

Hydraulic Oil Coolers

Heat Transfer Technology from Bowman



BOWMAN[®]

100 YEARS OF HEAT TRANSFER TECHNOLOGY

Proven durability, on land,

Bowman Hydraulic Oil Coolers

Efficient, reliable heat transfer performance for hydraulic oils, heat transfer fluids, plus lubricating and quenching oils.

Heat exchangers perform a vital role in maintaining the performance and reliability of hydraulic systems.

Excessive temperature will reduce the performance of the system and may lead to component failure.

Maintaining the correct oil temperature extends the life of the system, reducing downtime and servicing costs.

Bowman hydraulic oil coolers provide efficient heat transfer solutions for a wide range of hydraulic cooling requirements, ensuring they always operate at the desired temperature.



High quality

Bowman hydraulic oil coolers are high quality products incorporating the best materials and the latest technical features.

Wide range

Bowman have a comprehensive range of oil coolers including sizes for the very largest systems. Popular types are held in stock ready for immediate despatch.

Roller expanded tubes

Roller expanded tubes are available as an option, providing a highly durable joint.

Tube stack options

Cupro-nickel is the standard tube material on all units, but stainless steel or titanium are also available.

Normal and high flow

Normal flow is our preferred and standard arrangement. However if the oil flow is high relative to the required heat dissipation a 'High Flow' version can be supplied. They have a tube stack designed to reduce the oil pressure drop and also have larger oil connections as listed on pages 8 to 11.

SAE flanges

SAE oil flange connections are provided on the shell side for GL and larger Bowman oil cooler models.



on sea and deep underground



Marine & land based versions

Whether the cooling medium is sea water, fresh water, or mineral rich water, Bowman has a range of hydraulic oil coolers to suit all applications.

Fully floating tube stack

Bowman shell and tube oil coolers feature a precision engineered, fully floating tube stack, which minimises thermal stresses and provides efficient heat transfer and low pressure drop.

Advanced engineering

3D CAD models are available.

Simple to maintain

The end covers are easily removable allowing the tube stack to be withdrawn, making cleaning and routine maintenance simple and straightforward.

Fire resistant fluids

For applications with fire resistant fluids, the standard nitrile seals should be changed for either Ethylene Propylene or Viton. To specify these seals, a suffix should be added to the oil cooler type number as follows:

EP (Ethylene Propylene); or VT (Viton).

IMPORTANT: when ordering replacement seals, always change the 'NT' suffix in the 'Replacement Parts' table to the correct suffix for the seal specification required.



Selection guidance

The tables on pages 4-7 list typical examples of cooler performance at given temperatures and flow rates. This information is only intended for general guidance, graphs are available which show how heat dissipation and pressure losses vary with oil and water flow.

With the following information, we can use our computer programme to recommend the most appropriate oil cooler:

| | |
|---|-----------|
| Oil type (or its viscosity at a specified temperature) | cSt at °C |
| Oil flow | l/min |
| Required oil outlet temperature | °C |
| Heat to be dissipated | kW |
| Temperature of cooling water | °C |

Land based Hydraulic Oil Coolers

Designed to provide a high quality cooling solution for hydraulic systems where fresh water is the cooling medium, they are also suitable for use with heat transfer fluids, lubricating and quenching oils.

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



| Type | Heat Dissipated | Maximum Oil Flow | Maximum Fresh Water Flow | Internal Oil Volume | Internal Water Volume |
|--------------|-----------------|------------------|--------------------------|---------------------|-----------------------|
| | kW | l/min | l/min | l (litre) | l (litre) |
| EC 80-1425-1 | 4 | 80 | 80 | 0.26 | 0.31 |
| EC100-1425-2 | 9 | 92 | 80 | 0.49 | 0.44 |
| EC120-1425-3 | 13 | 77 | 77 | 0.74 | 0.57 |
| EC140-1425-4 | 17 | 68 | 72 | 0.97 | 0.71 |
| EC160-1425-5 | 22 | 64 | 66 | 1.30 | 0.91 |
| FC 80-1426-1 | 13 | 140 | 140 | 0.75 | 0.65 |
| FC100-1426-2 | 19 | 145 | 135 | 1.10 | 0.84 |
| FC120-1426-3 | 26 | 116 | 125 | 1.50 | 1.06 |
| FC140-1426-4 | 35 | 105 | 120 | 2.00 | 1.35 |
| FC160-1426-5 | 45 | 96 | 108 | 2.60 | 1.68 |
| FG 80-1427-1 | 28 | 192 | 185 | 1.64 | 1.26 |
| FG100-1427-2 | 37 | 190 | 175 | 2.40 | 1.56 |
| FG120-1427-3 | 50 | 160 | 160 | 3.00 | 1.96 |
| FG140-1427-4 | 62 | 160 | 150 | 3.90 | 2.42 |
| FG160-1427-5 | 79 | 145 | 135 | 5.00 | 2.97 |
| GL140-1428-2 | 56 | 300 | 300 | 3.60 | 3.10 |
| GL180-1428-3 | 73 | 285 | 280 | 4.80 | 3.80 |
| GL240-1428-4 | 93 | 280 | 260 | 6.30 | 4.60 |
| GL320-1428-5 | 114 | 270 | 240 | 8.00 | 5.50 |
| GL400-1428-6 | 146 | 240 | 220 | 10.00 | 6.60 |
| GL480-1428-7 | 172 | 235 | 205 | 12.20 | 7.70 |
| GK190-1658-3 | 112 | 460 | 420 | 7.00 | 6.30 |
| GK250-1658-4 | 144 | 445 | 385 | 9.00 | 7.50 |
| GK320-1658-5 | 181 | 430 | 355 | 11.60 | 9.00 |
| GK400-1658-6 | 221 | 420 | 325 | 14.60 | 10.60 |
| GK480-1658-7 | 259 | 400 | 300 | 17.40 | 12.30 |
| GK600-1658-8 | 329 | 365 | 275 | 22.10 | 14.70 |
| JK190-1661-3 | 145 | 830 | 650 | 9.70 | 8.80 |
| JK250-1661-4 | 186 | 740 | 550 | 12.50 | 10.40 |
| JK320-1661-5 | 232 | 690 | 500 | 16.10 | 12.50 |
| JK400-1661-6 | 283 | 650 | 460 | 20.30 | 14.70 |
| JK480-1661-7 | 335 | 620 | 430 | 24.20 | 17.10 |
| JK600-1661-8 | 401 | 600 | 400 | 30.70 | 20.40 |
| PK190-1669-3 | 212 | 1600 | 900 | 13.60 | 16.00 |
| PK250-1669-4 | 270 | 1240 | 840 | 17.70 | 18.60 |
| PK320-1669-5 | 336 | 1060 | 750 | 22.60 | 21.80 |
| PK400-1669-6 | 414 | 950 | 700 | 28.50 | 25.30 |
| PK480-1669-7 | 497 | 890 | 650 | 34.00 | 29.00 |
| PK600-1669-8 | 660 | 750 | 600 | 42.50 | 34.40 |
| RK400-1698-6 | 570 | 1450 | 1180 | 43.40 | 37.90 |
| RK600-1698-8 | 900 | 1240 | 850 | 65.20 | 50.10 |

The table above gives performance figures for normal flow versions. For high flow versions, please contact our sales team.

Marine Hydraulic Oil Coolers

Marine specification hydraulic oil coolers are designed to withstand aggressive cooling media, such as sea, mineral rich or contaminated water.

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



| Type | Heat Dissipated | Maximum Oil Flow | Maximum Sea Water Flow | Internal Oil Volume | Internal Water Volume |
|--------------|-----------------|------------------|------------------------|---------------------|-----------------------|
| | kW | l/min | l/min | l (litre) | l (litre) |
| EC 80-3875-1 | 4 | 80 | 50 | 0.26 | 0.31 |
| EC100-3875-2 | 8 | 92 | 50 | 0.49 | 0.44 |
| EC120-3875-3 | 12 | 77 | 50 | 0.74 | 0.57 |
| EC140-3875-4 | 16 | 68 | 50 | 0.97 | 0.71 |
| EC160-3875-5 | 20 | 64 | 50 | 1.30 | 0.91 |
| FC 80-3876-1 | 12 | 140 | 80 | 0.75 | 0.65 |
| FC100-3876-2 | 17 | 145 | 80 | 1.10 | 0.84 |
| FC120-3876-3 | 23 | 116 | 80 | 1.50 | 1.06 |
| FC140-3876-4 | 31 | 105 | 80 | 2.00 | 1.35 |
| FC160-3876-5 | 40 | 96 | 80 | 2.60 | 1.68 |
| FG 80-3877-1 | 25 | 192 | 110 | 1.64 | 1.26 |
| FG100-3877-2 | 33 | 190 | 110 | 2.40 | 1.56 |
| FG120-3877-3 | 44 | 160 | 110 | 3.00 | 1.96 |
| FG140-3877-4 | 56 | 160 | 110 | 3.90 | 2.42 |
| FG160-3877-5 | 72 | 145 | 110 | 5.00 | 2.97 |
| GL140-3878-2 | 51 | 300 | 200 | 3.60 | 3.10 |
| GL180-3878-3 | 67 | 285 | 200 | 4.80 | 3.80 |
| GL240-3878-4 | 86 | 280 | 200 | 6.30 | 4.60 |
| GL320-3878-5 | 107 | 270 | 200 | 8.00 | 5.50 |
| GL400-3878-6 | 139 | 240 | 200 | 10.00 | 6.60 |
| GL480-3878-7 | 167 | 235 | 200 | 12.20 | 7.70 |
| GK190-3879-3 | 102 | 460 | 300 | 7.00 | 6.30 |
| GK250-3879-4 | 133 | 445 | 300 | 9.00 | 7.50 |
| GK320-3879-5 | 171 | 430 | 300 | 11.60 | 9.00 |
| GK400-3879-6 | 211 | 420 | 300 | 14.60 | 10.60 |
| GK480-3879-7 | 256 | 400 | 300 | 17.40 | 12.30 |
| GK600-3879-8 | 343 | 365 | 300 | 22.10 | 14.70 |
| JK190-3881-3 | 132 | 830 | 400 | 9.70 | 8.80 |
| JK250-3881-4 | 169 | 740 | 400 | 12.50 | 10.40 |
| JK320-3881-5 | 211 | 690 | 400 | 16.10 | 12.50 |
| JK400-3881-6 | 265 | 650 | 400 | 20.30 | 14.70 |
| JK480-3881-7 | 320 | 620 | 400 | 24.20 | 17.10 |
| JK600-3881-8 | 395 | 600 | 400 | 30.70 | 20.40 |
| PK190-3880-3 | 196 | 1600 | 650 | 13.60 | 16.00 |
| PK250-3880-4 | 252 | 1240 | 650 | 17.70 | 18.60 |
| PK320-3880-5 | 319 | 1060 | 650 | 22.60 | 21.80 |
| PK400-3880-6 | 399 | 950 | 650 | 28.50 | 25.30 |
| PK480-3880-7 | 491 | 890 | 650 | 34.00 | 29.00 |
| PK600-3880-8 | 682 | 750 | 650 | 42.50 | 34.40 |
| RK400-5882-6 | 570 | 1450 | 900 | 43.40 | 37.90 |
| RK600-5882-8 | 900 | 1240 | 900 | 65.20 | 50.10 |

The table above gives performance figures for normal flow versions. For high flow versions, please contact our sales team.

High temperature oil up to 150°C

For applications where the oil is at higher temperatures, Bowman offer a range of oil coolers suitable for temperatures up to 150°C.



| Type | Maximum Oil Flow | Maximum Fresh Water Flow | Internal Oil Volume | Internal Water Volume |
|--------------|------------------|--------------------------|---------------------|-----------------------|
| | l/min | l/min | l (litre) | l (litre) |
| EC 80-3145-1 | 80 | 80 | 0.26 | 0.31 |
| EC100-3145-2 | 92 | 80 | 0.49 | 0.44 |
| EC120-3145-3 | 77 | 77 | 0.74 | 0.57 |
| EC140-3145-4 | 68 | 72 | 0.97 | 0.71 |
| EC160-3145-5 | 64 | 66 | 1.30 | 0.91 |
| FC 80-3146-1 | 140 | 140 | 0.75 | 0.65 |
| FC100-3146-2 | 145 | 135 | 1.10 | 0.84 |
| FC120-3146-3 | 116 | 125 | 1.50 | 1.06 |
| FC140-3146-4 | 105 | 120 | 2.00 | 1.35 |
| FC160-3146-5 | 96 | 108 | 2.60 | 1.68 |
| FG 80-3147-1 | 192 | 185 | 1.64 | 1.26 |
| FG100-3147-2 | 190 | 175 | 2.40 | 1.56 |
| FG120-3147-3 | 160 | 160 | 3.00 | 1.96 |
| FG140-3147-4 | 160 | 150 | 3.90 | 2.42 |
| FG160-3147-5 | 145 | 135 | 5.00 | 2.97 |
| GL140-3148-2 | 300 | 300 | 3.60 | 3.10 |
| GL180-3148-3 | 285 | 280 | 4.80 | 3.80 |
| GL240-3148-4 | 280 | 260 | 6.30 | 4.60 |
| GL320-3148-5 | 270 | 240 | 8.00 | 5.50 |
| GL400-3148-6 | 240 | 220 | 10.00 | 6.60 |
| GL480-3148-7 | 235 | 205 | 12.20 | 7.70 |
| GK190-3149-3 | 460 | 420 | 7.00 | 6.30 |
| GK250-3149-4 | 445 | 385 | 9.00 | 7.50 |
| GK320-3149-5 | 430 | 355 | 11.60 | 9.00 |
| GK400-3149-6 | 420 | 325 | 14.60 | 10.60 |
| GK480-3149-7 | 400 | 300 | 17.40 | 12.30 |
| GK600-3149-8 | 365 | 275 | 22.10 | 14.70 |
| JK190-3152-3 | 830 | 600 | 9.70 | 8.80 |
| JK250-3152-4 | 740 | 550 | 12.50 | 10.40 |
| JK320-3152-5 | 690 | 500 | 16.10 | 12.50 |
| JK400-3152-6 | 650 | 460 | 20.30 | 14.70 |
| JK480-3152-7 | 620 | 430 | 24.20 | 17.10 |
| JK600-3152-8 | 600 | 400 | 30.70 | 20.40 |
| PK190-3150-3 | 1600 | 900 | 13.60 | 16.00 |
| PK250-3150-4 | 1240 | 840 | 17.70 | 18.60 |
| PK320-3150-5 | 1060 | 750 | 22.60 | 21.80 |
| PK400-3150-6 | 950 | 700 | 28.50 | 25.30 |
| PK480-3150-7 | 890 | 650 | 34.00 | 29.00 |
| PK600-3150-8 | 750 | 600 | 42.50 | 34.40 |
| RK400-3155-6 | 1450 | 1180 | 43.40 | 37.90 |
| RK600-3155-8 | 1240 | 850 | 65.20 | 50.10 |

The table above gives performance figures for normal flow versions. For high flow versions, please contact our sales team.

Extreme temperature oil up to 200°C

For conditions with extreme oil temperatures, Bowman offer a range of oil coolers designed to operate at temperatures up to 200°C. These units feature a cast iron shell, Viton seals and a special tube stack.



| Type | Maximum Oil Flow | Maximum Fresh Water Flow | Internal Oil Volume | Internal Water Volume |
|--------------|------------------|--------------------------|---------------------|-----------------------|
| | l/min | l/min | l (litre) | l (litre) |
| EC120-3635-3 | 77 | 77 | 0.49 | 0.44 |
| FC100-3636-2 | 145 | 135 | 1.10 | 0.84 |
| FG100-3637-2 | 190 | 175 | 2.40 | 1.56 |
| FG120-3637-3 | 160 | 160 | 3.00 | 1.96 |
| FG140-3637-4 | 160 | 150 | 3.90 | 2.42 |
| FG160-3637-5 | 145 | 135 | 5.00 | 2.97 |
| GL140-3638-2 | 300 | 300 | 3.60 | 3.10 |
| GL240-3638-4 | 285 | 280 | 6.30 | 4.60 |

The table above gives performance figures for normal flow versions. For high flow versions, please contact our sales team.

Mining Hydraulic Oil Coolers

For underground mining applications, a special range of oil coolers is available suitable for use with water pressures up to 35 bar. These units have a cast iron shell, strengthened end covers, Viton seals and a special tube stack.

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

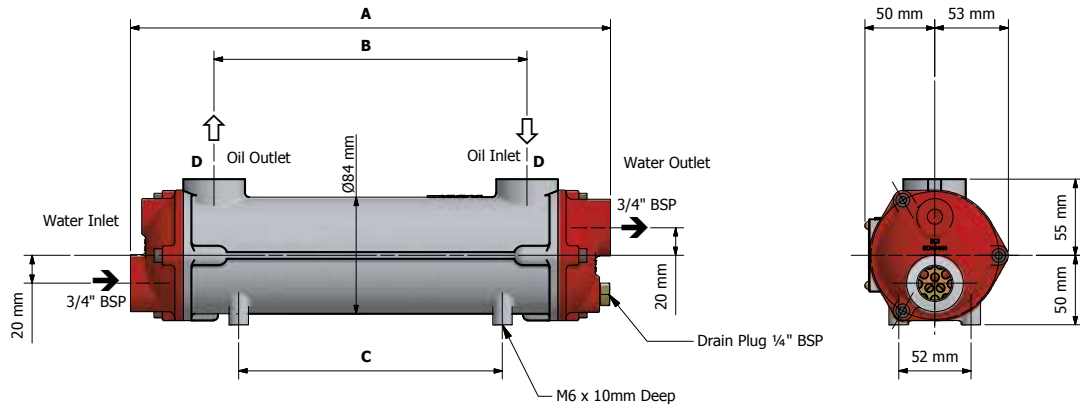


| Type | Heat Dissipated | Maximum Oil Flow | Maximum Fresh Water Flow | Internal Oil Volume | Internal Water Volume |
|--------------|-----------------|------------------|--------------------------|---------------------|-----------------------|
| | kW | l/min | l/min | l (litre) | l (litre) |
| EC120-3425-3 | 13 | 77 | 77 | 0.49 | 0.44 |
| FC100-3426-2 | 19 | 145 | 135 | 1.10 | 0.94 |
| FG100-3427-2 | 37 | 190 | 175 | 2.40 | 1.56 |
| FG120-3427-3 | 50 | 160 | 160 | 3.00 | 1.96 |
| FG140-3427-4 | 62 | 160 | 150 | 3.90 | 2.42 |
| FG160-3427-5 | 79 | 145 | 135 | 5.00 | 2.97 |
| GL140-3428-2 | 56 | 300 | 300 | 3.60 | 3.10 |
| GL240-3428-4 | 93 | 280 | 260 | 6.30 | 4.60 |

The table above gives performance figures for normal flow versions. For high flow versions, please contact our sales team.

EC Range

Three pass version



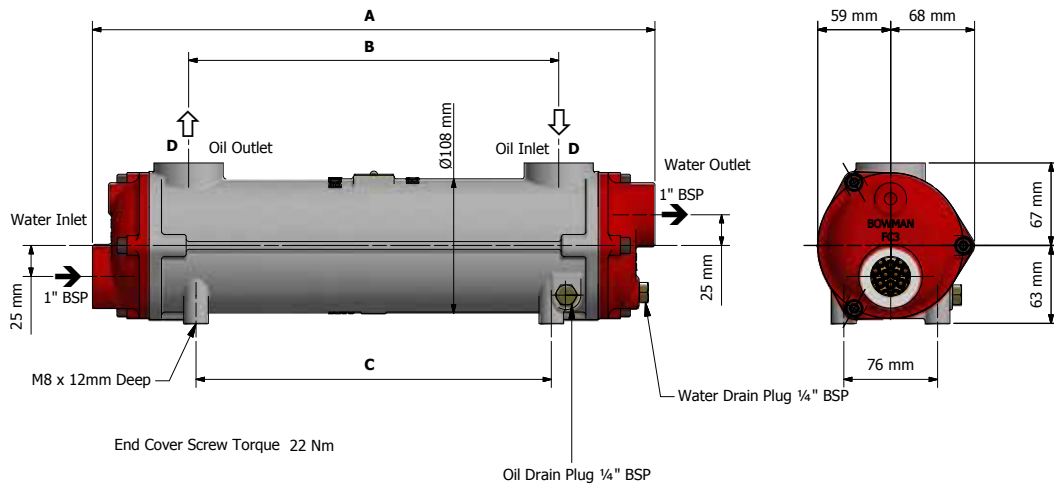
End Cover Screw Torque 8 Nm

| Type | Weight | A | B | C | D | D* |
|-------|--------|-----|-----|-----|------|-----|
| | kg | mm | mm | mm | BSP | BSP |
| EC80 | 2.4 | 174 | 60 | 60 | 1/2" | N/A |
| EC100 | 3.2 | 260 | 140 | 104 | 3/4" | 1" |
| EC120 | 3.8 | 346 | 226 | 190 | 3/4" | 1" |
| EC140 | 4.8 | 444 | 324 | 288 | 3/4" | 1" |
| EC160 | 5.7 | 572 | 452 | 416 | 3/4" | 1" |

Please note: dimensions marked D* are for high flow versions only. EC80 models are not available in high flow versions.

FC Range

Three pass version



End Cover Screw Torque 22 Nm

Oil Drain Plug 1/4" BSP

| Type | Weight | A | B | C | D | D* |
|-------|--------|-----|-----|-----|-----|--------|
| | kg | mm | mm | mm | BSP | BSP |
| FC80 | 5.5 | 272 | 116 | 104 | 1" | N/A |
| FC100 | 6.3 | 358 | 202 | 190 | 1" | 1 1/4" |
| FC120 | 7.3 | 456 | 300 | 288 | 1" | 1 1/4" |
| FC140 | 9.4 | 584 | 428 | 288 | 1" | 1 1/4" |
| FC160 | 11.0 | 730 | 574 | 434 | 1" | 1 1/4" |

Please note: dimensions marked D* are for high flow versions only. FC80 models are not available in high flow versions.

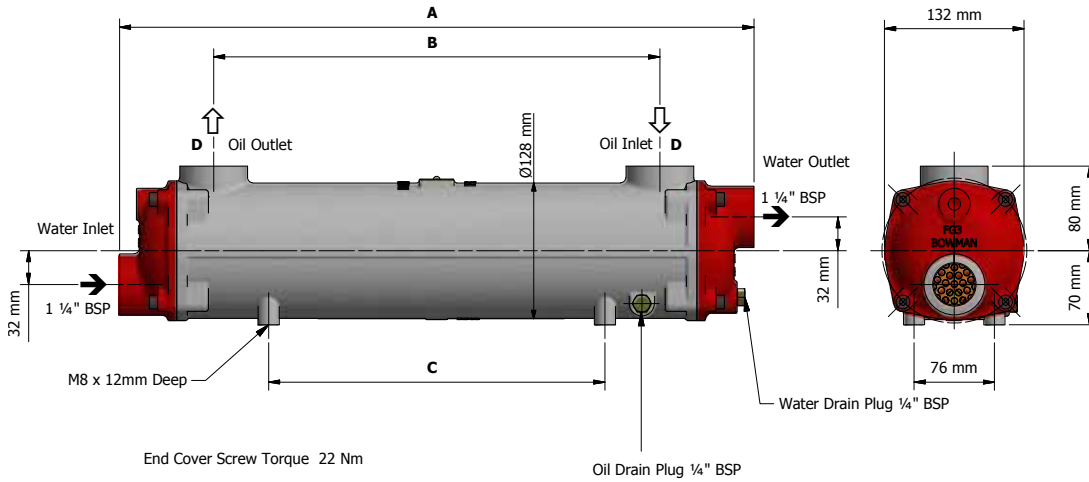
Maximum working oil pressure 20 bar.
Maximum working water pressure 16 bar.

Maximum working oil temperature
Maximum working water temperature

120°C.
110°C.

FG Range

Three pass version



End Cover Screw Torque 22 Nm

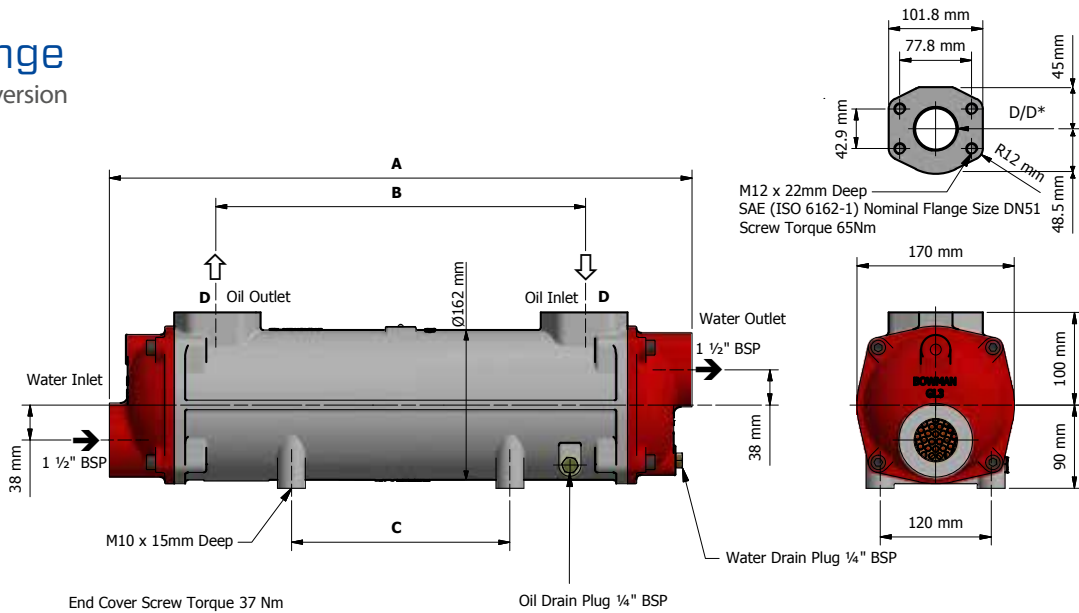
Oil Drain Plug 1/4" BSP

| Type | Weight | A | B | C | D | D* |
|-------|--------|-----|-----|-----|--------|--------|
| | kg | mm | mm | mm | BSP | BSP |
| FG80 | 8.5 | 374 | 196 | 92 | 1 1/4" | 1 1/2" |
| FG100 | 10.0 | 472 | 294 | 190 | 1 1/4" | 1 1/2" |
| FG120 | 12.0 | 600 | 422 | 318 | 1 1/4" | 1 1/2" |
| FG140 | 14.5 | 746 | 568 | 464 | 1 1/4" | 1 1/2" |
| FG160 | 17.5 | 924 | 746 | 642 | 1 1/4" | 1 1/2" |

Please note: dimensions marked D* are for high flow versions only

GL Range

Three pass version



End Cover Screw Torque 37 Nm

Oil Drain Plug 1/4" BSP

| Type | Weight | A | B | C | D | D* |
|-------|--------|------|------|-----|--------|---------|
| | kg | mm | mm | mm | BSP | mm |
| GL140 | 18 | 502 | 272 | 108 | 1 1/2" | Ø 51 mm |
| GL180 | 21 | 630 | 400 | 236 | 1 1/2" | Ø 51 mm |
| GL240 | 25 | 776 | 546 | 382 | 1 1/2" | Ø 51 mm |
| GL320 | 30 | 954 | 724 | 560 | 1 1/2" | Ø 51 mm |
| GL400 | 36 | 1156 | 926 | 762 | 1 1/2" | Ø 51 mm |
| GL480 | 42 | 1360 | 1130 | 966 | 1 1/2" | Ø 51 mm |

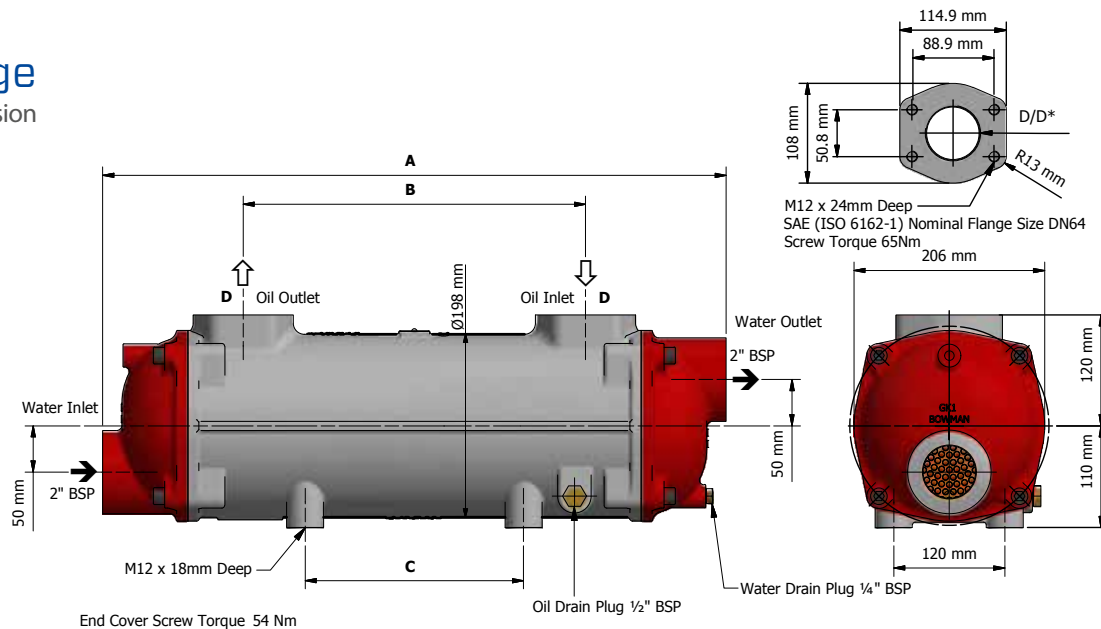
Please note: dimensions marked D* are for high flow versions only

Maximum working oil pressure 20 bar.
Maximum working water pressure 16 bar.

Maximum working oil temperature 120°C.
Maximum working water temperature 110°C.

GK Range

Three pass version

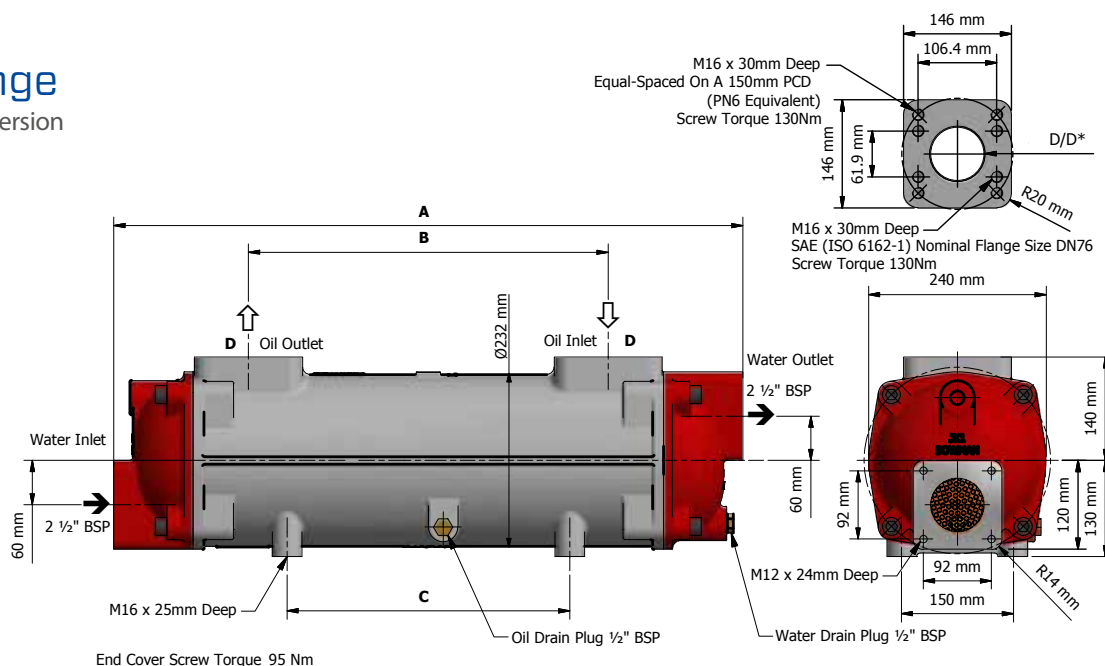


| Type | Weight | A | B | C | D | D* |
|-------|--------|------|------|------|-----|------|
| | kg | mm | mm | mm | BSP | mm |
| GK190 | 34 | 674 | 370 | 236 | 2" | Ø 64 |
| GK250 | 39 | 820 | 516 | 382 | 2" | Ø 64 |
| GK320 | 46 | 998 | 694 | 560 | 2" | Ø 64 |
| GK400 | 54 | 1200 | 896 | 762 | 2" | Ø 64 |
| GK480 | 62 | 1404 | 1100 | 966 | 2" | Ø 64 |
| GK600 | 74 | 1708 | 1404 | 1270 | 2" | Ø 64 |

Please note: dimensions marked D* are for high flow versions only

JK Range

Three pass version



| Type | Weight | A | B | C | D | D* |
|-------|--------|------|------|------|--------|------|
| | kg | mm | mm | mm | BSP | MM |
| JK190 | 58 | 704 | 340 | 236 | 2 1/2" | Ø 76 |
| JK250 | 66 | 850 | 486 | 382 | 2 1/2" | Ø 76 |
| JK320 | 78 | 1028 | 664 | 560 | 2 1/2" | Ø 76 |
| JK400 | 92 | 1230 | 866 | 762 | 2 1/2" | Ø 76 |
| JK480 | 105 | 1434 | 1070 | 966 | 2 1/2" | Ø 76 |
| JK600 | 126 | 1738 | 1374 | 1270 | 2 1/2" | Ø 76 |

Please note: dimensions marked D* are for high flow versions only

Maximum working oil pressure
Maximum working water pressure

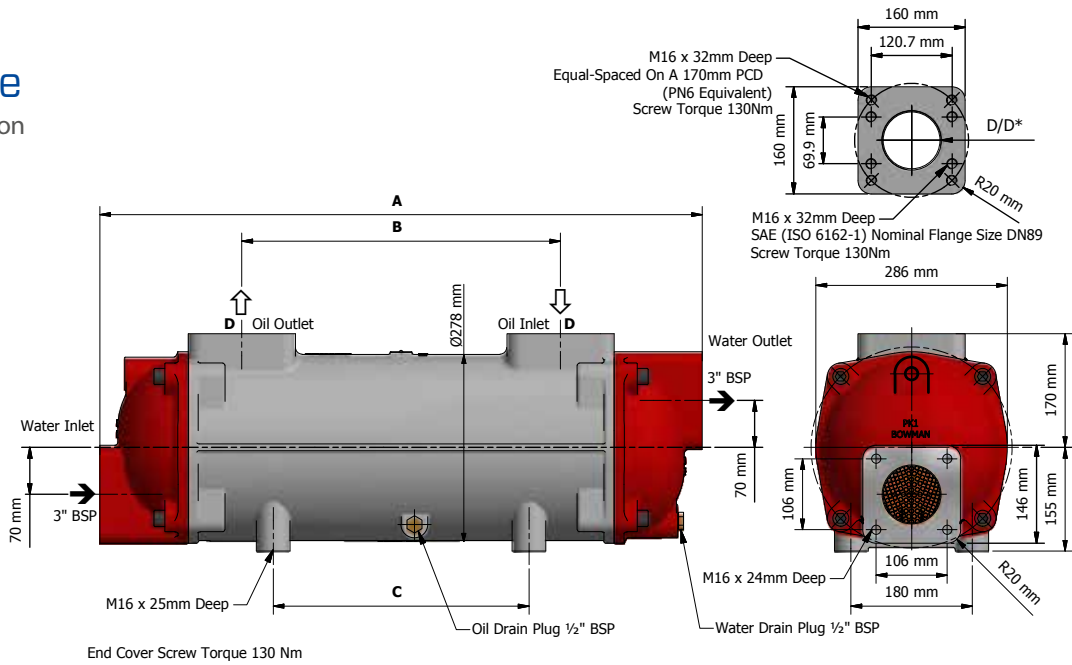
20 bar.
16 bar.

Maximum working oil temperature
Maximum working water temperature

120°C.
110°C.

PK Range

Three pass version

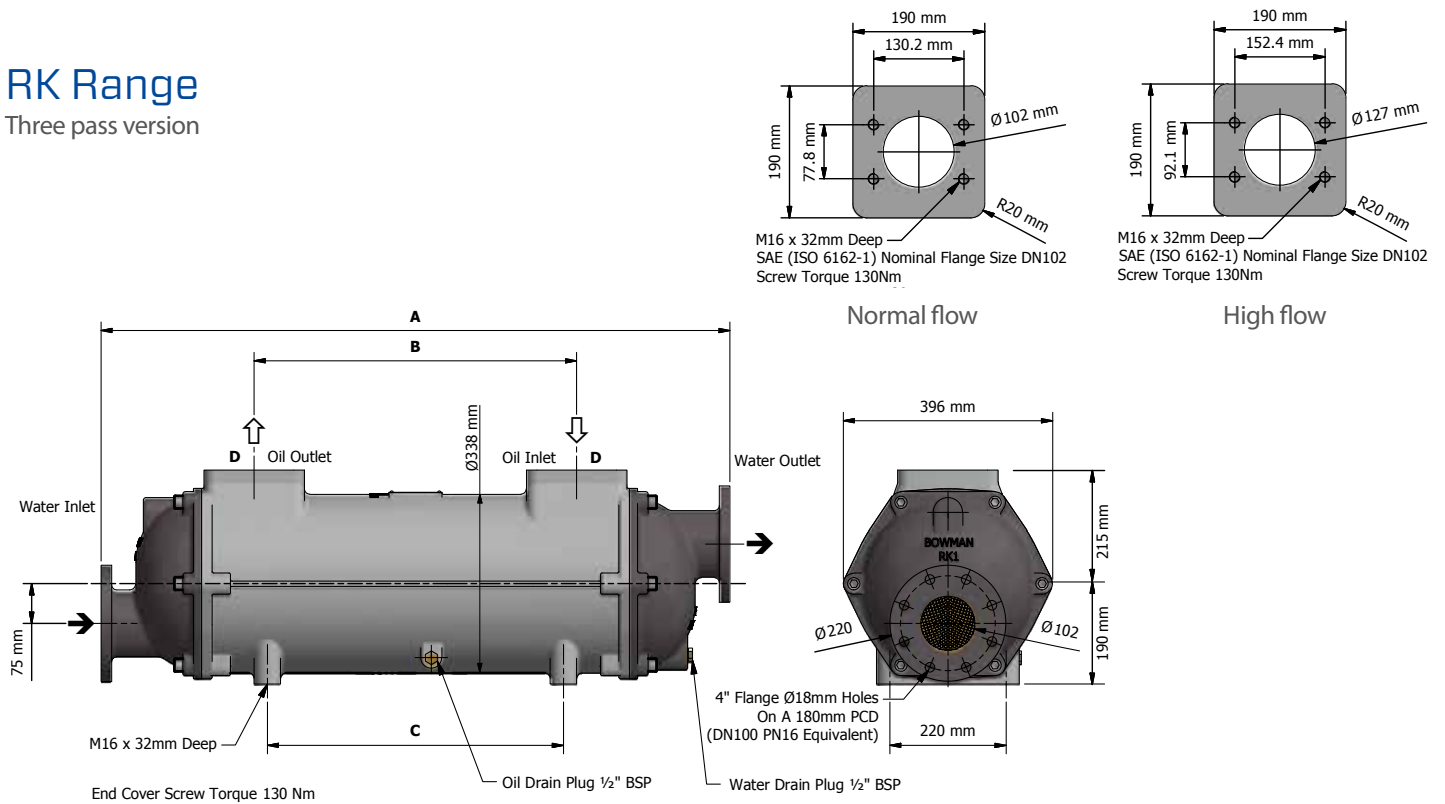


| Type | Weight | A | A1 | B | C | D | D* |
|-------|--------|------|------|------|------|-----|------|
| | kg | mm | mm | mm | mm | BSP | mm |
| PK190 | 81 | 754 | 706 | 330 | 236 | 3" | Ø 89 |
| PK250 | 94 | 900 | 852 | 476 | 382 | 3" | Ø 89 |
| PK320 | 110 | 1078 | 1030 | 654 | 560 | 3" | Ø 89 |
| PK400 | 125 | 1280 | 1232 | 856 | 762 | 3" | Ø 89 |
| PK480 | 140 | 1484 | 1436 | 1060 | 966 | 3" | Ø 89 |
| PK600 | 158 | 1788 | 1740 | 1364 | 1270 | 3" | Ø 89 |

Please note: dimensions marked D* are for high flow versions only; dimensions marked A1 are for marine versions only.

RK Range

Three pass version



| Type | Weight | A | B | C | D | D* |
|-------|--------|------|------|------|-------|-------|
| | kg | mm | mm | mm | mm | mm |
| RK400 | 186 | 1392 | 812 | 762 | Ø 102 | Ø 127 |
| RK600 | 246 | 1900 | 1320 | 1270 | Ø 102 | Ø 127 |

Please note: dimensions marked D* are for high flow versions only

Maximum working oil pressure 20 bar.
Maximum working water pressure 16 bar.

Maximum working oil temperature
Maximum working water temperature

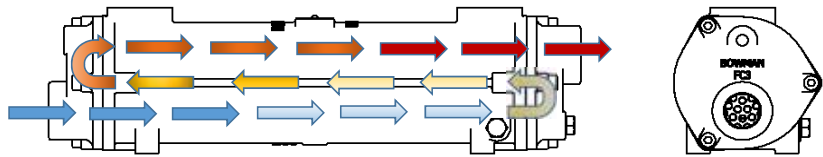
120°C.
110°C.

Three, Two and Single Pass Oil Coolers

There is the choice of three, two or single pass water flow to suit operating conditions.

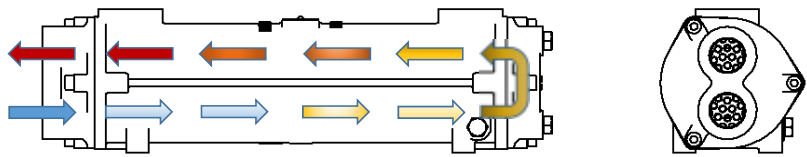
Three pass

This is our preferred and standard arrangement. Three pass units transfer more heat from a given water flow, splitting the internal area of the tube stack into three separate passes. Cooling water enters via the lower connection and passes through the first third of the tubes. It is then re-directed in a second pass, which returns the water back through the middle section, before the final third pass, leaving from the upper connection.



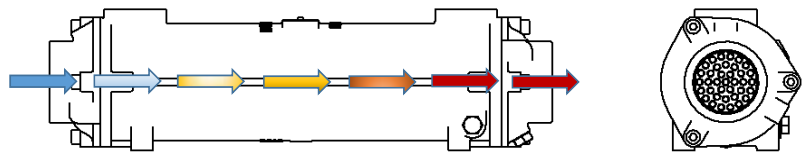
Two pass*

Ideal for applications where space is limited, two pass units have end covers which separate the internal area of the tube stack into two separate passes. Cooling water enters and leaves from connections on the same end cover, simplifying pipework. Two pass units can also accommodate higher flow rates than three pass units.



Single pass*

These units are only chosen when the cooling water flow rate is unavoidably high. The water passes through all of the tubes in a single pass.



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

Double Seal Retaining Flange

Rising levels of waste material in the ocean are dictating that regular cleaning and maintenance are now important to ensure oil coolers operate at their peak efficiency.

However, cleaning hydraulic oil coolers on board ship can be time-consuming and potentially hazardous, as even when drained, the unit may still contain some fluid, which can spill onto the deck when the tube stack is removed.

To minimise down time and eliminate deck spillage hazards, Bowman has developed the Double Seal Retaining Flange (DSRF) for marine hydraulic cooling applications.

Available for the GL and larger sizes, the DSRF fits between the end cover and the heat exchanger body, enabling the cooling water side of the unit to be cleaned and inspected - without having to disturb the oil side.

For full product specification details, please contact our sales team on +44 (0) 121 359 5401.



Titanium Tube Stacks

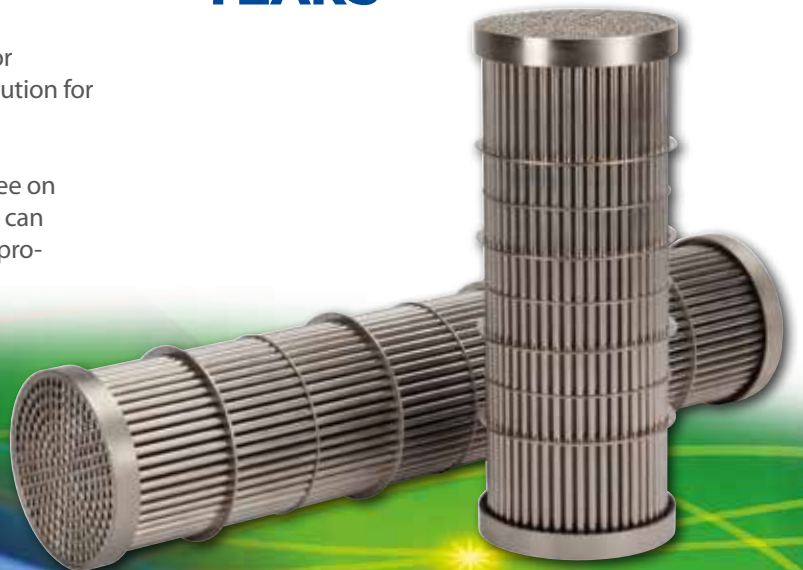
Titanium is the ultimate 'fit and forget' solution for any application where very aggressive water conditions exist, such as salt, or contaminated/mineral rich fresh water. Titanium resists chemical attack and eliminates the risk of premature failure of the tube stack.

Titanium tube stacks are now available as an option for Bowman hydraulic oil coolers, providing a long life solution for the most demanding conditions.

Bowman Titanium tube stacks have a 10 year guarantee on all Titanium material and, as a further advantage, they can operate at higher flow rates compared to standard cupro-nickel, without the risk of tube erosion.

GUARANTEED
10
YEARS

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



Shipboard Installation of Marine Hydraulic Oil Coolers

Product Mounting

The oil cooler can be mounted either horizontally or vertically as illustrated.

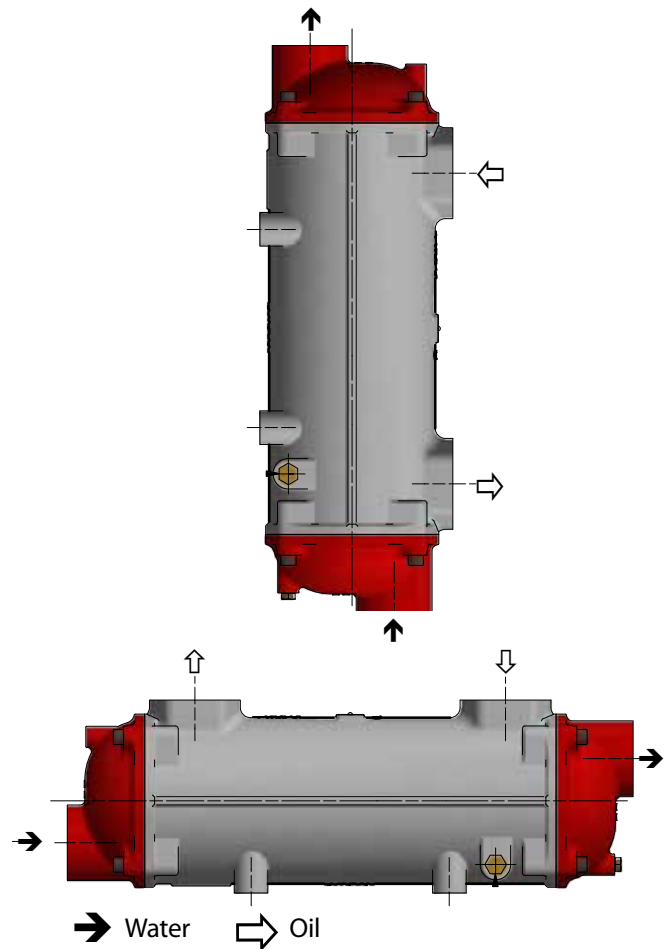
Counter Flow Installation

The oil cooler must always be installed in counter flow – i.e. where the sea water flows in the opposite direction to the oil, as illustrated.

Maximum Sea Water Flow Rates

The maximum permitted sea water flow rates for Bowman oil coolers are as follows:

| | | | |
|----------|------------|----------|------------|
| EC range | 50 l/min. | JK range | 400 l/min. |
| FC range | 80 l/min. | PK range | 650 l/min. |
| FG range | 110 l/min. | RK range | 900 l/min. |
| GL range | 200 l/min. | | |
| GK range | 300 l/min. | | |



Orifice Plates

If the sea water supply is taken from a ship's main, it is important to ensure that the recommended flow rate cannot be exceeded.

This will normally mean that an orifice plate must be fitted in the pipework at least 1m before the oil cooler, with the orifice size calculated to ensure that the maximum sea water flow rate cannot be exceeded.

The correct orifice diameter can be determined from the table below.

If this precaution is not taken, it is possible that the sea water flow through the cooler may be many times the recommended maximum, leading to rapid failure.

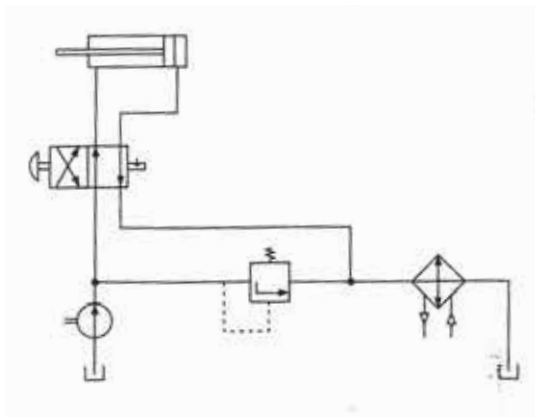
Recommended Orifice Plate Sizes

| Oil Cooler Series | Max. sea water flow l/min | Orifice diameter in mm for max. sea water flow | | | | | | | | |
|-------------------|---------------------------|--|-------|-------|-------|-------|-------|-------|-------|--------|
| | | 2 bar | 3 bar | 4 bar | 5 bar | 6 bar | 7 bar | 8 bar | 9 bar | 10 bar |
| EC | 50 | 9.5 | 8.5 | 8.0 | 7.5 | 7.2 | 6.8 | 6.7 | 6.5 | 6.3 |
| FC | 80 | 12 | 11 | 10 | 9.5 | 9.0 | 8.7 | 8.4 | 8.2 | 8.0 |
| FG | 110 | 14 | 13 | 12 | 11 | 10 | 10 | 9.8 | 9.6 | 9.3 |
| GL | 200 | 19 | 17 | 16 | 15 | 14 | 14 | 13 | 13 | 13 |
| GK | 300 | 23 | 21 | 19 | 18 | 17 | 17 | 16 | 16 | 15 |
| JK | 400 | 27 | 24 | 22 | 21 | 20 | 20 | 19 | 18 | 18 |
| PK | 650 | 34 | 31 | 28 | 27 | 26 | 25 | 24 | 23 | 23 |
| RK | 900 | 40 | 36 | 34 | 32 | 30 | 29 | 28 | 27 | 26 |

General Guidelines for Operation and Maintenance of Oil Coolers

Bowman oil coolers are renowned for combining excellent heat transfer, with long life. To ensure the unit continues to operate at its peak performance and to minimise the possibility of damage or premature failure, we suggest the following good practice:

- 1: For hydraulic applications, the oil cooler should be in the return pipe to tank as shown in the diagram. If the flow is subject to violent fluctuations in flow and pressure, it may be advisable to connect the cooler in a separate circuit with its own pump.
- 2: Oil coolers should be mounted as shown on page 14 to ensure that they operate full of water and should be connected for counter flow.



- 3: The water outlet pipe from the oil cooler should always have an uninterrupted run back to the waste or return water circuit.
- 4: Ensure that the maximum water flow rate is not exceeded and that the pH is between 7.2 and 7.8.
- 5: If a water flow control valve is used, it should be of the modulating type and fitted on the inlet side, so that the cooler is not pressurised when the system is shut down.
- 6: If the hydraulic system is not being used, isolate the oil cooler from water pressure.
- 7: Stainless steel water pipes and fittings should not be used adjacent to the oil cooler.
- 8: **Important note for marine applications:** during commissioning, shutdown and standby periods, if the oil cooler has not been used over a 4-6 day period, it should be drained, cleaned and kept dry. Where this procedure is not possible, drain the stagnant water and refill the oil cooler with clean sea or fresh water, which should be replaced with oxygenated sea water every 2-3 days to avoid further decomposition.

Before installing the oil cooler, always read the 'Installation, Operation & Maintenance Guide' which can be downloaded from our web site by visiting www.ej-bowman.com/downloads.

Special Cooling Requirements

Bowman offer one of the widest ranges of hydraulic oil coolers available, most applications can be covered from our standard range.

However, if you have a special application that is not listed in this brochure, please contact our sales team, who can advise on the most appropriate product.

For some applications where a single unit may be too small for the required oil flow, multiple units can be connected in parallel. We can also advise on installation, particularly for unusual or safety critical applications.

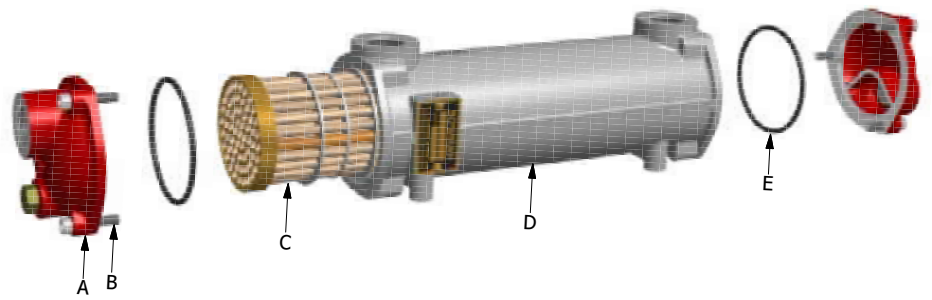
Servicing the Unit

By removing the end cover retaining screws, the tube stack can be removed from the body for routine cleaning and maintenance. On reassembly, it is recommended that the "O" seals are replaced to ensure a reliable joint. A comprehensive range of replacement parts is available for all Bowman hydraulic oil coolers, these are listed on pages 16 to 19.

NOTE: when ordering replacement parts, always quote the number on the nameplate.



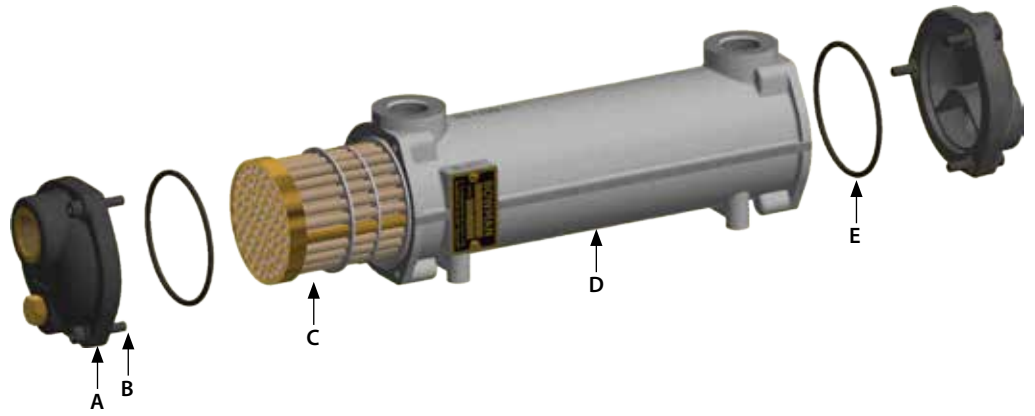
Land based Hydraulic Oil Cooler Replacement Parts



| Type | End Covers (A) | Screws (B) | Tube stack (C) | Body (D) | "O" Seals (E) |
|--------------|----------------|------------|----------------|------------------|---------------|
| EC 80-1425-1 | | | 785-1TN1A | EC21-978-AL2 | |
| EC100-1425-2 | | | 785-2TN1A | EC10-783-2AL | |
| EC120-1425-3 | EC3-1040CI | HS06X30DP | 785-3TN1A | EC12-783-3AL | AN12NT |
| EC140-1425-4 | | | 785-4TN1A | EC14-783-4AL | |
| EC160-1425-5 | | | 785-5TN1A | EC16-783-5AL | |
| FC 80-1426-1 | | | 1530-1TN1A | FC 8-1200-1AL | |
| FC100-1426-2 | | | 1530-2TN1A | FC10-1200-2AL | |
| FC120-1426-3 | FC3-1281CI | HS08X35DP | 1530-3TN1A | FC12-1200-3AL | OS46NT |
| FC140-1426-4 | | | 1530-4TN1A | FC14-1200-4AL | |
| FC160-1426-5 | | | 1530-5TN1A | FC16-1200-5AL | |
| FG 80-1427-1 | | | 1959-1TN1A | FG 8-1650-1AL | |
| FG100-1427-2 | | | 1959-2TN1A | FG10-1650-2AL | |
| FG120-1427-3 | | | 1959-3TN1A | FG12-1650-3AL | |
| FG140-1427-4 | FG3-1583CI | HS08X35DP | 1959-4TN1A | FG14-1650-4AL | OS52NT |
| FG160-1427-5 | | | 1959-5TN1A | FG16-1650-5AL | |
| GL140-1428-2 | | | 1798-2TN1A | GL15-3136NF-2AL6 | |
| GL180-1428-3 | | | 1798-3TN1A | GL19-3136NF-3AL6 | |
| GL240-1428-4 | | | 1798-4TN1A | GL25-3136NF-4AL6 | |
| GL320-1428-5 | GL3-3141CI | HS10X40DP | 1798-5TN1A | GL33-3136NF-5AL6 | OS63NT |
| GL400-1428-6 | | | 1798-6TN1A | GL41-3136NF-6AL6 | |
| GL480-1428-7 | | | 1798-7TN1A | GL49-3136NF-7AL6 | |
| GK190-1658-3 | | | 2315-3TN1A | GK19-2865NF-3AL7 | |
| GK250-1658-4 | | | 2315-4TN1A | GK25-2865NF-4AL7 | |
| GK320-1658-5 | | | 2315-5TN1A | GK32-2865NF-5AL7 | |
| GK400-1658-6 | GK1-2864CI | HS12X50DP | 2315-6TN1A | GK40-2865NF-6AL7 | OS69NT |
| GK480-1658-7 | | | 2315-7TN1A | GK48-2865NF-7AL7 | |
| GK600-1658-8 | | | 2315-8TN1A | GK60-2865NF-8AL7 | |
| JK190-1661-3 | | | 3334-3TN1A | JK19-3332NF-3AL8 | |
| JK250-1661-4 | | | 3334-4TN1A | JK25-3332NF-4AL8 | |
| JK320-1661-5 | | | 3334-5TN1A | JK32-3332NF-5AL8 | |
| JK400-1661-6 | JK1-3333CI | HS16X70DP | 3334-6TN1A | JK40-3332NF-6AL8 | OS74NT |
| JK480-1661-7 | | | 3334-7TN1A | JK48-3332NF-7AL8 | |
| JK600-1661-8 | | | 3334-8TN1A | JK60-3332NF-8AL8 | |
| PK190-1669-3 | | | 2829-3TN1A | PK19-2919NF-3AL9 | |
| PK250-1669-4 | | | 2829-4TN1A | PK25-2919NF-4AL9 | |
| PK320-1669-5 | | | 2829-5TN1A | PK32-2919NF-5AL9 | |
| PK400-1669-6 | PK1-2918CI | HS16X70DP | 2829-6TN1A | PK40-2919NF-6AL9 | OS81NT |
| PK480-1669-7 | | | 2829-7TN1A | PK48-2919NF-7AL9 | |
| PK600-1669-8 | | | 2829-8TN1A | PK60-2919NF-8AL9 | |
| RK400-1698-6 | RK1-5451CIC | HS16X70DP | 5455-6TN1A | RK40-5450NF-6AL0 | OS453NT |
| RK600-1698-8 | RK1-5451CIC | HS16X70DP | 5455-8TN1A | RK60-5450NF-8AL0 | OS453NT |

NOTE: when ordering replacement parts, always quote the number on the nameplate.
The table above lists replacement parts for normal flow versions. For high flow versions, please contact our sales team.

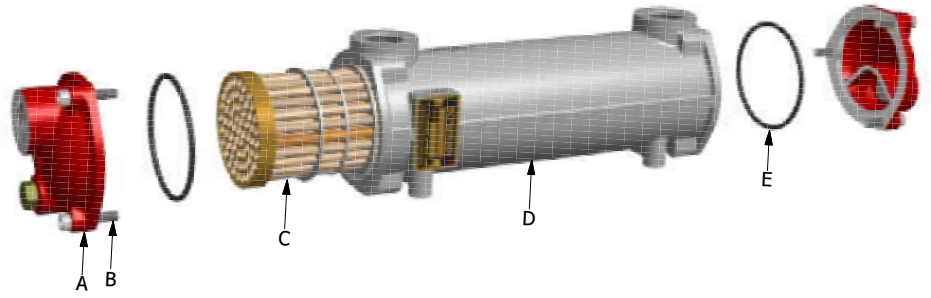
Marine Hydraulic Oil Cooler Replacement Parts



| Type | End Covers (A) | Screws (B) | Tube stack (C) | Body (D) | "O" Seals (E) |
|--------------|----------------|------------|----------------|------------------|---------------|
| EC 80-3875-1 | | | 785-1TN1A | EC21-978-AL2 | |
| EC100-3875-2 | | | 785-2TN1A | EC10-783-2AL | |
| EC120-3875-3 | EC3C-5480 | HS06X30DP | 785-3TN1A | EC12-783-3AL | AN12NT |
| EC140-3875-4 | | | 785-4TN1A | EC14-783-4AL | |
| EC160-3875-5 | | | 785-5TN1A | EC16-783-5AL | |
| FC 80-3876-1 | | | 1530-1TN1A | FC 8-1200-1AL | |
| FC100-3876-2 | | | 1530-2TN1A | FC10-1200-2AL | |
| FC120-3876-3 | FC3C-5481 | HS08X35DP | 1530-3TN1A | FC12-1200-3AL | OS46NT |
| FC140-3876-4 | | | 1530-4TN1A | FC14-1200-4AL | |
| FC160-3876-5 | | | 1530-5TN1A | FC16-1200-5AL | |
| FG 80-3877-1 | | | 1959-1TN1A | FG 8-1650-1AL | |
| FG100-3877-2 | | | 1959-2TN1A | FG10-1650-2AL | |
| FG120-3877-3 | FG3C-5482 | HS08X35DP | 1959-3TN1A | FG12-1650-3AL | OS52NT |
| FG140-3877-4 | | | 1959-4TN1A | FG14-1650-4AL | |
| FG160-3877-5 | | | 1959-5TN1A | FG16-1650-5AL | |
| GL140-3878-2 | | | 1798-2TN1A | GL15-3136NF-2AL6 | |
| GL180-3878-3 | | | 1798-3TN1A | GL19-3136NF-3AL6 | |
| GL240-3878-4 | | | 1798-4TN1A | GL25-3136NF-4AL6 | |
| GL320-3878-5 | GL3C-5483 | HS10X40DP | 1798-5TN1A | GL33-3136NF-5AL6 | OS63NT |
| GL400-3878-6 | | | 1798-6TN1A | GL41-3136NF-6AL6 | |
| GL480-3878-7 | | | 1798-7TN1A | GL49-3136NF-7AL6 | |
| GK190-3879-3 | | | 2315-3TN1A | GK19-2865NF-3AL7 | |
| GK250-3879-4 | | | 2315-4TN1A | GK25-2865NF-4AL7 | |
| GK320-3879-5 | | | 2315-5TN1A | GK32-2865NF-5AL7 | |
| GK400-3879-6 | GK1-2864BR | HS12X50DP | 2315-6TN1A | GK40-2865NF-6AL7 | OS69NT |
| GK480-3879-7 | | | 2315-7TN1A | GK48-2865NF-7AL7 | |
| GK600-3879-8 | | | 2315-8TN1A | GK60-2865NF-8AL7 | |
| JK190-3881-3 | | | 3334-3TN1A | JK19-3332NF-3AL8 | |
| JK250-3881-4 | | | 3334-4TN1A | JK25-3332NF-4AL8 | |
| JK320-3881-5 | | | 3334-5TN1A | JK32-3332NF-5AL8 | |
| JK400-3881-6 | JK1-4353BR | HS16X70DP | 3334-6TN1A | JK40-3332NF-6AL8 | OS74NT |
| JK480-3881-7 | | | 3334-7TN1A | JK48-3332NF-7AL8 | |
| JK600-3881-8 | | | 3334-8TN1A | JK60-3332NF-8AL8 | |
| PK190-3880-3 | | | 2829-3TN1A | PK19-2919NF-3AL9 | |
| PK250-3880-4 | | | 2829-4TN1A | PK25-2919NF-4AL9 | |
| PK320-3880-5 | | | 2829-5TN1A | PK32-2919NF-5AL9 | |
| PK400-3880-6 | PK1-4352BR | HS16X70DP | 2829-6TN1A | PK40-2919NF-6AL9 | OS81NT |
| PK480-3880-7 | | | 2829-7TN1A | PK48-2919NF-7AL9 | |
| PK600-3880-8 | | | 2829-8TN1A | PK60-2919NF-8AL9 | |
| RK400-5882-6 | RK1-5451CIC | HS16X70DP | 5455-6TN1A | RK40-5450NF-6AL0 | OS453NT |
| RK600-5882-8 | RK1-5451CIC | HS16X70DP | 5455-8TN1A | RK60-5450NF-8AL0 | OS453NT |

NOTE: when ordering replacement parts, always quote the number on the nameplate.
The table above lists replacement parts for normal flow versions. For high flow versions, please contact our sales team.

High Temperature Oil (to 150°C) Replacement Parts



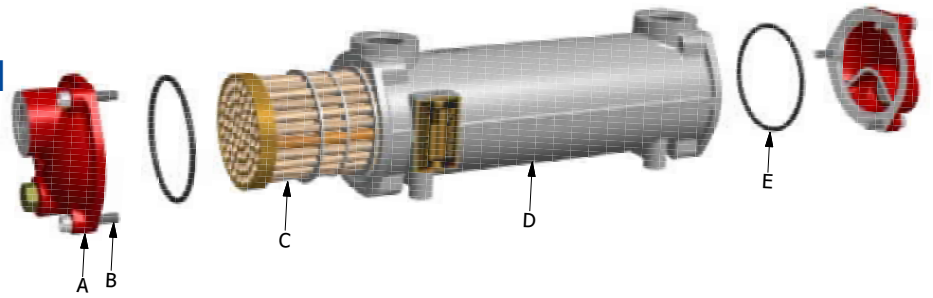
| Type | End Covers (A) | Screws (B) | Tube stack (C) | Body (D) | "O" Seals (E) |
|--------------|----------------|------------|----------------|------------------|---------------|
| EC 80-3145-1 | | | 785-1TN2A | EC21-978-AL2 | |
| EC100-3145-2 | | | 785-2TN2A | EC10-783-2AL | |
| EC120-3145-3 | EC3-1040CI | HS06X30DP | 785-3TN2A | EC12-783-3AL | AN12VT |
| EC140-3145-4 | | | 785-4TN2A | EC14-783-4AL | |
| EC160-3145-5 | | | 785-5TN2A | EC16-783-5AL | |
| FC 80-3146-1 | | | 1530-1TN2A | FC 8-1200-1AL | |
| FC100-3146-2 | | | 1530-2TN2A | FC10-1200-2AL | |
| FC120-3146-3 | FC3-1281CI | HS08X35DP | 1530-3TN2A | FC12-1200-3AL | OS46VT |
| FC140-3146-4 | | | 1530-4TN2A | FC14-1200-4AL | |
| FC160-3146-5 | | | 1530-5TN2A | FC16-1200-5AL | |
| FG 80-3147-1 | | | 1959-1TN2A | FG 8-1650-1AL | |
| FG100-3147-2 | | | 1959-2TN2A | FG10-1650-2AL | |
| FG120-3147-3 | FG3-1583CI | HS08X35DP | 1959-3TN2A | FG12-1650-3AL | OS52VT |
| FG140-3147-4 | | | 1959-4TN2A | FG14-1650-4AL | |
| FG160-3147-5 | | | 1959-5TN2A | FG16-1650-5AL | |
| GL140-3148-2 | | | 1798-2TN2A | GL15-3136NF-2AL6 | |
| GL180-3148-3 | | | 1798-3TN2A | GL19-3136NF-3AL6 | |
| GL240-3148-4 | | | 1798-4TN2A | GL25-3136NF-4AL6 | |
| GL320-3148-5 | GL3-3141CI | HS10X40DP | 1798-5TN2A | GL33-3136NF-5AL6 | OS63VT |
| GL400-3148-6 | | | 1798-6TN2A | GL41-3136NF-6AL6 | |
| GL480-3148-7 | | | 1798-7TN2A | GL49-3136NF-7AL6 | |
| GK190-3149-3 | | | 2315-3TN2A | GK19-2865NF-3AL7 | |
| GK250-3149-4 | | | 2315-4TN2A | GK25-2865NF-4AL7 | |
| GK320-3149-5 | | | 2315-5TN2A | GK32-2865NF-5AL7 | |
| GK400-3149-6 | GK1-2864CI | HS12X50DP | 2315-6TN2A | GK40-2865NF-6AL7 | OS69VT |
| GK480-3149-7 | | | 2315-7TN2A | GK48-2865NF-7AL7 | |
| GK600-3149-8 | | | 2315-8TN2A | GK60-2865NF-8AL7 | |
| JK190-3152-3 | | | 3334-3TN2A | JK19-3332NF-3AL8 | |
| JK250-3152-4 | | | 3334-4TN2A | JK25-3332NF-4AL8 | |
| JK320-3152-5 | | | 3334-5TN2A | JK32-3332NF-5AL8 | |
| JK400-3152-6 | JK1-3333CI | HS16X70DP | 3334-6TN2A | JK40-3332NF-6AL8 | OS74VT |
| JK480-3152-7 | | | 3334-7TN2A | JK48-3332NF-7AL8 | |
| JK600-3152-8 | | | 3334-8TN2A | JK60-3332NF-8AL8 | |
| PK190-3150-3 | | | 2829-3TN2A | PK19-2919NF-3AL9 | |
| PK250-3150-4 | | | 2829-4TN2A | PK25-2919NF-4AL9 | |
| PK320-3150-5 | | | 2829-5TN2A | PK32-2919NF-5AL9 | |
| PK400-3150-6 | PK1-2918CI | HS16X70DP | 2829-6TN2A | PK40-2919NF-6AL9 | OS81VT |
| PK480-3150-7 | | | 2829-7TN2A | PK48-2919NF-7AL9 | |
| PK600-3150-8 | | | 2829-8TN2A | PK60-2919NF-8AL9 | |
| RK400-3153-6 | RK1-5451CIC | HS16X70DP | 5455-6TN2A | RK40-5450NF-6AL0 | OS453VT |
| RK600-3153-8 | RK1-5451CIC | HS16X70DP | 5455-8TN2A | RK60-5450NF-8AL0 | OS453VT |

NOTE: when ordering replacement parts, always quote the number on the nameplate.

The table above lists replacement parts for normal flow versions. For high flow versions, please contact our sales team.

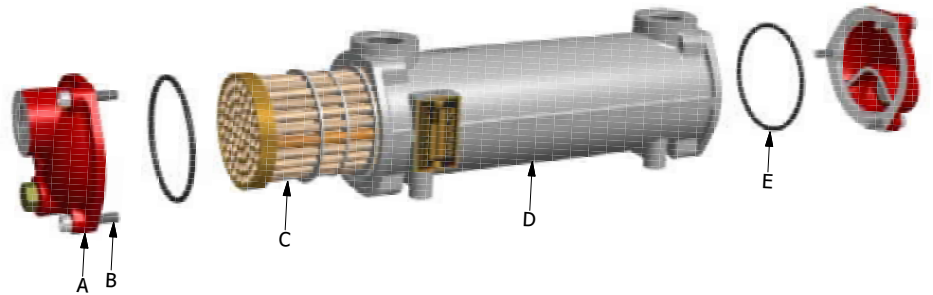
BOWMAN®

Extreme Temperature Oil (to 200°C) Replacement Parts



| Type | End Covers (A) | Screws (B) | Tube stack (C) | Body (D) | "O" Seals (E) |
|--------------|----------------|------------|----------------|---------------|---------------|
| EC120-3635-3 | EC3-1040CI | HS06X30DP | 785-3TN3B | EC71-4658-3CI | AN12VT |
| FC100-3636-2 | FC3-1281CI | HS08X35DP | 1530-2TN3B | FC70-4668-2CI | OS46VT |
| FG100-3637-2 | FG3-1583CI | HS08X35DP | 1959-2TN3B | FG10-1650-2CI | OS52VT |
| FG120-3637-3 | FG3-1583CI | HS08X35DP | 1959-3TN3B | FG12-1650-3CI | OS52VT |
| FG140-3637-4 | FG3-1583CI | HS08X35DP | 1959-4TN3B | FG14-1650-4CI | OS52VT |
| FG160-3637-5 | FG3-1583CI | HS08X35DP | 1959-5TN3B | FG16-1650-5CI | OS52VT |
| GL140-3638-2 | GL3-3141CI | HS10X40DP | 1798-2TN3B | GL15-3136-2CI | OS63VT |
| GL240-3638-4 | GL3-3141CI | HS10X40DP | 1798-4TN3B | GL25-3136-4CI | OS63VT |

Mining Hydraulic Oil Cooler Replacement Parts



| Type | End Covers (A) | Screws (B) | Tube stack (C) | Body (D) | "O" Seals (E) |
|--------------|----------------|------------|----------------|------------------|---------------|
| EC120-3425-3 | EC23-4033CI | HS06X30DP | 785-3TN2B | EC71-4568-3CI | AN12VT |
| FC100-3426-2 | FC23-4034CI | HS08X35DP | 1530-2TN2B | FC70-4668-2CI | OS46VT |
| FG100-3427-2 | FG23-4035CI | HS08X35DP | 1959-2TN2B | FG10-1650-2CI | OS52VT |
| FG120-3427-3 | FG23-4035CI | HS08X35DP | 1959-3TN2B | FG12-1650-3CI | OS52VT |
| FG140-3427-4 | FG23-4035CI | HS08X35DP | 1959-4TN2B | FG14-1650-4CI | OS52VT |
| FG160-3427-5 | FG23-4035CI | HS08X35DP | 1959-5TN2B | FG16-1650-5CI | OS52VT |
| GL140-3428-2 | GL23-4036CI | HS10A40DP | 1798-2TN2B | GL15-3136NF-2CI6 | OS63VT |
| GL240-3428-4 | GL23-4036CI | HS10A40DP | 1798-3TN2B | GL25-3136NF-4CI6 | OS63VT |

NOTE: when ordering replacement parts, always quote the number on the nameplate.
The table above lists replacement parts for normal flow versions. For high flow versions, please contact our sales team.

A world of applications

Bowman has been synonymous with hydraulic system cooling for over 50 years. Renowned for providing highly efficient, reliable heat transfer solutions, Bowman oil coolers can be found in an extremely wide range of applications, for marine and offshore industries, land based machines and equipment as well as deep underground mining equipment.



Industrial Machines & Equipment

Wherever hydraulic systems require fluid cooling, Bowman oil coolers can be found at the heart of the system, protecting equipment from excessive heat loads in applications as diverse as hydraulic presses, processing machinery, active fire protection systems, materials handling equipment and plastic injection moulding machines.



Deep Underground Mining

For deep mine operations, Bowman hydraulic oil coolers are the first choice for some of the world's leading machinery and equipment manufacturers, due to their efficient heat transfer and durability. Additionally, the choice of tube stack materials and construction enables the units to operate with all types of mine water conditions, including high salt content.



Marine Deck Machinery

Designed to combine extended service life with minimal running costs, this hydraulic propulsion system replaces conventional marine gearboxes to provide smooth, quiet operation for inland commercial charter boats. Extensively proven over 1,000s of hours, Bowman's oil cooling technology is at the heart of the system.



Marine Stabiliser and Thruster Systems

A pioneer in the development of advanced marine stabiliser technology and vessel roll reduction solutions, this leading USA manufacturer uses Bowman oil coolers in their hydraulic power packs to ensure the fluid power required to articulate the stabiliser fins is always kept at the optimum temperature.



All Bowman hydraulic oil coolers are produced to the highest quality in our UK manufacturing centre to ISO 9001:2008. With tens of thousands of units operating reliably and efficiently around the world, you can have complete confidence when you specify Bowman hydraulic oil coolers.

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