

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 CO₂ emissions. These units are specially designed to work with the lower temperature water from solar panels or ground source heat pumps.



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 | kg |
| 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 |

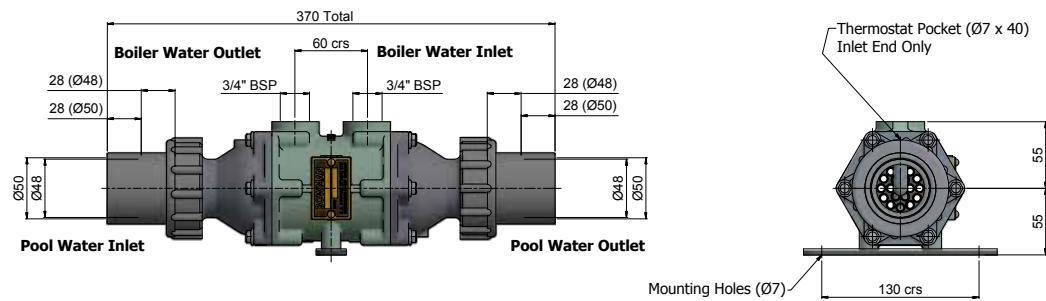
*Add the appropriate suffix indicating tube material when ordering these part numbers (S or T).

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

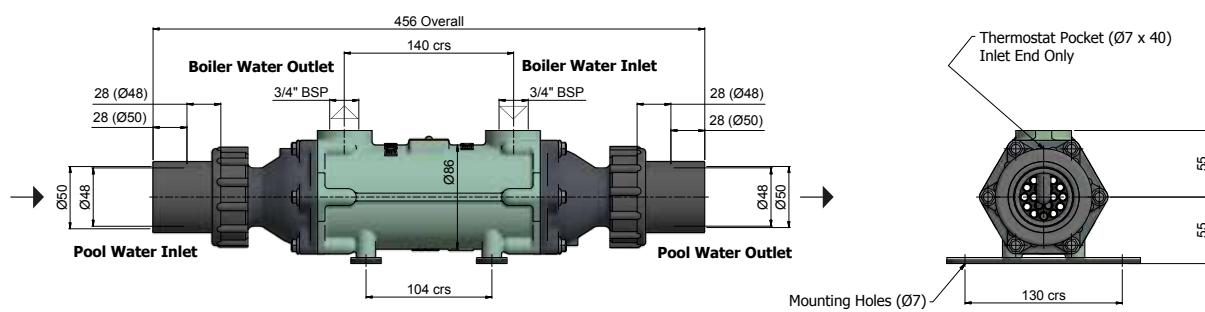
N.B. Stainless steel heat exchangers should not be used with salt water chlorinators or salt water pools.

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

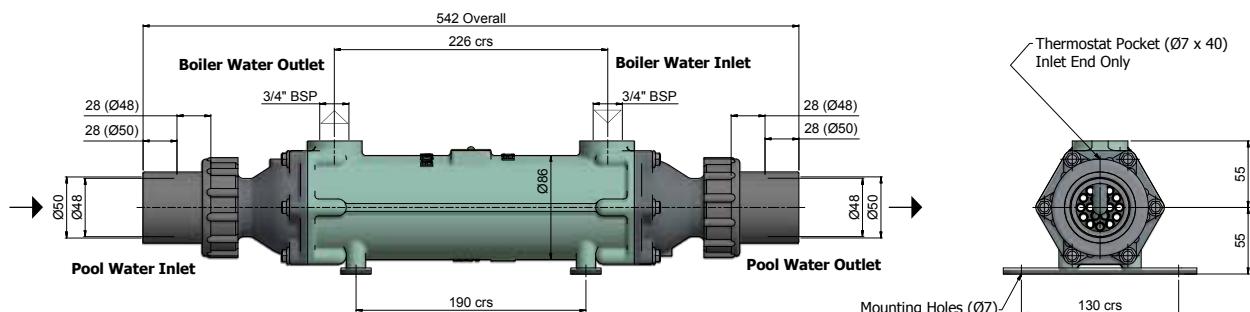
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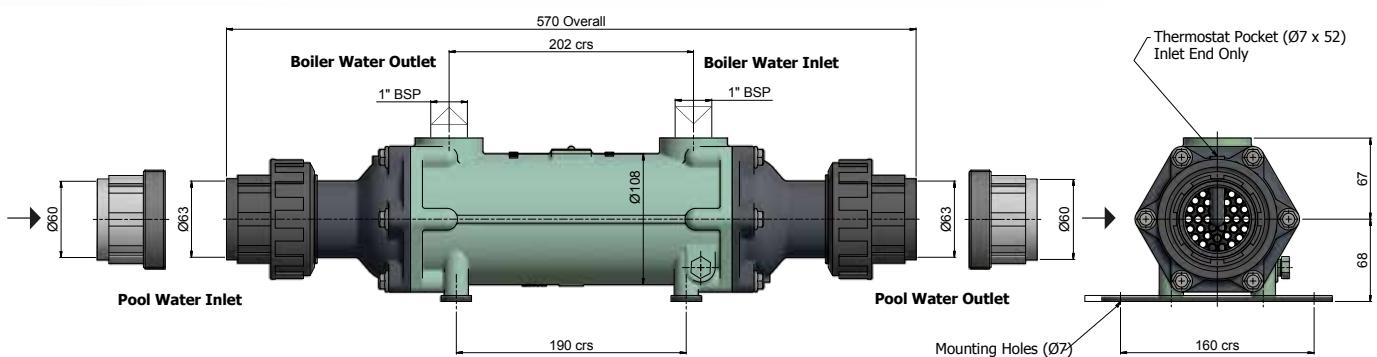
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EC120-5113-3

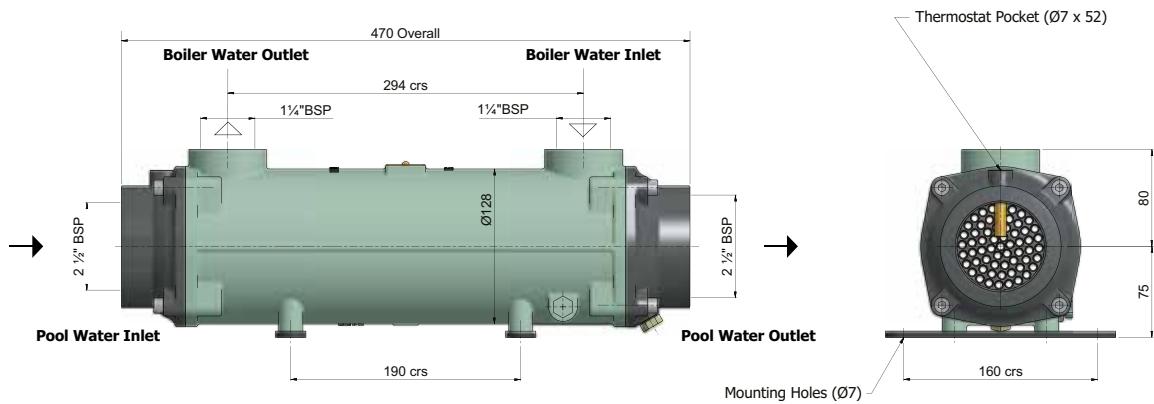


FC100-5114-2

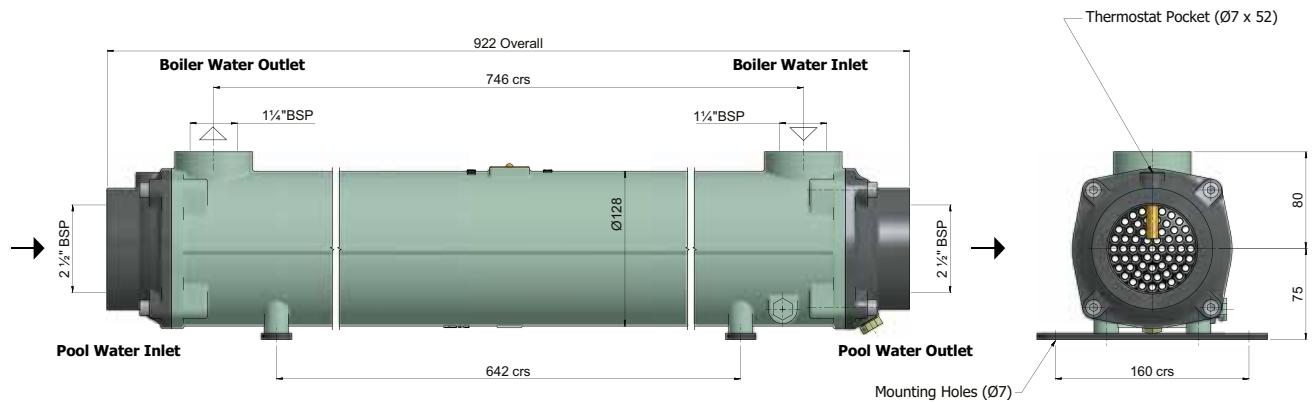


All dimensions in mm.

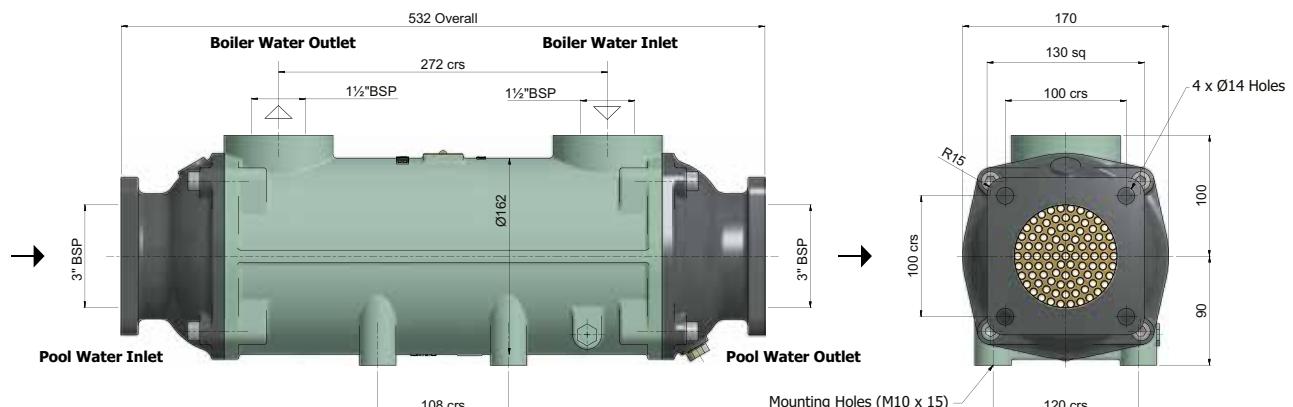
FG100-5115-2



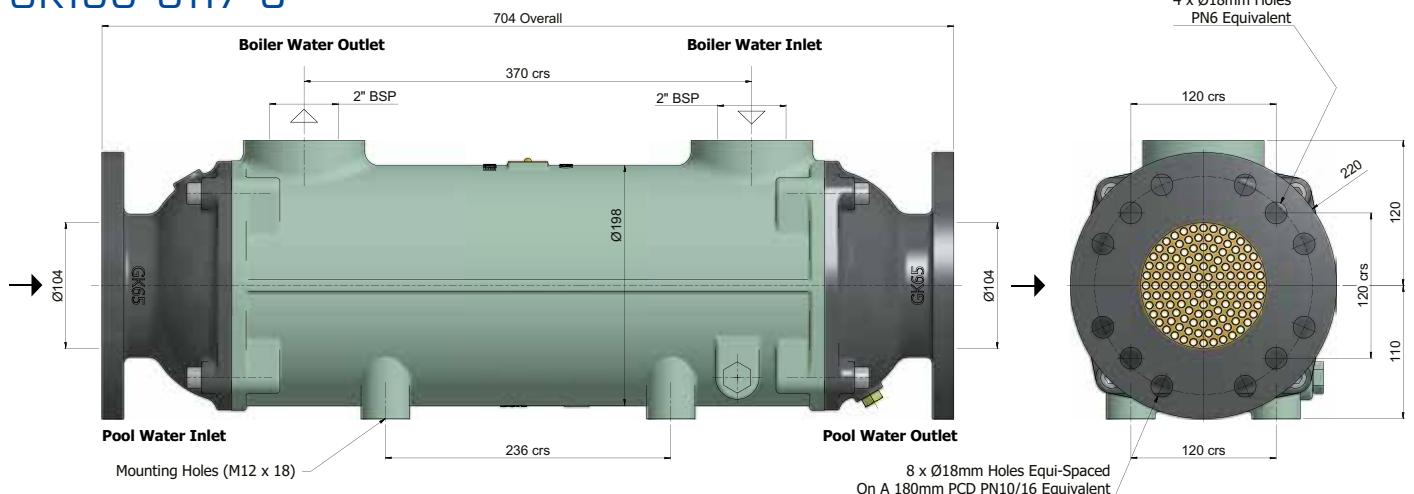
FG160-5115-5



GL140-3708-2



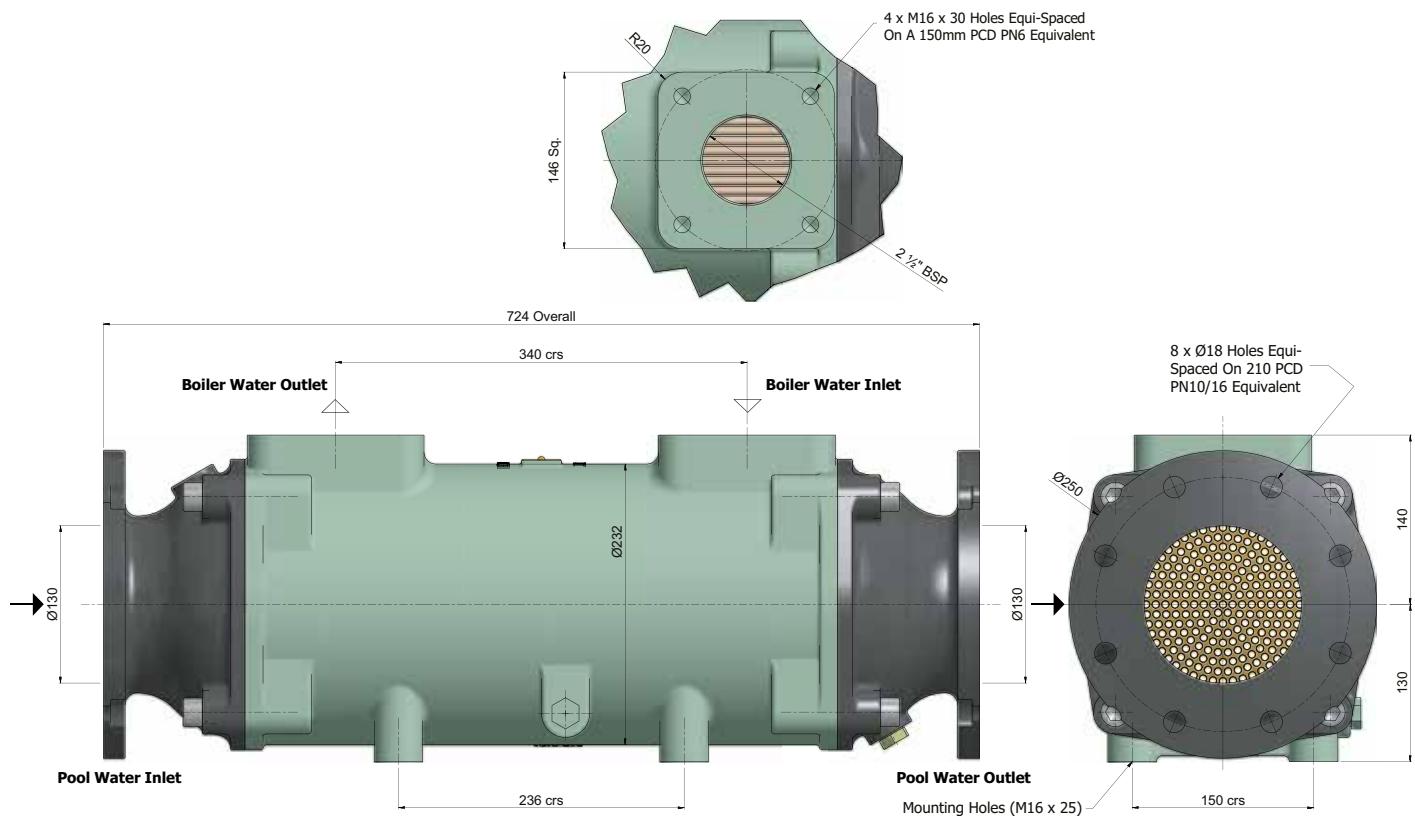
GK190-5117-3



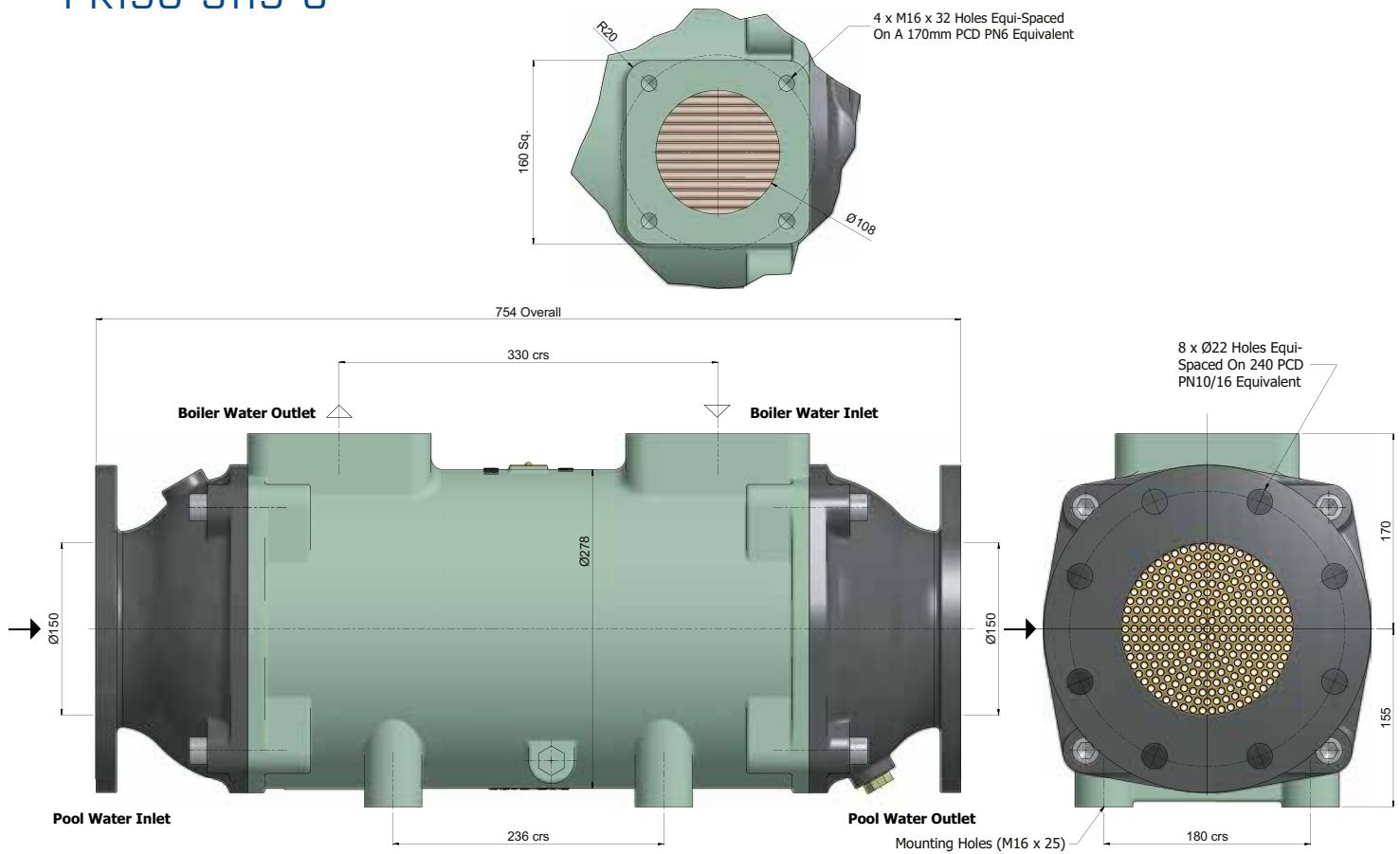
All dimensions in mm.

Flanges to BS EN 1092/1.

JK190-5118-3



PK190-5119-3



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.

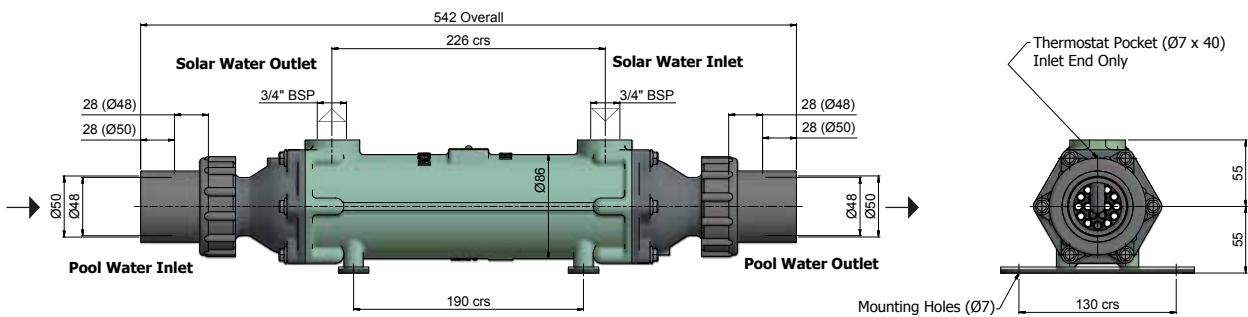


| Type | Pool Capacity | | Heat Transfer | | Solar or Heat Pump Water Flow | | Maximum Pool Water Flow | | Weight |
|--------------------------|----------------|--------|---------------|---------|-------------------------------|-------|-------------------------|-------|-----------------|
| | m ³ | gal | kW | Btu/h | m ³ /h | l/min | m ³ /h | l/min | |
| 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 |

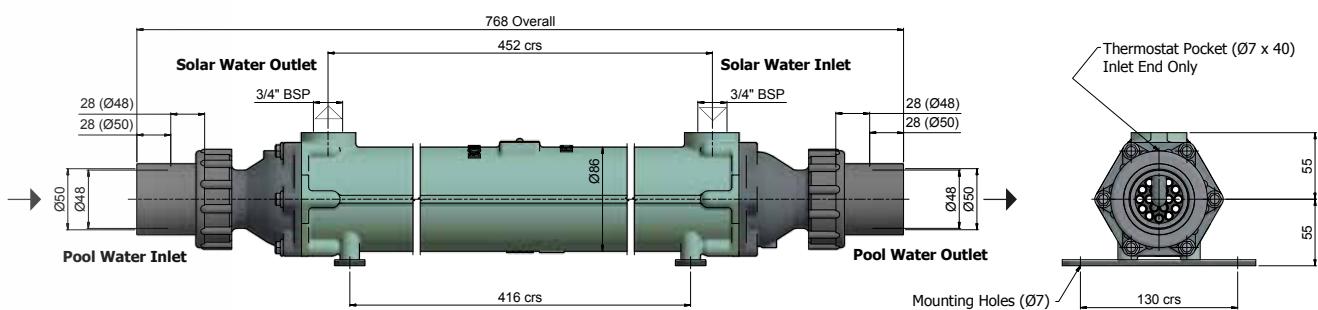
*Add the appropriate suffix indicating tube material when ordering these part numbers (C, S or T).
Tube stack material specification: C = Cupronickel S = Stainless Steel T = Titanium

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

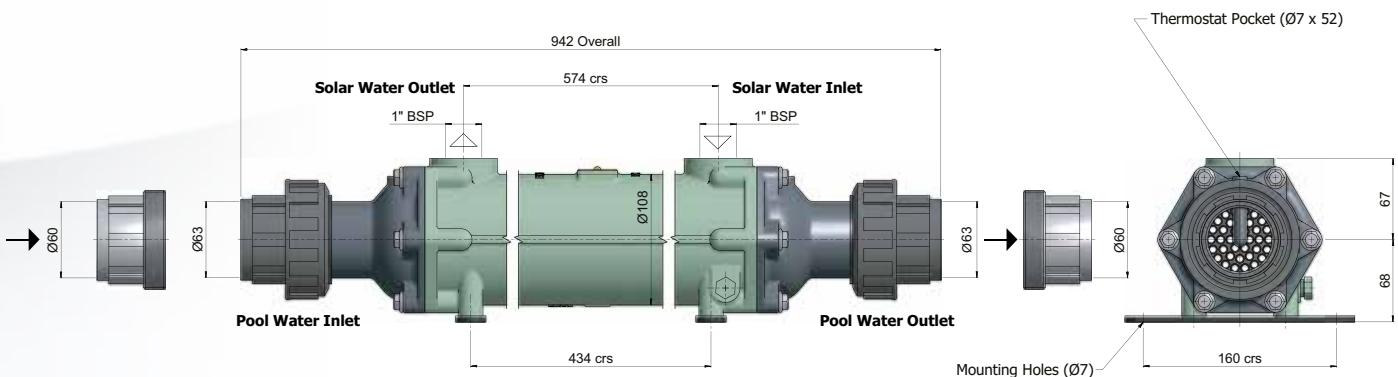
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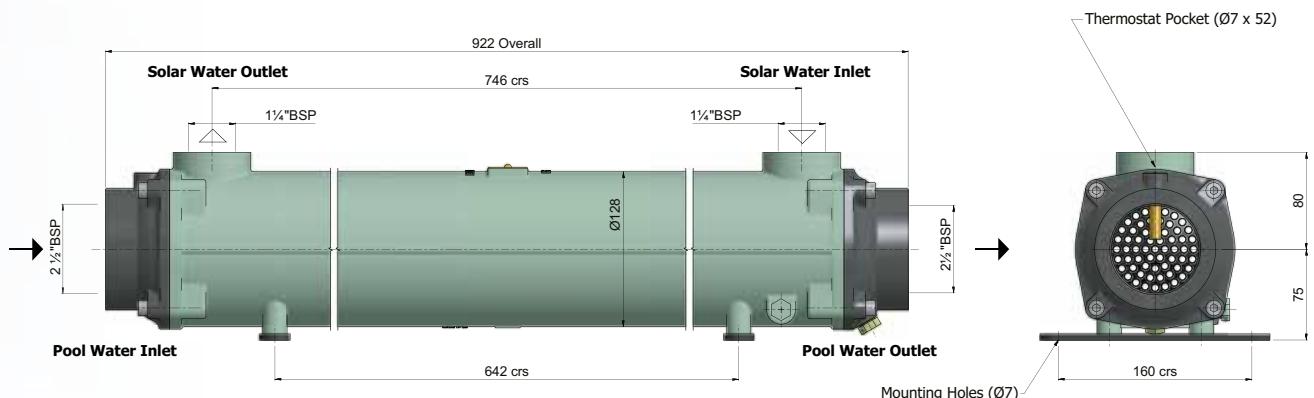
EC160-5113-5



FC160-5114-5



FG160-5115-5

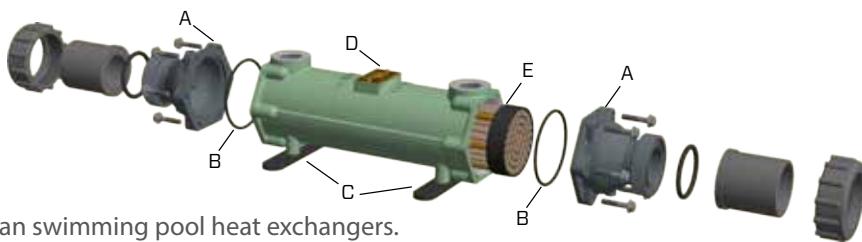


All dimensions in mm.

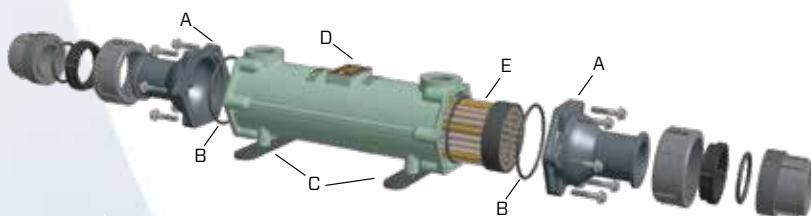
Flanges to BS EN 1092/1.

Replacement Parts

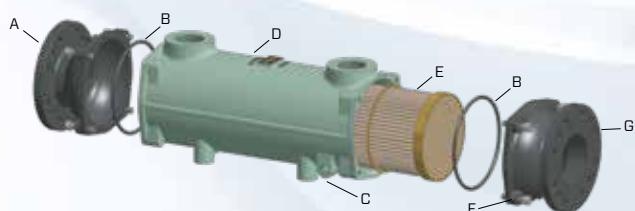
Replacement parts are available for all Bowman swimming pool heat exchangers.



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



| Type | End Cover Assembly (A) | 'O' Seals (B) | Mounting Brackets (C) | Body (D) | Tube Stack (E) |
|---------------|------------------------|---------------|-----------------------|------------------|----------------|
| FC100-5114-2C | | | | | 5096-2TNP |
| FC100-5114-2S | 5031 | OS46NT | 5032-2 | FC70-4668-2CI-SP | 5096-2STP |
| FC100-5114-2T | | | | | 5096-2TIP |
| FC160-5114-5C | | | | | 5096-5TNP |
| FC160-5114-5S | 5031 | OS46NT | 5032-2 | FC73-4668-5CI-SP | 5096-5STP |
| FC160-5114-5T | | | | | 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 | | | | | 5090-2TN1P | | |
| FG100-5115-2S | FG7-2802CIC-DR | OS52NT | 5032-2 | FG10-1650-2CI-SP | 5097-2STP | HS08X35DP | FG7-2802CIC-DR |
| FG100-5115-2T | | | | | 5097-2TIP | | |
| FG160-5115-5C | | | | | 5090-5TN1P | | |
| FG160-5115-5S | FG7-2802CIC-DR | OS52NT | 5032-2 | FG16-1650-5CI-SP | 5097-5STP | HS08X35DP | FG7-2802CIC-DR |
| FG160-5115-5T | | | | | 5097-5TIP | | |
| GL140-3708-2C | GL37-3140CIC | OS63NT | - | GL15-3136NF-2CI6-SP | 3447-2TN1B 5367-2TI4B | HS10X40DP | GL37-3140CIC-DR |
| GL140-3708-2T | | | - | | | | |
| GK190-5117-3C | GK65-5255CIC | OS69NT | - | GK19-2865NF-3CI7-SP | 3448-3TN1B 5369-3TI4B | HS12X50DP | GK65-5255CIC-DR |
| GK190-5117-3T | | | - | | | | |
| JK190-5118-3 | JK4-3331CIC | OS74NT | - | JK19-3332NF-3CI8-SP | 3450-3TN1B 5371-3TI4B | HS16X70DP | JK4-3331CIC-DR |
| JK190-5118-3T | | | - | | | | |
| PK190-5119-3 | PK4-2926CIC | OS81NT | - | PK19-2920HF-3CI0 | 3449-3TN1B 5373-3TI4B | HS16X70DP | PK4-2926CIC-DR |
| PK190-5119-3T | | | - | | | | |

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

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

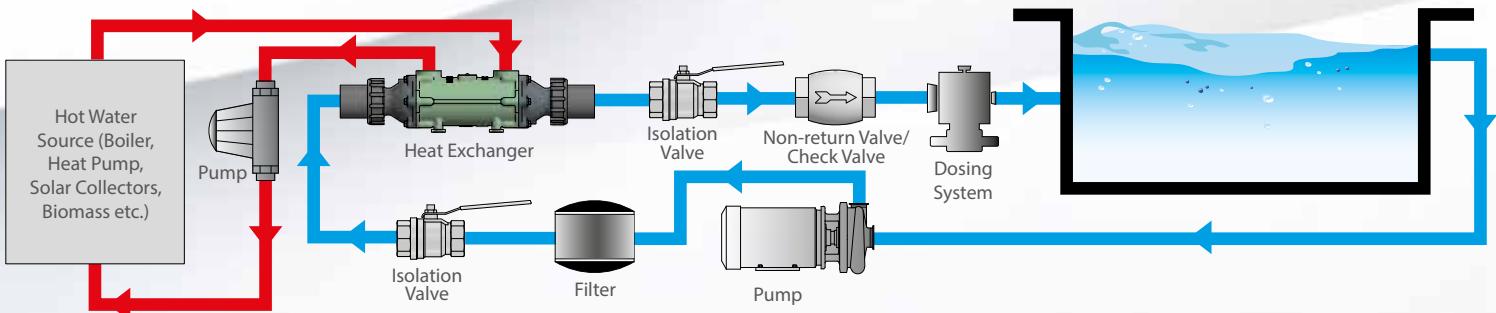
EC units are supplied with 'Universal Fit' composite end covers, which are designed for use with either 1.5" nominal pipe size (48mm O/D) or metric 50mm O/D pool pipework. A 'socket union' component enables either diameter to be accommodated, making installation even easier. For more information, contact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



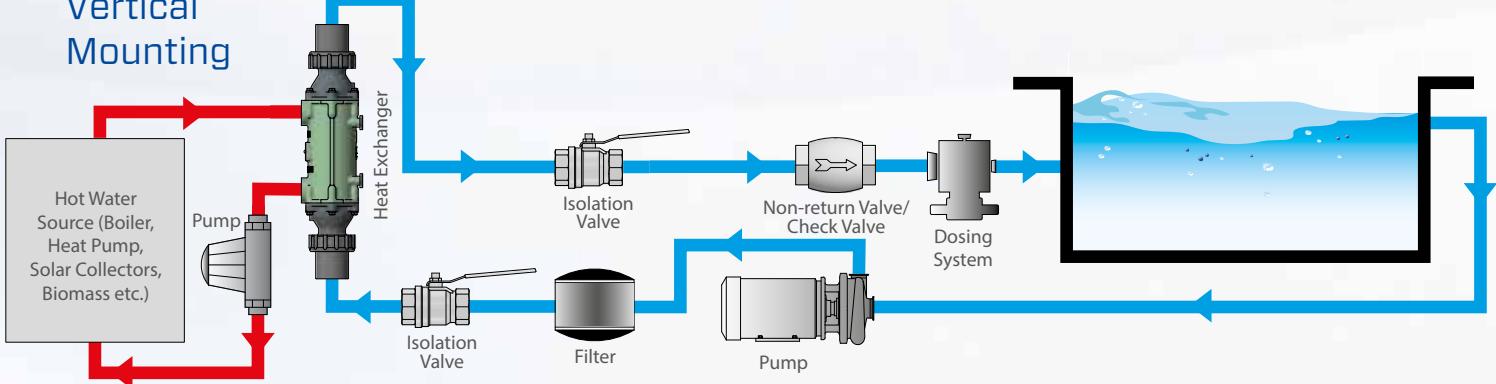
**GUARANTEED
10
YEARS**

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

Horizontal Mounting



Vertical Mounting



Titanium tube stacks



Titanium is the perfect material for swimming pool heat exchangers. It can be used with any type of pool water- including saline and with salt water chlorinators - resisting attack from aggressive chemicals indefinitely.

Titanium also eliminates the possibility of 'galvanic reaction' between two dissimilar materials, a major cause of tubestack corrosion which can lead to premature failure of the heat exchanger in certain conditions.

Titanium heat exchangers provide greater heat transfer, due to their ability to operate at higher flow rates than other materials. In some installations, this allows a smaller sized unit to be used, providing a useful cost saving.

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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