Marine Heat Exchangers & Oil Coolers

Heat Transfer Technology from Bowman

BOWMAN®

100 YEARS OF HEAT TRANSFER TECHNOLOGY

Marine cooling

Engines & Transmission, Electric & Hybrid

Bowman has been manufacturing marine heat exchangers and oil coolers for over 80 years. During that time, the company has built up a wealth of knowledge and experience, providing efficient cooling solutions for a range of propulsion and hydraulic system applications. Many Bowman heat exchangers are still operating efficiently after 20 years plus service, proving the quality of the products and the commitment of the company to support them.

Bowman heat exchangers and oil coolers can be found in a wide range of marine applications, including propulsion and power transmission systems; hydraulically controlled stabilisers, thrusters, power packs, winches, deck equipment and power steering equipment; plus generating sets and compressors.

With the rapid development of marine electric and electric/hybrid propulsion systems, Bowman can also provide heat exchangers for cooling battery packs, converters, electric motors, plus generators and hybrid control units.

This brochure provides an overview of the heat exchangers and oil coolers Bowman provide for marine cooling. Detailed literature is available for each product and can be downloaded at www.ej-bowman.com or by contacting either your local stockist or Bowman directly at info@ej-bowman.com or calling +44 (0) 121 359 5401.

Efficiency & durability

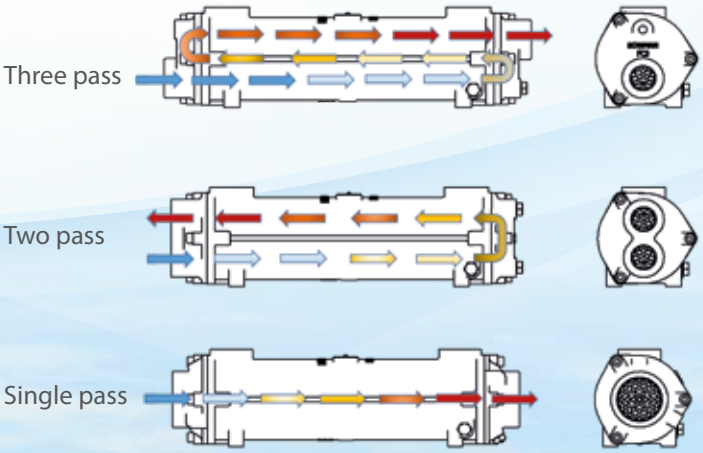
Bowman heat exchangers are renowned for their quality, performance and durability, in the harshest conditions.

Fully floating tube stack

Precision engineered, to minimise thermal stress and designed to provide efficient heat transfer with low pressure drop.

Single, 2 & 3 pass versions

Whilst 3 pass is the standard arrangement, with many units available ex-stock, most units are also available in single and 2 pass versions*



**These units are available at extra cost and slightly longer lead times. Please contact our sales team for details.*

solutions for

Propulsion, plus Hydraulic Systems

Compact design
With a wide choice of sizes and material specifications, the compact design of Bowman heat exchangers enables them to be easily integrated in to propulsion or hydraulic systems.

Premium quality
Bowman heat exchangers and oil coolers are UK manufactured using quality materials and proven construction methods.

Simple to maintain
The end covers and tube stack are removable making cleaning and maintenance easy.

Wide range
A wide choice of sizes and materials, including titanium tube stacks, is available to suit any marine application.

Easy product selection
Computer aided selection is used to select the correct heat exchanger for your requirements.

Comprehensive support
Bowman products are supported with technical information, full replacement parts programme and a network of stockists worldwide.

Rapid delivery
UK manufactured in our own production facility, we hold extensive stocks of most models for fast delivery worldwide.

Engine Jacket Water Cooling Solutions

Header Tank Heat Exchangers

Bowman marine grade header tank heat exchangers are designed for use with aggressive cooling media such as seawater. The specification includes cupro-nickel or titanium tube stacks and a choice of corrosion resistant end covers for long life reliability.

Product Benefits

Compact design - Easily integrated with the engine

Easy product selection - Provided quickly by our technical experts

Extensive range - Designed for engines up to 1800kW

Rapid delivery - Extensive stockholding for fast response

De-aeration system

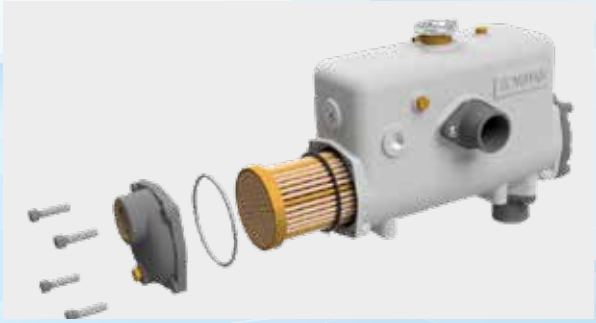
The unique 'quiet zone' design has a de-aeration feature which eliminates the problem of entrained air.

Comprehensive range

Bowman provide one of the widest range of engine jacket water heat exchangers available.

Jacket water connection

Hose connectors are provided on the most popular models for easy connection to the engine's jacket water inlet and outlet. On other models, counter flanges are provided.

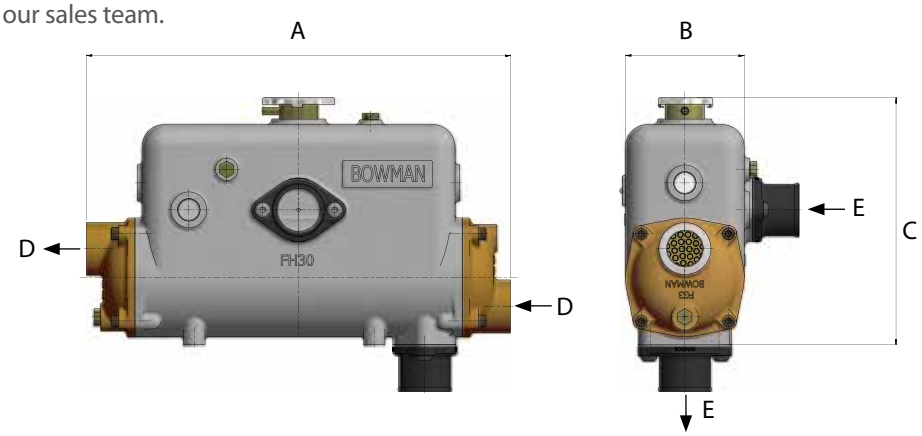


Easy to maintain

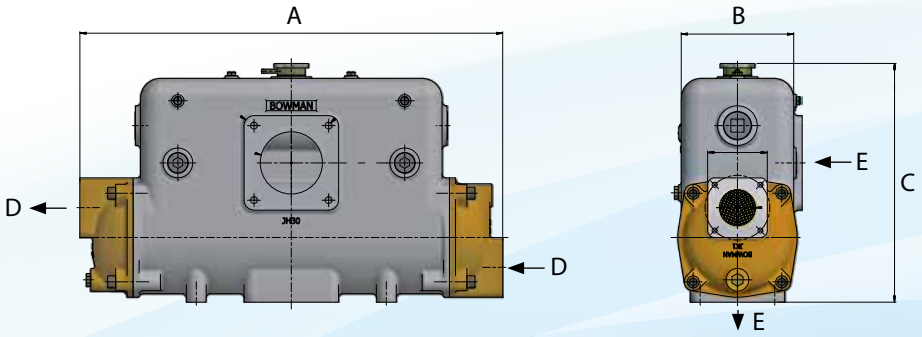
By removing the end covers, the tube stack can be easily withdrawn from the body housing for routine cleaning and maintenance.

Typical Performance & Dimensions

The drawings and dimensions below give general information on the product range. The drawings shown are of FH and JH products but can be used as a reference for alternative sizes in the table of dimensions. Max. Sea water flow shown is for three pass models, for single or two pass models, refer to our Header Tank Heat Exchanger brochure. For more detailed information please contact us our sales team.



Type	Typical Engine	Max Sea Water Flow	Dim A	Dim B	Dim C	Dim D	Dim E	Weight
	kW	l/m	mm	mm	mm	BSP	mm	kg
EH100	40	54	260	150	240	3/4"	35	5
EH200	52	54	346	150	240	3/4"	35	6
FH100	82	95	358	182	260	1"	46	8
FH200	115	95	454	182	260	1"	46	11
FH300	150	125	472	208	327	1 1/4"	57	14
FH400	200	125	600	208	327	1 1/4"	57	17
GH200	240	225	502	257	405	1 1/2"	70	24
GH300	320	225	630	257	405	1 1/2"	70	29
GH400	400	225	776	257	405	1 1/2"	70	34



Type	Typical Engine	Max Sea Water Flow	Dim A	Dim B	Dim C	Dim D	Dim E	Weight
	kW	l/m	mm	mm	mm	BSP	mm	kg
KH200	450	325	674	221	410	2"	100	51
KH300	600	325	820	221	410	2"	100	59
KH400	750	325	998	221	410	2"	100	67
JH200	620	460	704	257	480	2 1/2"	125	82
JH300	820	460	850	257	480	2 1/2"	125	93
JH400	1000	460	1028	257	480	2 1/2"	125	106
PH200	1200	700	890	305	593	3"	150	136
PH300	1500	700	1078	305	593	3"	150	156
PH400	1800	700	1280	305	593	3"	150	190

Easy Product Selection

Computer aided selection can be used to select the correct heat exchanger for your application. Please contact Bowman or your nearest stockist with the following information.

- Heat to be dissipated in kW
- Engine water flow rate in l/min
- Maximum engine coolant temperature in °C
- Sea water temperature in °C

For more information, see our separate Header Tank Heat Exchanger brochure.

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100 YEARS OF HEAT TRANSFER TECHNOLOGY

Engine Jacket Water Cooling Solutions

Tubular Heat Exchangers

For marine engine cooling applications where an integral expansion tank is not required, this range of tubular heat exchangers is available, which would be used with a remote header tank.

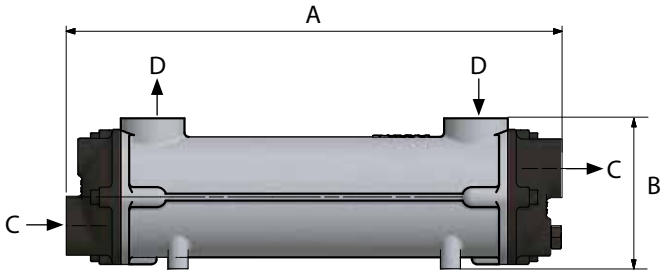
Product Benefits

Wide range – Suitable for engines up to 2500kW

Compact design – Easy to install and integrate with the engine

Premium quality – UK manufactured using quality components

Rapid delivery – Large stocks held for fast response



Type	Typical Engine	Max Seawater Flow	Dim A	Dim B	Dim C	Dim D	Weight
	kW	l/m	mm	mm	BSP		kg
EC100-4276-2	40	54	260	105	3/4"	1" BSP	3.2
EC120-4276-3	52	54	346	105	3/4"	1" BSP	3.8
FC100-3891-2	82	95	358	130	1"	1 1/4" BSP	6.3
FC120-3891-3	115	95	456	130	1"	1 1/4" BSP	7.3
FG100-3910-2	150	125	472	150	1 1/4"	1 1/2" BSP	10.0
FG120-3910-3	200	125	600	150	1 1/4"	1 1/2" BSP	12.0
GL140-3167-2	240	225	502	190	1 1/2"	SAE DN51*	18.0
GL180-3167-3	320	225	630	190	1 1/2"	SAE DN51*	21.0
GL240-3167-4	400	225	776	190	1 1/2"	SAE DN51*	25.0
GK190-3168-3	450	325	674	230	2"	SAE DN64*	34.0
GK250-3168-4	600	325	820	230	2"	SAE DN64*	39.0
GK320-3168-5	750	325	998	230	2"	SAE DN64*	46.0
JK190-3932-3	620	460	704	270	2 1/2"	SAE DN76*	58.0
JK250-3932-4	820	460	850	270	2 1/2"	SAE DN76*	66.0
JK320-3932-5	1000	460	1028	270	2 1/2"	SAE DN76*	78.0
PK250-3170-4	1200	700	900	275	3"	PN6 DN100**	94.0
PK320-3170-5	1500	700	1078	275	3"	PN6 DN100**	110.0
PK400-3170-6	1800	700	1280	275	3"	PN6 DN100**	125.0
RK400-5883-6	2500	1000	1392	405	PN16 DN100	SAE DN125*	186.0

*ISO6162-1 **BS EN 1092-1

Easy Product Selection

Computer aided selection is available to select the correct heat exchanger for your application. Please contact Bowman, or your nearest stockist with the information opposite.

- Heat to be dissipated in kW
- Engine coolant flow in l/min
- Maximum engine coolant temperature in °C
- Sea water temperature in °C

For more information, see our separate Tubular Heat Exchangers brochure.

Bespoke Engine Cooling Solutions

Engine Specific Cooling Solutions

Whilst most marine cooling applications can be satisfied from our standard range, we do have a number of heat exchangers designed for specific engines, including Cummins, Ford, Mitsubishi and Perkins.

The range includes heat exchangers and charge air coolers providing a replacement for a failed OEM part, or an easy way to convert an engine for marine use.

Current Range

The information below gives a general guide to the current range of bespoke engine heat exchangers. If the part you require isn't listed below, please contact our sales team on +44 121 359 5401, as a limited number of heat exchangers for certain obsolete British Leyland, Ford, Mercedes Benz and Perkins engines are available.

Cummins Engines

Model	Bowman Type	Application
4B/BT/BTA Series	CB120-4109-3	Heat Exchanger
4BT/BTA Series	FG100-4075-2	Charge Air Cooler
6B/BT Series	CB140-4216-4	Heat Exchanger
6BT Series	FG100-4075-2	Charge Air Cooler
6BTA Series	GL140-4076-2	Charge Air Cooler
6C/CT/CTA Series	CC120-4173	Heat Exchanger

Ford Engines

Model	Bowman Type	Application
Type 2722/3/5	FH440-3404	Header Tank Heat Exchanger

Mitsubishi Engines

Model	Bowman Type	Application
L series: L2	ML120-3992	Combined Heat Exchanger and Exhaust Manifold
L series: L3	ML130-3993	Combined Heat Exchanger and Exhaust Manifold
K series: K3B/D/E	MK130-3996	Combined Heat Exchanger and Exhaust Manifold
K series: K4C/D/E	MK140-3997	Combined Heat Exchanger and Exhaust Manifold
S series: S3/L2	MS130-4295	Combined Heat Exchanger and Exhaust Manifold
S series: S4/L2	MS140-4296	Combined Heat Exchanger and Exhaust Manifold

Perkins Engines

Model	Bowman Type	Application
4-99/107/108	PE180-3483	Combined Heat Exchanger and Exhaust Manifold
4-236	PE390-3674	Combined Heat Exchanger and Exhaust Manifold
6-354	PE580-3676	Combined Heat Exchanger and Exhaust Manifold

Engine, Gearbox Oil and Fuel Cooling Solutions

Oil Coolers

Bowman offers a range of marine oil coolers for engines rated from 20kW to 8900kW.

Product Benefits

Compact design - Easily installed and integrated with the engine
Premium quality - UK manufactured, using quality components
Easy product selection - Available quickly for our technical experts
Rapid delivery - Extensive stockholding for fast response

Oil Coolers for 20 bar oil pressure

Single pass - Hose connections

These single pass oil coolers have brass end covers with hose connections for easy installation in to the sea water pipework.

Three pass - Threaded connections

Available in three pass configuration with marine specification end covers and threaded connections, they are available in a wide range of sizes from EC to PK.

Oil Coolers for 30 bar oil pressure

Single pass - Neoprene connections

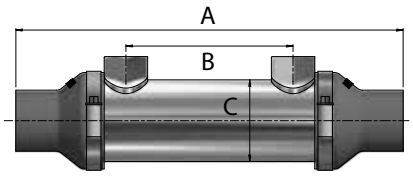
The DC is a compact, efficient single pass oil cooler suitable for engines up to 180kW, with durable cupro-nickel tubes and a choice of neoprene seawater connections. Models are also available for fuel cooling.

Single pass -Threaded connections

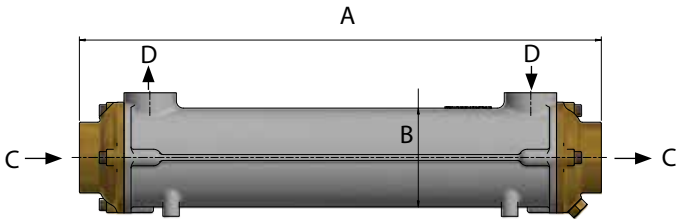
Available with single pass threaded connections, these oil coolers are suitable for higher sea water pressures.

Typical Performance & Dimensions for cooling marine transmissions

The following information offers a general guide to the performance and dimensions of our single pass 30 Bar marine oil cooler range. For more detailed information on additional configurations and engine oil coolers, please refer to our DC Oil Cooler brochure or contact our sales team.



Type	Typical Engine Rating	Typical Oil Flow	Max Seawater Flow	Dimensions			Weight
	kW	l/m	l/m	A mm	B mm	C mm	kg
DC060	80	10	60	240	104	51	0.9
DC090	140	15	60	314	178	51	1.1
DC120	180	15	60	396	260	51	1.4



Type	Typical Engine Rating	Typical Oil Flow	Max Seawater Flow	Dimensions				Weight
	kW	l/m	l/m	A mm	B mm	C	D	kg
EC080-4097-1	120	20	180	174	84	1 ½" BSP	½" BSP	2.4
EC100-4097-2	180	30	180	260	84	1 ½" BSP	¾" BSP	3.2
EC120-4097-3	240	30	180	346	84	1 ½" BSP	¾" BSP	3.8
EC140-4097-4	300	30	180	444	84	1 ½" BSP	¾" BSP	4.8
EC160-4097-5	360	30	180	572	84	1 ½" BSP	¾" BSP	5.7
FC100-1806-2	380	40	260	358	108	2" BSP	1" BSP	6.3
FC120-1806-3	520	40	260	456	108	2" BSP	1" BSP	7.3
FC140-1806-4	640	40	260	584	108	2" BSP	1" BSP	9.4
FC160-1806-5	760	40	260	730	108	2" BSP	1" BSP	11
FG100-1807-2	660	50	375	470	128	2 ½" BSP	1 ¼" BSP	11
FG120-1807-3	840	50	375	598	128	2 ½" BSP	1 ¼" BSP	13
FG140-1807-4	960	50	375	744	128	2 ½" BSP	1 ¼" BSP	15
FG160-1807-5	1100	50	375	922	128	2 ½" BSP	1 ¼" BSP	18
GL140-3188-2	1000	80	640	532	162	3" BSP	1 ½" BSP / SAE - DN51	20
GL180-3188-3	1240	80	640	660	162	3" BSP	1 ½" BSP / SAE - DN51	23
GL240-3188-4	1440	80	640	806	162	3" BSP	1 ½" BSP / SAE - DN51	27
GL320-3188-5	1640	80	640	984	162	3" BSP	1 ½" BSP / SAE - DN51	32
GL400-3188-6	1880	80	640	1186	162	3" BSP	1 ½" BSP / SAE - DN51	38
GK190-3189-3	1640	100	975	704	198	PN6 - DN100 / PN10/16 - DN100	2" BSP / SAE - DN64	39
GK250-3189-4	1940	100	975	850	198	PN6 - DN100 / PN10/16 - DN100	2" BSP / SAE - DN64	44
GK320-3189-5	2220	100	975	1028	198	PN6 - DN100 / PN10/16 - DN100	2" BSP / SAE - DN64	50
GK400-3189-6	2460	100	975	1230	198	PN6 - DN100 / PN10/16 - DN100	2" BSP / SAE - DN64	58
GK480-3189-7	2640	100	975	1434	198	PN6 - DN100 / PN10/16 - DN100	2" BSP / SAE - DN64	66

The above figures are for single pass. For three pass, contact our sales team.

Easy Product Selection

Computer aided selection is available to select the correct oil cooler for your application. Please contact Bowman or your nearest stockist with the information opposite.

- Oil type or viscosity at a specific temperature
- Oil flow in l/min
- Required oil outlet temperature in °C
- Heat to be dissipated in kW
- Sea water temperature in °C

Turbocharger Induction Air Cooling Solutions

Charge Air Coolers

Bowman charge air coolers, also known as 'intercoolers', are an efficient solution for cooling engine combustion air. Designed for use with sea water, they are extremely durable, save space and are available in a range of sizes to suit marine engines up to 800kW.

Product Benefits

Compact design - Saves space. Simplifies installation
Thermal calculations - Provided quickly by our technical experts
Premium quality - UK manufactured. Robust and reliable
Comprehensive range – Suitable for heat loads up to 100kW
Rapid delivery - Extensive stockholding for fast response

High efficiency

Bowman charge air coolers provide high levels of heat transfer due to the innovative design of the tube stack.

Easy maintenance

The fully floating tube stack can be easily removed from the body of the heat exchanger for simple maintenance and cleaning.

Outstanding reliability

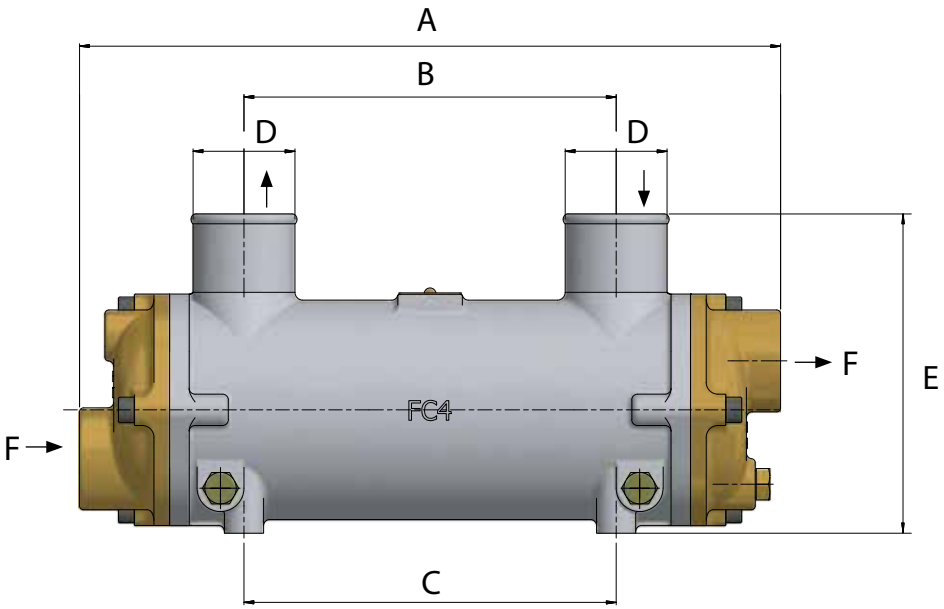
Designed and built to the highest standards, Bowman units provide outstanding levels of reliability and durability.

Titanium tube stacks

Titanium is the ultimate 'fit and forget' material for aggressive water conditions. Bowman now offer titanium tube stacks on many of our charge air coolers.

Typical Performance & Dimensions

The information below gives a general guide to the performance and dimensions of the standard range of charge air coolers. For more detailed information please download the Charge Air Cooler product brochure at www.ej-bowman.com or contact our sales team.



The image above is representative of the range of Charge Air Coolers from EC120 to RK250*.

Type	Engine Power	Charge Air Flow	Heat Rejection	Pressure Drop	Dimensions mm						Weight
	kW	kg/min	kW	kpa	A	B	C	D	E	F	kg
EC120-4073-3	50	2.5	6.5	2.2	346	212	94	52	145	¾" BSP	3.8
FC100-4074-2	90	4.3	9.2	2.9	358	190	112	52	163	1" BSP	6.7
FG100-4075-2	120	9.8	20.6	5.1	472	272	132	76	180	1 ¼" BSP	10
GL140-4076-2	175	15.4	34.2	8.3	502	272	170	76	260	1 ½" BSP	17
GK190-4877-3	280	20.3	48.1	7.2	674	370	206	89	310	2" BSP	36
JK190-4078-3	365	30.1	71.8	9.2	704	350	240	102	360	2 ½" BSP	53
PK250-4979-4	570	40.3	95	3.9	852	446	286	108	370	3" BSP	97
RK250-4980-4	850	60.0	146.6	7.9	1012	432	382	130	450	102 BSP	153

The above typical performance figures are based on an air inlet temperature of 180°C at 1.75 bar g and cooling water at 30°C. Max. air inlet temperature is 250°C. For higher temperatures please contact the technical sales team. Max. air inlet pressure is 5.5 bar g (EC120 – GK190) and 4 bar g (JK190 - PK250). Bowman charge air coolers must not be operated without adequate water flow and must be mounted so the water outlet is uppermost.

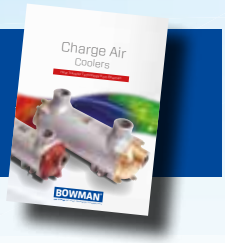
*Please note hose connections (dimension D) are not available on the PK250 and RK250 models. For details of the flanged connectors on these models, please refer to the Charge Air Cooler brochure.

Easy Product Selection

Computer aided selection can be used to select the correct heat exchanger for your application. Please contact Bowman or your nearest stockist with the following information.

- **Charge air mass flow in kg/min**
- **Charge air pressure in bar g**
- **Charge air maximum allowable pressure drop in bar g**
- **Charge air inlet and desired outlet temperature in °C**
- **Cooling water temperature in °C and flow in l/min**

For more information, see our separate Charge Air Cooler brochure



BOWMAN®
100 YEARS OF HEAT TRANSFER TECHNOLOGY

Electric & Hybrid Marine Propulsion Cooling Solutions

Bowman now provide a range of high performance heat exchangers for cooling electric and hybrid power systems, enabling OE manufacturers, system integrators and boat builders to ensure the heat generated from the power unit is adequately cooled and kept within the desired operating temperature range.

Product Benefits

Proven products – already used by some of the world's leading manufacturers

Compact design – easily installed where space is limited

Easy product selection – provided quickly from our technical experts

Premium quality – UK manufactured. Designed for marine conditions

Electric marine propulsion systems

EC and FG heat exchanger ranges are already proved for cooling electric marine propulsion systems for applications including:

- Battery pack
- On board charger
- AC-DC and DC-DC converter
- Electric drive motor

The combination of excellent heat transfer, durability and ease of installation, has provided leading OE manufacturers with an efficient solution for their system cooling requirements.

For more information, see our separate Electric & Hybrid Marine Cooling brochure

Hybrid marine propulsion systems

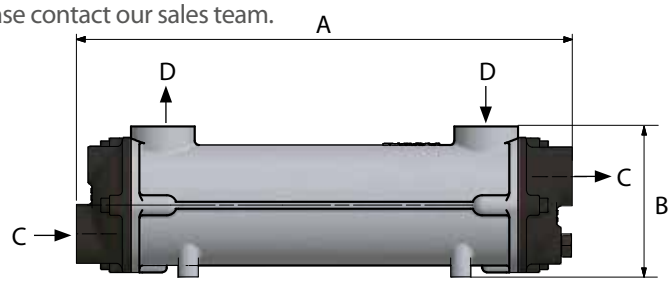
Cooling demands for hybrid systems can vary from their pure electric counterparts, with additional cooling required for:

- Hybrid control unit
- Electric motor/generator
- Engine powered generators

Additionally, for hybrid systems using both electric and engine power for propulsion, Bowman can also provide heat exchangers for the engines jacket water, turbo charged induction air, plus transmission and fuel systems. See pages. See pages 4-9 for details.

Typical Performance & Dimensions

The following figures are based on 50/50 glycol coolant with an outlet temperature of 40°C and a sea water temperature of 30°C. for more information please contact our sales team.



Titanium Heat Exchanger Range

Type	Heat Dissipated	Coolant Flow	Sea Water Flow	Dimensions				Weight
	kW	l/min	l/min	A mm	B mm	C BSP	D BSP	kg
EC 80-5204-1	3	40	40	174	105	3/4"	1/2"	1.5
EC100-5204-2	7	50	50	260	105	3/4"	3/4"	2.1
EC120-5204-3	11	50	50	346	105	3/4"	3/4"	2.6
EC140-5204-4	15	50	50	444	105	3/4"	3/4"	3.2
EC160-5204-5	19	50	50	572	105	3/4"	3/4"	3.8
FC 80-5205-1	11	80	80	272	130	1"	1"	3.5
FC100-5205-2	16	80	80	358	130	1"	1"	4.2
FC120-5205-3	22	80	80	456	130	1"	1"	5.2
FC140-5205-4	29	80	80	584	130	1"	1"	6.5
FC160-5205-5	37	80	80	730	130	1"	1"	8.0
FG 80-5206-1	24	120	120	374	150	1 1/4"	1 1/4"	5.7
FG100-5206-2	32	120	120	472	150	1 1/4"	1 1/4"	7.0
FG120-5206-3	43	120	120	600	150	1 1/4"	1 1/4"	8.4
FG140-5206-4	53	120	120	746	150	1 1/4"	1 1/4"	10.4
FG160-5206-5	65	120	120	924	150	1 1/4"	1 1/4"	12.6

Standard Heat Exchanger Range

Type	Heat Dissipated	Coolant Flow	Sea Water Flow	Dimensions				Weight
	kW	l/min	l/min	A mm	B mm	C BSP	D BSP	kg
EC80-3875-1	3	40	40	174	105	3/4"	1/2"	2.4
EC100-3875-2	7	50	50	260	105	3/4"	3/4"	3.2
EC120-3875-3	11	50	50	346	105	3/4"	3/4"	3.8
EC140-3875-4	15	50	50	444	105	3/4"	3/4"	4.8
EC160-3875-5	19	50	50	572	105	3/4"	3/4"	5.7
FC80-3876-1	11	80	80	272	130	1"	1"	5.5
FC100-3876-2	16	80	80	358	130	1"	1"	6.3
FC120-3876-3	22	80	80	456	130	1"	1"	7.3
FC140-3876-4	29	80	80	584	130	1"	1"	9.4
FC160-3876-5	37	80	80	730	130	1"	1"	11.0
FG80-3877-1	24	120	120	374	150	1 1/4"	1 1/4"	8.5
FG100-3877-2	32	120	120	472	150	1 1/4"	1 1/4"	10.0
FG120-3877-3	43	120	120	600	150	1 1/4"	1 1/4"	12.0
FG140-3877-4	53	120	120	746	150	1 1/4"	1 1/4"	14.5
FG160-3877-5	65	120	120	924	150	1 1/4"	1 1/4"	17.5
GL140-3878-2	50	200	200	502	190	1 1/2"	1 1/2"	18.0
GL180-3878-3	66	200	200	630	190	1 1/2"	1 1/2"	21.0
GL240-3878-4	82	200	200	776	190	1 1/2"	1 1/2"	25.0
GL320-3878-5	100	200	200	954	190	1 1/2"	1 1/2"	30.0
GL400-3878-6	121	200	200	1156	190	1 1/2"	1 1/2"	36.0
GL480-3878-7	136	200	200	1360	190	1 1/2"	1 1/2"	42.0

For larger sizes, please contact our sales team

Easy Product Selection

Computer aided selection is available to accurately select the correct heat exchanger for your application. Please contact Bowman, or your nearest stockist with the following information.

- **Coolant type and concentration**
- **Heat to be dissipated** kW
- **Required coolant outlet temperature** °C
- **Coolant flow** l/min
- **Seawater temperature** °C

BOWMAN®

100 YEARS OF HEAT TRANSFER TECHNOLOGY

Hydraulic Equipment Cooling Solutions

Hydraulic Oil Coolers

Bowman marine specification hydraulic oil coolers are designed to provide efficient cooling for a wide range of applications, including: air compressors, cranes and lifting equipment, deck machinery, power packs, power steering, thruster and stabiliser control systems, plus hydraulic winches.

Product Benefits

Compact design - Saves space. Simplifies installation
Thermal calculations - Provided quickly by our technical experts
Premium quality - UK manufactured, using quality components
Comprehensive range – Suitable for heat loads from 4kW to 900kW
Rapid delivery - Extensive stockholding for fast response

High temperature versions

Standard units are suitable for cooling oil up to 120ºC, but for applications where higher temperatures are required, oil coolers are available for temperatures up to 200ºC.

Tube stack options

Whilst Cupro-nickel is the standard tube material on all units, titanium tube stacks are also available as an option, on all models, offering even greater durability and backed with a 10 year guarantee*.

SAE flanges

On Bowman GL size Hydraulic Oil Coolers and larger, SAE oil flange connections are provided, whilst the smaller EC, FC & FG models feature BSP connections.

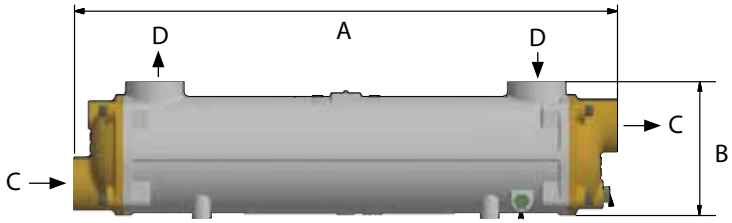
Specification options

Double seal retaining flanges are available on GL140 to PK600 units, allowing the cooling circuit to be cleaned without draining the hydraulic system.

* 10 year guarantee on all titanium material in contact with cooling water.

Typical Performance & Dimensions

The following information offers a general guide to the performance and dimensions of our standard marine hydraulic oil cooler range. For more detailed information please contact our sales team.

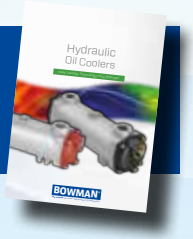


Type	Heat Dissipated	Max Oil Flow	Max. Sea Water Flow	Dimensions				Weight
	kW	l/min	l/min	A mm	B mm	C BSP except *	D BSP except **	kg
EC80-3875-1	4	80	50	174	105	¾"	½"	2.4
EC100-3875-2	9	92	50	260	105	¾"	¾"	3.2
EC120-3875-3	13	77	50	346	105	¾"	¾"	3.8
EC140-3875-4	17	68	50	444	105	¾"	¾"	4.8
EC160-3875-5	22	64	50	572	105	¾"	¾"	5.7
FC80-3876-1	13	140	80	272	130	1"	1"	5.5
FC100-3876-2	19	145	80	358	130	1"	1"	6.3
FC120-3876-3	26	116	80	456	130	1"	1"	7.3
FC140-3876-4	35	105	80	584	130	1"	1"	9.4
FC160-3876-5	45	96	80	730	130	1"	1"	11.0
FG80-3877-1	28	192	110	374	150	1 ¼"	1 ¼"	8.5
FG100-3877-2	37	190	110	472	150	1 ¼"	1 ¼"	10.0
FG120-3877-3	50	160	110	600	150	1 ¼"	1 ¼"	12.0
FG140-3877-4	62	160	110	746	150	1 ¼"	1 ¼"	14.5
FG160-3877-5	79	145	110	924	150	1 ¼"	1 ¼"	17.5
FG200-3877-7	123	130	110	1330	150	1 ¼"	1 ¼"	24.0
GL140-3878-2	56	300	200	502	190	1 ½"	1 ½"	18.0
GL180-3878-3	73	285	200	630	190	1 ½"	1 ½"	21.0
GL240-3878-4	93	280	200	776	190	1 ½"	1 ½"	25.0
GL320-3878-5	114	270	200	954	190	1 ½"	1 ½"	30.0
GL400-3878-6	146	240	200	1156	190	1 ½"	1 ½"	36.0
GL480-3878-7	172	235	200	1360	190	1 ½"	1 ½"	42.0
GK190-3879-3	112	460	300	674	230	2"	2"	34.0
GK250-3879-4	144	445	300	820	230	2"	2"	39.0
GK320-3879-5	181	430	300	998	230	2"	2"	46.0
GK400-3879-6	221	420	300	1200	230	2"	2"	54.0
GK480-3879-7	259	400	300	1404	230	2"	2"	62.0
GK600-3879-8	329	365	300	1708	230	2"	2"	74.0
JK190-3881-3	145	830	400	704	270	2 ½"	2 ½"	58.0
JK250-3881-4	186	740	400	850	270	2 ½"	2 ½"	66.0
JK320-3881-5	232	690	400	1028	270	2 ½"	2 ½"	78.0
JK400-3881-6	283	650	400	1230	270	2 ½"	2 ½"	92.0
JK480-3881-7	335	620	400	1434	270	2 ½"	2 ½"	105.0
JK600-3881-8	401	600	400	1738	270	2 ½"	2 ½"	126.0
PK190-3880-3	212	1600	650	754	275	3"	3"	81.0
PK250-3880-4	270	1240	650	900	275	3"	3"	94.0
PK320-3880-5	336	1060	650	1078	275	3"	3"	110.0
PK400-3880-6	414	950	650	1280	275	3"	3"	125.0
PK480-3880-7	497	890	650	1484	275	3"	3"	140.0
PK600-3880-8	660	750	650	1788	275	3"	3"	158.0
RK400-5882-6	570	1450	900	1392	405	PN16-DN 100*	SAE-DN102**	186.0
RK600-5882-8	900	1240	900	1900	405	PN16-DN 100*	SAE-DN102**	246.0

Typical examples of oil cooler performance with,

Oil type	ISO VG 37
Oil outlet temperature	50°C
Oil pressure drop	100 kPa
Water inlet temperature	25°C
Water pressure drop	50 kPa

For more information, see our separate Hydraulic Oil Cooler brochure.



Easy Product Selection

Computer aided selection is available to select the correct heat exchanger for your application. Please contact Bowman or your nearest stockist with the following information.

- **Oil type (or Viscosity at a specific temperature)**
- **Oil flow in l/min**
- **Required oil outlet temperature in °C**
- **Heat to be dissipated in kW**
- **Sea water temperature in °C**

A world of applications

Bowman heat exchangers and oil coolers can be found cooling marine propulsion systems and hydraulic control systems throughout the world. Renowned for their excellent heat transfer performance and durability, in the most difficult conditions, here are just a few examples of Bowman applications in action:

Engine Cooling

In Portugal, Bowman header tank heat exchangers and charge air coolers have been used to convert two John Deere engines for marine operation. The installation on the catamaran 'Independencia' reduced temperatures in the engine room from over 50^{0}C, to just 25^{0}C.

Transmission Cooling

Throughout the world, thousands of work boats and leisure craft rely on Bowman gearbox oil coolers for safe, reliable operation of the vessels power transmission. Bowman oil coolers deliver highly efficient cooling for the lubrication and transmission systems, ensuring the oil is kept within its optimum temperature range.

Roll Reduction Systems

This manufacturer of advanced marine stabiliser and vessel roll reduction systems, uses Bowman oil coolers in their hydraulic power packs, to ensure the fluid power required to articulate the immense forces on the stabiliser fins is always kept at the correct operating temperature.

Electric & Hybrid Cooling

This 'leading edge' manufacturer, who specifies Bowman heat exchangers for cooling its larger (100kW plus) propulsion products, is just one of a number of companies at the forefront of electric and hybrid marine development, that rely on Bowman cooling solutions for their propulsion systems.

All Bowman marine heat exchangers are UK manufactured to the highest quality. With over 100 years' experience, you can have confidence specifying Bowman marine heat exchangers and oil coolers.

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