

# Swimming Pool Heat Exchangers

BSP/PN6/10/16 Connections

Heat Transfer Technology from Bowman



# **BOWMAN®**

100 YEARS OF HEAT TRANSFER TECHNOLOGY

# 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. 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 of Bowman heat exchangers will help you achieve faster heat-up times while reducing your energy consumption, costs and CO2 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's products, Bowman units heat pools up to three times faster, reducing energy costs and saving money.

#### Easy installation

Our popular EC and FC ranges feature composite end covers and solvent weld connectors for installation directly into pool pipework. Most models also feature an integral 7mm thermostat pocket.

#### Universal fit end covers

All EC models are supplied with 'Universal Fit' end covers, which makes installation even easier – see page 11 for more information.

#### Simple to maintain

An easily removable tubestack and end covers makes cleaning and maintenance 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 reliability and durability.

### **Titanium tube stacks**

Titanium is the ultimate 'fit & forget' material for swimming pool heat exchangers. It is capable of withstanding attack from all known chemicals and is suitable for use with any type of pool water. Bowman now offer titanium tube stacks, with a 10 year guarantee, for every model in the range. See page 11 for more information.

### **Solar and renewable energy**

Bowman also offer a range of heat exchangers for solar and renewable energy, for swimming pool owners wishing to reduce energy costs and CO<sub>2</sub> emissions. These units are specially designed to work with the lower temperature water from solar panels or ground source heat pumps.





# BOWMAN®

## 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 with different boiler water temperatures.



Type	Pool Capacity		Heat Transfer 82°C Boiler Water		Heat Transfer 60°C Boiler Water		Boiler Water Flow		Maximum Pool Water Flow		Weight
	m³	gal	kW	Btu/h	kW	Btu/h	m³/h	l/min	m³/h	l/min	
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	80	270,000	46	157,000	4.0	67	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	110	375,000	60	205,000	6.0	100	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
GL140-3708-2T	478	105,000	320	1,100,000	180	615,000	13.5	225	54.0	900	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
JK190-5118-3	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
PK190-5119-3	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

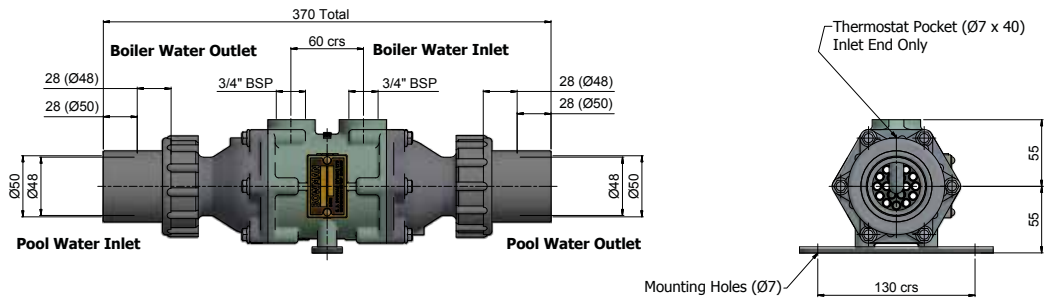
\*Add the appropriate suffix indicating tube material when ordering these part numbers (S or T).

Tube stack material specification: C = Cupronickel S = Stainless Steel T = Titanium

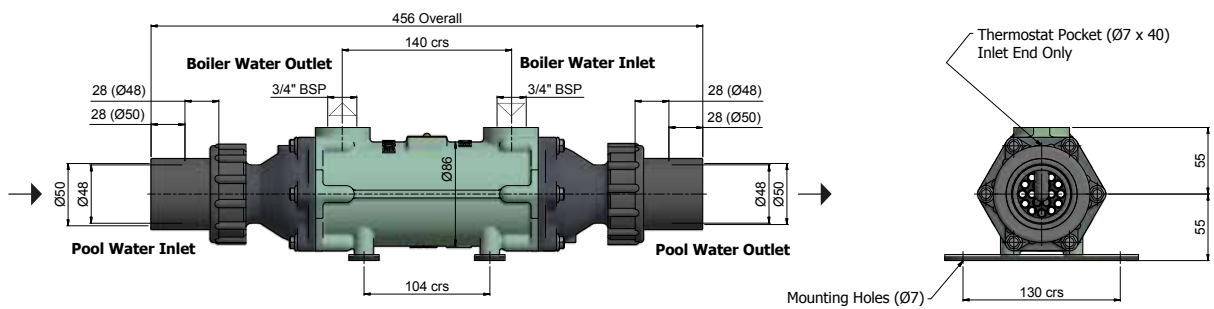
N.B. Stainless steel heat exchangers should not be used with salt water chlorinators or salt water pools.

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

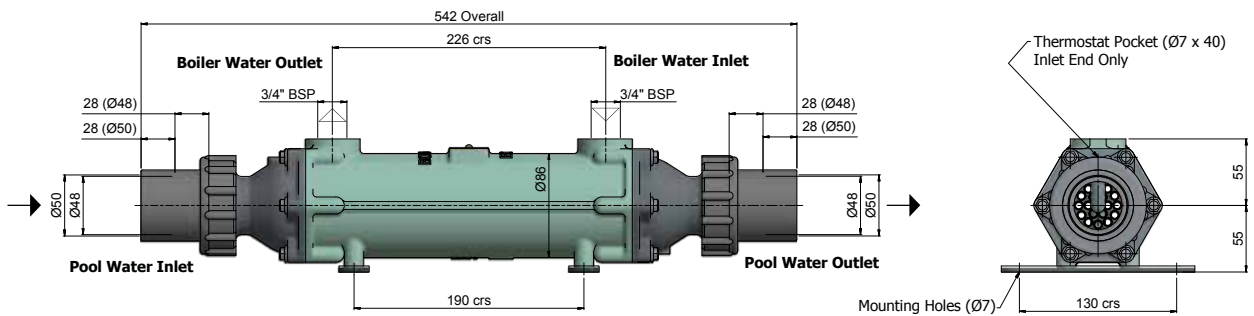
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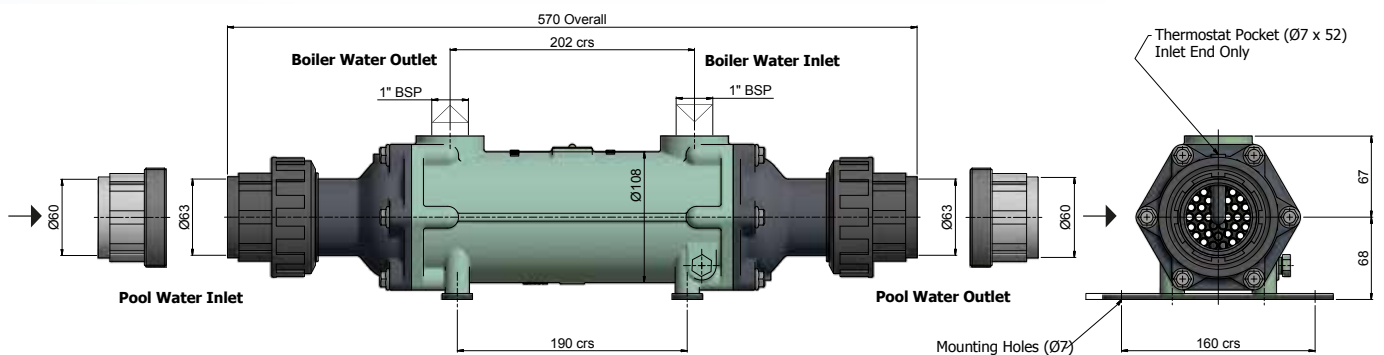
## EC100-5113-2



## EC120-5113-3

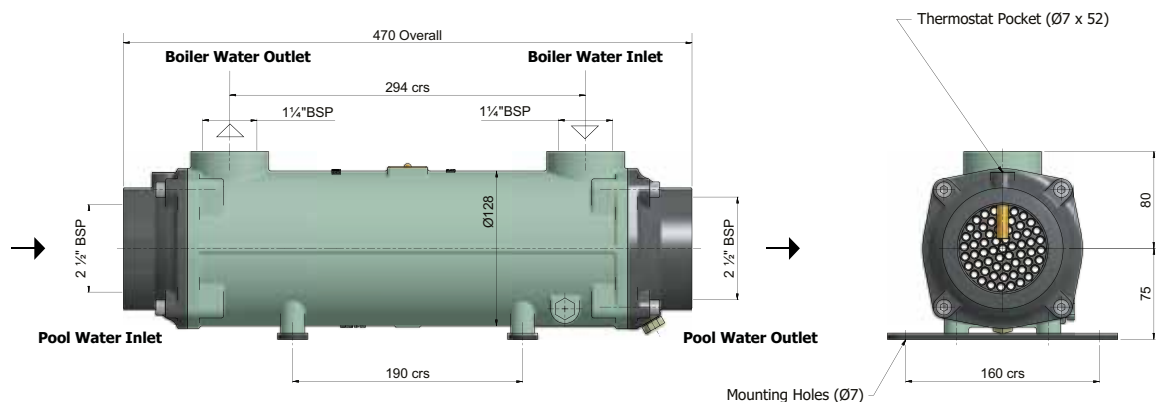


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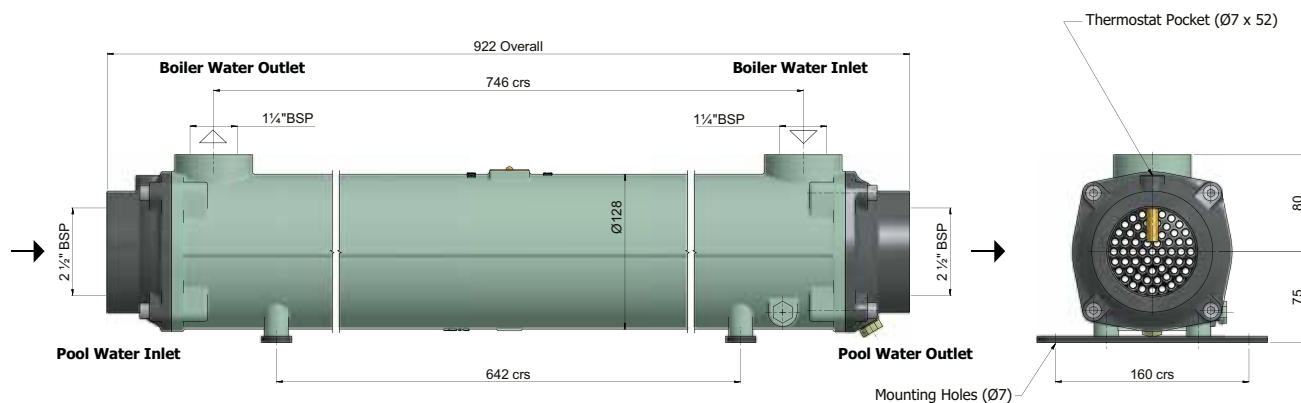


All dimensions in mm.

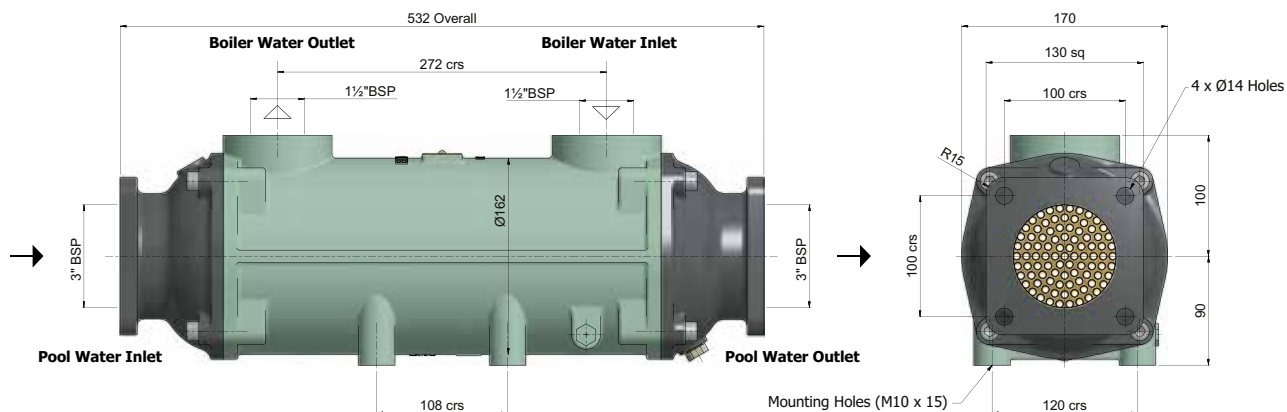
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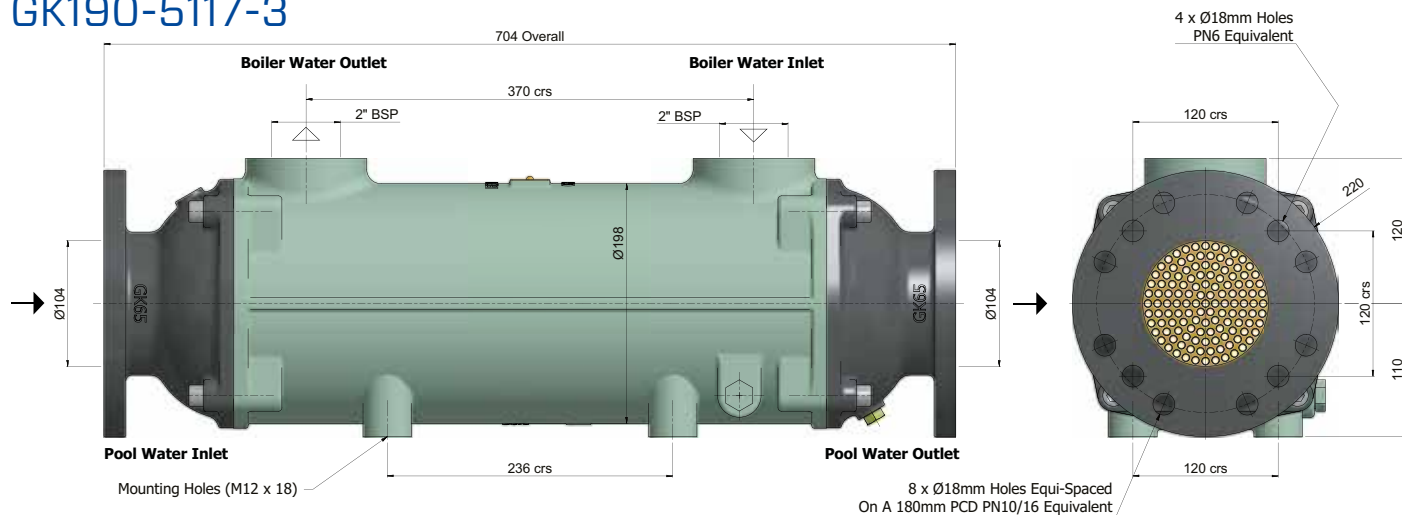
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## GL140-3708-2



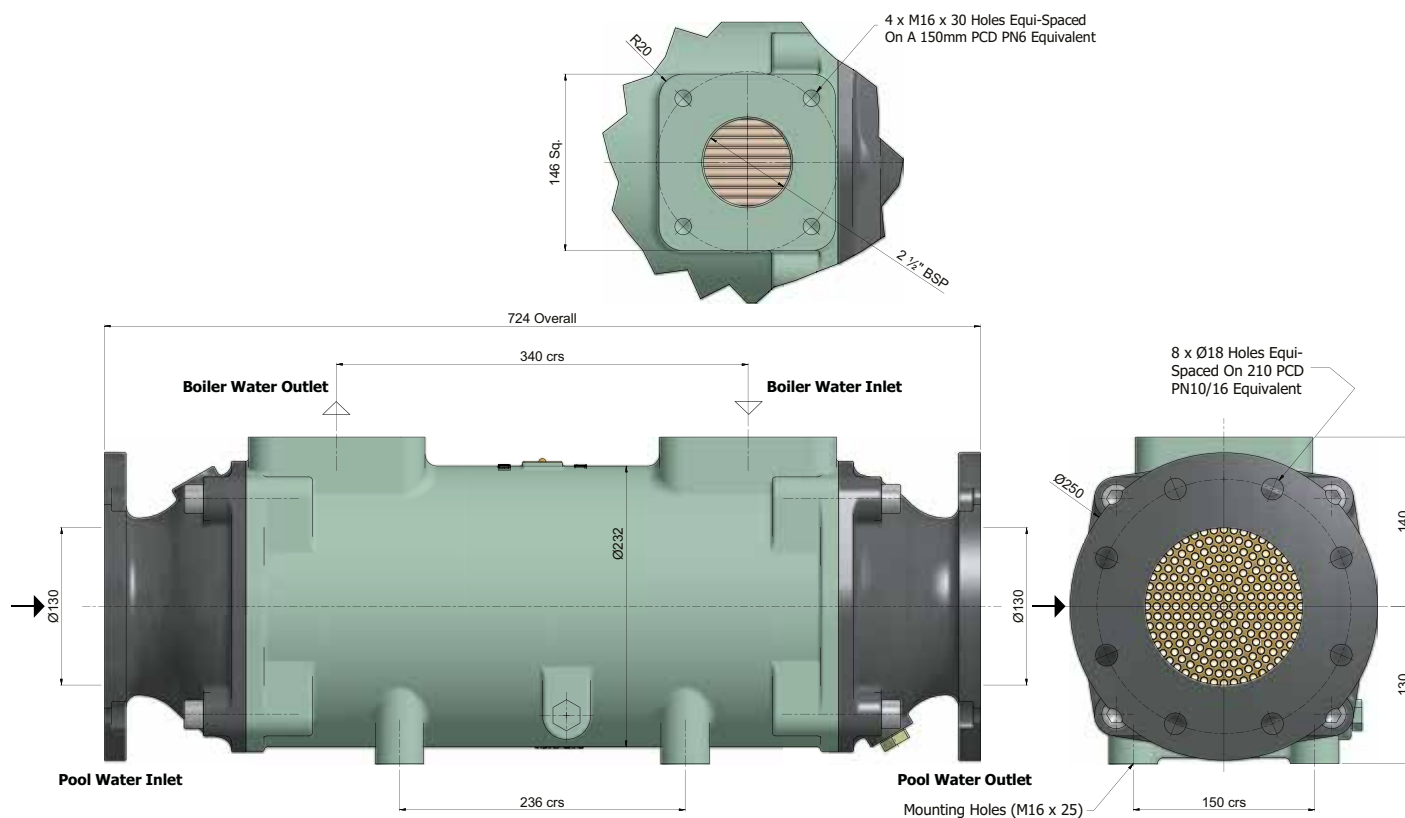
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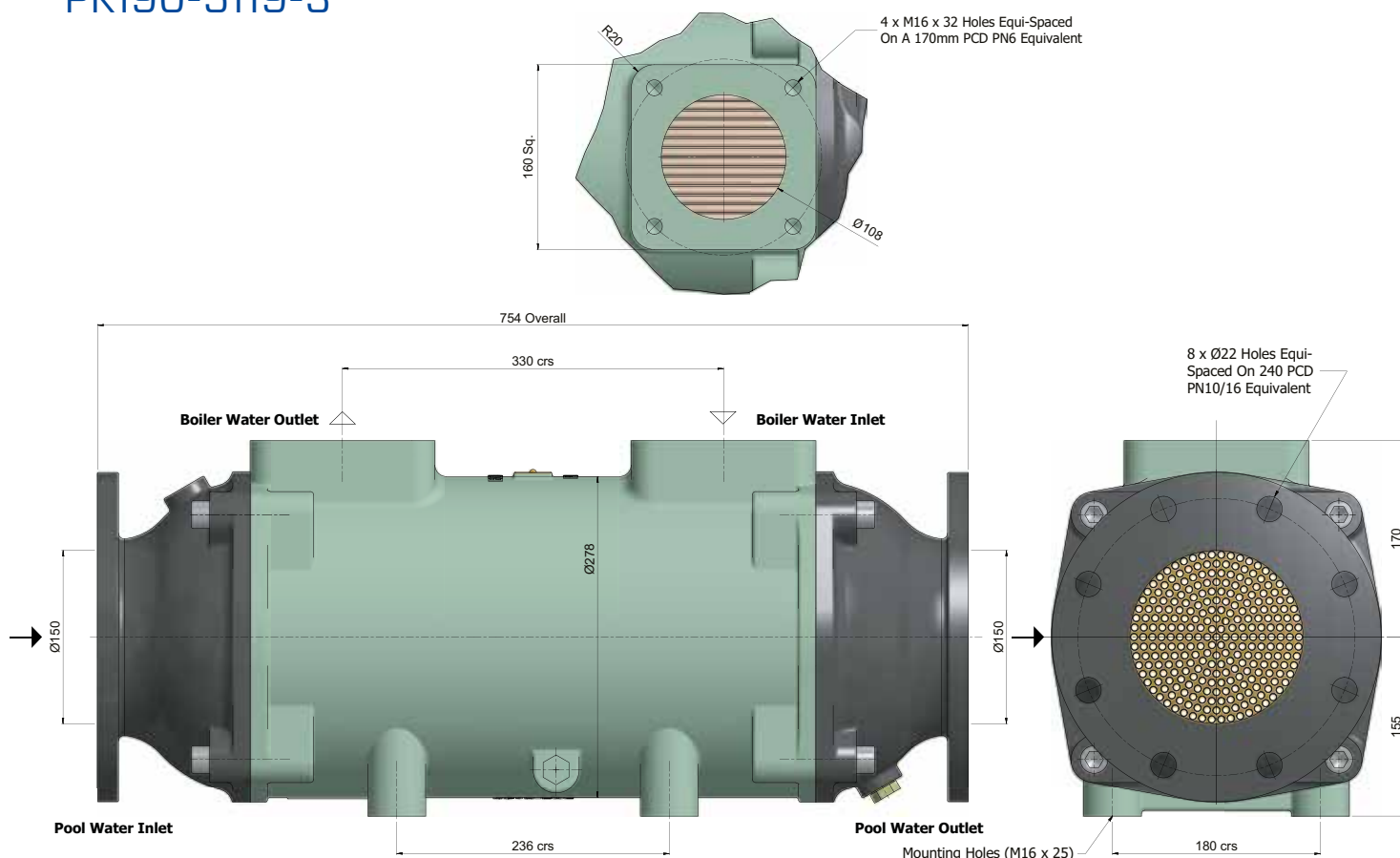
All dimensions in mm.

Flanges to BS EN 1092/1.

## JK190-5118-3



## PK190-5119-3



All dimensions in mm.

Flanges to BS EN 1092/1.



## 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 pumps at 70°C, 60°C or 45°C and the swimming pool water at 30°C.



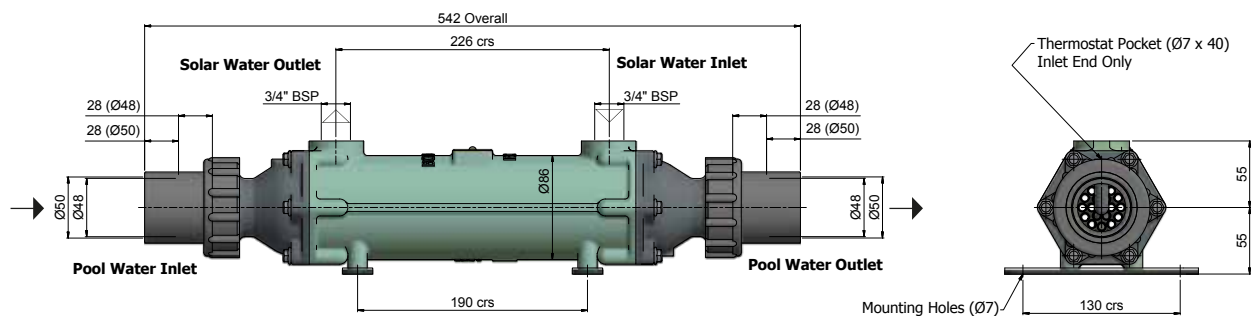
Type	Pool Capacity		Heat Transfer		Solar or Heat Pump Water Flow		Maximum Pool Water Flow		Weight
	m <sup>3</sup>	gal	kW	Btu/h	m <sup>3</sup> /h	l/min	m <sup>3</sup> /h	l/min	kg
Hot Water at 70°C									
EC120-5113-3C/S/T*	50	11,000	30	102,000	1.5	25	6.2	104	5.5 / 5.5 / 4.9
EC160-5113-5C/S/T*	120	26,000	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).  
Tube stack material specification: C = Cupronickel S = Stainless Steel T = Titanium

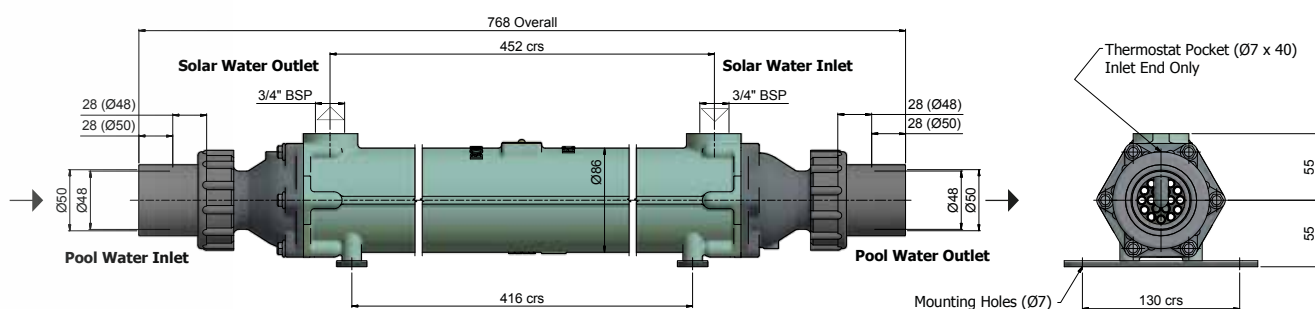
N.B. Stainless steel heat exchangers should not be used with salt water chlorinators or salt water pools.



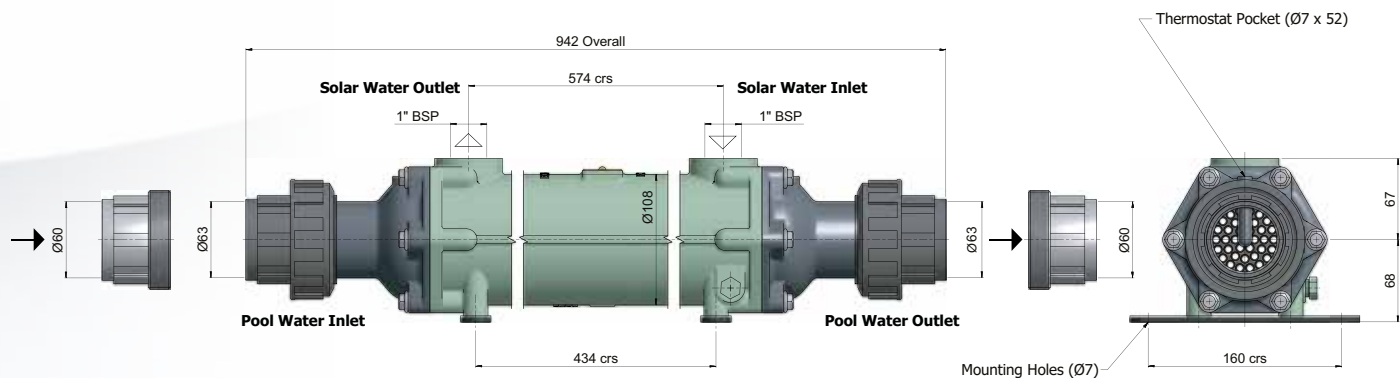
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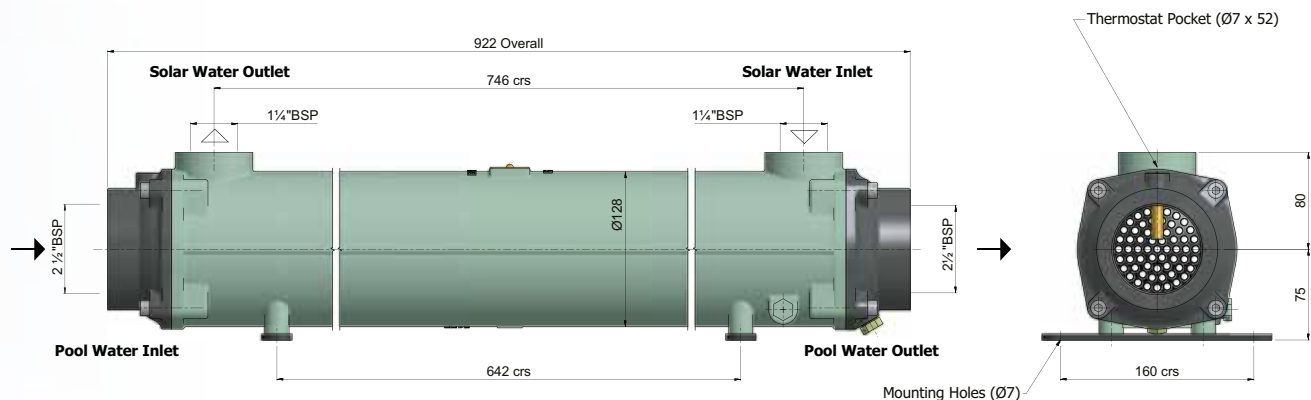
## EC160-5113-5



## FC160-5114-5

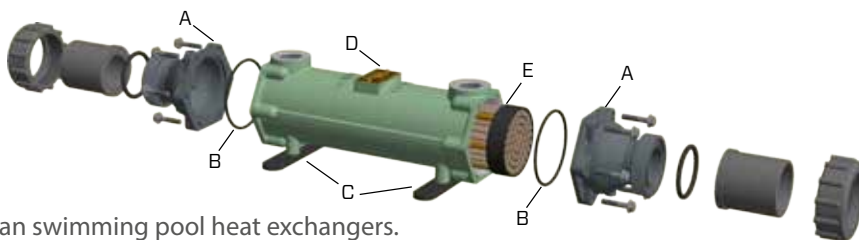


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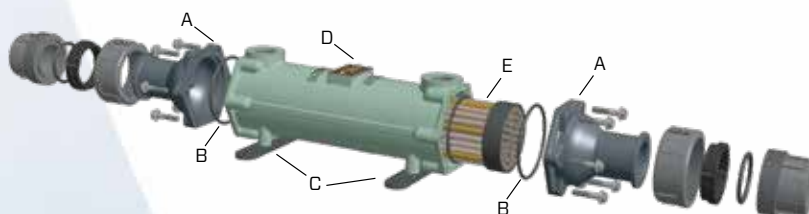


## Replacement Parts

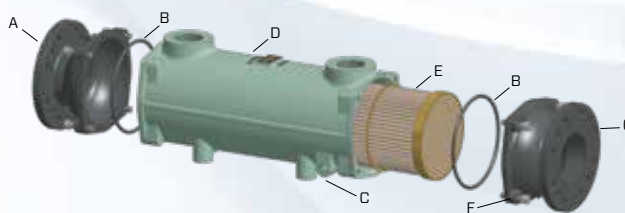
Replacement parts are available for all Bowman swimming pool heat exchangers.



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



Type	End Cover Assembly (A)	'O' Seals (B)	Mounting Brackets (C)	Body (D)	Tube Stack (E)
FC100-5114-2C FC100-5114-2S FC100-5114-2T	5031	OS46NT	5032-2	FC70-4668-2CI-SP	5096-2TNP 5096-2STP 5096-2TIP
FC160-5114-5C FC160-5114-5S FC160-5114-5T	5031	OS46NT	5032-2	FC73-4668-5CI-SP	5096-5TNP 5096-5STP 5096-5TIP



Type	Non Drain End Cover (A)	'O' Seals (B)	Mounting Brackets (C)	Body (D)	Tube Stack (E)	End Cover Screws (F)	Drain End Cover (G)
FG100-5115-2C FG100-5115-2S FG100-5115-2T	FG7-2802CIC-DR	OS52NT	5032-2	FG10-1650-2CI-SP	5090-2TN1P 5097-2STP 5097-2TIP	HS08X35DP	FG7-2802CIC-DR
FG160-5115-5C FG160-5115-5S FG160-5115-5T	FG7-2802CIC-DR	OS52NT	5032-2	FG16-1650-5CI-SP	5090-5TN1P 5097-5STP 5097-5TIP	HS08X35DP	FG7-2802CIC-DR
GL140-3708-2C GL140-3708-2T	GL37-3140CIC	OS63NT	-	GL15-3136NF-2CI6-SP	3447-2TN1B 5367-2TI4B	HS10X40DP	GL37-3140CIC-DR
GK190-5117-3C GK190-5117-3T	GK65-5255CIC	OS69NT	-	GK19-2865NF-3CI7-SP	3448-3TN1B 5369-3TI4B	HS12X50DP	GK65-5255CIC-DR
JK190-5118-3 JK190-5118-3T	JK4-3331CIC	OS74NT	-	JK19-3332NF-3CI8-SP	3450-3TN1B 5371-3TI4B	HS16X70DP	JK4-3331CIC-DR
PK190-5119-3 PK190-5119-3T	PK4-2926CIC	OS81NT	-	PK19-2920HF-3CI0	3449-3TN1B 5373-3TI4B	HS16X70DP	PK4-2926CIC-DR

When an end cover is removed for cleaning or maintenance, a new 'O' seal should be fitted.

## 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.ej-bowman.com](http://www.ej-bowman.com)

**Pool Water Flow** - The maximum pool water flow rates detailed in the performance tables 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.

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

**Dosing** - If an automatic dosing system is used, it must be installed after the heat exchanger and before the pool.

**Salt Water** - Stainless steel heat exchangers should not be used with salt water chlorinators or salt water pools.

## 'Universal Fit' end covers for EC units

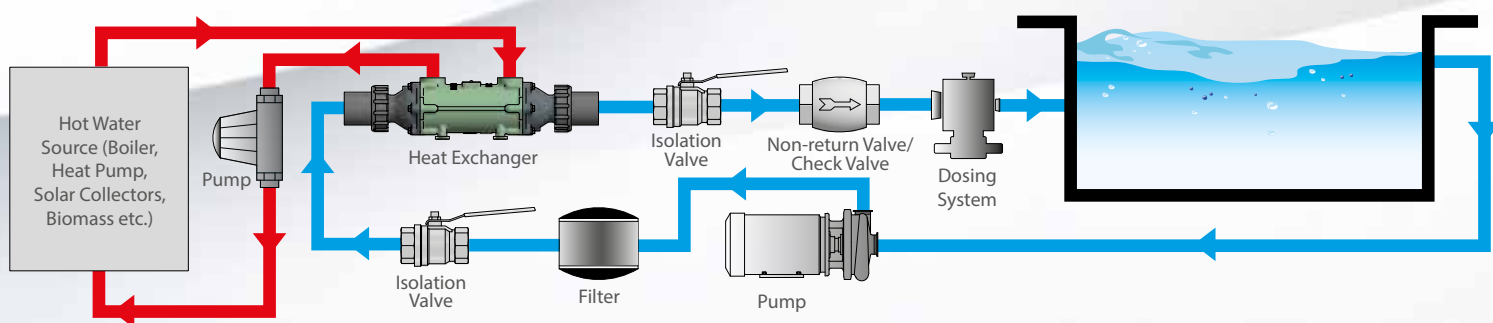
EC units are supplied with 'Universal Fit' composite end covers, which are designed for use with either 1.5" nominal pipe size (48mm O/D) or metric 50mm O/D pool pipework. A 'socket union' component enables either diameter to be accommodated, making installation even easier. For more information, contact our sales team and ask for the product bulletin.



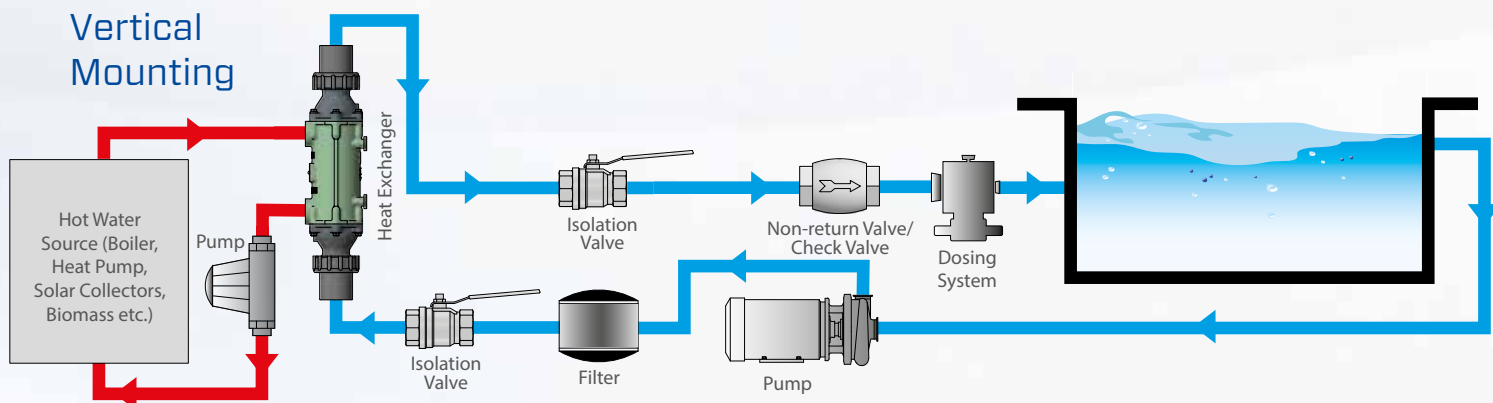
**GUARANTEED**  
**10**  
**YEARS**

Bowman titanium heat exchangers have a full 10 year guarantee on all titanium material in contact with pool water.

## 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.



Bowman heat exchangers are playing a vital role in the success of the **Paragraph Resort and Spa Hotel in Georgia**. One of its standout features is the 115-metre-long outdoor saltwater swimming pool, which extends out over the Black Sea, and is heated via a Bowman titanium heat exchanger.



Nirvana Spa has created a relaxed, high end Mediterranean holiday experience in the **UK**, that can be enjoyed all year round, including a range of stunning swimming, spa and wellness pools, which are all heated by Bowman heat exchangers.



Biomass boilers, plus Bowman heat exchangers provide efficient and effective heating all year round for the stunning swim spa's that are a major guest attraction at the luxury country holiday experience that is **Ashlin Farm Barns**.



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 manufacturer of 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.

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