Swimming Pool Heat Exchangers

NPT/ANSI-150 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 CO_2 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_2 emissions. These units are specially designed to work with the lower temperature water from solar panels or ground source heat pumps.

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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.

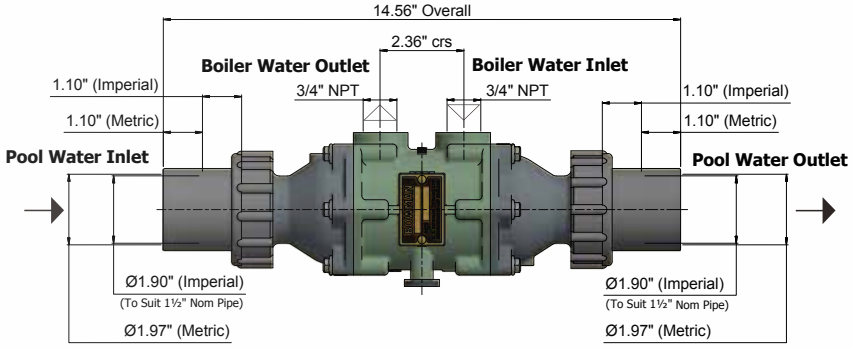
Type	Pool Capacity		Heat Transfer 180°F Boiler Water	Heat Transfer 140°F Boiler Water	Boiler Water Flow	Maximum Pool Water Flow	Weight
	ft^3	US gal	Btu/h	Btu/h	USGPM	USGPM	lb
EC80-5102-1C	1,400	10,500	68,000	41,000	9.2	40.0	6.6
EC80-5102-1S/T*	1,750	13,000	85,000	55,000	13.2	53.0	6.6/6.0
EC100-5102-2C	2,900	22,000	135,000	75,000	10.5	45.0	10
EC100-5102-2S/T*	3,200	24,000	170,000	102,000	13.2	53.0	10/9
EC120-5102-3C	4,250	32,000	240,000	135,000	15.8	60.0	12
EC120-5102-3S/T*	4,600	34,500	270,000	157,000	17.6	66.0	12/11
FC100-5103-2C	6,000	44,500	340,000	190,000	23.8	93.0	19
FC100-5103-2S/T*	6,400	48,000	375,000	205,000	26.4	100.0	19/17
FG100-5107-2C	8,000	60,000	580,000	340,000	31.7	127.0	35
FG100-5107-2S/T*	9,600	72,000	650,000	376,000	37.0	145.0	35/31
FG160-5107-5S/T*	11,000	82,000	1,000,000	580,000	40.0	180.0	64/55
GL140-5108-2C	16,000	120,000	1,000,000	580,000	54.5	222.0	66
GL140-5108-2T	16,800	126,000	1,100,000	615,000	59.4	238.0	60
GK190-5109-3C	23,300	174,000	1,900,000	1,060,000	84.5	330.0	125
GK190-5109-3T	26,500	198,000	2,150,000	1,230,000	95.1	425.0	112
JK190-5110-3	35,300	264,000	2,660,000	1,500,000	125.0	500.0	187
JK190-5110-3T	43,500	325,000	3,280,000	1,840,000	165.0	660.0	167
PK190-5111-3	53,000	396,000	3,600,000	2,000,000	195.0	770.0	264
PK190-5111-3T	59,300	444,000	4,000,000	2,200,000	217.0	950.0	233

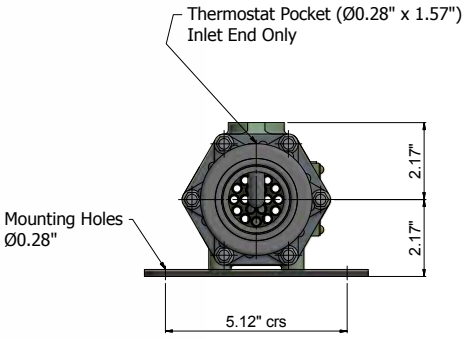
*Add the appropriate suffix indicating tube material when ordering these part numbers (S or T).
Tube stack material specification: C = Cupronickel S = Stainless Steel T = Titanium

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 86°F.

EC80-5102-1





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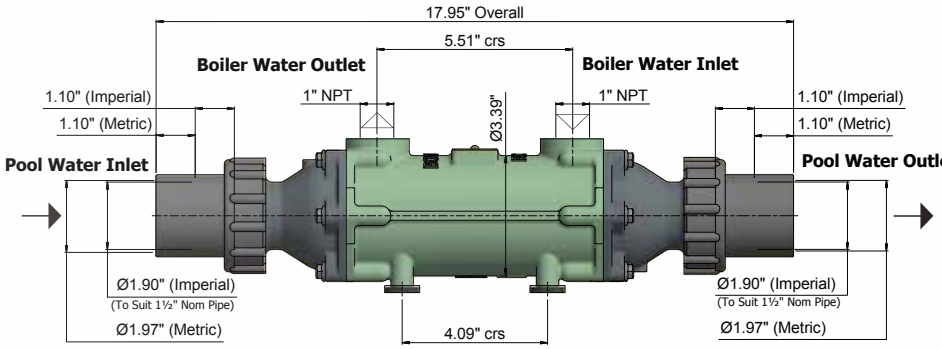

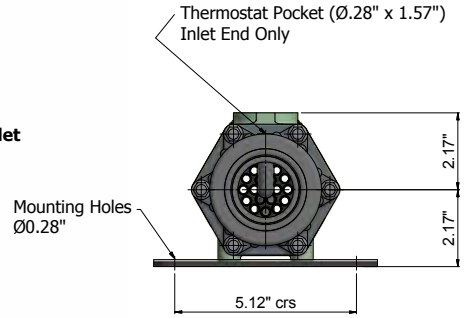

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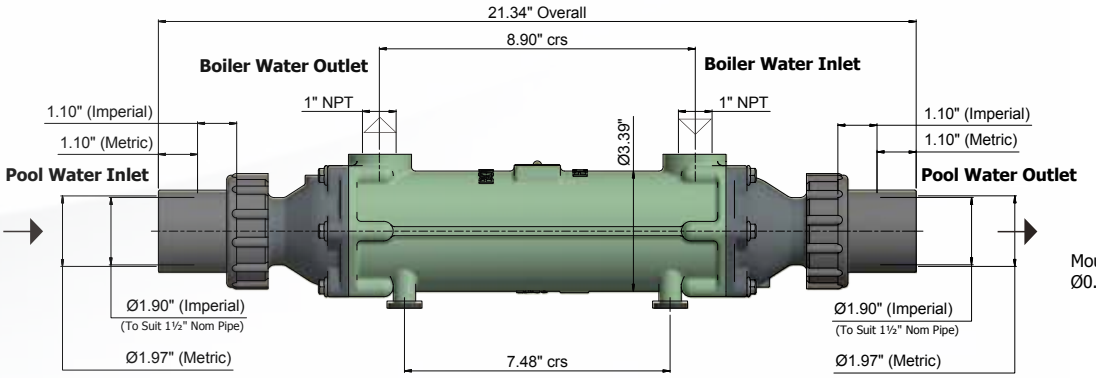

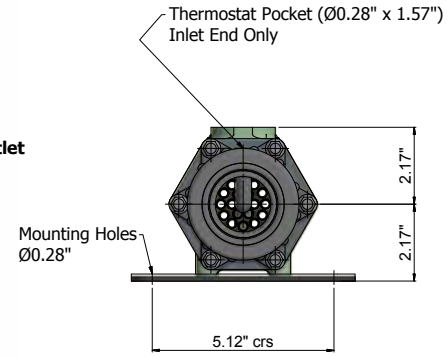

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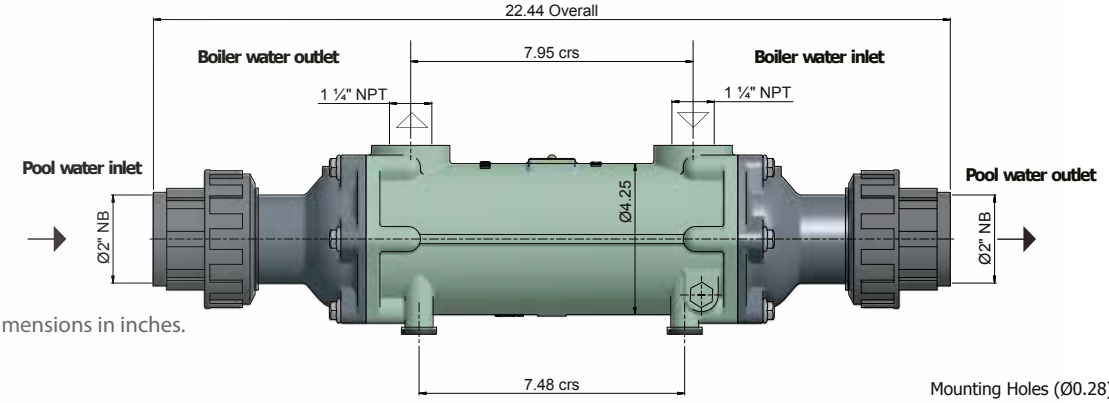

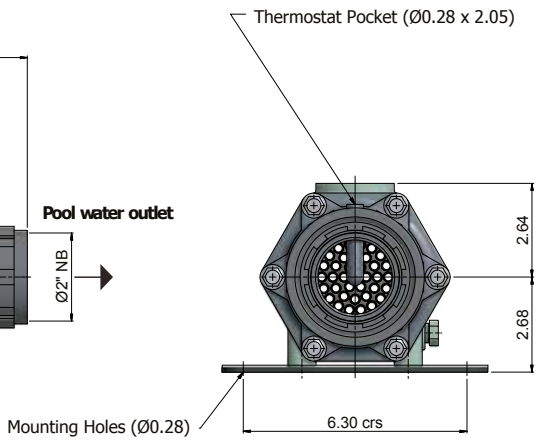

All dimensions in inches.

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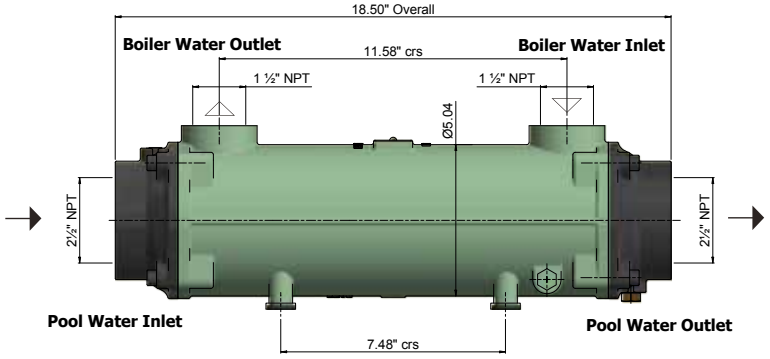

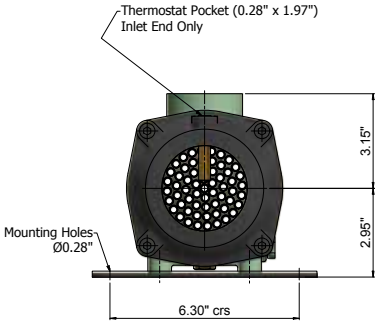

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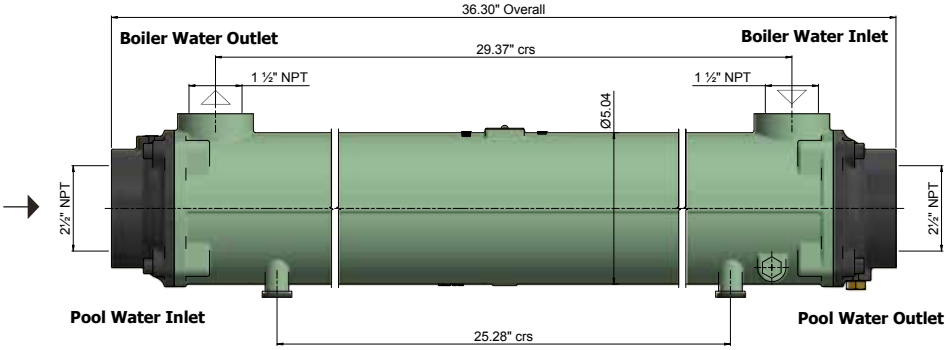

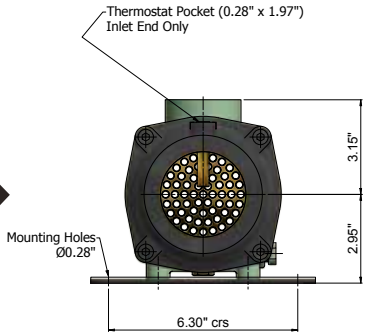

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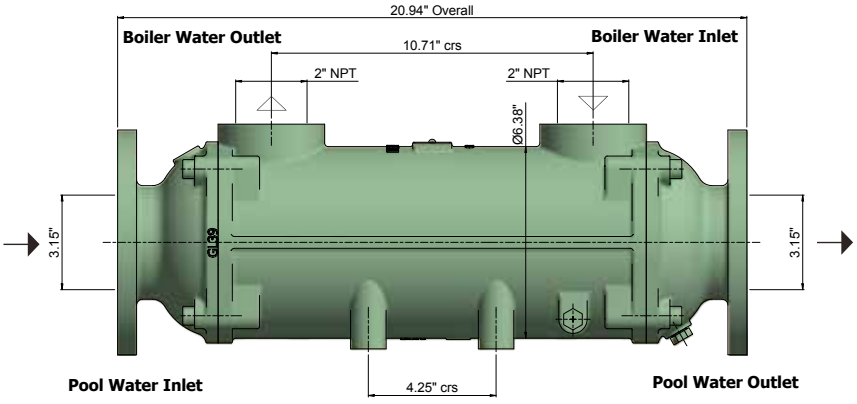

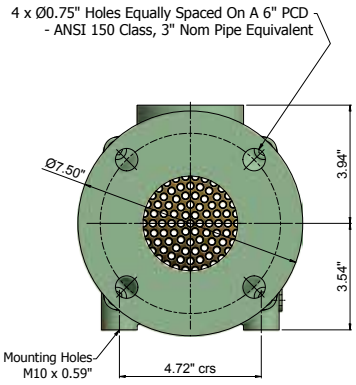

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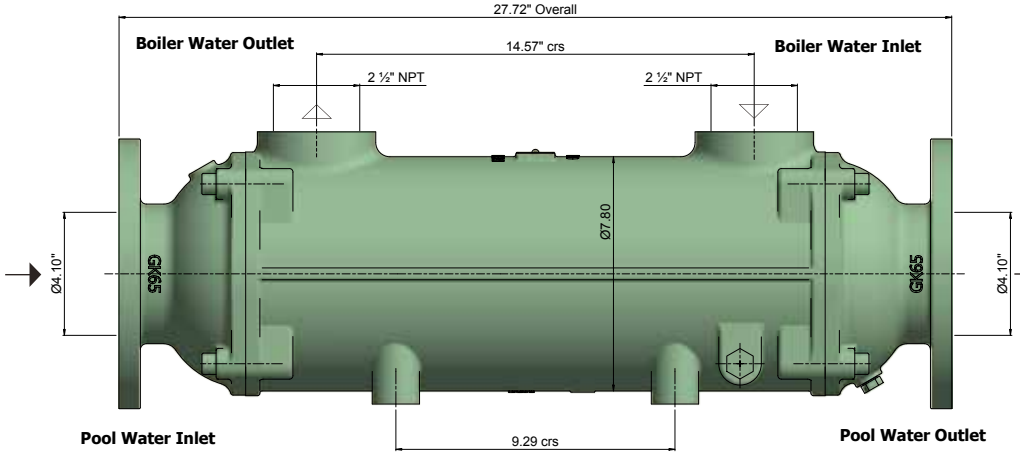
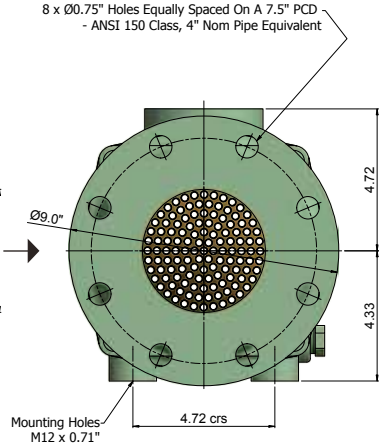
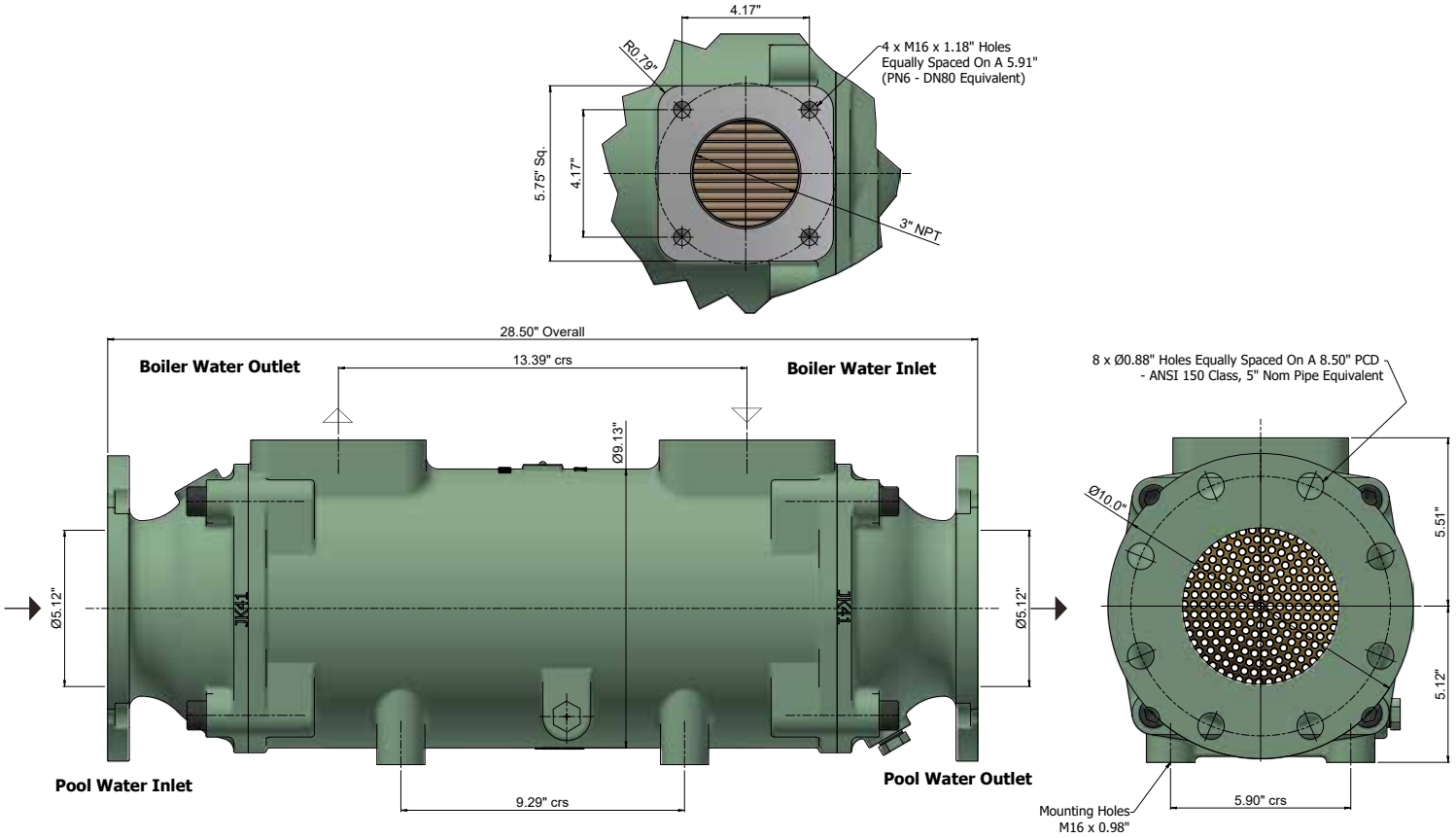




All dimensions in inches

JK190-5110-3



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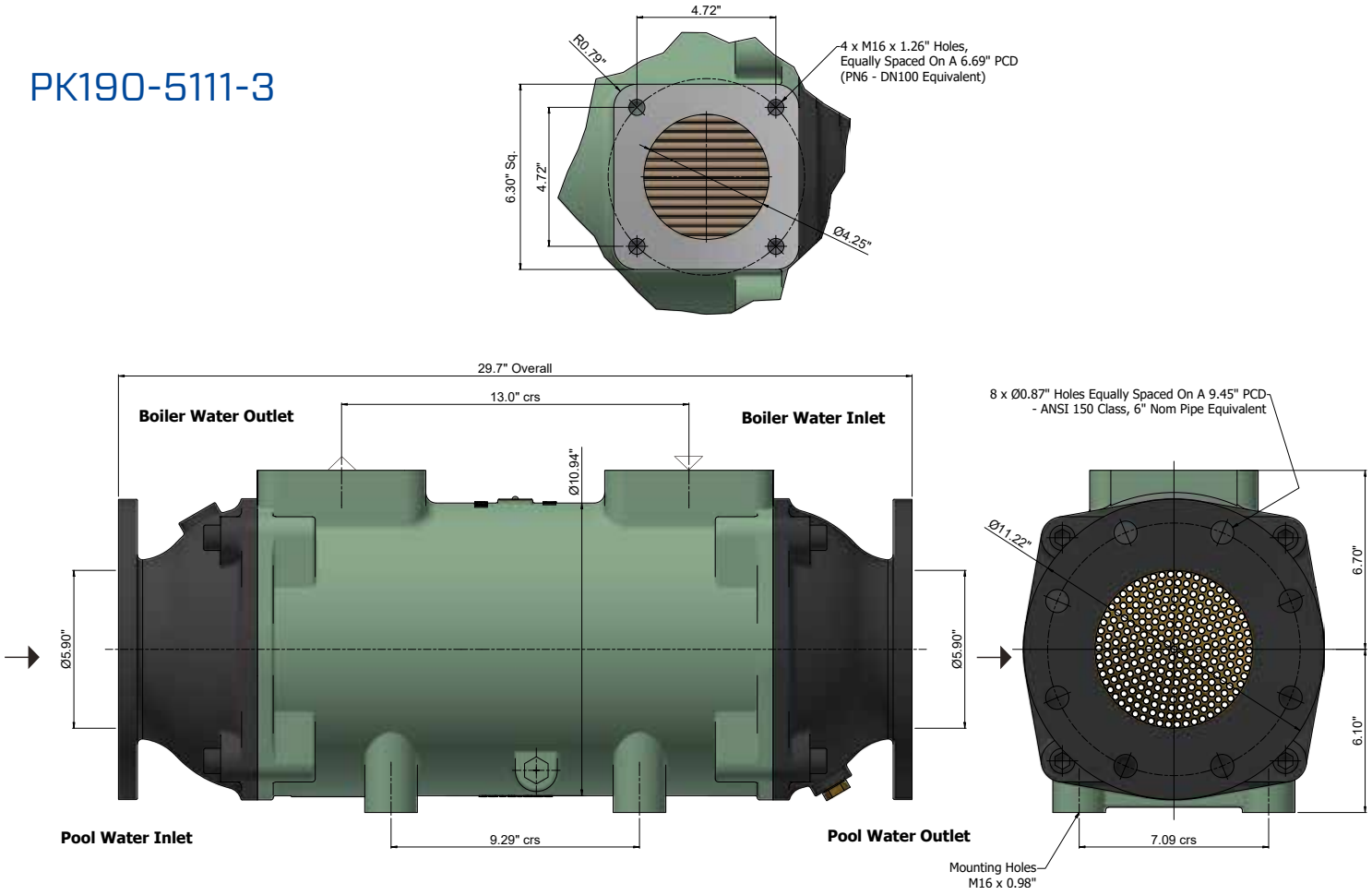


All dimensions in inches.

BOWMAN®

Swimming Pool Heat Exchangers

for use with solar panels and heat pumps

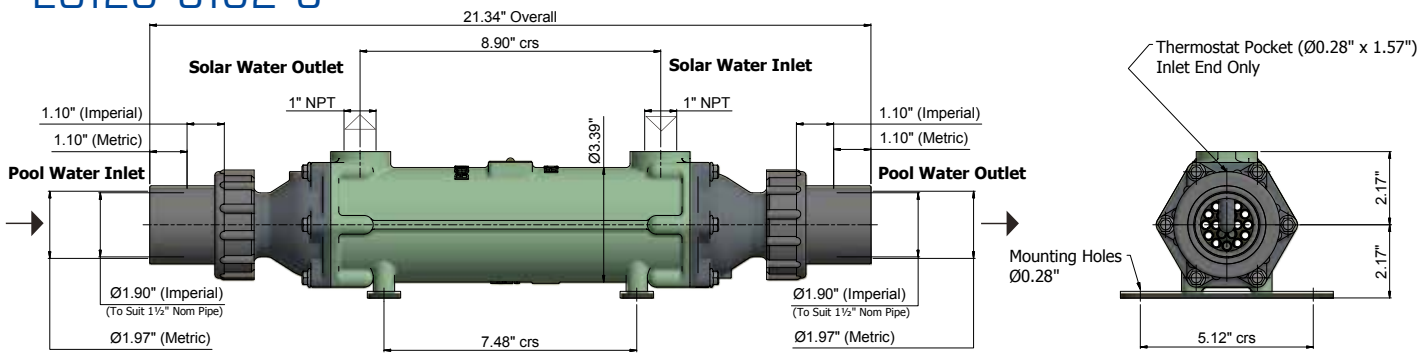
The table below shows the heat that can be transferred by Bowman units with the water temperature from solar panels or heat pumps 158°F, 140°F or 113°F and the swimming pool water at 86°F.

Type	Pool Capacity		Heat Transfer	Solar or Heat Pump Water Flow	Maximum Pool Water Flow	Weight
	ft^3	US gal	Btu/h	USGPM	USGPM	lb
Hot Water at 158°F						
EC120-5102-3C/S/T*	1,800	13,500	102,000	6.6	27.0	12/12/11
EC160-5102-5C/S/T*	4,280	32,000	256,000	13.2	66.0	19/19/16
FC160-5103-5C/S/T*	7,000	52,400	444,000	20.0	100.0	38/38/33
FG160-5107-5C/S/T*	10,600	79,300	680,000	29.0	127.0	64/64/55
Hot Water at 140°F						
EC120-5102-3C/S/T*	1,400	10,500	68,000	6.6	27.0	12/12/11
EC160-5102-5C/S/T*	3,900	29,200	190,000	13.2	66.0	19/19/16
FC160-5103-5C/S/T*	6,500	48,600	325,000	20.0	100.0	38/38/33
FG160-5107-5C/S/T*	8,150	61,000	512,000	29.0	127.0	64/64/55
Hot Water at 113°F						
EC120-5102-3C/S/T*	700	5,200	34,000	6.6	27.0	12/12/11
EC160-5102-5C/S/T*	1,850	13,800	92,000	13.2	66.0	19/19/16
FC160-5103-5C/S/T*	3,300	24,700	160,000	20.0	100.0	38/38/33
FG160-5107-5C/S/T*	4,950	37,000	240,000	29.0	127.0	64/64/55

*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 on pools with salt water chlorinators or salt water pools.

EC120-5102-3



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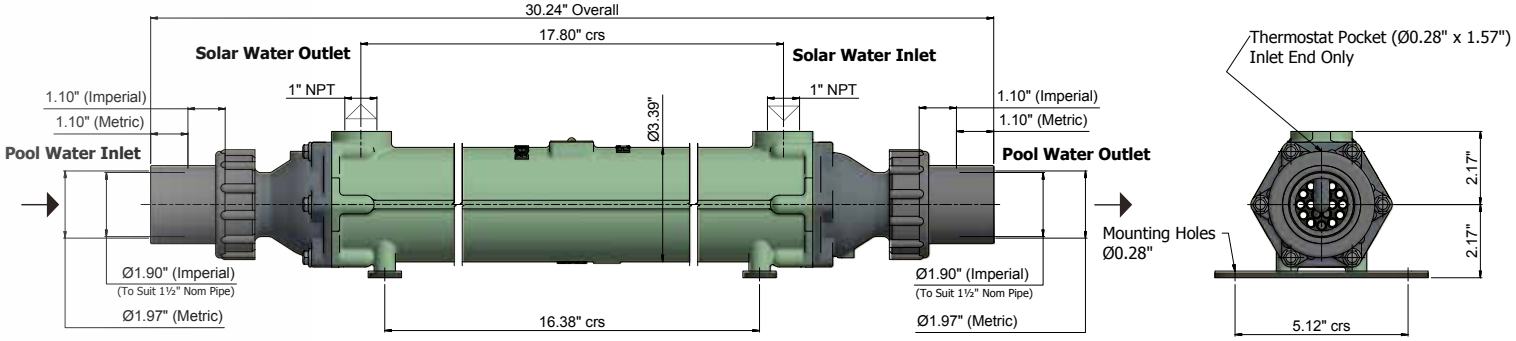

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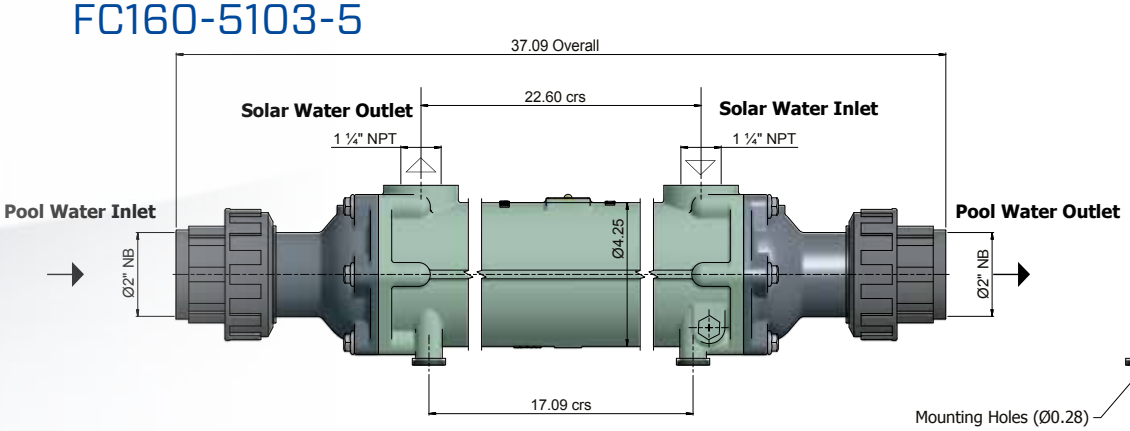

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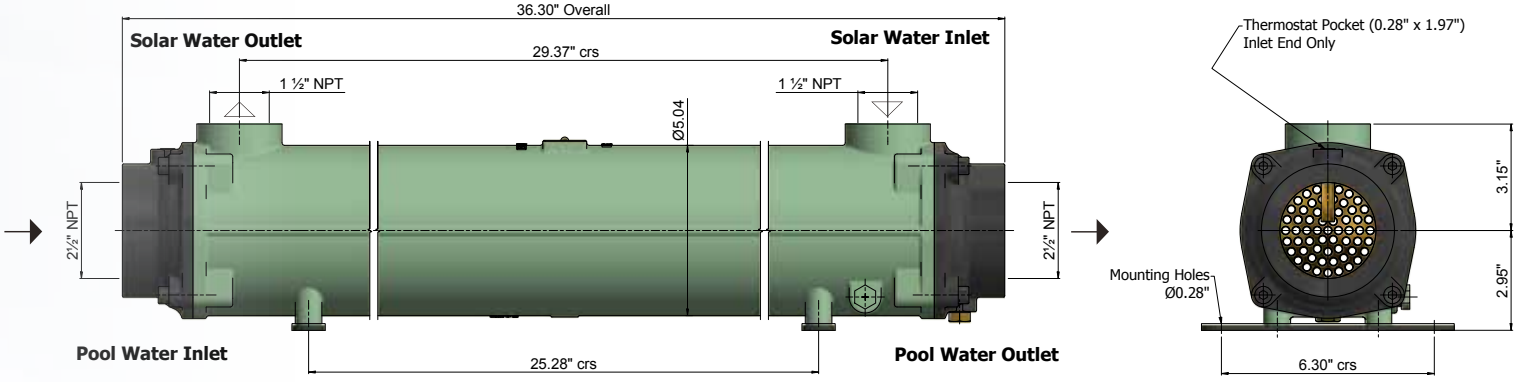

All dimensions in inches.

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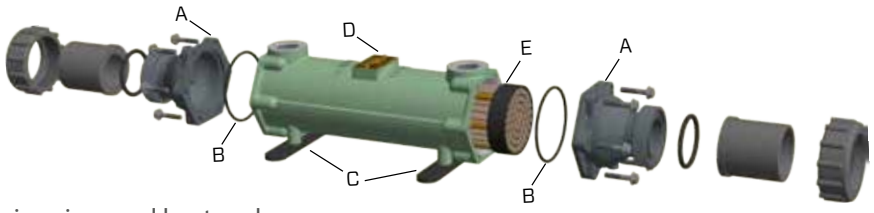
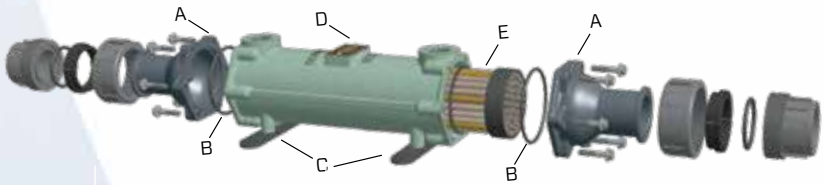
Replacement Parts

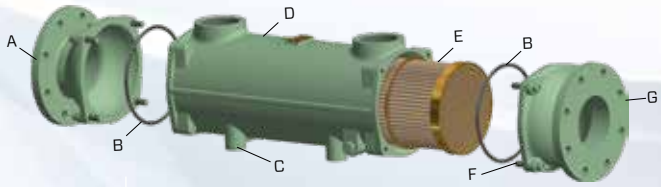


Replacement parts are available for all Bowman swimming pool heat exchangers.

Type	End Cover Assembly (A)	'O' Seals (B)	Mounting Brackets (C)	Body (D)	Tube Stack (E)
EC080-5102-1C EC080-5102-1S EC080-5102-1T	5030-1	AN12NT	5032-1	EC069-5568-1CIN	5095-1TNP 5095-1STP 5095-1TIP
EC100-5102-2C EC100-5102-2S EC100-5102-2T	5030-1	AN12NT	5032-1	EC070-4568-2CIN	5095-2TNP 5095-2STP 5095-2TIP
EC120-5102-3C EC120-5102-3S EC120-5102-3T	5030-1	AN12NT	5032-1	EC071-4568-3CIN-SP	5095-3TNP 5095-3STP 5095-3TIP
EC160-5102-5C EC160-5102-5S EC160-5102-5T	5030-1	AN12NT	5032-1	EC073-4568-5CIN	5095-5TNP 5095-5STP 5095-5TIP



Type	End Cover Assembly (A)	'O' Seals (B)	Mounting Brackets (C)	Body (D)	Tube Stack (E)
FC100-5103-2C FC100-5103-2S FC100-5103-2T	5031	OS46NT	5032-2	FC070-4668-2CIN	5096-2TNP 5096-2STP 5096-2TIP
FC160-5103-5C FC160-5103-5S FC160-5103-5T	5031	OS46NT	5032-2	FC073-4668-5CIN	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)
FG100-5107-2C FG100-5107-2S FG100-5107-2T	FG007-2802CIC8N-DR	OS52NT	5032-2	FG010-4780-2CI	5090-2TN1P 5097-2STP 5097-2TIP	HS08X35DP	FG7-2802CIC8N-DR
FG160-5107-5C FG160-5107-5S FG160-5107-5T	FG007-2802CIC8N-DR	OS52NT	5032-2	FG016-4780-5CI	5090-5TN1P 5097-5STP 5097-5TIP	HS08X35DP	FG7-2802CIC8N-DR
GL140-5108-2 GL140-5108-2T	GL039-4801GM-SP	OS63NT	-	GL015-3136NF-2CI7N	3447-2TN1B 5367-2TI4B	HS10X40DP	GL39-4801GM-DR-SP
GK190-5109-3 GK190-5109-3T	GK065-4802GM-SP	OS69NT	- -	GK019-2865NF-3CI8N	3448-3TN1B 5369-3TI4B	HS12X50DP	GK65-4802GM-DR-SP
JK190-5110-3 JK190-5110-3T	JK041-4803GM-SP	OS74NT	-	JK019-3332NF-3CI9N	3450-3TN1B 5371-3TI4B	HS16X70DP	JK41-4803GM-DR-SP
PK190-5111-3 PK190-5111-3T	PK004-2926CIC	OS81NT	- -	PK019-2920HF-3CI0	3449-3TN1B 5373-3TI4B	HS16X70DP	PK004-2926CIC-DR

Installation and Maintenance

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 ratings charts must not be exceeded.

Operating Temperature - Heating water must not exceed 210ºF.

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 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

All EC units are supplied with 'Universal Fit' composite end covers, which are 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 sales team and ask for the product bulletin.

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.

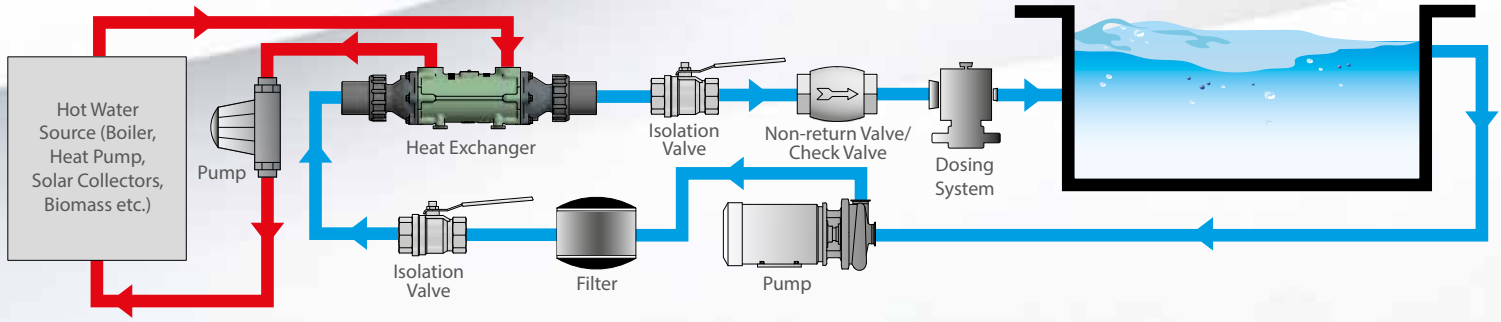
Titanium heat exchangers provide greater heat transfer due to their ability to operate at higher flow rates than other materials. In some installations, this allows a smaller sized unit to be used, providing a useful cost saving.

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

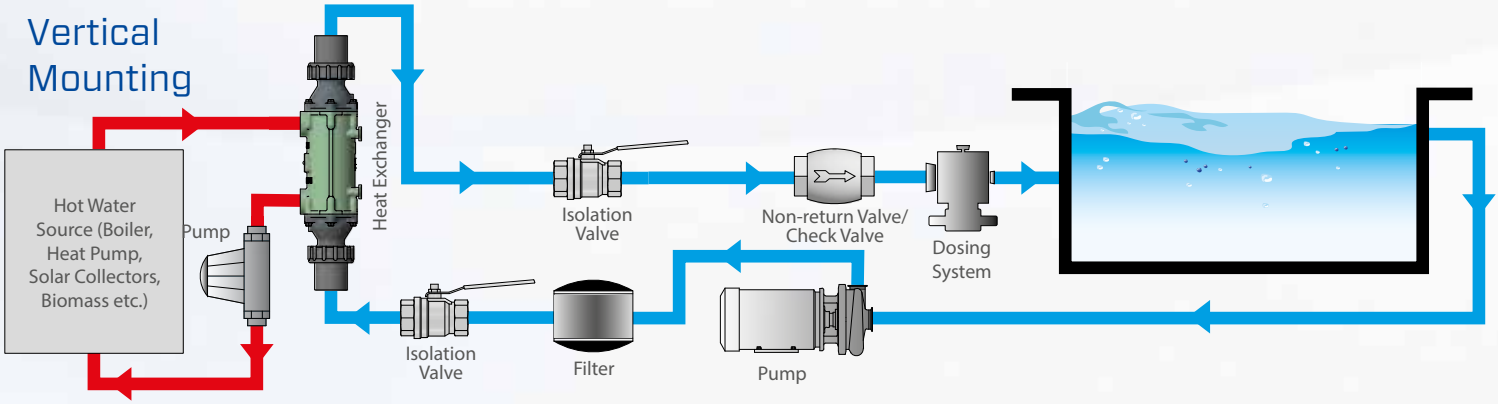
ASME Boiler and Pressure Vessel Code

Bowman swimming pool heat exchangers are exempted from ASME Boiler and Pressure Vessel Code VIII-1, as they are vessels containing water under pressure for water service under the following limitations:
- a design pressure of 300 psi (20.7 bar) and a design temperature of 210°F (99°C).

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.

EJ Bowman (Birmingham) Ltd
Chester Street, Birmingham B6 4AP, UK
Tel: +44 (0) 121 359 5401
Fax: +44 (0) 121 359 7495
Email: sales@ej-bowman.com
www.ej-bowman.com

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