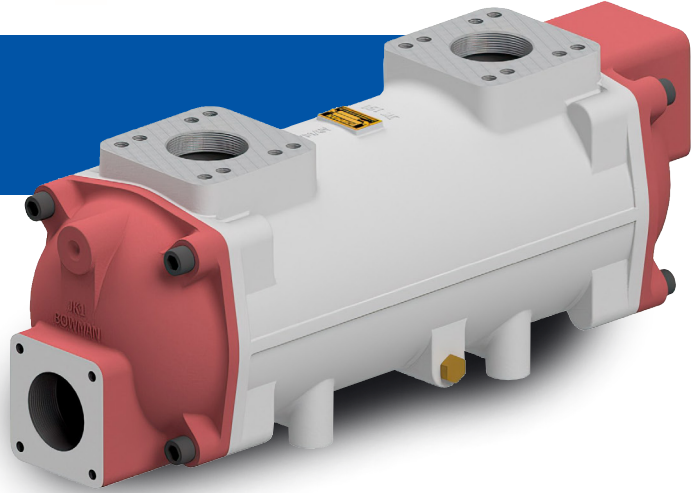


## PRODUCT PROFILE

# JK Series

## Hydraulic Oil Coolers



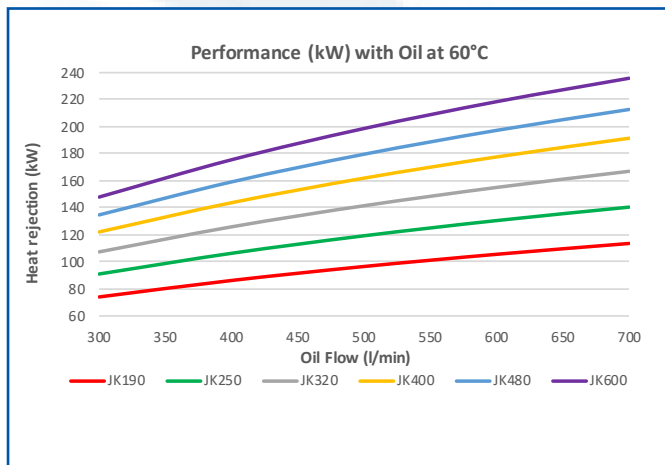
### Introduction

Bowman hydraulic oil coolers offer efficient, reliable heat transfer performance for a wide range of cooling requirements. Suitable for cooling a variety of oils, using either fresh or sea water, they have become the unit of choice for hydraulic engineers the world over.

### Typical Performance

Bowman JK oil coolers can remove from around 74kW up to 395kW of heat and the tables and graphs below show examples of their cooling performance throughout the range, using different water flow rates and oil temperatures.

**ISO 46 Oil at 60°C on inlet to the cooler**  
**Water inlet temperature: 30°C at 300 l/min**

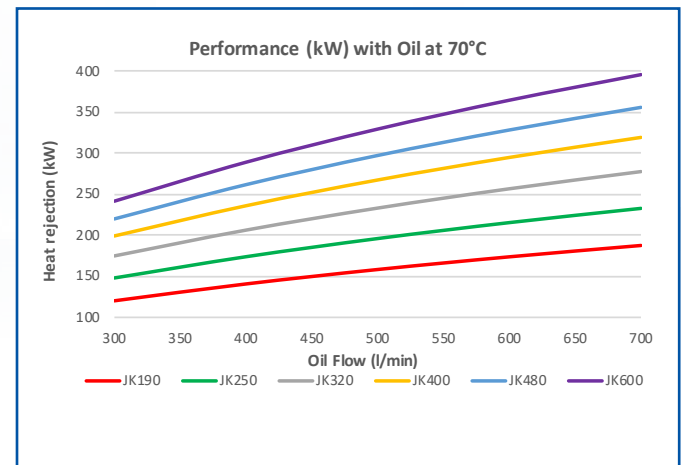


Heat Dissipation (kW) vs Oil Flow Rate (l/min)						
Model	300 l/min	400 l/min	500 l/min	600 l/min	700 l/min	
JK190	74.0	86.2	96.6	105.6	113.6	
JK250	91.0	106.4	119.3	130.6	140.5	
JK320	107.1	125.9	141.6	155.1	167.0	
JK400	122.1	143.8	162.0	177.7	191.5	
JK480	134.7	159.2	179.7	197.3	212.8	
JK600	147.9	175.6	198.7	218.5	235.9	

Oil Outlet Temp (°C) vs Oil Flow Rate (l/min)						
Model	300 l/min	400 l/min	500 l/min	600 l/min	700 l/min	
JK190	51.4	52.5	53.3	53.9	54.4	
JK250	49.4	50.7	51.7	52.4	53.0	
JK320	47.5	49.0	50.1	51.0	51.7	
JK400	45.8	47.5	48.7	49.7	50.5	
JK480	44.3	46.1	47.5	48.5	49.4	
JK600	42.7	44.6	46.1	47.3	48.2	

The figures show typical heat transfer performance and any changes in temperature, flow rate or fluids will significantly alter their performance, so whilst this information is provided for guidance, specific application details should be sent to Bowman, or an authorised distributor, to ensure the correct unit is specified.

**ISO 46 Oil at 70°C on inlet to the cooler**  
**Water inlet temperature: 25°C at 400 l/min**



Heat Dissipation (kW) vs Oil Flow Rate (l/min)						
Model	300 l/min	400 l/min	500 l/min	600 l/min	700 l/min	
JK190	120.2	140.7	158.2	173.7	187.5	
JK250	147.9	173.8	195.9	215.3	232.6	
JK320	174.8	206.2	233.0	256.5	277.4	
JK400	199.0	235.8	267.2	294.6	319.0	
JK480	219.8	261.5	297.0	328.0	355.5	
JK600	241.3	288.8	329.1	364.2	395.4	

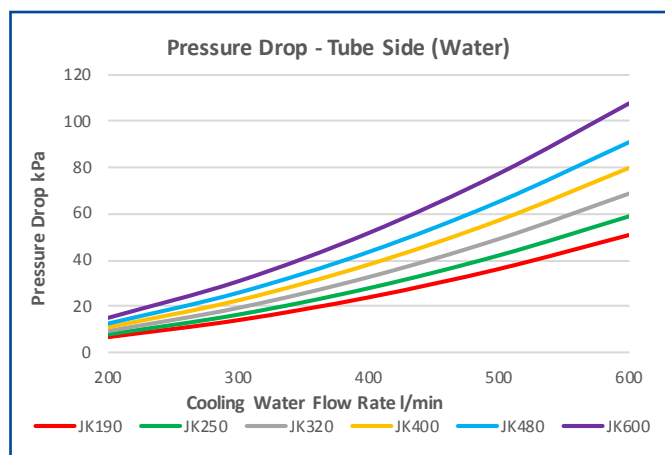
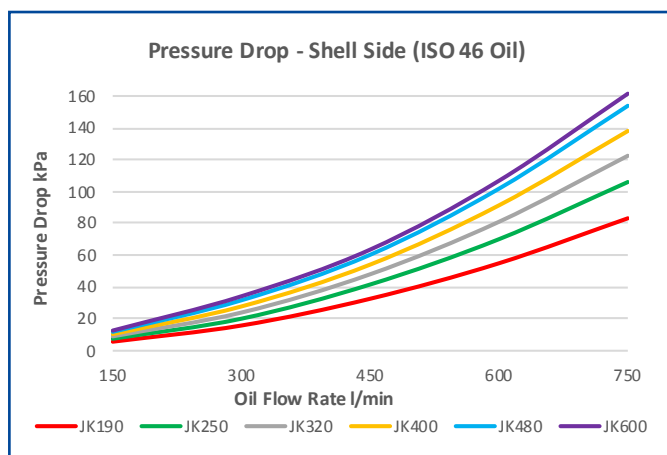
Oil Outlet Temp (°C) vs Oil Flow Rate (l/min)						
Model	300 l/min	400 l/min	500 l/min	600 l/min	700 l/min	
JK190	56.2	57.9	59.1	60.0	60.8	
JK250	52.9	55.0	56.5	57.6	58.5	
JK320	49.7	52.1	53.9	55.2	56.3	
JK400	46.9	49.5	51.4	53.0	54.2	
JK480	44.4	47.2	49.3	51.0	52.4	
JK600	41.8	44.8	47.1	48.9	50.4	

### Computer Selection Programme

Given specific details including oil type and flow rate, temperatures of oil and water and heat dissipation required we can use computer aided selection software to accurately select the ideal unit for your application. Please contact our technical sales team or your local Bowman distributor for assistance.

## Pressure Drop

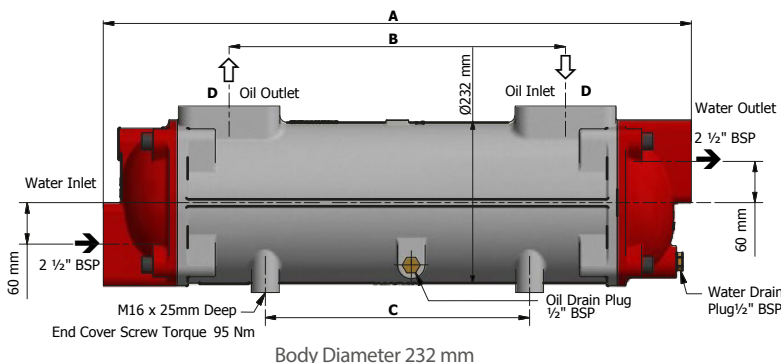
The graphs show the typical pressure drop that is expected when using a normal flow, three pass, JK series oil cooler. Where flow rates or pressure drops are too high, we may be able to offer alternative configurations such as high flow, single pass or two pass models which can accept higher flow rates with reduced pressure drop. Alternatively, a different size cooler can be selected. If detailed pressure drop information for specific flows, fluids or temperatures is required, please contact a distributor or our technical sales team.



Pressure Drop (kPa) - Shell Side (ISO 46 Oil)					
Model	150 l/min	300 l/min	450 l/min	600 l/min	750 l/min
JK190	5.7	15.9	32.7	55.0	83.2
JK250	7.6	20.2	41.7	70.1	106.0
JK320	9.1	24.1	48.1	81.0	122.5
JK400	10.5	27.9	54.2	91.4	138.0
JK480	12.0	31.8	60.4	101.8	153.9
JK600	12.8	34.3	63.6	106.8	161.5

Pressure Drop (kPa) - Tube Side (Water)					
Model	200 l/min	300 l/min	400 l/min	500 l/min	600 l/min
JK190	6.7	14.0	23.9	36.1	50.8
JK250	7.8	16.4	27.8	42.0	58.9
JK320	9.3	19.3	32.6	49.1	68.8
JK400	10.9	22.6	38.1	57.2	79.9
JK480	12.5	25.9	43.5	65.2	91.0
JK600	15.0	30.9	51.7	77.4	107.8

## Specification / Materials



	Standard	Marine	Other options
Tube	90/10 Cupro Nickel	90/10 Cupro Nickel	Copper, 70/30 Cupro Nickel, Titanium
Shell	Aluminium	Aluminium	Cast Iron (some models)
End Covers	Cast Iron	C coat or Brass / Bronze	2 pass and single pass in cast iron and brass / bronze
Seals	Nitrile	Nitrile	Viton, EPDM

Model	Max Flow	Number of Tubes	Surface Area	Volume(litres)		Weight	A	B	C	D	D*
	Shell side		(m <sup>2</sup> )	Shell	Tube	kg	mm	mm	mm	BSP	mm
JK190	830	469	4.52	9.7	8.8	58	704	340	236	2½"	Ø 76
JK250	740	469	5.87	12.5	10.4	66	850	486	382	2½"	Ø 76
JK320	690	469	7.51	16.1	12.5	78	1028	664	560	2½"	Ø 76
JK400	650	469	9.37	20.3	14.7	92	1230	866	762	2½"	Ø 76
JK480	620	469	11.25	24.2	17.1	105	1434	1070	966	2½"	Ø 76
JK600	600	469	14.09	30.7	20.4	126	1738	1374	1270	2½"	Ø 76

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

## Flow rates – Tube Side

Flow rate is important to the performance of the oil cooler but it is also crucial that minimum and maximum flow rates are adhered to in order to ensure longevity of the unit in service. Please refer to the following table for minimum and maximum flow rates.

Model	Minimum Flow Rate (l/min) Based on 1m/s Velocity			Maximum Flow Rate (l/min) Sea Water - Based on 2m/s Velocity			Maximum Flow Rate (l/min) Fresh Water - Based on 3m/s Velocity		
	1 Pass	2 Pass	3 Pass	1 Pass	2 Pass	3 Pass	1 Pass	2 Pass	3 Pass
JK Series	600	300	200	1200	600	400	2000	1000	660

Only Genuine Bowman products are sold by Bowman Australia which is an Australian registered company completely separate to and wholly independent of the company that manufactures the products which is EJ Bowman Birmingham Ltd the actual and only manufacturer of genuine Bowman Heat Exchangers and Coolers. The relationship between both companies is that of manufacturer and distributor.

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100 YEARS OF HEAT TRANSFER TECHNOLOGY

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