Swimming Pool Heat Exchangers
NPT/ANSI-150 Connections
Heat Transfer Technology from Bowman

BOWMAN®
100 YEARS OF HEAT TRANSFER TECHNOLOGY
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 CO₂ emissions.

The ultimate heat transfer performance for pools and spas

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 EC and FC ranges feature composite end covers and solvent weld connectors for installation directly into pool pipework. Most models also feature an integral 0.28” thermostat pocket.

NEW Universal fit end covers
All EC models are now supplied with our NEW ‘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 procedures very simple and straightforward.
Dominates in the Pool
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 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 and need less energy to heat pools to the required temperature.
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.

<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ft³</td>
<td>gal</td>
<td>Btu/h</td>
<td>Btu/h</td>
<td>GPM</td>
<td>GPM</td>
</tr>
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<td>10,500</td>
<td>68,000</td>
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<td>9.2</td>
<td>40.0</td>
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<td>53.0</td>
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<td>135,000</td>
<td>75,000</td>
<td>10.5</td>
<td>45.0</td>
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<td>24,000</td>
<td>170,000</td>
<td>102,000</td>
<td>13.2</td>
<td>53.0</td>
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<td>240,000</td>
<td>135,000</td>
<td>15.8</td>
<td>60.0</td>
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<td>157,000</td>
<td>17.6</td>
<td>66.0</td>
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<td>340,000</td>
<td>190,000</td>
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<td>93.0</td>
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<td>6,400</td>
<td>48,000</td>
<td>375,000</td>
<td>205,000</td>
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<td>100.0</td>
</tr>
<tr>
<td>FG100-5107-2C</td>
<td>8,000</td>
<td>60,000</td>
<td>580,000</td>
<td>340,000</td>
<td>31.7</td>
<td>127.0</td>
</tr>
<tr>
<td>FG100-5107-2S/T*</td>
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<td>650,000</td>
<td>376,000</td>
<td>37.0</td>
<td>145.0</td>
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<td>FG160-5107-5S/T*</td>
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<td>1,000,000</td>
<td>580,000</td>
<td>40.0</td>
<td>180.0</td>
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<td>1,000,000</td>
<td>580,000</td>
<td>54.5</td>
<td>222.0</td>
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<td>GL140-5108-2S/T*</td>
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<td>1,100,000</td>
<td>615,000</td>
<td>59.4</td>
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<td>GK190-5109-3C</td>
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<td>174,000</td>
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<td>1,060,000</td>
<td>84.5</td>
<td>330.0</td>
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<td>GK190-5109-3T</td>
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<td>198,000</td>
<td>2,150,000</td>
<td>1,230,000</td>
<td>95.1</td>
<td>425.0</td>
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<td>1,500,000</td>
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<td>500.0</td>
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<td>660.0</td>
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<td>3,600,000</td>
<td>2,000,000</td>
<td>195.0</td>
<td>770.0</td>
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<td>444,000</td>
<td>4,000,000</td>
<td>2,200,000</td>
<td>217.0</td>
<td>950.0</td>
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</tbody>
</table>

*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.

The performance capabilities of the heat exchangers are based on achieving a pool water temperature of 86°F.
**EC80-5102-1**

- Boiler Water Outlet: 3/4" NPT
- Boiler Water Inlet: 3/4" NPT
- Pool Water Outlet: Ø1.90" (Imperial) (To Suit 1 1/2" Nom Pipe) Ø1.97" (Metric)
- Pool Water Inlet: Ø1.90" (Imperial) (To Suit 1 1/2" Nom Pipe) Ø1.97" (Metric)

**EC100-5102-2**

- Boiler Water Outlet: 1" NPT
- Boiler Water Inlet: 1" NPT
- Pool Water Outlet: Ø1.90" (Imperial) (To Suit 1 1/2" Nom Pipe) Ø1.97" (Metric)
- Pool Water Inlet: Ø1.90" (Imperial) (To Suit 1 1/2" Nom Pipe) Ø1.97" (Metric)

**EC120-5102-3**

- Boiler Water Outlet: 1" NPT
- Boiler Water Inlet: 1" NPT
- Pool Water Outlet: Ø1.90" (Imperial) (To Suit 1 1/2" Nom Pipe) Ø1.97" (Metric)
- Pool Water Inlet: Ø1.90" (Imperial) (To Suit 1 1/2" Nom Pipe) Ø1.97" (Metric)

**FC100-5103-2**

- Boiler water outlet: 1 1/2" NPT
- Boiler water inlet: 1 1/2" NPT
- Pool water outlet: Ø0.28"

All dimensions in inches.

Pool water inlet

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Thermostat Pocket (Ø0.28" x 1.57")
Inlet End Only

Mounting Holes Ø0.28"
FG100-5107-2

Pool Water Inlet  7.48" crs  18.50" Overall  Boiler Water Outlet 11.68" crs

FG100-5107-2 (Boiler)

GL140-5108-2

Pool Water Inlet  4.25" crs  25.28" crs  20.94" Overall

Pool Water Outlet  2½" NPT

GL140-5108-2

GK190-5109-3

Pool Water Inlet  9.29" crs  27.72" Overall

Pool Water Outlet  4.72 crs

GK190-5109-3

All dimensions in inches
JK190-5110-3

Boiler Water Outlet  Boiler Water Inlet
Pool Water Outlet  Pool Water Inlet

9.29" crs  13.40" crs  5.75" Sq.
R0.79"  3"

8 x ø0.88" Holes Equally Spaced On A 8.5" PCD
- ANSI 150 Class, 5" Nom Pipe Equivalent

5.51"  5.12"
Mounting Holes
M16 x 0.98"

All dimensions in inches.

PK190-5111-3

Boiler Water Outlet  Boiler Water Inlet
Pool Water Outlet  Pool Water Inlet

9.30" crs  13.0" crs

8 x ø0.88" Holes Equally Spaced On A 9.5" PCD
- ANSI 150 Class, 6" Nom Pipe Equivalent

7.10 crs

All dimensions in inches.
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 158°F, 140°F or 113°F for various pool capacities and the swimming pool water at 86°F.

<table>
<thead>
<tr>
<th>Type</th>
<th>Pool Capacity</th>
<th>Heat Transfer</th>
<th>Solar or Heat Pump Water Flow</th>
<th>Maximum Pool Water Flow</th>
<th>Weight</th>
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<tbody>
<tr>
<td></td>
<td>ft³</td>
<td>gal</td>
<td>Btu/h</td>
<td>GPM</td>
<td>GPM</td>
</tr>
<tr>
<td>Hot Water at 158°F</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>EC120-5102-3C/S/T*</td>
<td>1,800</td>
<td>13,500</td>
<td>102,000</td>
<td>6.6</td>
<td>27.0</td>
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<td>66.0</td>
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<td>444,000</td>
<td>20.0</td>
<td>100.0</td>
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<td>79,300</td>
<td>680,000</td>
<td>29.0</td>
<td>127.0</td>
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<tr>
<td>Hot Water at 140°F</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EC120-5102-3C/S/T*</td>
<td>1,400</td>
<td>10,500</td>
<td>68,000</td>
<td>6.6</td>
<td>27.0</td>
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<td>EC160-5102-5C/S/T*</td>
<td>3,900</td>
<td>29,200</td>
<td>190,000</td>
<td>13.2</td>
<td>66.0</td>
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<td>FC160-5103-5C/S/T*</td>
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<td>48,600</td>
<td>325,000</td>
<td>20.0</td>
<td>100.0</td>
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<td>61,000</td>
<td>512,000</td>
<td>29.0</td>
<td>127.0</td>
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<td>Hot Water at 113°F</td>
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<td>EC120-5102-3C/S/T*</td>
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<td>5,200</td>
<td>34,000</td>
<td>6.6</td>
<td>27.0</td>
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<td>92,000</td>
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<td>66.0</td>
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<td>160,000</td>
<td>20.0</td>
<td>100.0</td>
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<td>4,950</td>
<td>37,000</td>
<td>240,000</td>
<td>29.0</td>
<td>127.0</td>
</tr>
</tbody>
</table>

*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.
All dimensions in inches.
Whenever an end cover is removed for cleaning or maintenance, a new ‘O’ seal should be fitted up on re-assembly.
**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 230°F.

**Operating Pressure** - The maximum working pressure on both sides is 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.

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**NEW ‘Universal Fit’ end covers for EC units**

All EC units are now supplied with the new ‘Universal Fit’ composite end covers, which are specially designed for use with either 1.5” nominal pipe size (1.90” O/D) or metric 1.97” O/D pool pipework. A new ‘socket union’ component enables either diameter to be accommodated, making installation even easier. For more information, contact our technical sales team and ask for the product bulletin.

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**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 erosion which can lead to premature failure of the heat exchanger in certain conditions.

Titanium heat exchangers offer even greater heat transfer efficiency, 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.

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**Guaranteed 10 Years**

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