



ENGINE AND TRANSMISSION OIL COOLERS



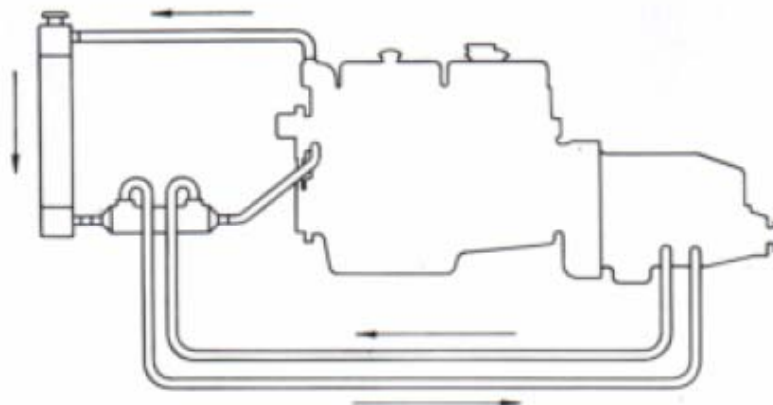
INTRODUCTION.

These oil coolers are equally suitable for cooling torque converter, automatic transmission and engine oils. Being water cooled they have the advantage of freedom from accidental damage and also encourage quicker warming up of the oil, a feature which is particularly valuable in cold climates. The tube stack is fully floating so that thermal stresses are minimised and it can easily be removed should cleaning be necessary.

The cooler should be fitted into the engine water circuit between the bottom tank of the radiator and the water inlet connection on the engine as illustrated on page 3, the radii of the water pipe bends should be as large as possible to reduce the pressure drop. Also indicated on page 3 are the approximate capabilities of the various coolers for torque converter applications. This information is only intended as a general guide as the factors affecting the choice of oil cooler are complex. In the case of engine oil applications we are not able to give any general recommendations, but proposals can be submitted on receipt of details of the particular engine.

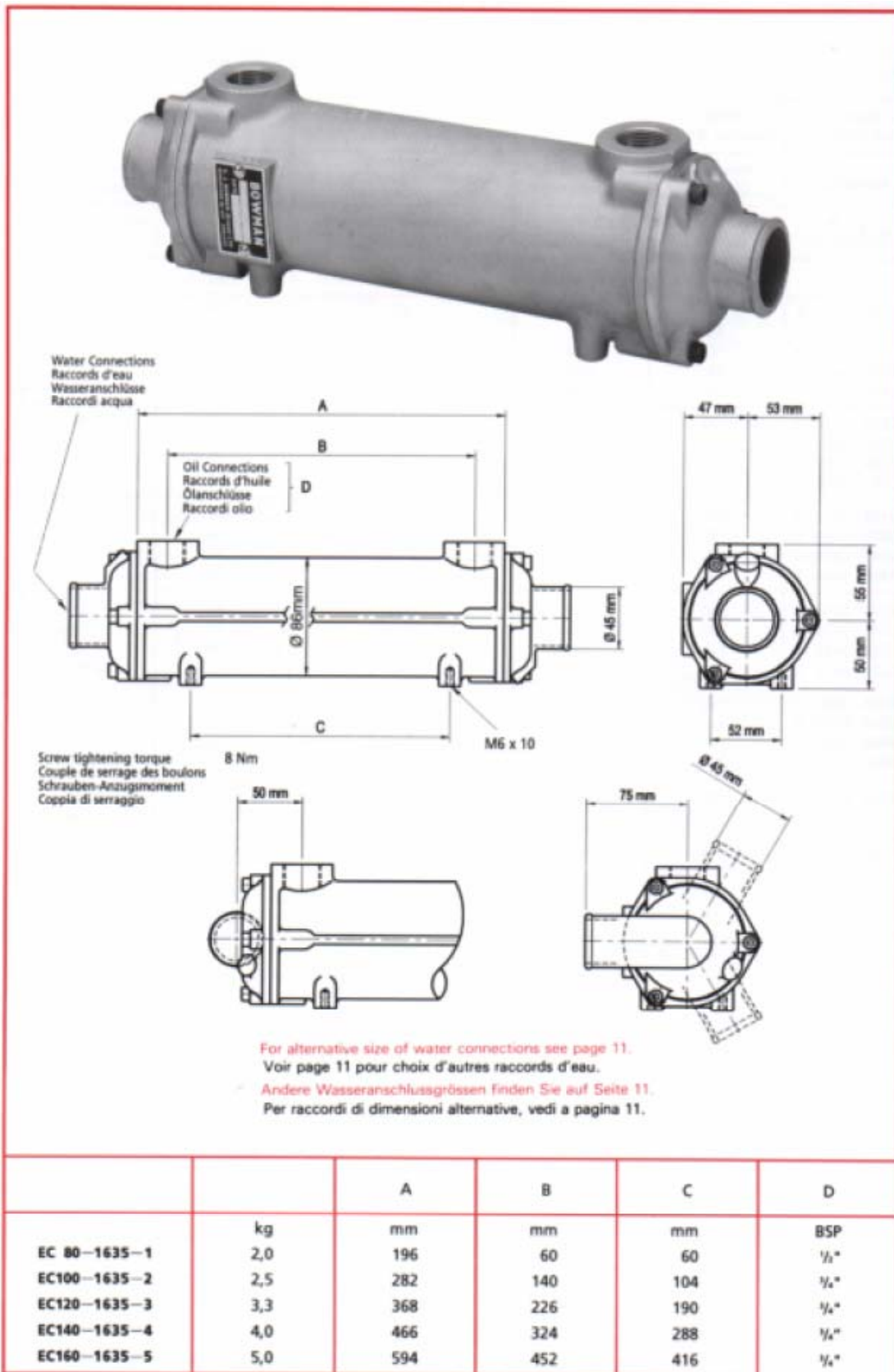
Typical examples of oil coolers fitted to torque converter transmissions with an oil inlet temperature of 110°C and a water inlet temperature of 80°C.

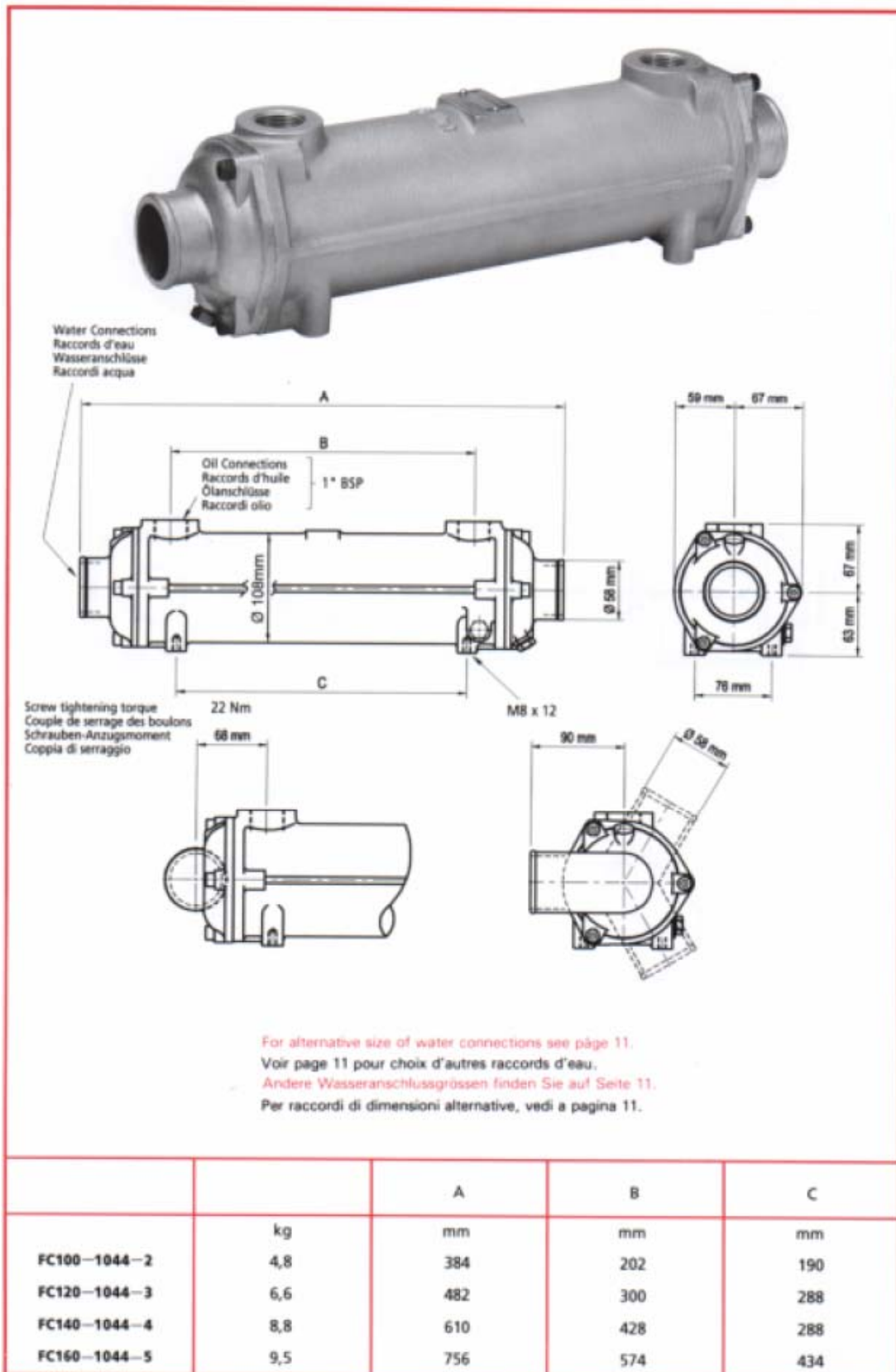
Cooler Type	Maximum oil flow	Maximum water flow	Suitable for torque converter transmitting:	Internal oil volume	Internal water volume
Type de refroidisseur	Débit maximal d'huile	Débit maximal d'eau	Convient aux convertisseurs de couple de:	Contenance en huile	Contenance en eau
Kühlertyp	Maximale Ölmenge	Maximale Wassermenge	Geeignet für Drehmomentwandler mit einer Leistung von:	Internes Ölvolumen	Internes Wasservolumen
Tipo di raffreddatore	Flusso massimo dell'olio	Flusso massimo dell'acqua	Adatto per variatore di coppia di:	Volumen interioraceite	Volumen interioraqua
	liter/min	liter/min	kW	liter	liter
EC 80-1635-1	30	200	45	0.26	0.31
EC100-1635-2	60	200	60	0.49	0.44
EC120-1635-3	60	200	75	0.74	0.57
EC140-1635-4	60	200	90	0.97	0.71
EC160-1635-5	60	200	105	1.30	0.91
FC100-1044-2	100	300	90	1.10	0.84
FC120-1044-3	100	300	105	1.50	1.06
FC140-1044-4	100	300	120	2.00	1.35
FC160-1044-5	100	300	135	2.60	1.68
FG100-1604-2	150	400	120	2.40	1.56
FG120-1604-3	150	400	140	3.00	1.96
FG140-1604-4	150	400	170	3.90	2.42
FG160-1604-5	150	400	200	5.00	2.97
GL180-3508-3	220	700	180	4.80	3.80
GL240-3508-4	220	700	240	6.30	4.60
GL320-3508-5	220	700	300	8.00	5.50
GL400-3508-6	220	700	360	10.00	6.60
GK250-3509-4	350	1000	360	9.00	7.50
GK320-3509-5	350	1000	450	11.60	9.00
GK400-3509-6	350	1000	540	14.60	10.60
GK480-3509-7	350	1000	630	17.40	12.30
JK250-3511-4	550	1600	520	12.50	10.40
JK320-3511-5	550	1600	640	16.10	12.50
JK400-3511-6	550	1600	780	20.30	14.70
JK480-3511-7	550	1600	900	24.20	17.10

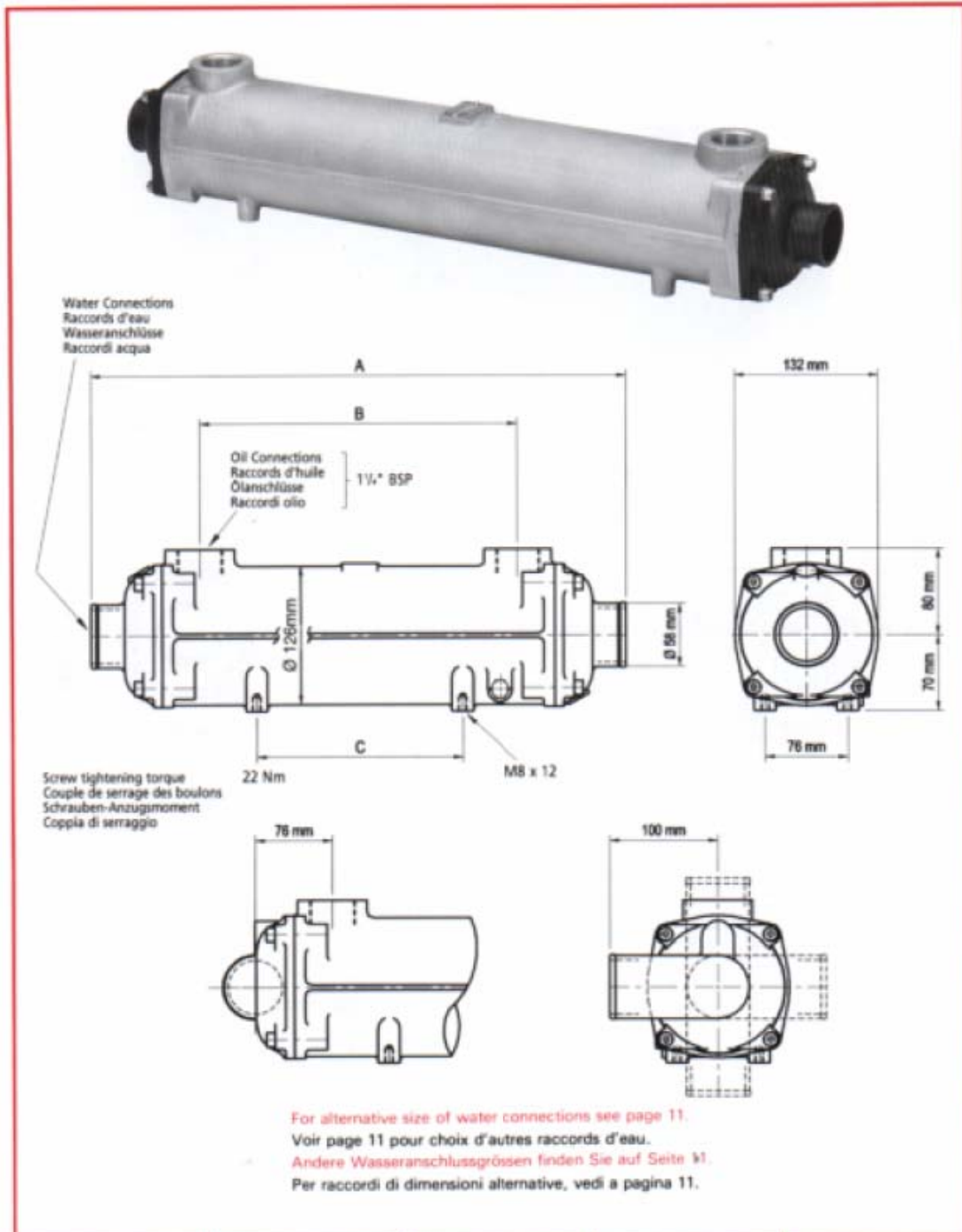


Installation of an oil cooler in an engine water circuit.

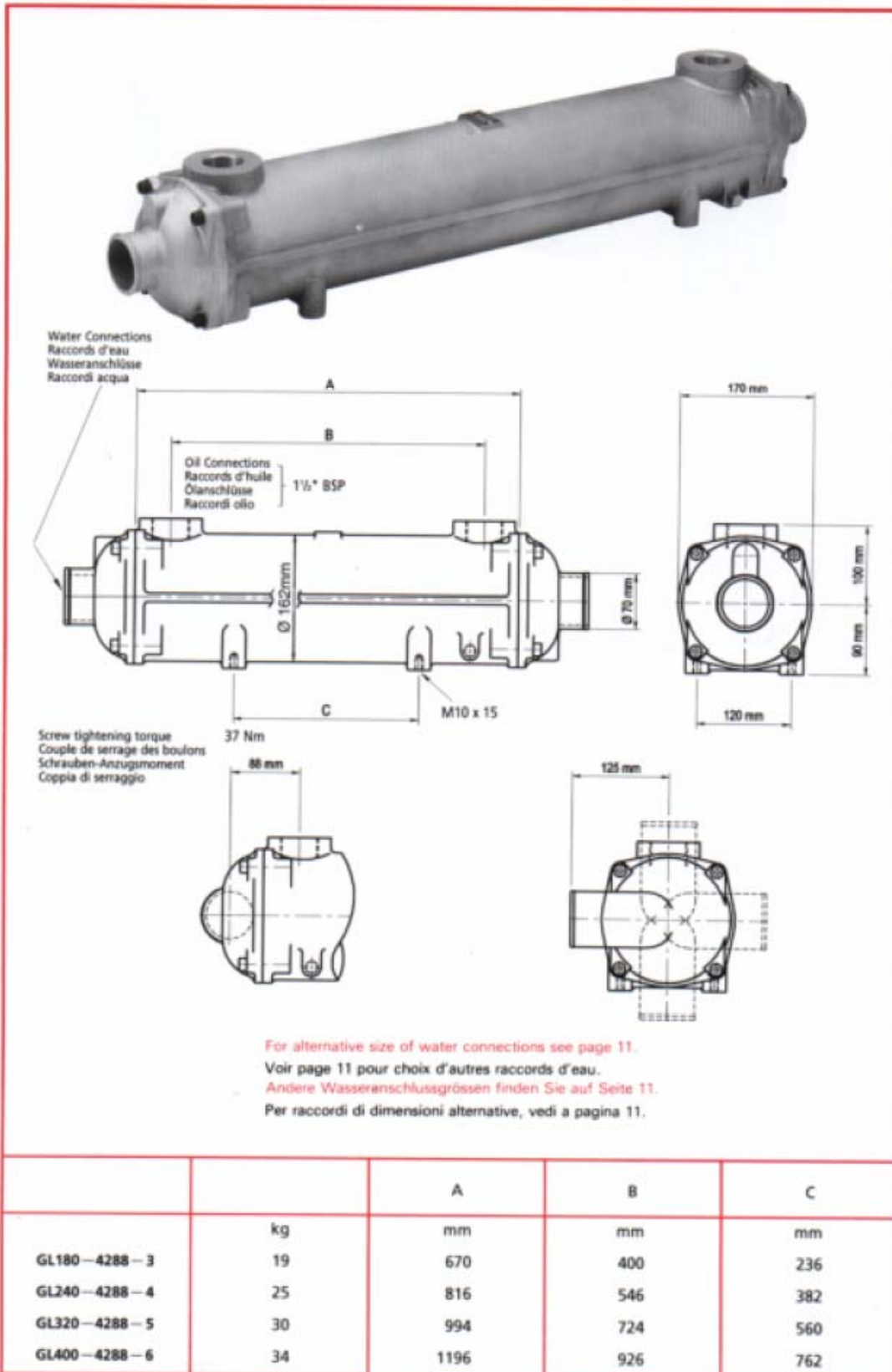


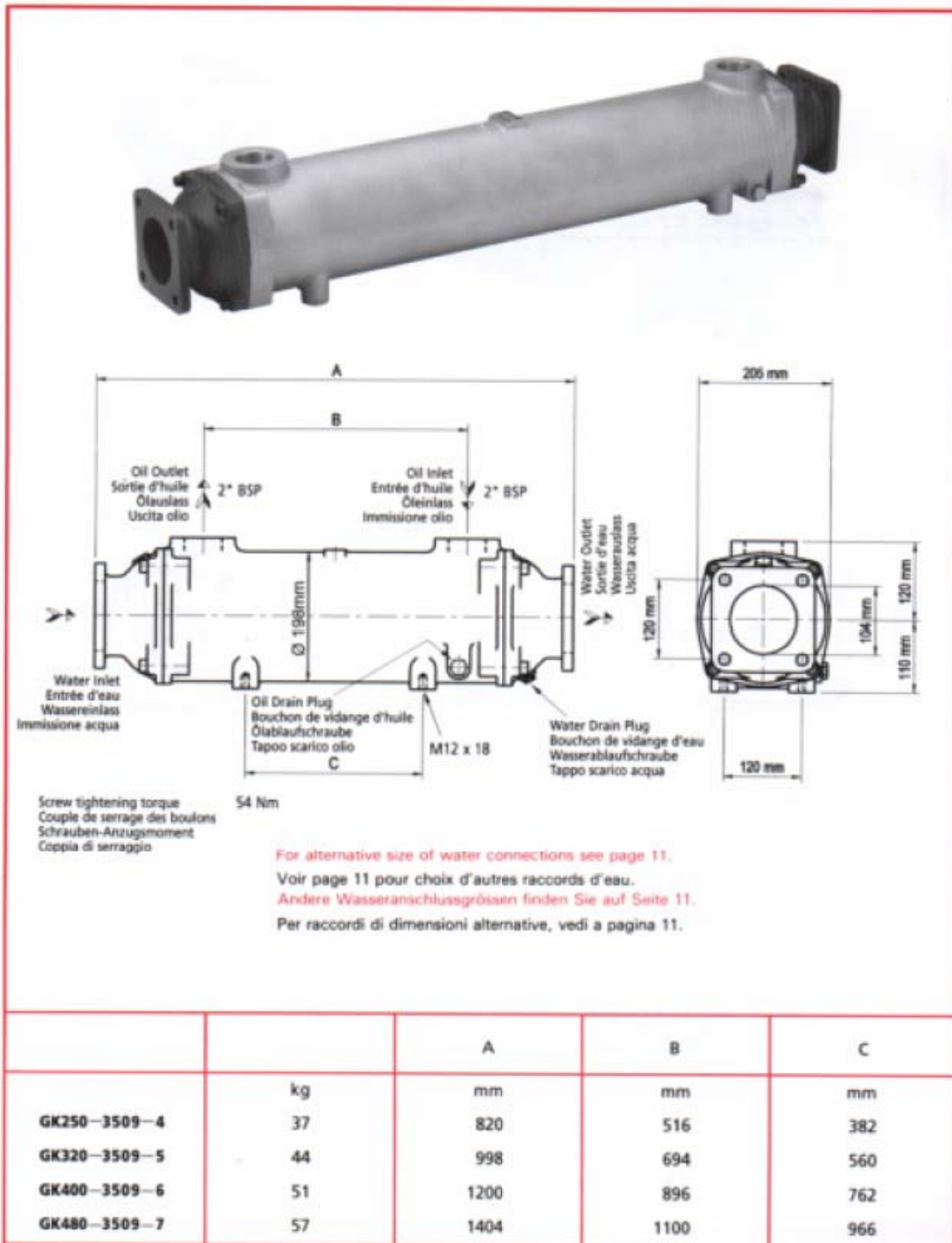






		A	B	C
	kg	mm	mm	mm
FG100-1604-2	10,0	496	294	190
FG120-1604-3	12,7	624	422	318
FG140-1604-4	15,0	770	568	464
FG160-1604-5	17,0	948	746	642

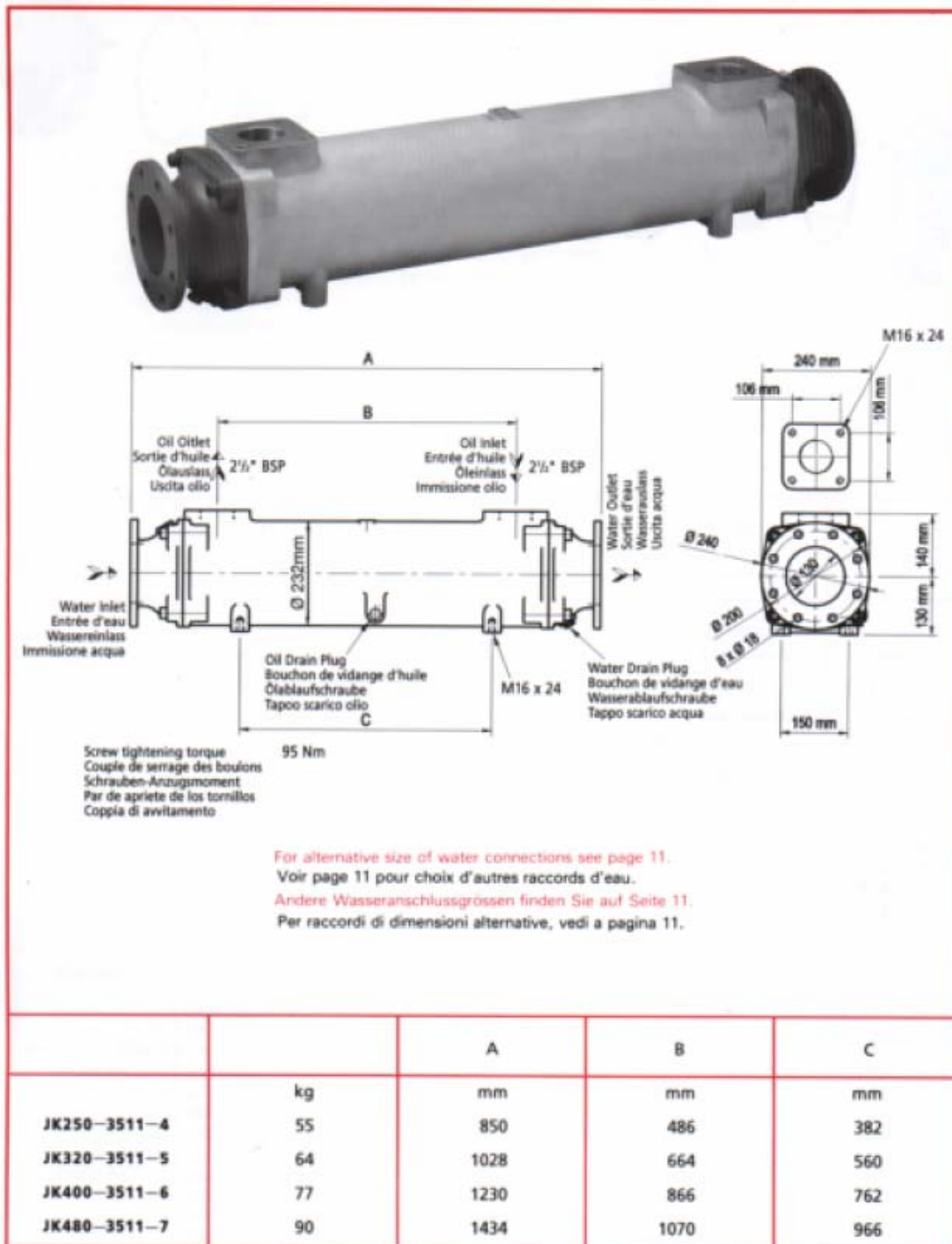




Maximum working oil pressure 25 bar
 Maximum working water pressure 3 bar
 Maximum working temperature 150°C

Pression effective d'huile max. 25 bar
 Pression effective d'eau max. 3 bar
 Température effective max. 150°C

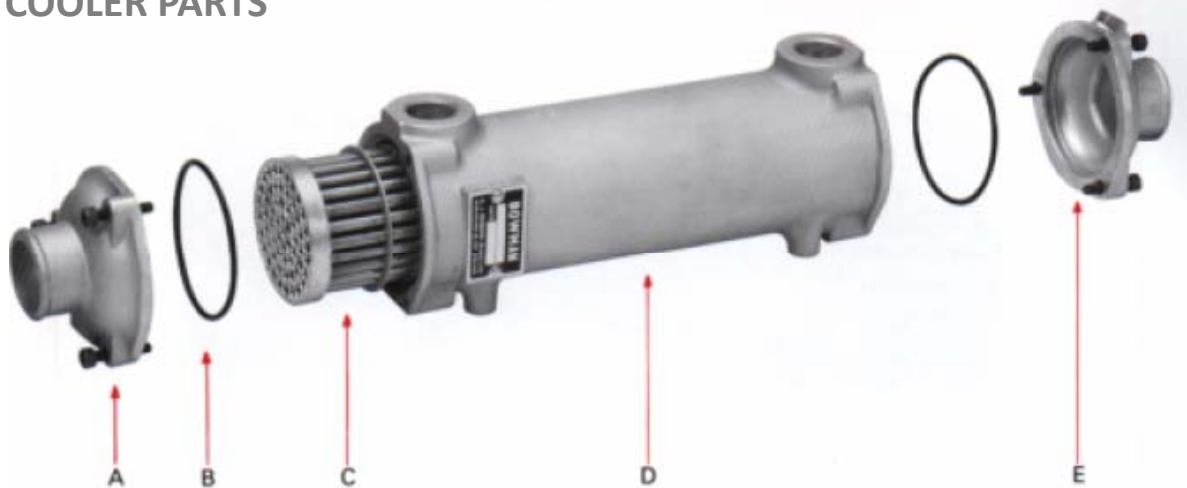




Maximaler Betriebsdruck - Öl 25 bar
 Maximaler Betriebsdruck - Wasser 3 bar
 Maximale Betriebstemperatur 150°C

Pressione max. d'esercizio dell'olio 25 bar
 Pressione max. d'esercizio dell'acqua 3 bar
 Temperatura max. d'esercizio 150°C

OIL COOLER PARTS



	A	B	C	D	E
Type	End Covers	"O" Seals	Tube Stack	Body	Screws
Type	Couvercles d'extrémité	Joints toriques	Faisceau de tubes	Corps	Boulons
Typ	Enddeckel	O-Dichtungen	Rohrbündel	Körper	Schrauben
Tipo	Chiusure d'estremità	Anelli torici	Fascio di tubi	Corpo	Viti
EC 80-1635-1 EC100-1635-2 EC120-1635-3 EC140-1635-4 EC160-1635-5	EC2 - 786AL * * * *	AN12VT * * * *	785 - 1TC2A 785 - 2TC2A 785 - 3TC2A 785 - 4TC2A 785 - 5TC2A	EC21 - 978AL EC10 - 783 - 2AL EC12 - 783 - 3AL EC14 - 783 - 4AL EC16 - 783 - 5AL	HS06X30 * * * *
FC100-1044-2 FC120-1044-3 FC140-1044-4 FC160-1044-5	FC2 - 1108AL * * *	OS46VT * * *	1530 - 2TC2A 1530 - 3TC2A 1530 - 4TC2A 1530 - 5TC2A	FC10 - 1200 - 2AL FC12 - 1200 - 3AL FC14 - 1200 - 4AL FC16 - 1200 - 5AL	HS08X35 * * *
FG100-1604-2 FG120-1604-3 FG140-1604-4 FG160-1604-5	FG5 - 1957AL * * *	OS52VT * * *	1959 - 2TC2A 1959 - 3TC2A 1959 - 4TC2A 1959 - 5TC2A	FG10 - 1650 - 2AL FG12 - 1650 - 3AL FG14 - 1650 - 4AL FG16 - 1650 - 5AL	HS08X35 * * *
GL180-4288-3 GL240-4288-4 GL320-4288-5 GL400-4288-6	GL4-1860AL * * *	OS63VT * * *	1798 - 3TC2A 1798 - 4TC2A 1798 - 5TC2A 1798 - 6TC2A	GL19 - 3136 - 3AL GL25 - 3136 - 4AL GL33 - 3136 - 5AL GL41 - 3136 - 6AL	HS10X40 * * *
GK250-3509-4 GK320-3509-5 GK400-3509-6 GK480-3509-7	GK63 - 3255CI * * *	OS69VT * * *	2315 - 4TC2A 2315 - 5TC2A 2315 - 6TC2A 2315 - 7TC2A	GK25 - 2865 - 4AL GK32 - 2865 - 5AL GK40 - 2865 - 6AL GK48 - 2865 - 7AL	HS12X50 * * *
JK250-3511-4 JK320-3511-5 JK400-3511-6 JK480-3511-7	JK4 - 3331CI * * *	OS74VT * * *	3334 - 4TC2A 3334 - 5TC2A 3334 - 6TC2A 3334 - 7TC2A	JK25 - 3332 - 4AL JK32 - 3332 - 5AL JK40 - 3332 - 6AL JK48 - 3332 - 7AL	HS16X70 * * *



Removal of the screws around the periphery each end will allow the end covers and the seals to be removed. Following this operation the tube stack can be withdrawn from either end of the body.

When assembling the oil cooler, new 'O' seals should be fitted and the end screws must be tightened to the torque settings given on the drawings.

ALTERNATIVE WATER CONNECTIONS

Type	In line (axially)	Right angled
Type	Dans l'axe	Perpendiculaires à l'axe
Typ	axiale Anordnung	rechtwinklige Anordnung
Tipo	In linea (assialmente)	Ad angolo retto
EC	38 mm (EC11 - 3666AL) 52 mm (EC9 - 2421CI)	38 mm (EC30 - 1585AL) 45 mm (EC13 - 1865AL) 52 mm (EC15 - 3558AL)
FC	45 mm (FC5 - 1312AL) 52 mm (FC9 - 3291AL) 2" BSP (FC33 - 1176CI)	45 mm (FC34 - 3225AL) 52 mm (FC35 - 3173AL) 58 mm (FC36 - 3212AL)
FG	45 mm (FG4 - 1944AL) 2 1/2" BSP (FG7 - 2802CI)	50 mm (FG37 - 2781AL) 58 mm (FG36 - 2740GFN)
GL	3" BSP (GL37-3140CI)	70 mm (GL14 - 4055CI)
GK	N/A	N/A
JK	N/A	N/A