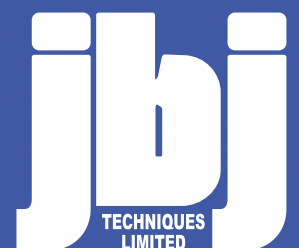




Quality Products for Mechanical
& Fluid Power



SHELL & TUBE HEAT EXCHANGERS



www.jbj.co.uk/cooling-heatexchange.html

ACN and DCN Series Oil-Air Coolers

with alternate current drives (3 x 400V) and direct current drives (12/24V)

ACN

- » Compact oil-air cooler.
- » Aluminium matrix ensures high cooling / size ratio.
- » Low pressure drop.
- » Maximum dissipation 3.5 Kw / °C.
- » Max. flow 600 lpm.
- » Three phase or single phase versions available Including NEMA.
- » Reduced motor speeds aid low noise levels.
- » By-pass valve available on request.
- » Supplied complete with thermostat.

AACN

- » Compact oil-air cooler Atex certified.
- » Maximum dissipation 3.8 Kw. / °C.
- » Low pressure drop.
- » Max. flow 540 lpm.
- » Three phase or single phase versions available including NEMA.
- » Reduced motor speeds aid low noise level output.
- » Stainless steel matrix versions available on request.



MACN

- » Compact air-oil coolers for marine applications.
- » Marine approval to DNV, Lloyds register, GL + many more.
- » Maximum Dissipation 3.8 Kw. / °C.
- » Low pressure drop.
- » Max. flow 540 lpm.
- » Three phase or single phase versions available including NEMA.
- » Reduced motor speeds aid low noise level output.
- » Stainless steel matrix versions available on request.

HCN

- » Compact oil-air cooler.
- » Hydraulic drive for remote and mobile applications.
- » Max. Dissipation 3.5 Kw. / °C.
- » Low pressure drop.
- » Max. Flow 600 lpm.
- » By-pass valve available on request.

DCN

- » Compact oil-air cooler for direct current applications.
- » Aluminium matrix ensures high cooling / size ratio.
- » Low pressure drop.
- » Maximum dissipation 0.65 kW/°C.
- » Max. flow 150 lpm.
- » 12 & 24 volt available as standard.
- » Low amp draw.
- » Alternative voltages available on request.





OCN Offline Cooling Units

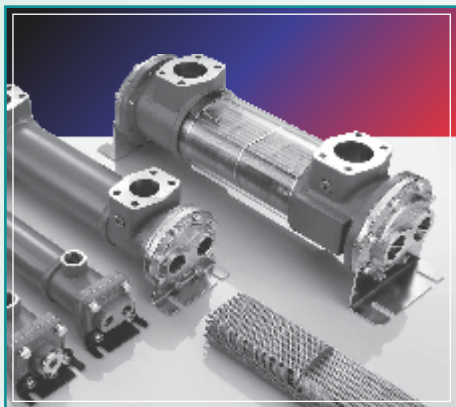
AC drives with integrated hydraulic pump

- » Compact air-oil cooler for off-line applications.
- » Low noise level.
- » Cooling capacity of 1.5 Kw. / °C (higher levels on request).
- » Stand alone system.
- » Operating viscosities of up to 300 cSt.

Cooler Bellhousings

KPV Series

- » Bellhousing coolers for drain line or full flow cooling.
- » Dimensions according to the VDMA Standard.
- » Rigid and noise damping versions with identical lengths.
- » Will replace existing bellhousing mounted in systems.
- » Optional foot bracket allows horizontal mounting.
- » To connect metric frame electric motors to a wide variety of pumps.
- » No additional electrical requirement.



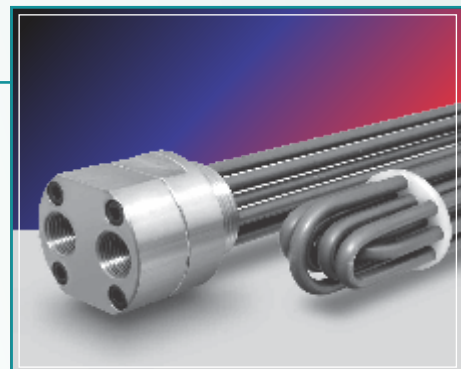
Oil-Water Cooler BNZ

with aluminium fins and rigid tube stack

- » Compact design.
- » Low pressure drop.
- » Integrated test points.
- » Large cooling surface area.
- » Cooling capacity upto 500 Kw.
- » Flow rate upto 850 lpm.
- » Seawater versions available on request.

Oil/Water Heat Exchanger ESK

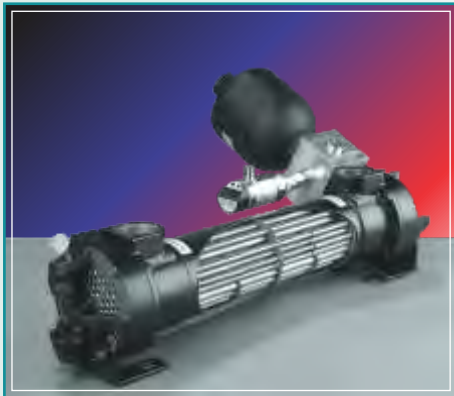
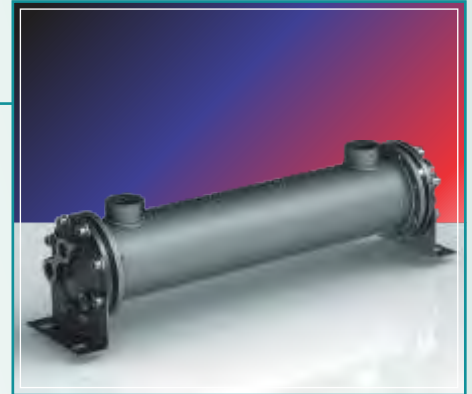
- » Screw in design allows integrating to existing components.
- » Allowable Connections 1.1/2" or 2" BSPP.
- » Compact design.
- » Various tube & sheet materials suit a variety of fluids.
- » Allows integration to applications such as gear units, piping circuits and hydraulic tanks.
- » Performance is dependant on the flow rate around the cooling tubes.



Shell & Tube Heat Exchangers

BAMNZ

- » Heat dissipation upto 2000Kw.
- » Accepts flow rates upto 2400 lpm.
- » Multipass versions reduce water requirements.
- » Enlarged oil connections ensure low system pressure drop.
- » Variety of materials available.
- » ASME, TEMA-C and ATEX certified versions.
- » Marine Approval - DNV, GL LLoyds etc.



Oil-Water Safety Heat Exchangers

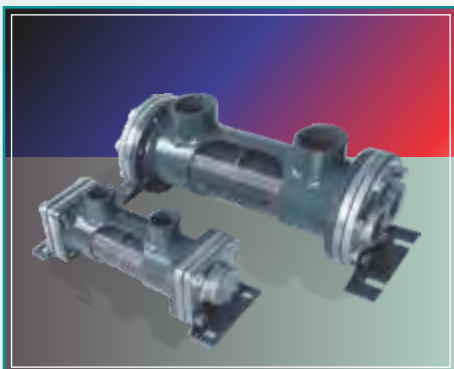
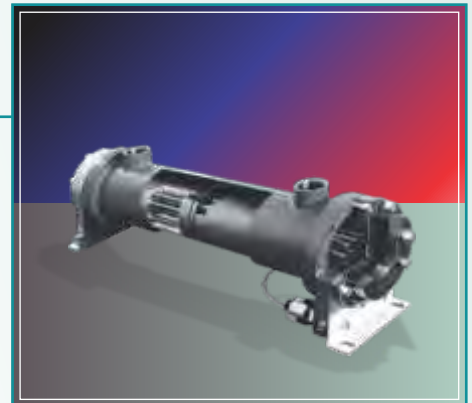
BAMNZSC

- » Safety cooler gives protection against cross flow contamination.
- » Sealed double tube technology.
- » 100% electronic monitoring.
- » Removable cover allows ease of cleaning internal water pipes.
- » Variety of materials suit many applications.
- » Leak detector available on request certified to IECEx.

Oil-Water Safety Heat Exchangers

BAMCNZSC

- » Safety cooler gives protection against cross flow contamination.
- » Sealed double tube technology.
- » Protects against over pressure.
- » 100% electronic monitoring.
- » Leak detector available on request certified to IECEx.
- » Monitors thermal changes in sealing liquid volume.
- » Variety of materials suit many applications.



Oil/Water Heat Exchanger

BAESNZ

- » Aluminium fins ensure large degree of heat exchange.
- » Cooling capacity up to 1000 Kw.
- » Flow rates up to 1200 lpm.
- » Optimised for maximum performance.
- » Flange connections allow cooler to be rotated through 90 degrees.
- » Maximum pressure 35 bar oil / 16 bar water.
- » Internal bypass valve available as an option.

Plate Heat Exchangers

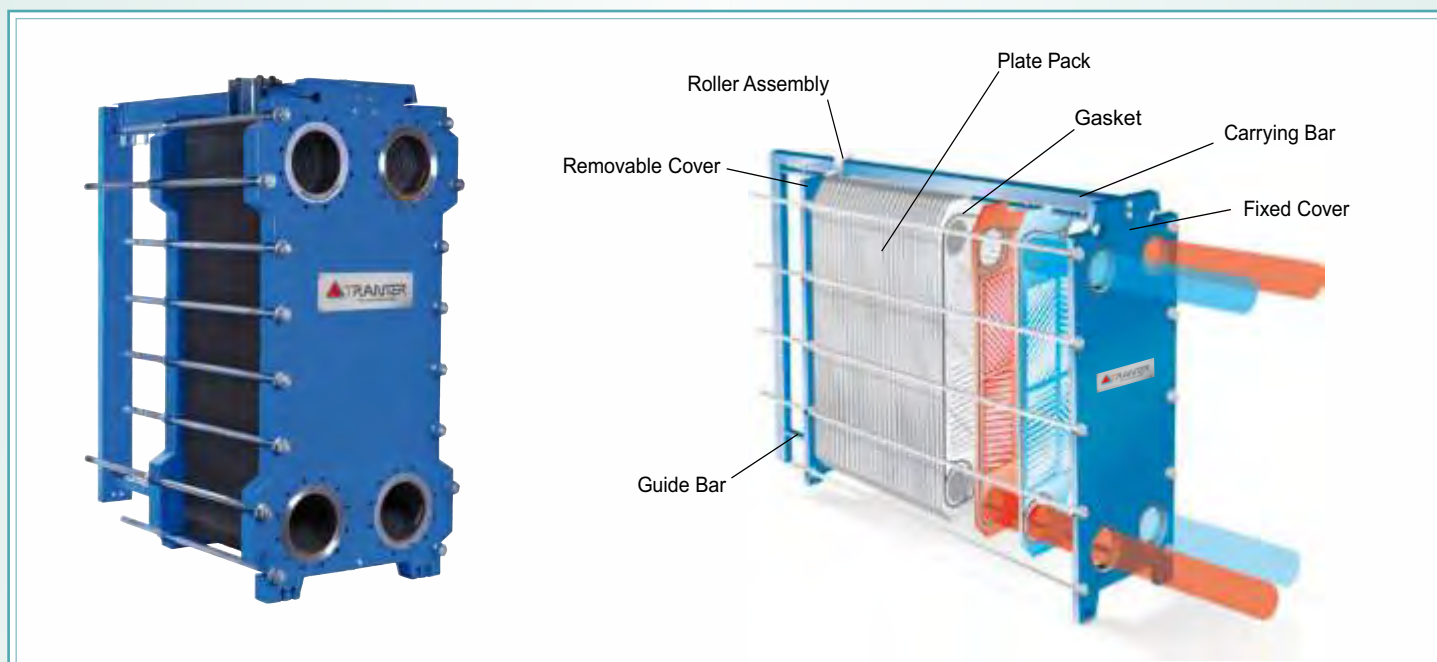
SPB & SPBT Brazed Plate Heat Exchangers

- » Compact alternatives to conventional Shell & Tube coolers.
- » Vacuum brazed units ensure system integrity.
- » High efficiency means reduced coolant requirement.
- » Small size allows for reduce pipe and space requirements.
- » Optimised performance delivers exact system requirements.
- » Reduced size and weight improves shipping costs.
- » Plates pressed in either AISI 316L with SMO 254 available on request.
- » Copper or Nickel braze suits all environments and applications.
- » Various pipe connections and accessories available.
- » Accept temperatures up to 200°C and pressure of up to 31 bar.
- » ASME code certified and UL listed designs available on request.



SPGC, SPGL, SPGLD & SPGX Gasketed Plate Heat Exchangers

- » Gasketed versions for ease of assembly and cleaning.
- » Designed to suit individual customers requirements.
- » Fail safe design eliminates cross fluid contamination.
- » Modular design provides maximum efficiency of fluid heat transfer.
- » Unit performance can be adjusted by adding or reducing plate numbers when requirements change.
- » A variety of channel arrangements offer different solutions within the same footprint.
- » Maximum flows up to 4,600 metres³ per hour.
- » Maximum pressures up to 25 bar.
- » Temperature range from -40 to 180°C.
- » Various pipe connections from DN 25 - DN500, weld neck flanges or threaded.
- » Plate materials in AISI 304, 316L and Titanium combat the most arduous conditions.
- » Optimised performance meets exact system requirements.





The details contained within this catalogue are reproduced in accordance with the latest information at going to press E & OE

	<i>Page</i>
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BNZ Series Water/Oil Coolers	1 - 7
Screw-In Water/Oil Heat Exchanger.	8 - 9
Shell & Tube Heat Exchangers	10 - 13
BAMNZSC Series Oil/Water Safety Heat Exchangers	14 - 15
BATMNZ Series Oil/Water Heat Exchangers	16 - 22



Oil-Water Cooler BNZ with aluminium fins and rigid tube stack

- » Extended cooling surface
- » Compact design
- » Low pressure loss
- » Integrated test ports
- » Cooling capacity up to 500 kW
- » Flow rate up to 850 l/min



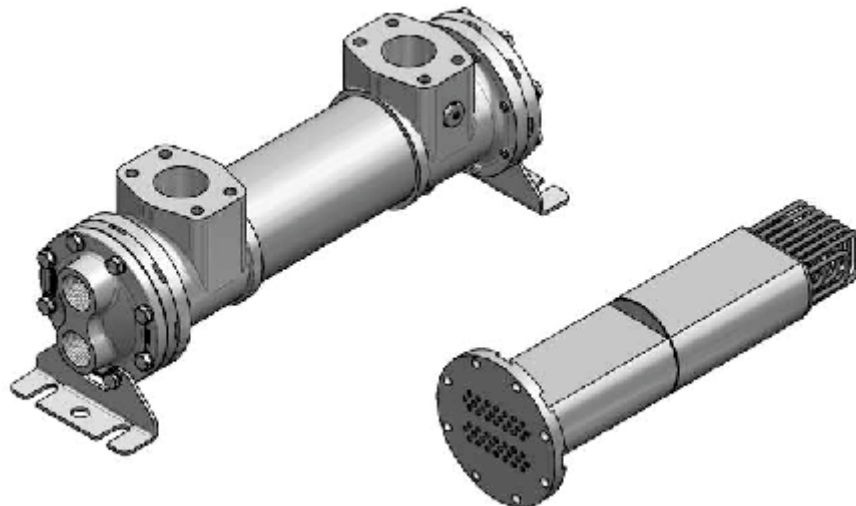
NewCool® products are the result of many years of experience combined with a wealth of knowledge from within the field of fluid and transmission engineering. Thanks to the standardisation of individual components, technically sophisticated solutions are available at a highly competitive price/performance ratio. The standard BNZ series offers four shell sizes with available lengths of up to 2100 mm. We also offer tailor made solutions for the most arduous applications and according to customer specification. BNZ coolers are suitable for all industrial and marine environments.

The following data will be required to correctly specify cooling components for your application: oil inlet temperature, oil volume, oil specification, volume of water, water inlet temperature, cooling performance.

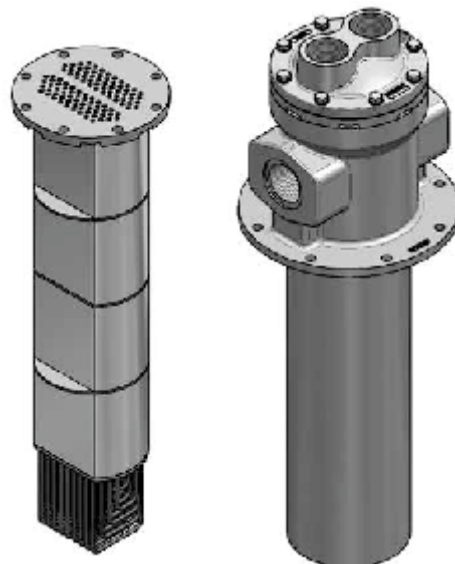
Our technical staff will be happy to make the selection upon receipt of the required information if you would prefer. Compact design, robust construction, extremely low pressure drop, high quality materials and ease of maintenance are the prominent features of the NewCool® shell & tube coolers.

Additional products are:

BU-Cooler for tank top mounting with removable tube stack

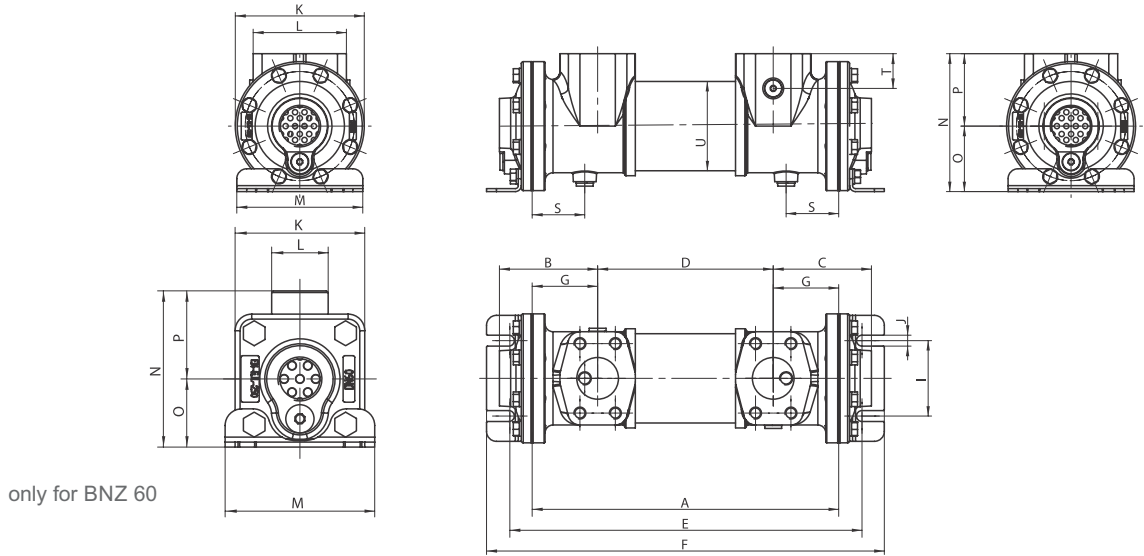


BTU-Cooler for in-tank mounting with removable tube stack

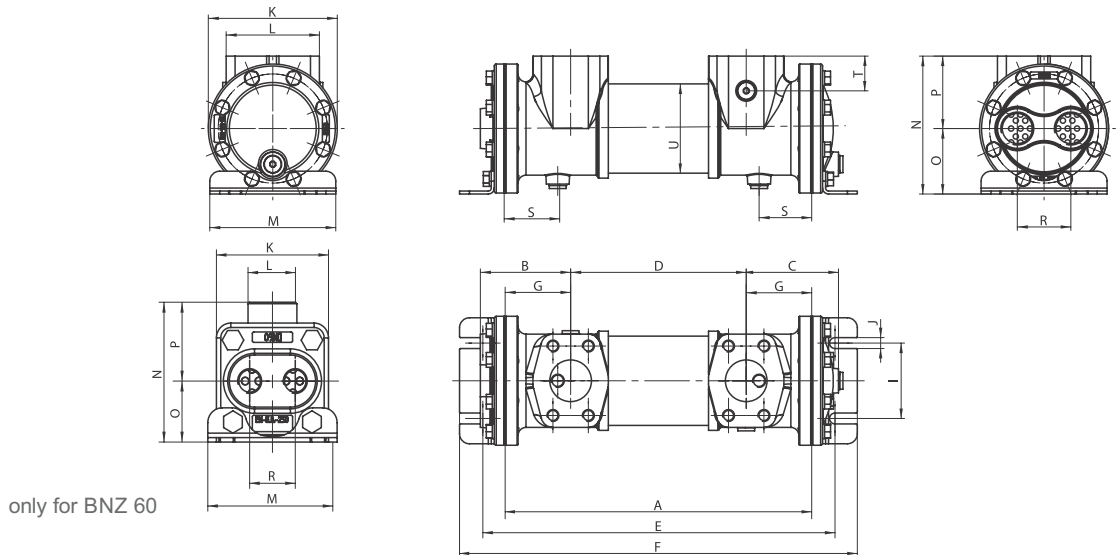




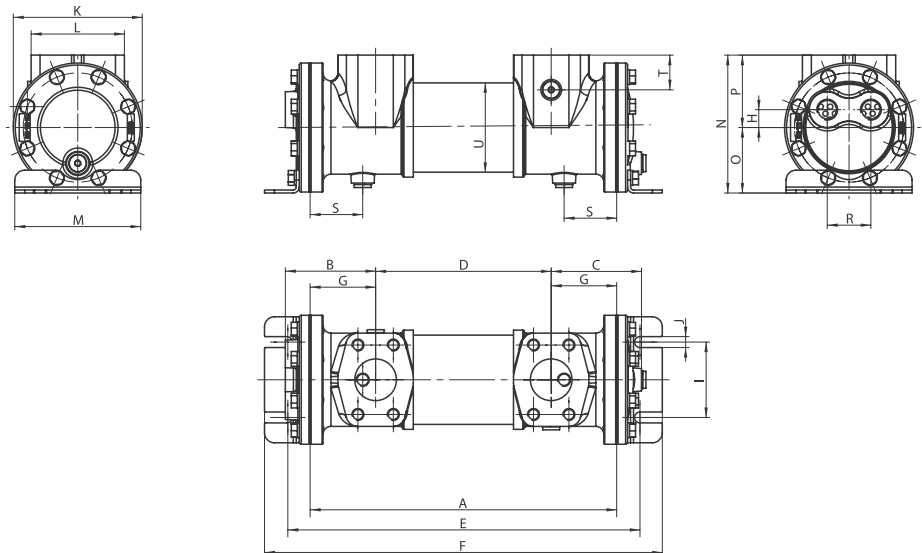
1-pass



2-pass



4-pass





Dimensions

Types	A	B			C			D	E	F	G	H	I	J	K	L	M	N	O	P	R		S	T	U
		1-pass	2-pass	4-pass	1-pass	2-pass	4-pass														2-pass	4-pass			
BNZ-60-131	131	65	65	-	65	65	-	55	181	213	38	-	63.5	9	78	34	90	94	41	57	31.75	-	-	-	65
BNZ-60-208	208	82.5	82.5	-	82.5	82.5	-	97	259	290	55.5	-	63.5	9	78	34	90	98	41	57	31.75	-	-	-	65
BNZ-60-259	259	82.5	82.5	-	82.5	82.5	-	148	310	341	55.5	-	63.5	9	78	34	90	98	41	57	31.75	-	-	-	65
BNZ-60-310	310	82.5	82.5	-	82.5	82.5	-	199	361	392	55.5	-	63.5	9	78	34	90	98	41	57	31.75	-	-	-	65
BNZ-60-361	361	82.5	82.5	-	82.5	82.5	-	250	412	443	55.5	-	63.5	9	78	34	90	98	41	57	31.75	-	-	-	65
BNZ-60-463	463	82.5	82.5	-	82.5	82.5	-	352	514	545	55.5	-	63.5	9	78	34	90	98	41	57	31.75	-	-	-	65
BNZ-60-615	615	82.5	82.5	-	82.5	82.5	-	504	666	697	55.5	-	63.5	9	78	34	90	98	41	57	31.75	-	-	-	65
BNZ-60-920	920	82.5	82.5	-	82.5	82.5	-	809	971	1002	55.5	-	63.5	9	78	34	90	95	41	57	31.75	-	-	-	65
BNZ-80-208	208	99	91	91	99	93	91	76	255	300	66	18	76	11	130	94	127	139	66	73	54	44	53	35	90
BNZ-80-310	310	99	91	91	99	93	91	178	357	402	66	18	76	11	130	94	127	139	66	73	54	44	53	35	90
BNZ-80-361	361	99	91	91	99	93	91	229	408	453	66	18	76	11	130	94	127	139	66	73	54	44	53	35	90
BNZ-80-463	463	99	91	91	99	93	91	331	510	555	66	18	76	11	130	94	127	139	66	73	54	44	53	35	90
BNZ-80-615	615	99	91	91	99	93	91	483	662	707	66	18	76	11	130	94	127	139	66	73	54	44	53	35	90
BNZ-80-920	920	99	91	91	99	93	91	788	967	1012	66	18	76	11	130	94	127	139	66	73	54	44	53	35	90
BNZ-125-310	310	116	109.5	109.5	116	101.5	101.5	157	375	436	76.5	21	102	11	165	103	165	194	102	92	60	56	62	35	128
BNZ-125-361	361	116	109.5	109.5	116	101.5	101.5	208	426	487	76.5	21	102	11	165	103	165	194	102	92	60	56	62	35	128
BNZ-125-463	463	116	109.5	109.5	116	101.5	101.5	310	528	589	76.5	21	102	11	165	103	165	194	102	92	60	56	62	35	128
BNZ-125-615	615	116	109.5	109.5	116	101.5	101.5	462	680	741	76.5	21	102	11	165	103	165	194	102	92	60	56	62	35	128
BNZ-125-920	920	116	109.5	109.5	116	101.5	101.5	767	985	1046	76.5	21	102	11	165	103	165	194	102	92	60	56	62	35	128
BNZ-125-1225	1225	116	109.5	109.5	116	101.5	101.5	1072	1290	1351	76.5	21	102	11	165	103	165	194	102	92	60	56	62	35	128
BNZ-175-370	370	169	169	169	169	155	155	174	461	544	98	36	140	11	220	152	210	249	130	119	94	80	80	35	180
BNZ-175-500	500	169	169	169	169	155	155	304	591	674	98	36	140	11	220	152	210	249	130	119	94	80	80	35	180
BNZ-175-840	840	169	169	169	169	155	155	644	931	1014	98	36	140	11	220	152	210	249	130	119	94	80	80	35	180
BNZ-175-1000	1000	169	169	169	169	155	155	804	1091	1174	98	36	140	11	220	152	210	249	130	119	94	80	80	35	180
BNZ-175-1200	1200	169	169	169	169	155	155	1004	1291	1374	98	36	140	11	220	152	210	249	130	119	94	80	80	35	180
BNZ-175-1400	1400	169	169	169	169	155	155	1204	1491	1574	98	36	140	11	220	152	210	249	130	119	94	80	80	35	180
BNZ-175-1600	1600	169	169	169	169	155	155	1404	1691	1774	98	36	140	11	220	152	210	249	130	119	94	80	80	35	180
BNZ-175-1700	1700	169	169	169	169	155	155	1504	1791	1874	98	36	140	11	220	152	210	249	130	119	94	80	80	35	180
BNZ-175-1900	1900	169	169	169	169	155	155	1704	1991	2074	98	36	140	11	220	152	210	249	130	119	94	80	80	35	180
BNZ-175-2100	2100	169	169	169	169	155	155	1904	2191	2274	98	36	140	11	220	152	210	249	130	119	94	80	80	35	180



Port connections

Types	Surface area in m ²	Oil port		Drain plug (S)	Test port (T)	Water connection			Drain plug (S)	Number of baffles
		Standard	Optional			1-pass	2-pass	4-pass		
BNZ-60-131	0.32	G ½"	–	–	–	G ¾"	G ¾"	–	G 1/8"	1
BNZ-60-208	0.57	G ¾"	–	–	–	G ¾"	G ¾"	–	G 1/8"	1
BNZ-60-259	0.73	G ¾"	–	–	–	G ¾"	G ¾"	–	G 1/8"	3
BNZ-60-310	0.9	G ¾"	–	–	–	G ¾"	G ¾"	–	G 1/8"	1
BNZ-60-361	1.06	G ¾"	–	–	–	G ¾"	G ¾"	–	G 1/8"	3
BNZ-60-463	1.38	G ¾"	–	–	–	G ¾"	G ¾"	–	G 1/8"	3
BNZ-60-615	1.86	G ¾"	–	–	–	G ¾"	G ¾"	–	G 1/8"	5
BNZ-60-920	2.83	G ¾"	–	–	–	G ¾"	G ¾"	–	G 1/8"	5
BNZ-80-208	1.11	G 1½"	–	G ¼"	G ¼"	G 1¼"	G 1"	G ½"	G ¼"	1
BNZ-80-310	1.74	G 1½"	SAE 1½"	G ¼"	G ¼"	G 1¼"	G 1"	G ½"	G ¼"	1
BNZ-80-361	2.04	G 1½"	SAE 1½"	G ¼"	G ¼"	G 1¼"	G 1"	G ½"	G ¼"	3
BNZ-80-463	2.67	G 1½"	SAE 1½"	G ¼"	G ¼"	G 1¼"	G 1"	G ½"	G ¼"	3
BNZ-80-615	3.6	G 1½"	SAE 1½"	G ¼"	G ¼"	G 1¼"	G 1"	G ½"	G ¼"	3
BNZ-80-920	5.47	G 1½"	SAE 1½"	G ¼"	G ¼"	G 1¼"	G 1"	G ½"	G ¼"	5
BNZ-125-310	3.72	G 1½"	SAE 2"	G ¼"	G ¼"	G ½"	G 1¼"	G ¾"	G ¼"	1
BNZ-125-361	4.35	G 1½"	SAE 2"	G ¼"	G ¼"	G ½"	G 1¼"	G ¾"	G ¼"	3
BNZ-125-463	5.71	G 1½"	SAE 2"	G ¼"	G ¼"	G ½"	G 1¼"	G ¾"	G ¼"	3
BNZ-125-615	7.71	G 1½"	SAE 2"	G ¼"	G ¼"	G ½"	G 1¼"	G ¾"	G ¼"	3
BNZ-125-920	11.72	G 1½"	SAE 2"	G ¼"	G ¼"	G ½"	G 1¼"	G ¾"	G ¼"	3, 5
BNZ-125-1225	15.71	G 1½"	SAE 2"	G ¼"	G ¼"	G ½"	G 1¼"	G ¾"	G ¼"	3, 5, 7
BNZ-175-370	8.54	SAE 3½"	–	G ½"	G ½"	SAE 3½"	SAE 2"	SAE 1¼"	G ½"	1
BNZ-175-500	11.73	SAE 3½"	–	G ½"	G ½"	SAE 3½"	SAE 2"	SAE 1¼"	G ½"	1, 3
BNZ-175-840	20.19	SAE 3½"	–	G ½"	G ½"	SAE 3½"	SAE 2"	SAE 1¼"	G ½"	3, 5
BNZ-175-1000	24.18	SAE 3½"	–	G ½"	G ½"	SAE 3½"	SAE 2"	SAE 1¼"	G ½"	3, 5, 7
BNZ-175-1200	29.18	SAE 3½"	–	G ½"	G ½"	SAE 3½"	SAE 2"	SAE 1¼"	G ½"	3, 5, 7
BNZ-175-1400	34.13	SAE 3½"	–	G ½"	G ½"	SAE 3½"	SAE 2"	SAE 1¼"	G ½"	5, 7, 9
BNZ-175-1600	39.12	SAE 3½"	–	G ½"	G ½"	SAE 3½"	SAE 2"	SAE 1¼"	G ½"	5, 7, 9
BNZ-175-1700	41.62	SAE 3½"	–	G ½"	G ½"	SAE 3½"	SAE 2"	SAE 1¼"	G ½"	3, 7, 11
BNZ-175-1900	46.61	SAE 3½"	–	G ½"	G ½"	SAE 3½"	SAE 2"	SAE 1¼"	G ½"	3, 7, 11
BNZ-175-2100	51.56	SAE 3½"	–	G ½"	G ½"	SAE 3½"	SAE 2"	SAE 1¼"	G ½"	3, 7, 11

Length measurements may vary for production engineering reasons by ± 2 mm.



Component Materials

Components	Standard-Cooler	Seewater-Cooler	Optional (on special request)
Tubes	CuNi 90/10	CuNi 90/10	Copper/Stainless Steel
Shell, guide plate, mounting bracket, bypass valve	Steel	Steel	
End cover	Cast Iron GG25	chemically nickel-plated	Stainless Steel Bronze
Fins	Aluminium	Aluminium	Copper/Stainless Steel
Tube sheet	Steel	Steel with CuNi end plate 90/10	Stainless Steel
Gaskets	Flat Gasket C4400		

Technical Data

- 1) Maximum operating temperature 95 °C (higher temperatures on request)
- 2) Maximum operating pressure 40 bar on shell side and 16 bar on tube side
- 3) Maximum flow rate volumes [l/min] see table below.

Maximum Flow Rates

BNZ/BU/BTU Product Series	Oil Shell [l/min]	BNZ Water [l/min]								
		1-pass			2-pass			4-pass		
		CU	CuNi	SS	CU	CuNi	SS	CU	CuNi	SS
DN 60	75	47	70	105	23	35	54	–	–	–
DN 80 G/F	225	90	135	202	45	67	100	22	34	51
DN 125 G	330	206	310	465	103	155	232	51	77	115
DN 125 F	400	206	310	465	103	155	232	51	77	115
DN 175	850	410	614	921	205	307	460	102	154	230

G = BSP; F = flange (sizes see port/connection sizes table on previous page)

For sea water application, the water volume should be reduced. Use single pass if possible

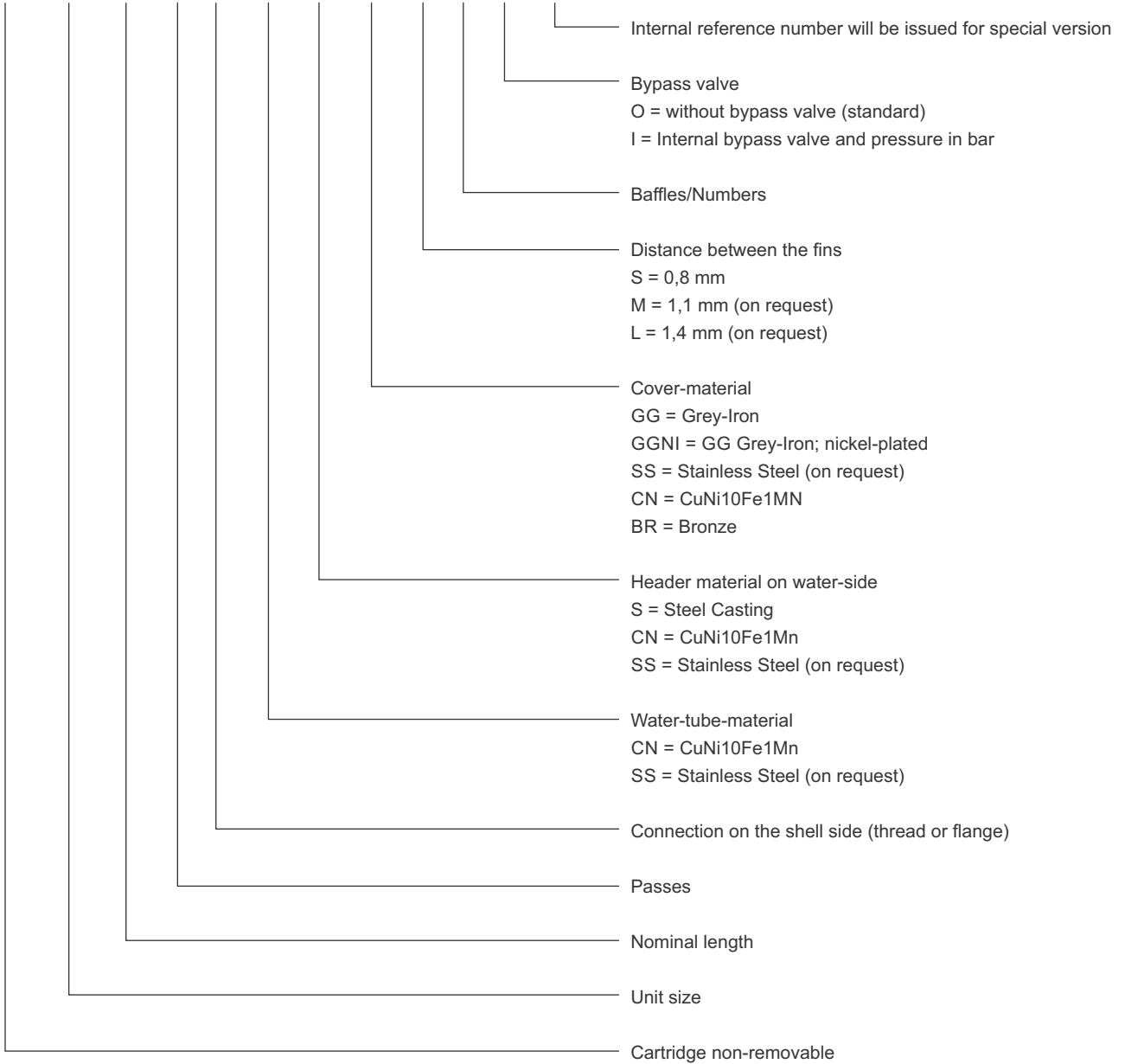
Please contact the **jbj Techniques Limited technical department** telephone: **01737 767493** or email: **info@jbj.co.uk**

Caution! – Please study the maintenance and operating instructions before installation of the heat exchanger. Incorrect installation can cause damage to the cooler!



Type designation code BNZ

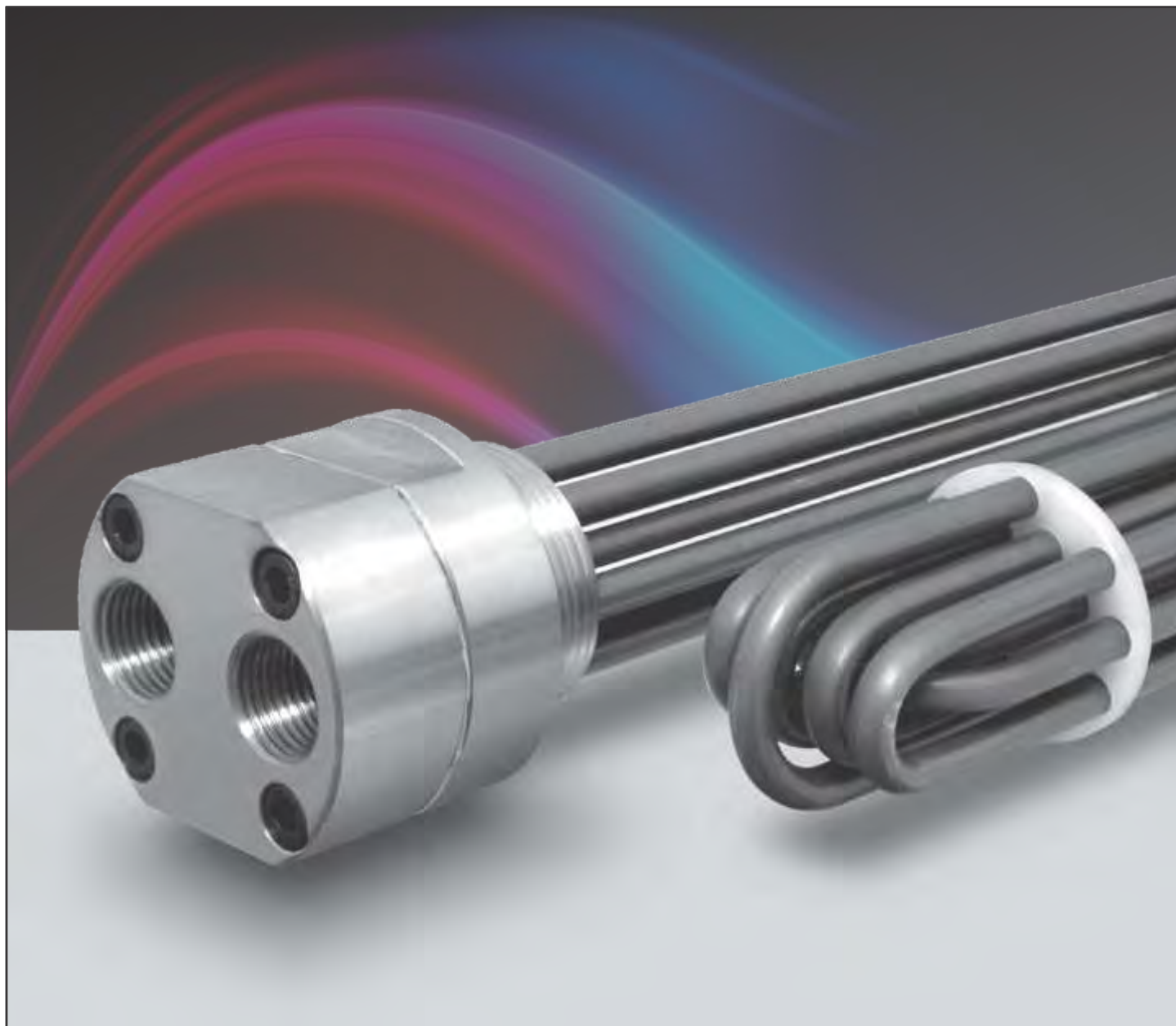
BNZ - 60 - 131 - 1 - G - CN - S - GG - S - 3 - I3 - S13



The type designation code must always be complete.

Exception: is no special version assigned it will be omitted.
Example: BNZ - 80 - 361 - 4 - F - CN - S - GG - S - 5 - O

Special version
Example: BNZ - 80 - 361 - 4 - F - CN - S - GG - S - 5 - O - S25



Oil/Water Heat Exchanger ESK

Screw-in Heat Exchanger

- » Cooling surfaces from 0.018 – 0.911 m²
- » Screw-in into threadings G 1½" or 2"
- » Compact design
- » To be mounted using allen wrench

This compact cooling solution can be screwed into an existing threading, for example, instead of screw-in heating elements in gear units, piping systems and hydraulic tanks. The cooling performance varies depending upon the flow rate around the cooling pipe. The ESK must be braced when exposed to vibrations.



Technical Data

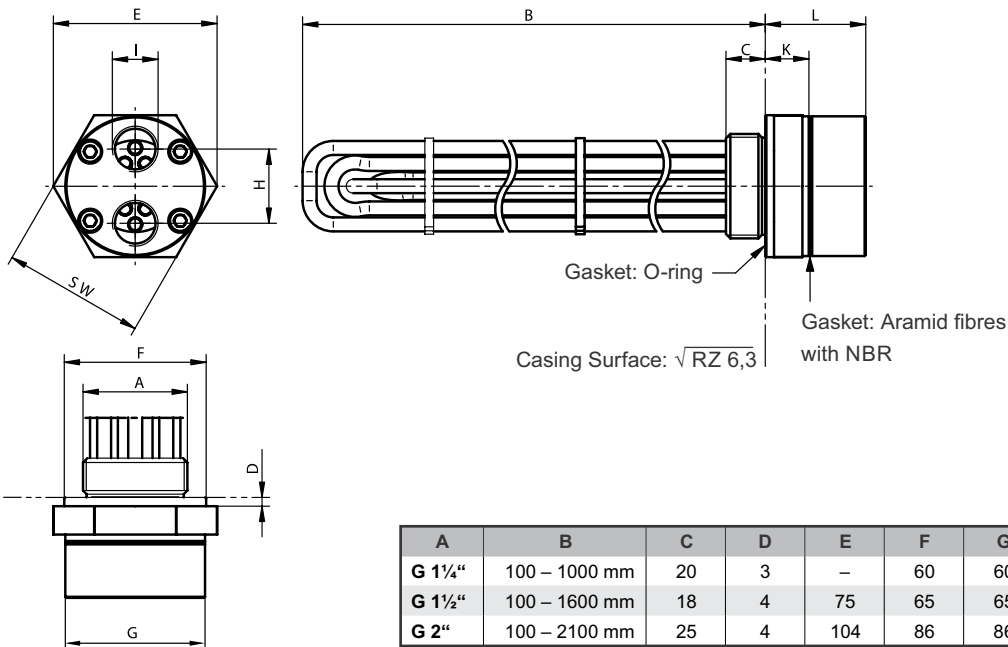
Max. operating pressure 16 bar
 Max. operating temperature +105 °C temporarily up to +160 °C
 Minimum temperature -30 °C

Screw-in cooler complete with o-ring gasket included in delivery

Materials

Components	Standards
Tubesheet with screw in thread	Brass/Steel treated
Tubes	Copper/Copper Nickel/Stainless steel
Tube separator	Plastics
Caps	Brass/Steel treated
Gasket	Aramid fibres with NBR
O-Ring-Gasket	NBR

Dimensions



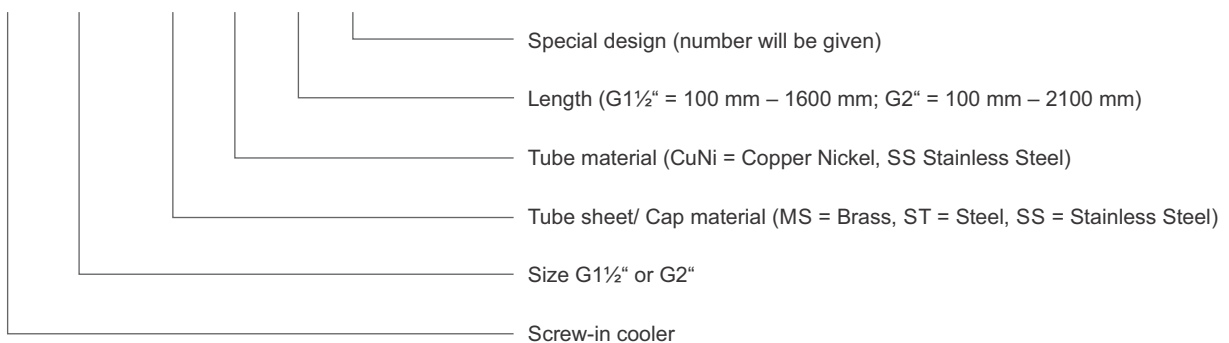
Maximum flow rate volumes

Type	Water (l/min)		
	Cu	CuNi	14.404
G 1¼"	10	15	20
G 1½"	19	28	38
G 2"	30	45	60

	A	B	C	D	E	F	G	H	I	K	L	SW
G 1¼"		100 – 1000 mm	20	3	–	60	60	24	G ¼"	20	41	55
G 1½"		100 – 1600 mm	18	4	75	65	65	34	G ½"	20	46	65
G 2"		100 – 2100 mm	25	4	104	86	86	44	G ¾"	27	58	90

Order Code Example

ESK – G 1½" – MS – CN – 600 – S





Shell and tube heat exchangers for Industrial Use

- » Safety version
- » Atex certification
- » Marine approval DNV, GL, Lloyds . . .
- » Sea water version
- » Stainless steel version complete or partially
- » Special versions



Product description

The BAMNZ is a series of compact heat exchangers with a fixed tube bundle, which has been standardized into logically grouped models with a heat-exchange surface of from 0.43 to 40 m².

The models comprise basic units, each divided into two versions (narrow/wide baffle spacing), each also available as a 1-pass version, 2-pass or 4-pass version.

Product features

- » Fixed tube bundle.
- » Large-bore oil connections for minimum pressure drop.
- » Heat dissipation up to 1.000 kW.
- » Oil flow rate of up to 1.500 l/min.
- » Removable end caps for easy cleaning of the tubes.
- » Max. pressure: shell side 20 bar, tube side 10 bar.
- » Wide choice of baffle spacing.

Option

- » Stainless steel version
- » ASME + TEMA-C version
- » Version for use with sea water
- » Safety version

Materials

	Standard	Sea water
End plates Shell Shell side connections	Steel	Copper-Nickel
Mounting bracket	Steel	Steel
Type designation plate	Aluminium	Aluminium Stainless steel
Tubes	Copper Stainless steel	Copper-Nickel
End caps	Cast iron	Brass or cast iron Nickel plated Stainless steel CuNi material
Gaskets	NBR/cellulose fibre	
Baffels	Steel	Steel

Optional: Zinc-anode



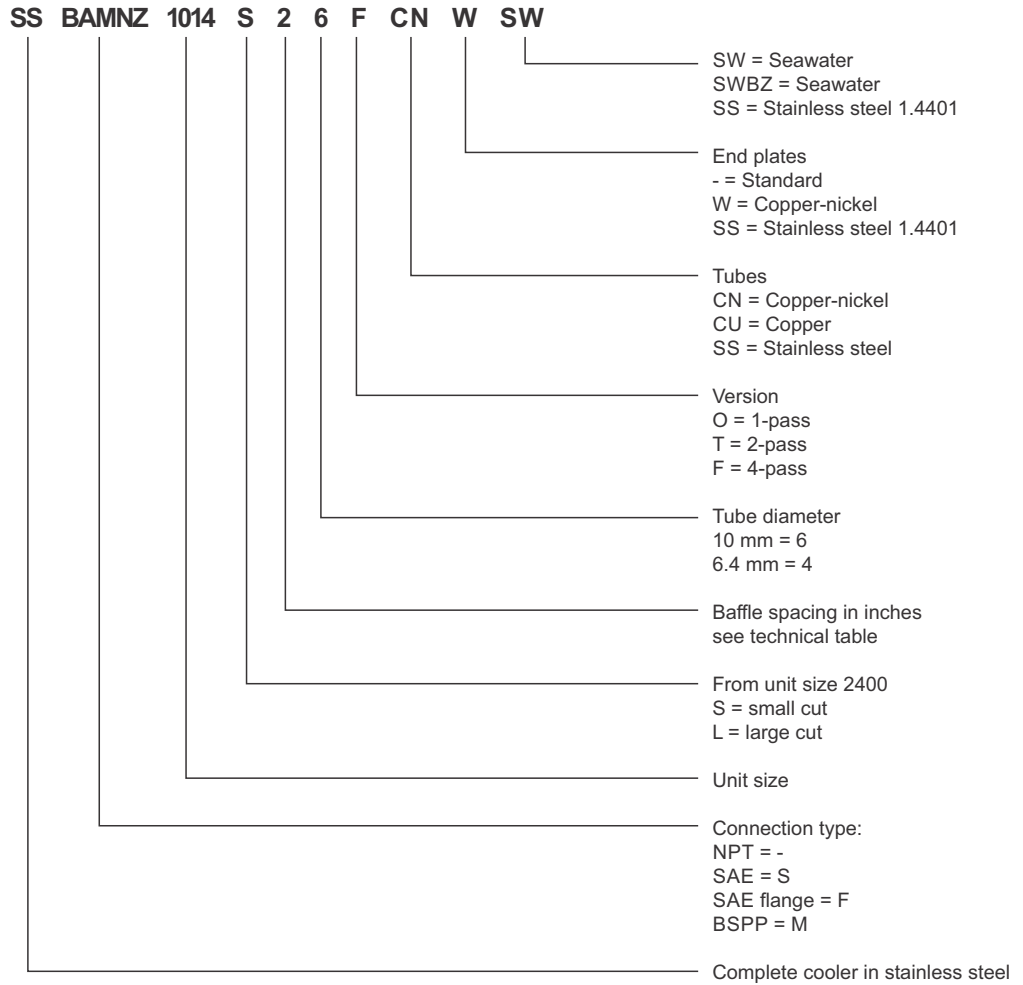
Unit Dimensions BAMNZ (in mm / BSPP)

	U	V	W	X	Z
SAE 1"	70	52,4	55	26,2	M10
SAE 1 1/4"	79	58,7	68	30,2	M10
SAE 1 1/2"	93	69,9	79	35,7	M12
SAE 2"	102	77,8	90	42,9	M12
SAE 2 1/2"	114	88,9	105	50,8	M12
SAE 3"	135	106,4	130,6	62	M16

Type	A	B	D	E	G	F	T	R	I	K	N1	M	N	O	L	Q
BAMNZ-714	418	229	89	73	94,5	G 1 1/2"	66	G 1 1/4"	29	G 1"	-	-	-	127	76	Ø#11 x 19
BAMNZ-724	672	483	89	73	94,5	G 1 1/2"	66	G 1 1/4"	29	G 1"	-	-	-	127	76	Ø#11 x 19
BAMNZ-1014	448	208	113,5	92	120	G 1 1/2"	103	G 1 1/2"	42,4	G 1 1/4"	6,7	G 3/4"	44,5	165	102	Ø#11 x 25
BAMNZ-1024	702	462	113,5	92	120	G 1 1/2"	103	G 1 1/2"	42,4	G 1 1/4"	6,7	G 3/4"	44,5	165	102	Ø#11 x 25
BAMNZ-1036	1007	767	113,5	92	120	G 1 1/2"	103	G 1 1/2"	42,4	G 1 1/4"	6,7	G 3/4"	44,5	165	102	Ø#11 x 25
BAMNZ-1224	663	402	149	106	130,5	G 2"	114,3	G 2"	61,5	G 2"	7	G 1"	49,5	159	127	Ø#13 x 28
BAMNZ-1236	968	707	149	106	130,5	G 2"	114,3	G 2"	61,5	G 2"	7	G 1"	49,5	159	127	Ø#13 x 28
BAMNZ-1248	1273	1012	149	106	130,5	G 2"	114,3	G 2"	61,5	G 2"	7	G 1"	49,5	159	127	Ø#13 x 28
BAMNZ-1260	1578	1317	149	106	130,5	G 2"	114,3	G 2"	61,5	G 2"	7	G 1"	49,5	159	127	Ø#13 x 28
BAMNZ-1724	698	386	215,5	135	170,5	G 3"	146	G 3"	70,7	G 2 1/2"	12,7	G 2"	76,2	210	178	Ø#16 x 38
BAMNZ-1736	1003	691	215,5	135	170,5	G 3"	146	G 3"	70,7	G 2 1/2"	12,7	G 2"	76,2	210	178	Ø#16 x 38
BAMNZ-1748	1308	996	215,5	135	170,5	G 3"	146	G 3"	70,7	G 2 1/2"	12,7	G 2"	76,2	210	178	Ø#16 x 38
BAMNZ-1760	1613	1301	215,5	135	170,5	G 3"	146	G 3"	70,7	G 2 1/2"	12,7	G 2"	76,2	210	178	Ø#16 x 38
BAMNZ-1772	1932	1591	215,5	135	170,5	G 3"	146	G 3"	70,7	G 2 1/2"	12,7	G 2"	76,2	210	178	Ø#16 x 38
BAMNZ-1784	2251	1910	215,5	135	170,5	G 3"	146	G 3"	70,7	G 2 1/2"	12,7	G 2"	76,2	210	178	Ø#16 x 38
BAMNZ-2448	785	923	442	275	69	SAE 4"	321	SAE 6"	82,5	SAE 4"	35	SAE 3"	125,5	400	352	Ø#22
BAMNZ-2460	1090	1228	442	275	69	SAE 4"	321	SAE 6"	82,5	SAE 4"	35	SAE 3"	125,5	400	352	Ø#22
BAMNZ-2472	1395	1533	442	275	69	SAE 4"	321	SAE 6"	82,5	SAE 4"	35	SAE 3"	125,5	400	352	Ø#22
BAMNZ-2484	1700	1838	442	275	69	SAE 4"	321	SAE 6"	82,5	SAE 4"	35	SAE 3"	125,5	400	352	Ø#22
BAMNZ-2496	2005	2142	442	275	69	SAE 4"	321	SAE 6"	82,5	SAE 4"	35	SAE 3"	125,5	400	352	Ø#22



Ordering code



Technical data

Unit Size	Max. flow rate (l/min)				Maximum heat load (kW)
	Shell (oil)	Tubes (water)			
		1-Pass	2-Pass	4-Pass	
BAMNZ-7XX	225	200	100	-	40
BAMNZ-10XX	330	450	225	110	100
BAMNZ-12XX	650	850	420	210	200
BAMNZ-17XX	1200	1550	750	375	500
BAMNZ-24XX	1500	1800	1000	600	1000

The technical data of this sheet is depending on the described operational conditions and individual cases. At different operational conditions and differing individual cases contact **jbj Techniques Limited technical office** telephone: **01737 767493** or email: **info@jbj.co.uk**

Technical modifications reserved. Please also pay attention to our operation manuals and maintenance documentation.

Maximum operating conditions

- max. permissible operating pressure: Shell side 20 bar (BAMNZ-24XX 16 bar) Tube side 10 bar (BAMNZ-24XX 16 bar)
- Test pressure: Shell side 30 bar (BAMNZ-24XX 24 bar) Tube side 15 bar (BAMNZ-24XX 24 bar)
- min./max. permissible operating temperature: Shell side 5 - 95 °C Tube side 5 - 95 °C

Caution: Incorrect installation can lead to damage to the cooler.



Safety Principle

- » Version with double tubes.
- » Protection against over-pressure as well as corrosion effects.
- » Expansion tank with pressure control to accommodate changes in sealing liquid volume.
- » Removable sealing cover for cleaning internal water pipes.

Standard material

Shell - Brass/Steel

Outer tubes - Cu

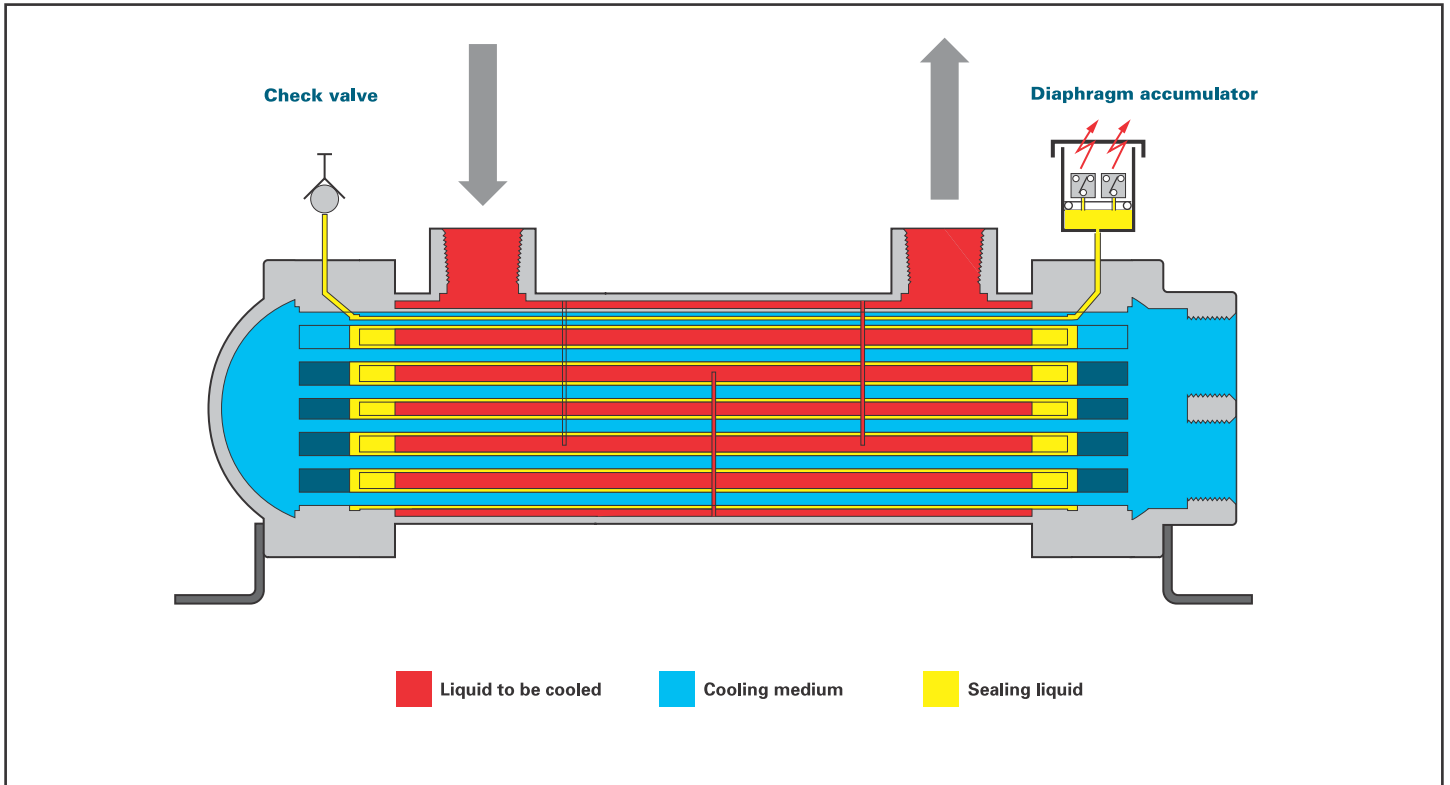
Inner tubes - Cu-Ni/SS

Cover - Grey cast iron

Separating chamber - Steel

Other material combinations at customer request.

Optional: Sea water version

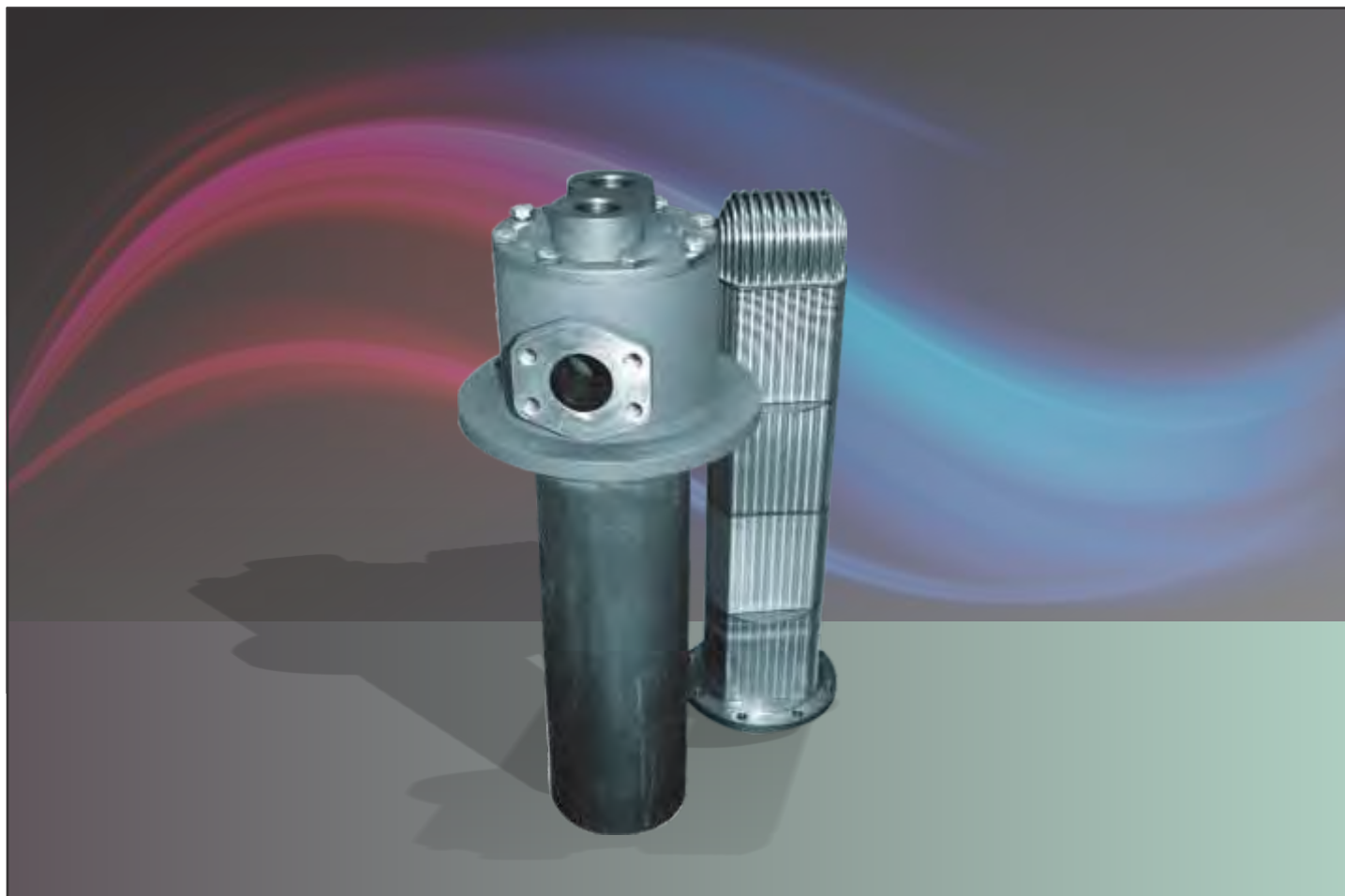


Safety Principle

Based on the existing oil/water heat exchangers of the BAMNZSC series. This new oil/water safety heat exchanger BAMNZSC which, by means of a double tube, prevents the danger of mixing the cooling and the to be cooled medium. The space between the two tubes is filled with a sealing liquid. A pre-charged diaphragm accumulator compensates the thermal change in volume of the sealing liquid and keeps the sealing liquid pressure almost constant. Any leaks in the bank of tubes are indicated at once by the pressure switches. These two characteristics, the pre-charging of the system in connection with the min. and max. pressure monitoring, guarantee an independent operating pressure for the cooling medium as well as the liquid to be cooled.

Sealing liquid

A special liquid enables optimum heat transfer. It is frost-resistant up to -30°C and, at the same time, safe with foodstuffs. Other liquids available on request.



Product description

The BATMNZ series is a logical further development of a tube-stack heat exchanger for a wide range of industrial applications.

This range is particularly effective due to the additional cooling area which is produced by aluminium fins, which are pushed over the bank of tubes with metal-to-metal contact. The BATMNZ range of heat exchangers has a cooling surface of from 0.73 m² to 29 m².

The BATMNZ series is constructed of more than 30 basic units, and is available as two and four pass versions.

Product features

- » Aluminium fins and copper or coppernickel tubes ensure maximum levels of heat exchange.
- » Large-bore oil connections for minimum flow resistance.
- » Oil flow rates of up to 650 l/min.
- » Removable end caps for easy cleaning of the tubes.
- » Flanges allow the heat exchanger to be turned through 90°.
- » Optionally available with patented internal bypass check valve.
- » High-quality materials.
- » Max. pressure: oil 35 bar /water 16 bar.
- » Full range of accessories available.

Option

Sea water version



Materials

	Standard	Sea water
Shell Mounting bracket Baffels	Steel	
End plates	Brass	Special brass
Cooling fins Type designation plate	Aluminium	
Tubes	Copper	Copper-Nickel
End caps	Cast iron	Cast iron with nickel coating treatment
Gaskets	NBR/cellulose fibre	NBR/cellulose fibre
Additional installation	Steel	Zinc anode

For different oil outlet temperatures, water inlet temperatures and viscosities, the following calculation must be made:

Where:

Heat to be dissipated (AW) = 17kW

Oil flow (V) = 80 l/mn.

Oil outlet temp. (t oil out) = 45°C

Water inlet temp. (t water in) = 25°C

Oil type = ISO 68

Effective heat to be dissipated = kW eff.

1. The viscosity correction factor is calculated as follows:

Temperature difference ΔT (°C) =

$$\frac{AW \text{ (kW)} \times 34,1}{Q \text{ (l/mn)}} = 7,2$$

Average oil temp. therefore (°C) =

$$\frac{t_{oil \text{ out}} + \Delta t + t_{oil \text{ out}}}{2} = 49^\circ\text{C}$$

2. From oil manufacturer's data for ISO 68:

Viscosity at 49°C = 38 cSt

3. From viscosity correction table "A":

38 cSt = 1,11

AW_{eff} =

$$\frac{AW \text{ (kW)} \times 25 \times \text{viscosity (cSt) Tab. A}}{t_{oil \text{ out}} \text{ (}^\circ\text{C)} - t_{water \text{ in}} \text{ (}^\circ\text{C)}}$$

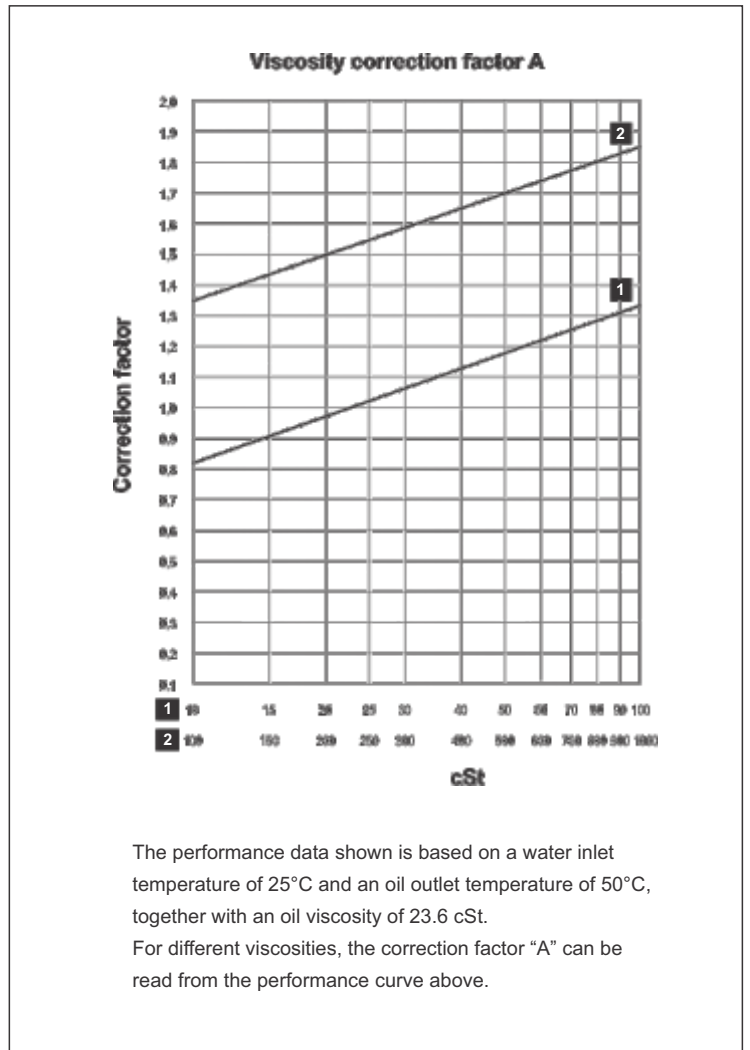
$$= \frac{17 \times 25 \times 1,11}{20} = 23.6 \text{ kW}$$

From oil/water 2:1 performance diagram at

an oil flow of 80 l/min and 23.6 kW, we

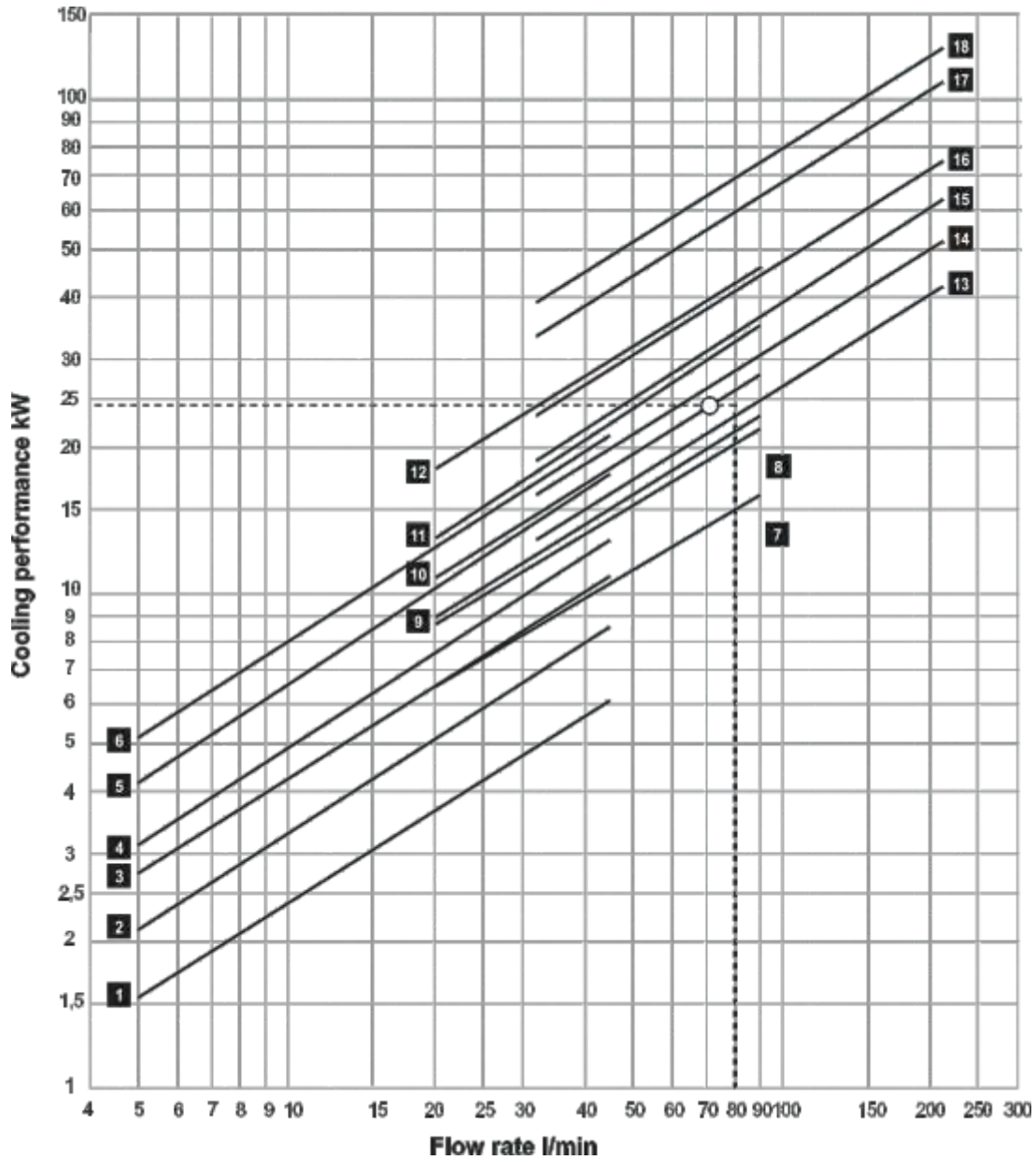
thus arrive at:

Cooler no. 10 = BATMNZ- 718 - T





Performance Data 2 pass



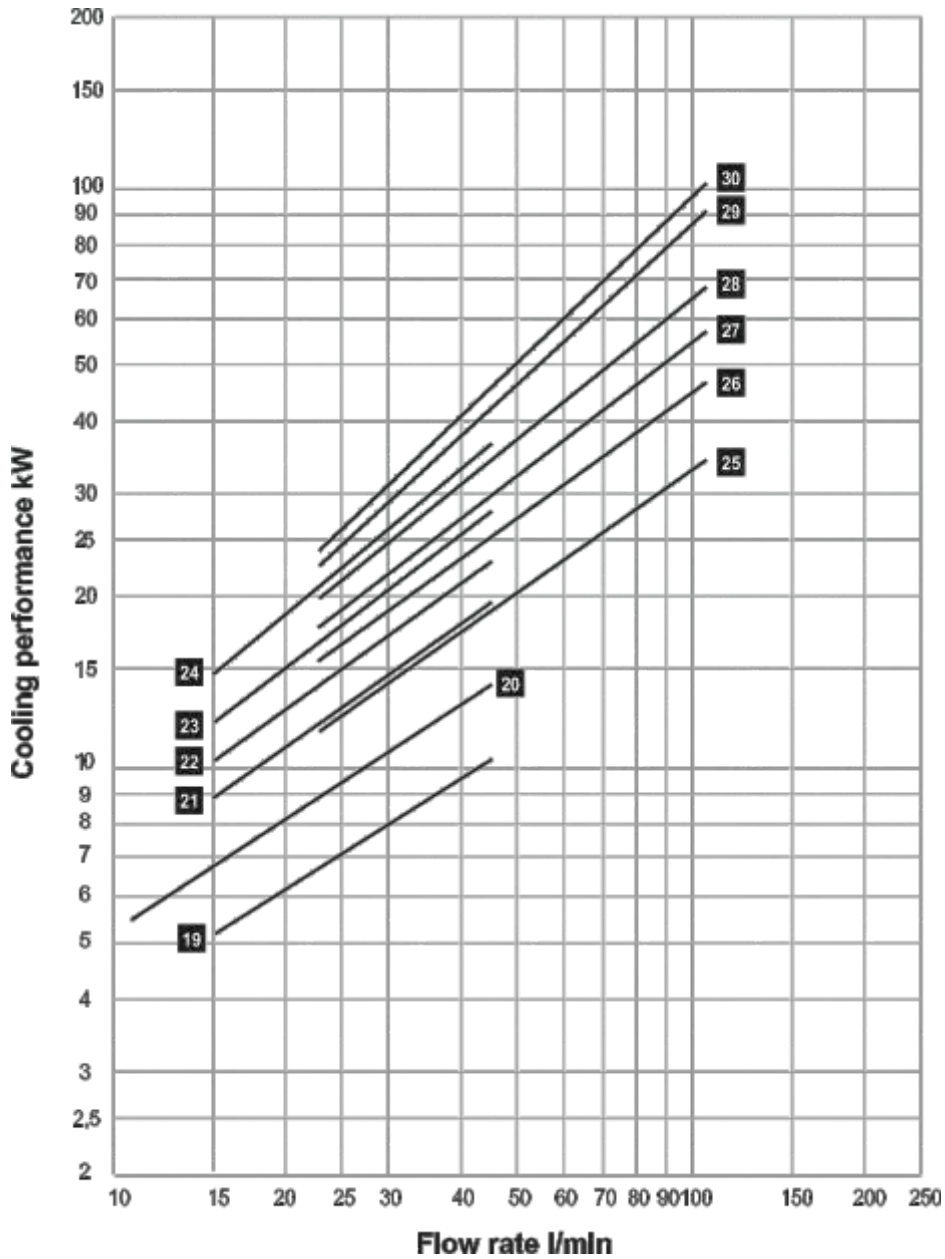
Model

- | | | | |
|---|--------------|----|---------------|
| 1 | BATMNZ-508-T | 10 | BATMNZ-718-T |
| 2 | BATMNZ-512-T | 11 | BATMNZ-724-T |
| 3 | BATMNZ-514-T | 12 | BATMNZ-736-T |
| 4 | BATMNZ-518-T | 13 | BATMNZ-1012-T |
| 5 | BATMNZ-524-T | 14 | BATMNZ-1014-T |
| 6 | BATMNZ-536-T | 15 | BATMNZ-1018-T |
| 7 | BATMNZ-708-T | 16 | BATMNZ-1024-T |
| 8 | BATMNZ-712-T | 17 | BATMNZ-1036-T |
| 9 | BATMNZ-714-T | 18 | BATMNZ-1048-T |

The performance data shown in the diagram is limited by the flow rate and may be exceeded after consultation with the manufacturer.



Performance Data 4 pass



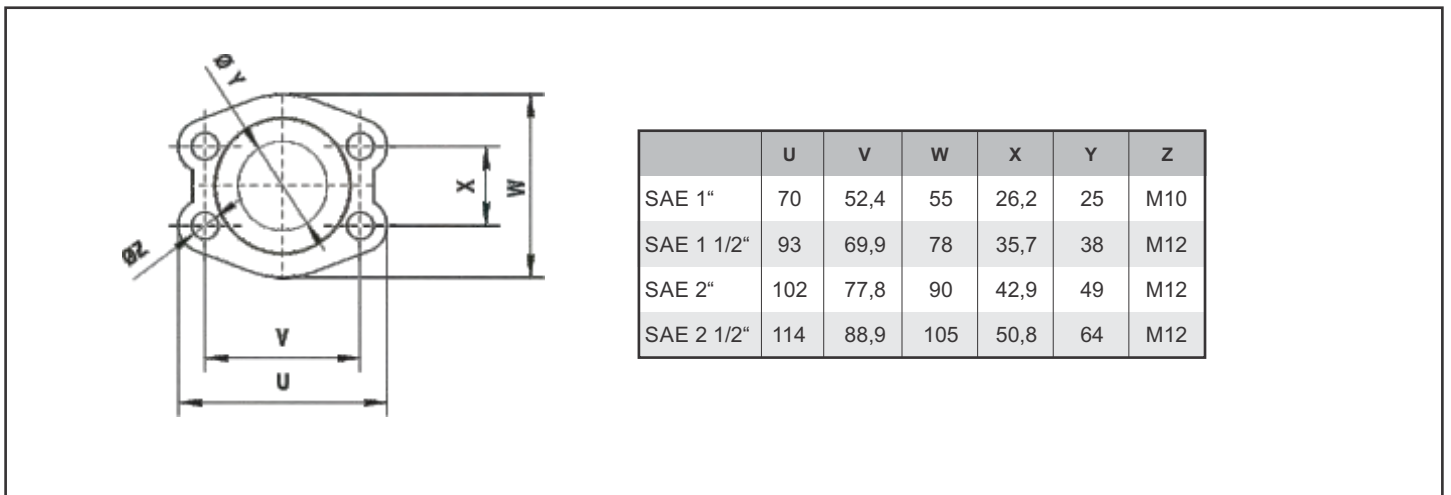
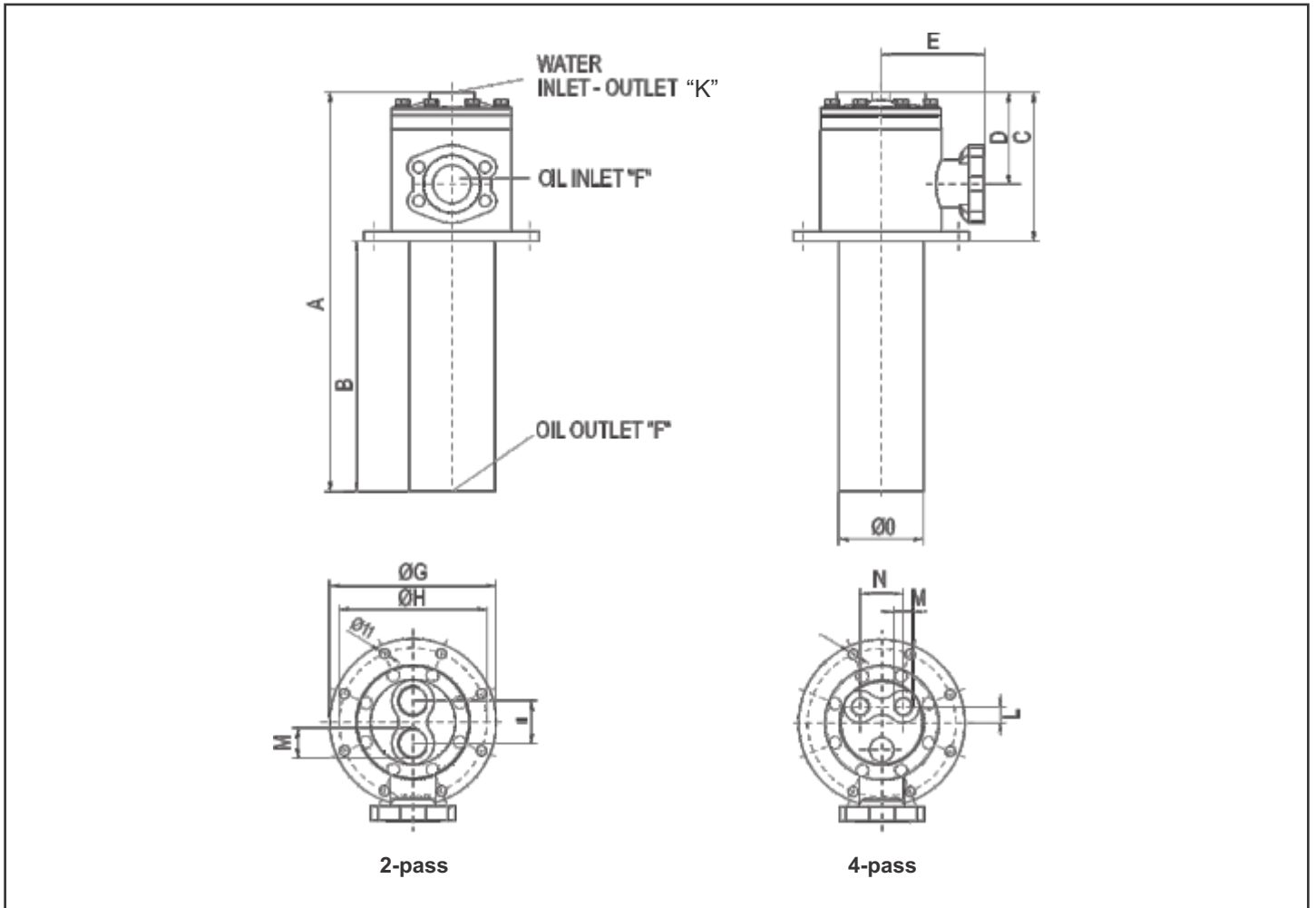
Model

- | | | | |
|----|--------------|----|---------------|
| 19 | BATMNZ-708-F | 25 | BATMNZ-1012-F |
| 20 | BATMNZ-712-F | 26 | BATMNZ-1014-F |
| 21 | BATMNZ-714-F | 27 | BATMNZ-1018-F |
| 22 | BATMNZ-718-F | 28 | BATMNZ-1024-F |
| 23 | BATMNZ-724-F | 29 | BATMNZ-1036-F |
| 24 | BATMNZ-736-F | 30 | BATMNZ-1048-F |

The performance Data shown in the diagram is limited by the flow rate and may be exceeded after consultation with the manufacturer.



Dimensions





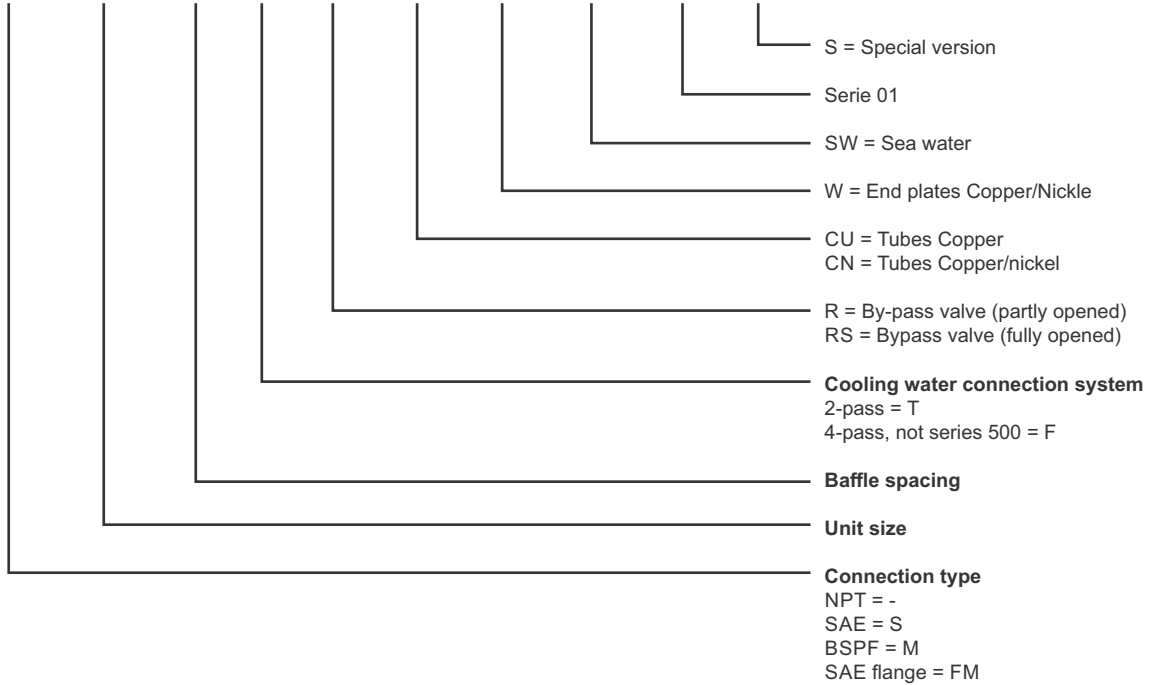
Dimensions

in mm / BSPP	Basic dimensions								2-pass			4-pass			m ²
	A	B	C	D	E	F*	G	O	H	I	K	L	M	N	
BATMNZ-508	285	140	145	92	48	G 1"	150	65	130	35	G 1/2"	-	-	-	0,73
BATMNZ-512	386	241	145	92	48	G 1"	150	65	130	35	G 1/2"	-	-	-	1,13
BATMNZ-514	437	292	145	92	48	G 1"	150	65	130	35	G 1/2"	-	-	-	1,43
BATMNZ-518	539	394	145	92	48	G 1"	150	65	130	35	G 1/2"	-	-	-	1,74
BATMNZ-524	691	546	145	92	48	G 1"	150	65	130	35	G 1/2"	-	-	-	2,35
BATMNZ-536	996	851	145	92	48	G 1"	150	65	130	35	G 1/2"	-	-	-	3,57
BATMNZ-708	297	141	156	96	110	SAE 11/2"	185	89	165	47	G 1"	18	R 1/2"	48	1,38
BATMNZ-712	398	242	156	96	110	SAE 11/2"	185	89	165	47	G 1"	18	R 1/2"	48	2,18
BATMNZ-714	449	293	156	96	110	SAE 11/2"	185	89	165	47	G 1"	18	R 1/2"	48	2,53
BATMNZ-718	551	395	156	96	110	SAE 11/2"	185	89	165	47	G 1"	18	R 1/2"	48	3,29
BATMNZ-724	703	547	156	96	110	SAE 11/2"	185	89	165	47	G 1"	18	R 1/2"	48	4,44
BATMNZ-736	1008	852	156	96	110	SAE 11/2"	185	89	165	47	G 1"	18	R 1/2"	48	6,73
BATMNZ-1012	425	240	185	110	125	SAE 2"	230	128	205	62	G 11/4"	22	R 3/4"	63	4,38
BATMNZ-1014	476	291	185	110	125	SAE 2"	230	128	205	62	G 11/4"	22	R 3/4"	63	5,17
BATMNZ-1018	578	393	185	110	125	SAE 2"	230	128	205	62	G 11/4"	22	R 3/4"	63	6,73
BATMNZ-1024	730	545	185	110	125	SAE 2"	230	128	205	62	G 11/4"	22	R 3/4"	63	9,06
BATMNZ-1036	1035	850	185	110	125	SAE 2"	230	128	205	62	G 11/4"	22	R 3/4"	63	13,74
BATMNZ-1048	1340	1155	185	110	125	SAE 2"	230	128	205	62	G 11/4"	22	R 3/4"	63	18,41
BATMNZ-1218	592	390	202	127	145	SAE 2 1/2"	275	160	240	87	G 2"	25	G 1"	70	6,00
BATMNZ-1224	744	542	202	127	145	SAE 2 1/2"	275	160	240	87	G 2"	25	G 1"	70	8,06
BATMNZ-1230	897	695	202	127	145	SAE 2 1/2"	275	160	240	87	G 2"	25	G 1"	70	10,19
BATMNZ-1236	1049	847	202	127	145	SAE 2 1/2"	275	160	240	87	G 2"	25	G 1"	70	12,25
BATMNZ-1242	1202	1000	202	127	145	SAE 2 1/2"	275	160	240	87	G 2"	25	G 1"	70	14,38
BATMNZ-1248	1354	1152	202	127	145	SAE 2 1/2"	275	160	240	87	G 2"	25	G 1"	70	16,35
BATMNZ-1254	1506	1304	202	127	145	SAE 2 1/2"	275	160	240	87	G 2"	25	G 1"	70	18,48
BATMNZ-1260	1659	1457	202	127	145	SAE 2 1/2"	275	160	240	87	G 2"	25	G 1"	70	20,52
BATMNZ-1266	1811	1609	202	127	145	SAE 2 1/2"	275	160	240	87	G 2"	25	G 1"	70	22,63
BATMNZ-1272	1964	1762	202	127	145	SAE 2 1/2"	275	160	240	87	G 2"	25	G 1"	70	24,74
BATMNZ-1278	2117	1915	202	127	145	SAE 2 1/2"	275	160	240	87	G 2"	25	G 1"	70	26,88
BATMNZ-1284	2269	2067	202	127	145	SAE 2 1/2"	275	160	240	87	G 2"	25	G 1"	70	28,99



Ordering Code

BATMNZ - 1014 - 2 - T - R - CN - W - SW - 01 - S



Technical data

Maximum operating Pressure

Shell = 35 bar
Tubes = 16 bar

Maximum operating temperature

= 95 °C

Maximum flow rate

Version	l/min						
	Oil Shell	Water Tubes CU		Water Tubes CN/		Sea water Tubes CN	
		T	F	T	F	T	F
BATMNZ - 500	75	17	-	26	-	22	-
BATMNZ - 700	225	34	16	52	24	43	21
BATMNZ - 1000	400	82	40	122	58	102	51
BATMNZ - 1200	650	182	91	272	136	227	114

jbj Techniques is a specialist supplier of high-quality products for the mechanical power transmission and fluid power sectors. The company offers a high level of in-house expertise plus a huge selection of products to meet a very broad range of customer applications. From specification, through technical advice and manufacture to after-sales support, jbj Techniques provides a comprehensive and valued service to the power transmission and hydraulics industries. The company fields a UK-wide team of technical sales engineers to ensure that the business is close to its customers, and it enjoys excellent associations with European manufacturers, acting as sole UK distributor in many cases.

jbj's team is recognised for its expertise in the selection and configuration of hydraulic and mechanical transmission systems. Able to draw on an **extensive product range** that provides the building blocks for **bespoke systems both large and small**, the in-house design team offers a complete service, ranging from an assessment of customer requirements to full technical backup, including product specification, CAD based system design, system build and certification. Moreover customers can take advantage of **jbj's own machine-shop facilities and skilled engineers to guarantee quality and control costs.**

jbj Techniques provides one of the widest ranges of couplings available within the UK; mechanical power transmission couplings for a vast range of applications. Ranging from miniature couplings, all steel gear couplings, flexible spider couplings, shaft couplings, torque limiting couplings, disc and grid type couplings, ATEX compliant and shaft locking devices. Magnetic couplings for power transmission between hermetically sealed areas. However as extensive as the selection is, couplings make up a fraction of jbj's portfolio. As power transmission specialists the company stock and provide gearboxes, clutches, pumps, hydraulic motors, flow meters, fluid power accessories including: cooling & heat exchange products, reservoirs, pipe flanges, seals and level indicators, as well as a variety of bellhousings and engine adaptors, to name just a few of the product categories.

jbj Techniques Limited is proud of its relationship and reputation with customers and suppliers.

The core client base is stable and loyal, which is testament to the quality of service provided by the company. A similar relationship exists with suppliers, ensuring a continuing high quality service in which customers can have complete confidence.



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