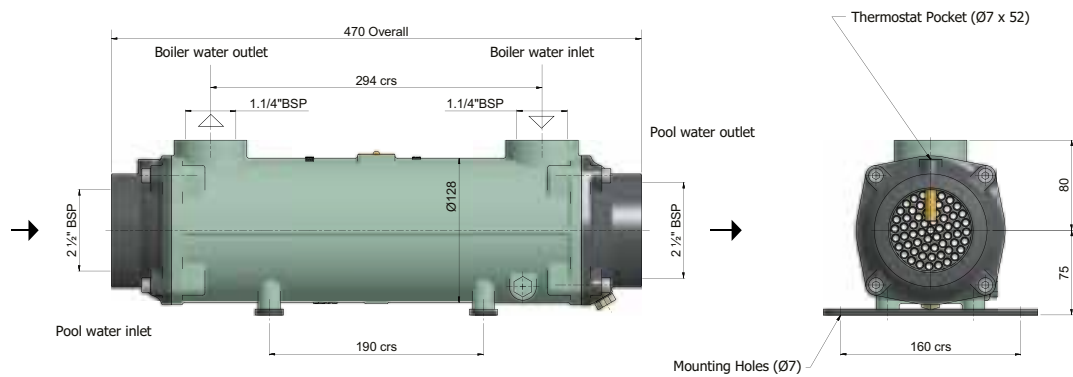


## FC100-5114-2

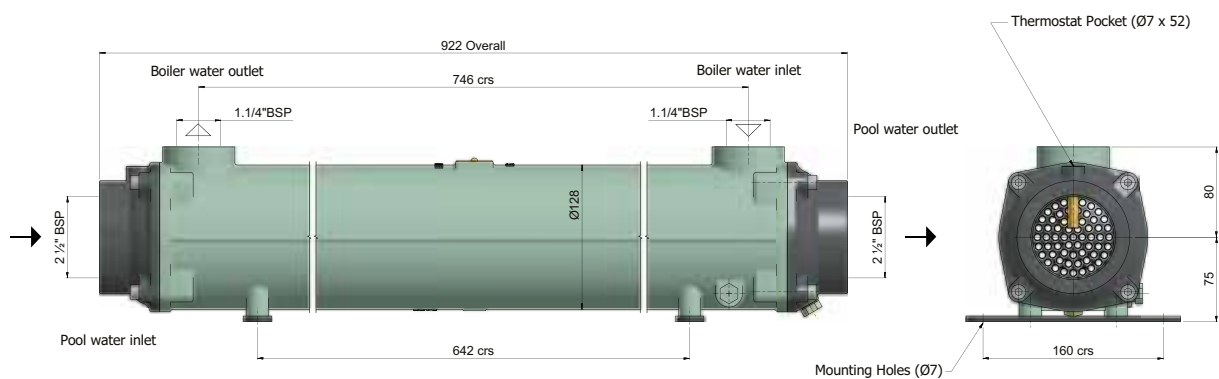


All dimensions in mm.

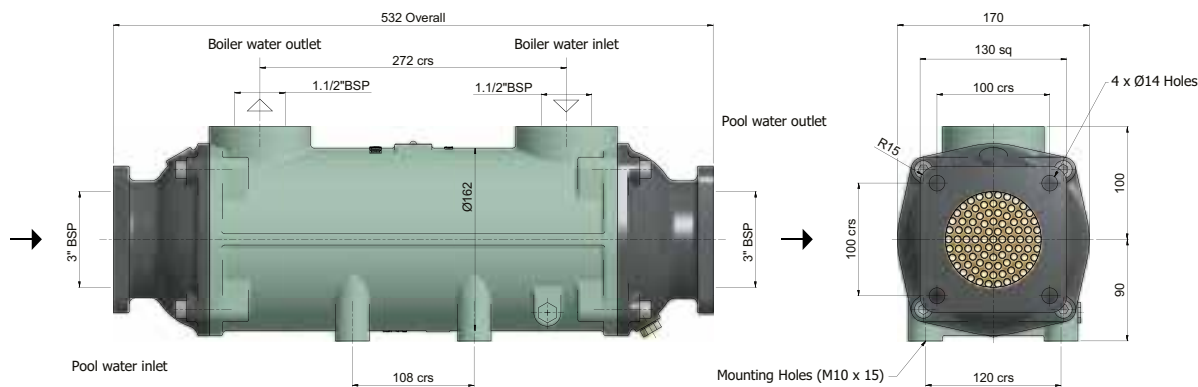
## FG100-5115-2



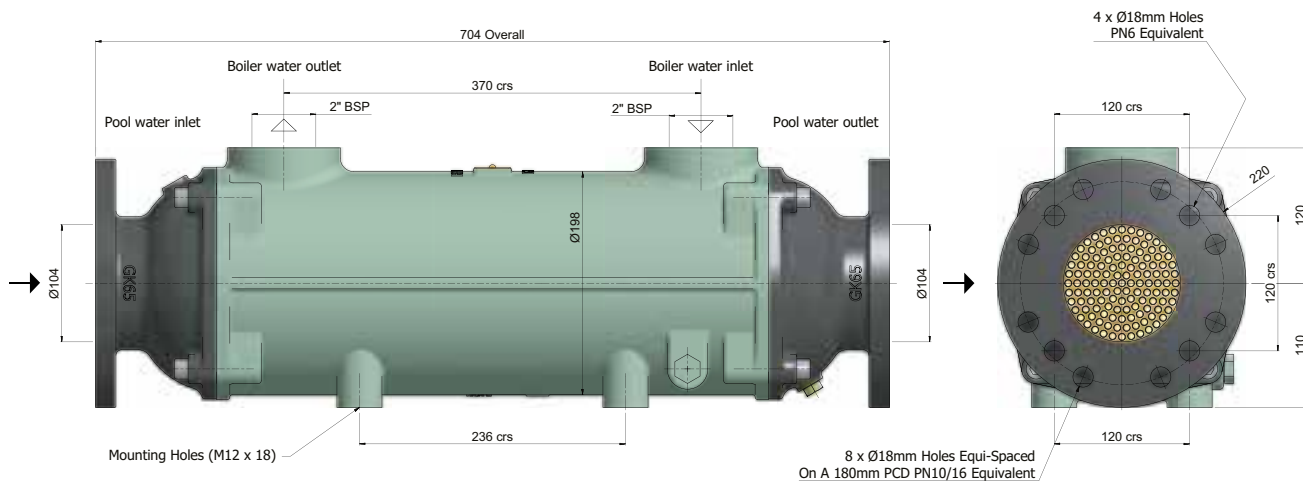
## FG160-5115-5



## GL140-3708-2



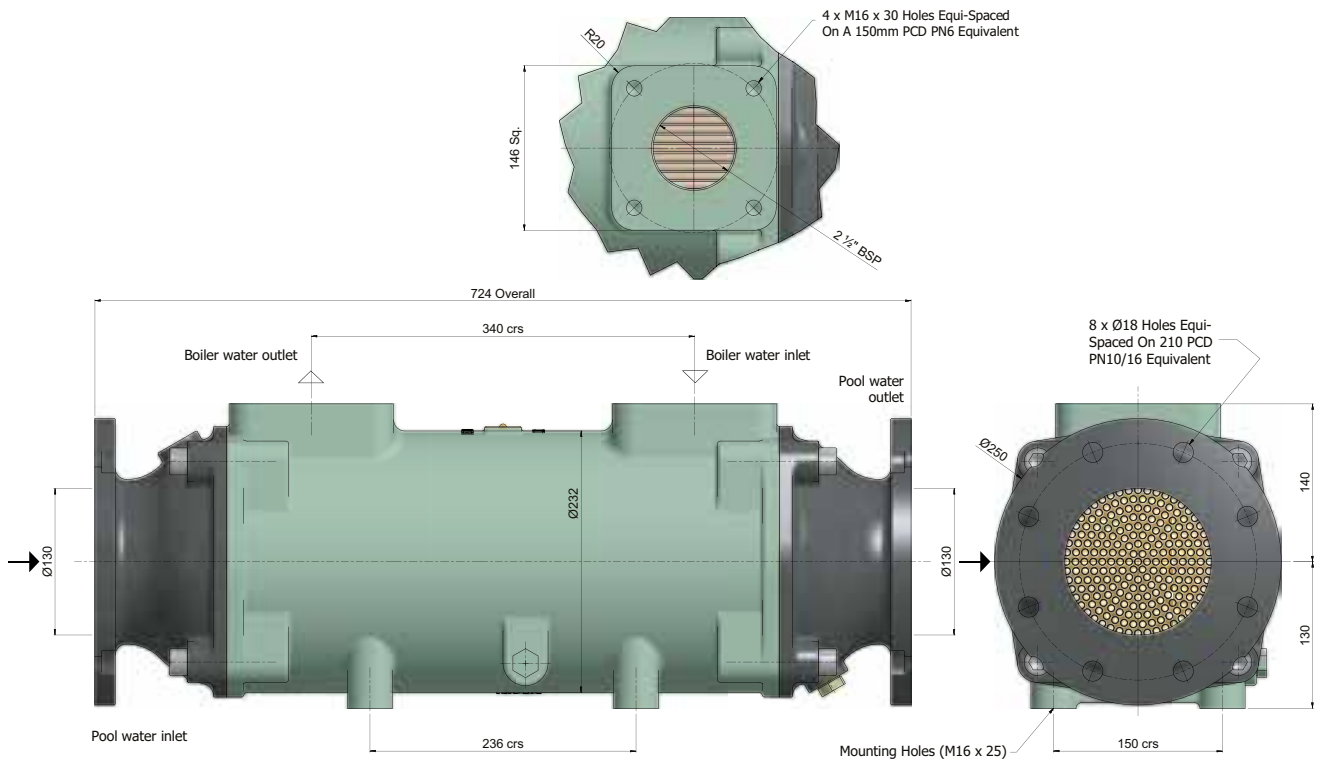
## GK190-5117-3



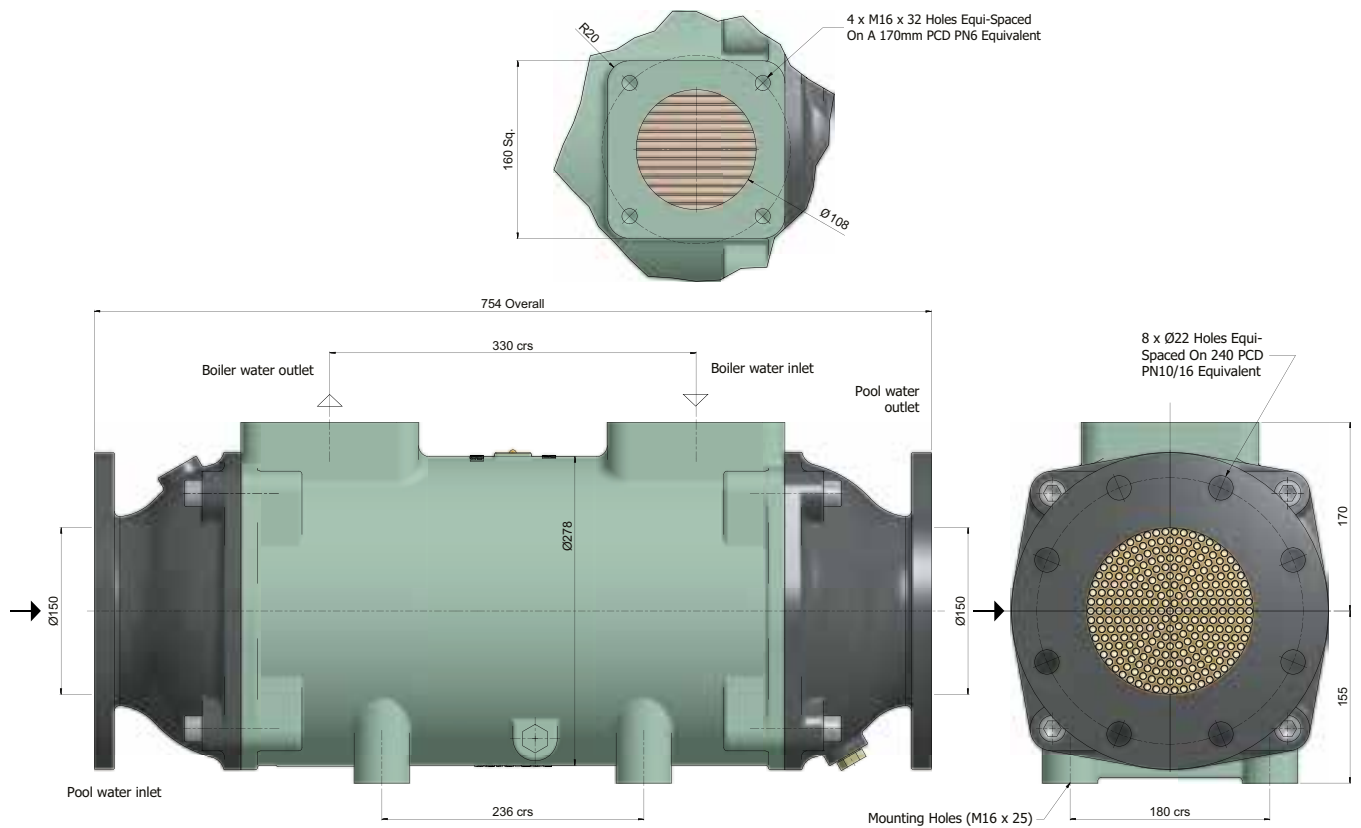
All dimensions in mm.

Flanges to BS EN 1092/1.

# JK190-5118-3



# PK190-5119-3



## Swimming Pool Heat Exchangers for use with solar panels and heat pumps

The table below shows the heat that can be transferred by Bowman units with the water temperature from the solar panels or heat pump being 70°C (158°F), 60°C (140°F) or 45°C (113°F) for various pool capacities and the swimming pool water at 30°C (86°F).



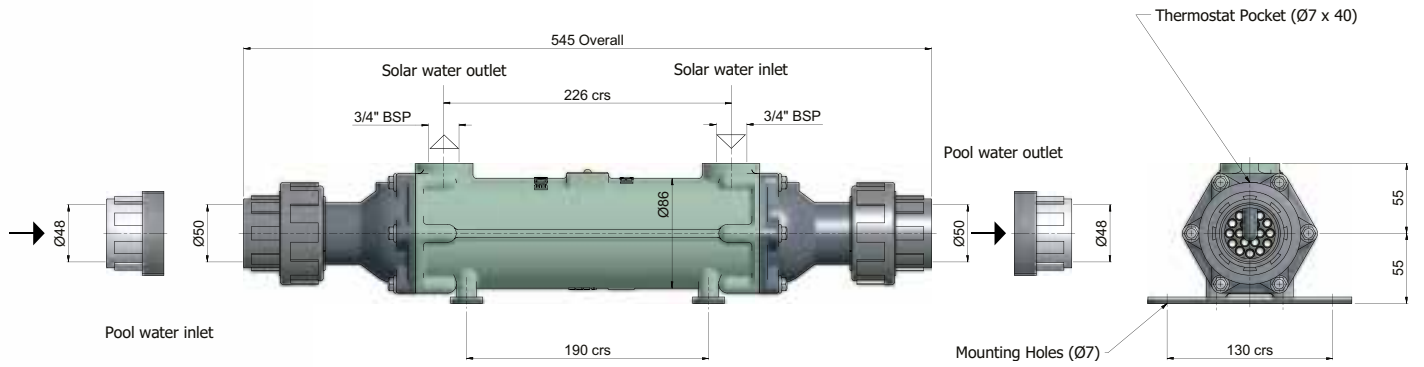
Type	Pool Capacity		Heat Transfer		Solar or Heat Pump Water Flow		Maximum Pool Water Flow		Weight
	m <sup>3</sup>	gal	kW	Btu/h	m <sup>3</sup> /h	l/m	m <sup>3</sup> /h	l/m	
Hot Water at 70°C									
EC120-5113-3C/S/T*	50	11,000	30	102,000	1.5	25	6.2	104	5.5 / 5.5 / 4.9
EC160-5113-5C/S/T*	120	26,000	75	256,000	3.0	50	15.0	250	8.5 / 8.5 / 7.3
FC160-5114-5C/S/T*	200	44,000	130	444,000	4.5	76	23.0	380	17 / 17 / 15
FG160-5115-5C/S/T*	300	66,000	200	680,000	6.6	110	29.0	480	29 / 29 / 25
Hot Water at 60°C									
EC120-5113-3C/S/T*	40	8,800	20	68,000	1.5	25	6.2	104	5.5 / 5.5 / 4.9
EC160-5113-5C/S/T*	110	24,000	55	190,000	3.0	50	15.0	250	8.5 / 8.5 / 7.3
FC160-5114-5C/S/T*	180	40,000	96	325,000	4.5	76	23.0	380	17 / 17 / 15
FG160-5115-5C/S/T*	230	50,000	150	512,000	6.6	110	29.0	480	29 / 29 / 25
Hot Water at 45°C									
EC120-5113-3C/S/T*	20	4,400	10	34,000	1.5	25	6.2	104	5.5 / 5.5 / 4.9
EC160-5113-5C/S/T*	52	11,400	27	92,000	3.0	50	15.0	250	8.5 / 8.5 / 7.3
FC160-5114-5C/S/T*	94	20,600	47	160,000	4.5	76	23.0	380	17 / 17 / 15
FG160-5115-5C/S/T*	140	30,800	70	240,000	6.6	110	29.0	480	29 / 29 / 25

\*Add the appropriate suffix indicating tube material when ordering these part numbers (C, S or T).  
C = Cupronickel S = Stainless steel T = Titanium

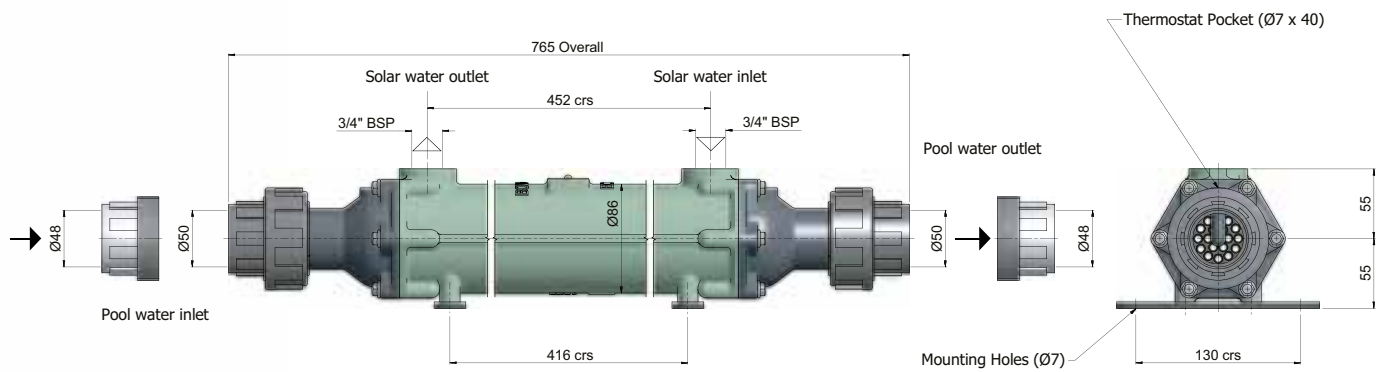
N.B. Stainless steel heat exchangers should not be used on pools fitted with salt water chlorinators or salt water pools.



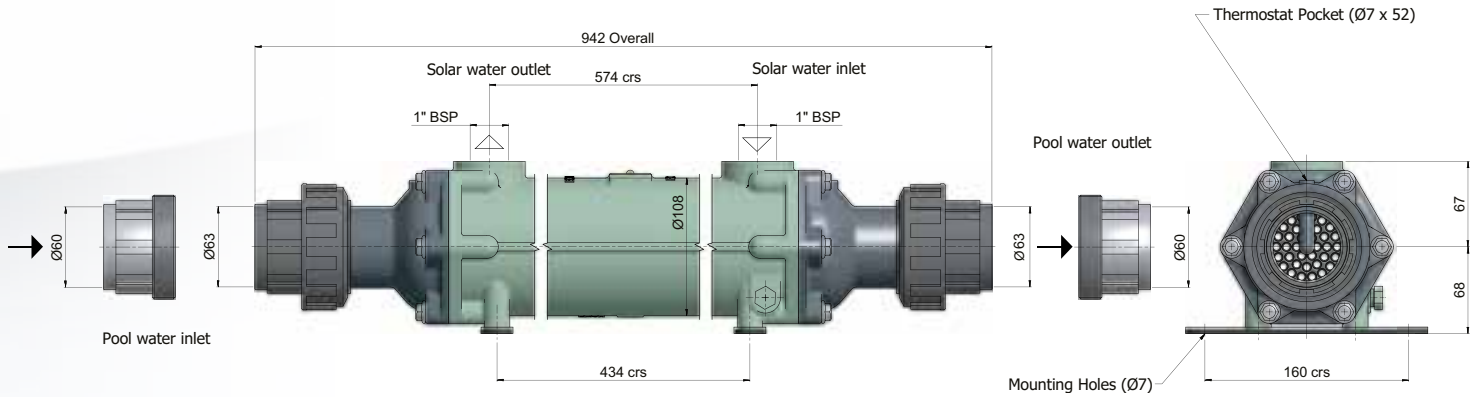
## EC120-5113-3



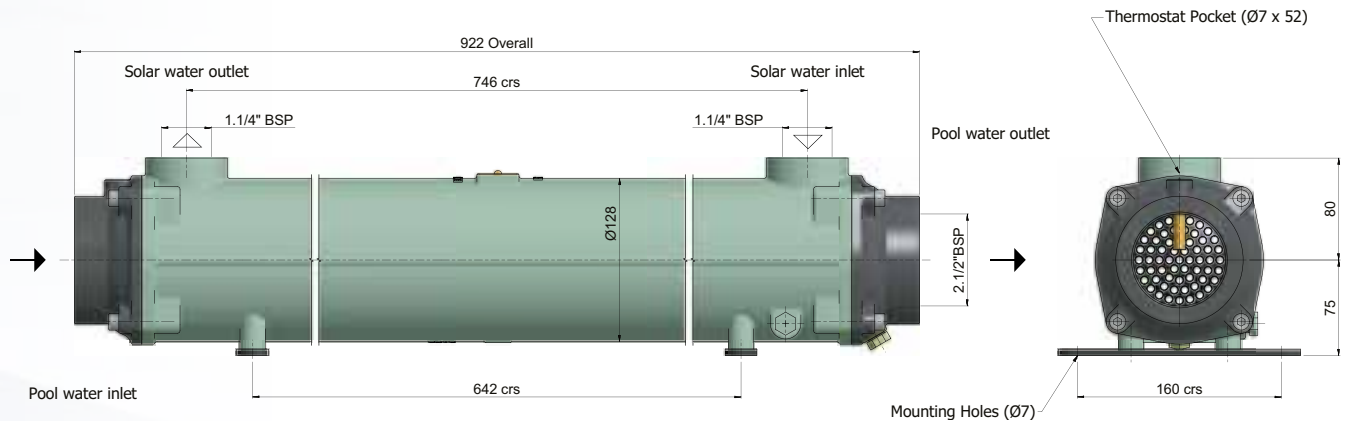
## EC160-5113-5



## FC160-5114-5



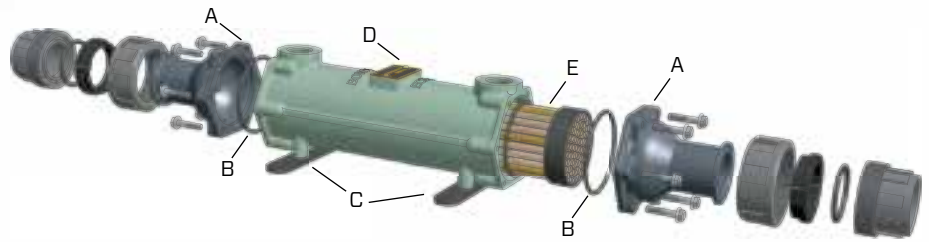
## FG160-5115-5



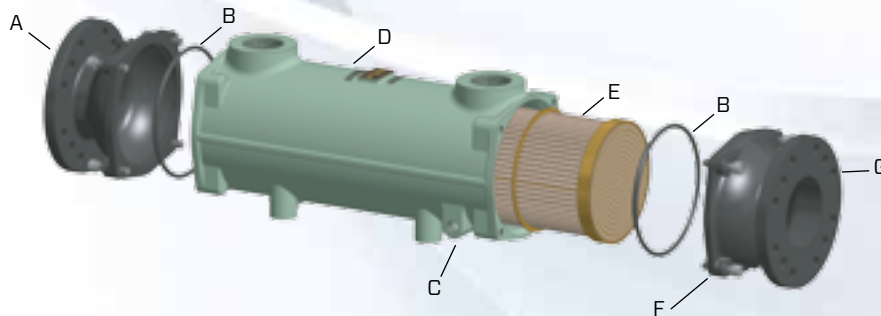
All dimensions in mm.

Flanges to BS EN 1092/1.

## Spare Parts



Type	End Cover Assembly (A)	'O' Seals (B)	Mounting Brackets (C)	Body (D)	Tube Stack (E)
EC80-5113-1C	5030	AN12NT	5032-1	EC69-5568-1CI	5095-1TNP
EC80-5113-1S					5095-1STP
EC80-5113-1T					5095-1TIP
EC100-5113-2C	5030	AN12NT	5032-1	EC70-4568-2CI	5095-2TNP
EC100-5113-2S					5095-2STP
EC100-5113-2T					5095-2TIP
EC120-5113-3C	5030	AN12NT	5032-1	EC71-4568-3CI	5095-3TNP
EC120-5113-3S					5095-3STP
EC120-5113-3T					5095-3TIP
EC160-5113-5C	5030	AN12NT	5032-1	EC73-4568-5CI	5095-5TNP
EC160-5113-5S					5095-5STP
EC160-5113-5T					5095-5TIP
FC100-5114-2C	5031	OS46NT	5032-2	FC70-4668-2CI	5096-2TNP
FC100-5114-2S					5096-2STP
FC100-5114-2T					5096-2TIP
FC160-5114-5C	5031	OS46NT	5032-2	FC73-4668-5CI	5096-5TNP
FC160-5114-5S					5096-5STP
FC160-5114-5T					5096-5TIP



Type	Drain End Cover (A)	'O' Seals (B)	Mounting Brackets (C)	Body (D)	Tube Stack (E)	End Cover Screws (F)	Non Drain End Cover (G)
FG100-5115-2C	FG7-2802BR-DR	OS52NT	5032-2	FG10-1650-2CI	5090-2TN2P	HS08X35	FG7-4761BR
FG100-5115-2S					5097-2STP		
FG100-5115-2T					5097-2TIP		
FG160-5115-5C	FG7-2802BR-DR	OS52NT	5032-2	FG16-1650-5CI	5090-5TN2P	HS08X35	FG7-4761BR
FG160-5115-5S					5097-5STP		
FG160-5115-5T					5097-5TIP		
GL140-3708-2C	GL37-3140CIC-DR	OS63NT	-	GL15-3136NF-2CI6	3447-2TN2B	HS10X40	GL37-3140CIC
GK190-5117-3C	GK65-5255CIC-DR	OS69NT	-	GK19-2865NF-3CI7	3448-3TN2B	HS12X50	GK65-5255CIC
JK190-5118-3C	JK4-3331CIC-DR	OS74NT	-	JK19-3332NF-3CI8	3450-3TN2B	HS16X70	JK4-3331CIC
PK190-5119-3C	PK4-2926CIC-DR	OS81NT	-	PK19-2920HF-3CI0	3449-3TN2B	HS16X70	PK4-2926CIC

When replacing the tube stack always fit new seals - 2 off per unit

# Installation and Maintenance

All Bowman swimming pool heat exchangers must be installed in accordance with the 'Installation, Operation & Maintenance Guide' which can be downloaded from the Bowman website - [www.ejbowman.co.uk](http://www.ejbowman.co.uk)

**Pool Water Flow** - The maximum pool water flow rates detailed in the ratings charts must not be exceeded.

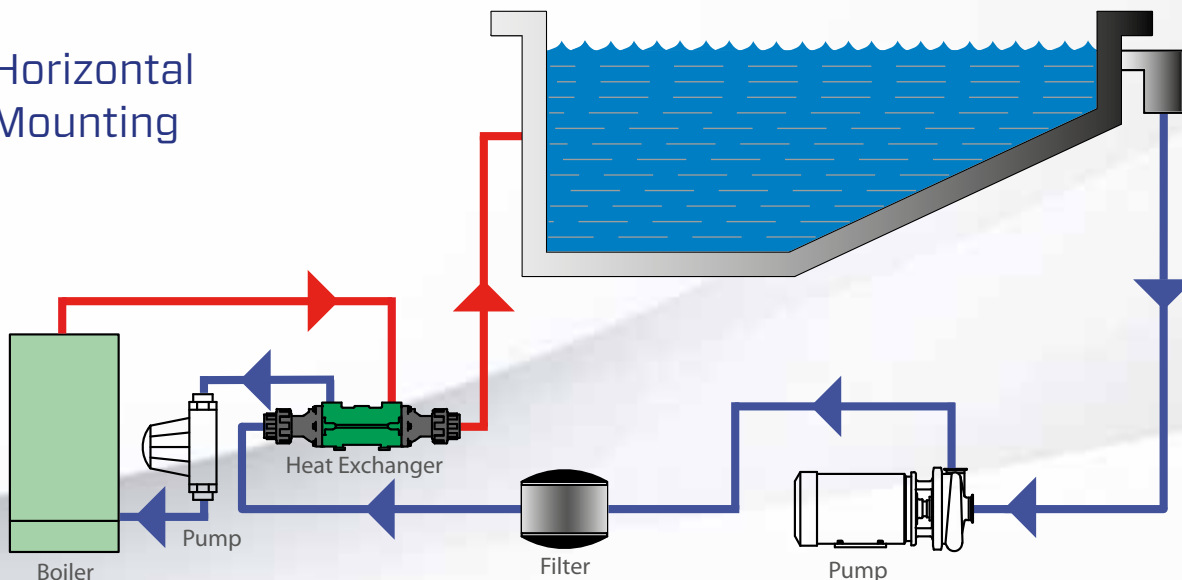
**Operating Temperature** - Heating water must not exceed 110°C.

**Operating Pressure** - The maximum working pressure on both sides is 6 bar (87 psi).

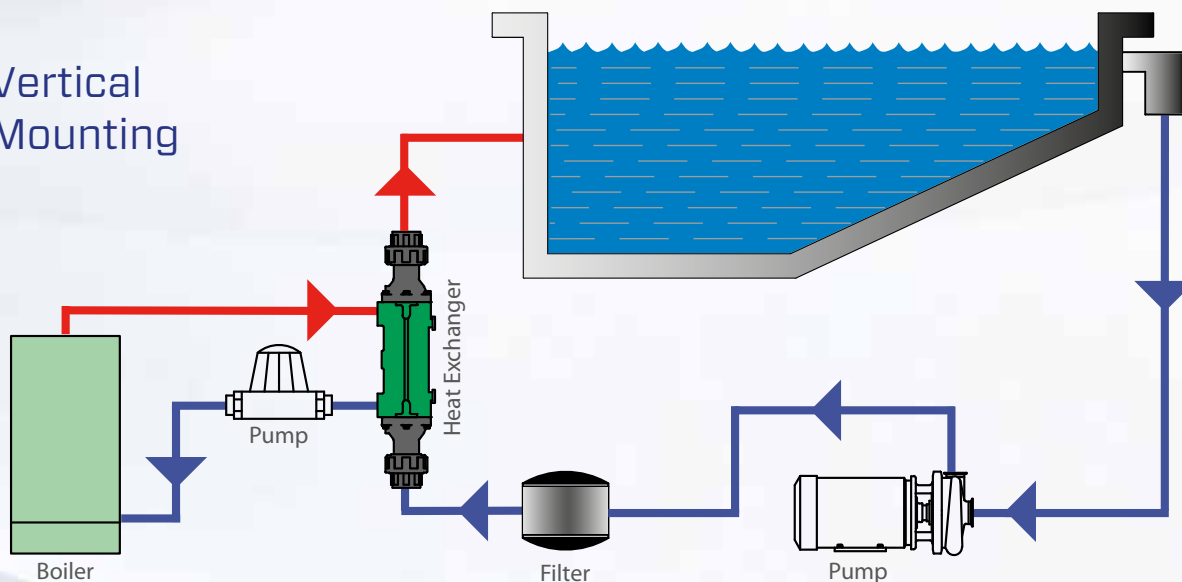
**Mounting** - The heat exchanger can be mounted vertically or horizontally as per the diagram below.

**Dosing** - If an automatic dosing system is added, it must be installed after the heat exchanger on the return to the pool.

## Horizontal Mounting



## Vertical Mounting



# A world of applications

Wherever you can install a swimming pool, you can enjoy the high performance and energy efficiency of a Bowman heat exchanger. We've been involved in an incredibly diverse range of projects around the world – just take a look at these examples.



**In Russia** - Bowman heat exchangers are used in the pool heating system in the Russian Spa Resort of Sochi, the site of the Winter Olympics 2014.



Bowman units are at the heart of a new cogeneration system at Leichhardt Park and Aquatic Centre (LPAC) in New South Wales, **Australia**, where they're helping to improve the centre's energy efficiency and reduce annual energy costs and greenhouse gas emissions.



The KP Club resort, Yorkshire, **UK**, is using Bowman products in the renewable heating system for the hot tubs in its luxury lodges. By installing a biomass boiler and heat exchangers instead of conventional electric heating, the club is saving thousands of pounds a year on its energy bills.



The famous outdoor pool complex at **Moree Hot Artesian Spa in the Australian Outback** relies on Bowman titanium heat exchangers to meet the demands of the unique artesian water supply and massive fluctuation in outside air temperatures.



Bowman is now established as the 'leading brand' for swimming pool heat exchangers. With tens of thousands of units operating reliably and efficiently throughout the world, you can have complete confidence when you specify Bowman heat exchangers for your pool.

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# **BOWMAN**<sup>®</sup>

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Reg. No. FM38224