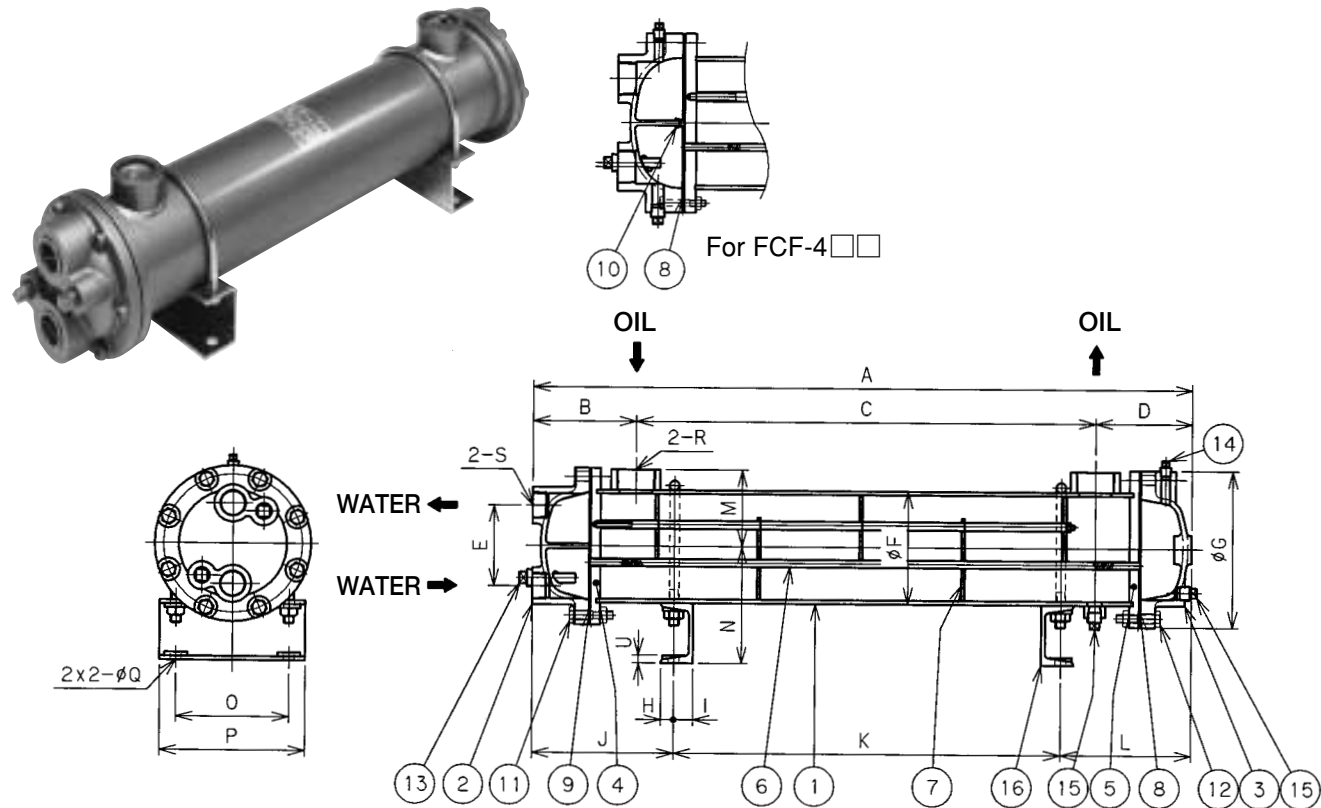
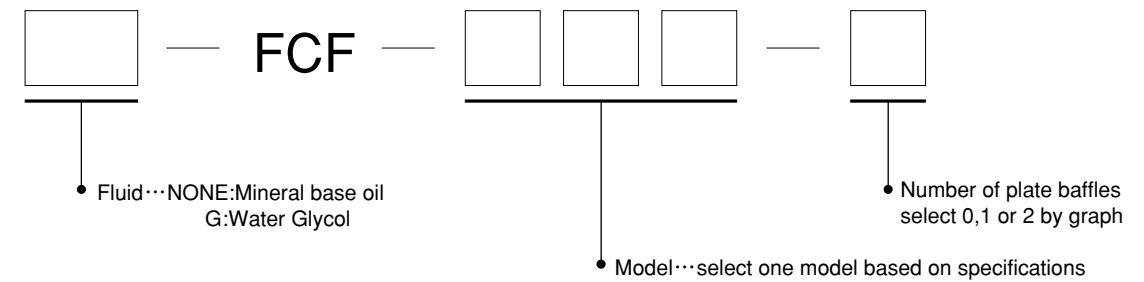


## Construction & Dimensions



Code																			Cooling surface	Weight		
Model	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	U	m <sup>2</sup>	kg
FCF-003	297	80	140	77	52	φ 63.5	φ 100	15	15	110	80	107	50	65	60	80	φ 10	Rc3/4	Rc1/2	1.6	0.15	5.5
FCF-006	477		320								260										0.3	6.3
FCF-108	347		180								105										0.4	6.5
FCF-114	527	85	360	82	52	φ 76.2	φ 110	15	15	120	285	120	60	70	80	102	φ 10	Rc 1	Rc3/4	2.3	0.7	8.5
FCF-122	757		590								515										1.1	11
FCF-226	437		240								160										1.3	14
FCF-234	547		350								270										1.7	16
FCF-242	627	101	430	96	76	φ 114.3	φ 147	20	20	140	350	137	85	90	120	148	φ 12	Rc11/4	Rc 1	3.2	2.1	17.5
FCF-256	777		580								500										2.8	22
FCF-270	947		750								670										3.5	25
FCF-350	587		340								250										2.5	34
FCF-370	817		570								480										3.5	42
FCF-390	987		740								650										4.5	47
FCF-311	1107	127	860	120	100	φ 139.8	φ 194	16	24	175	770	162	95	145	140	180	φ 13.5	Rc1 1/2	Rc 1	10	5.5	52
FCF-313	1287		1040								950										6.5	58
FCF-314	1407		1160								1070										7	63
FCF-316	1587		1340								1250										8	69
FCF-411	834		540								390										5.5	60
FCF-414	1004		710								560										7	68
FCF-416	1124	153	830	141	110	φ 165.2	φ 223	16	24	228	680	216	140	158	170	210	φ 13.5	Rc1 1/2	Rc11/4	10	8	74
FCF-418	1204		910								760										9	78
FCF-420	1304		1010								860										10	83

## Model Number



## Specifications

Type	Shell and tube, Fixed tube plate
Max.Operating Pressure	Shell side : 1.0 MPa / Tube side : 1.0 MPa
Fluids	Shell side : Mineral base oil, Water Glycol etc. Tube side : Clean fresh water. (Select other model for sea water application)
Tube Material	9mm dia. Low Fin Tube (C1220T)
Cooling area	0.15~10 m <sup>2</sup>
Features	Size: Unique low fin tube allows 20% size and weight reduction.
	Leg: U bolt legs allow free installation
	Corrosion proof: Inside of water chamber covers are coated with a tar-epoxy paint to prevent corrosion.

## Component Parts

No.	Parts name	No.	Parts name
1	Shell	9	Packing
2	Chamber cover A	10	Packing ※
3	Chamber cover B	11	Bolt/Not
4	Tube plate A	12	Bolt/Not
5	Tube plate B	13	Zinc plug
6	Fin tube	14	Vent plug
7	Baffle plate	15	Drain plug
8	Packing	16	Leg

※ For only FCF-4XX

## Spare Parts

Remarks: Please note part numbers and quantity, when placing orders.

Model	No.	Parts name	Q'ty	Size	Material
FCF-0□□	8	Packing	1	t2×φ 74 / φ 60	None asbestos
	9	Packing(with partition)	1	t2×φ 74 / φ 60	None asbestos
	13	Zinc plug	2	R1/4	Zn, FcMB
FCF-1□□	8	Packing	1	t2×φ 83 / φ 72	None asbestos
	9	Packing(with partition)	1	t2×φ 83 / φ 72	None asbestos
	13	Zinc plug	2	R3/8	Zn, FcMB
FCF-2□□	8	Packing	1	t2×φ 120 / φ 109	None asbestos
	9	Packing(with partition)	1	t2×φ 120 / φ 109	None asbestos
	13	Zinc plug	2	R3/8	Zn, FcMB
FCF-3□□	8	Packing	1	t2×φ 160 / φ 134	None asbestos
	9	Packing(with partition)	1	t2×φ 160 / φ 134	None asbestos
	13	Zinc plug	2	R1/2	Zn, FcMB
FCF-4□□	8	Packing	2	t3×φ 188 / φ 162	None asbestos
	10	Packing	1	12×12×162	NBR
	13	Zinc plug	2	R1/2	Zn, FcMB

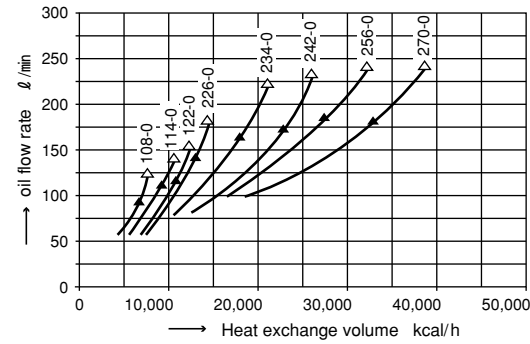
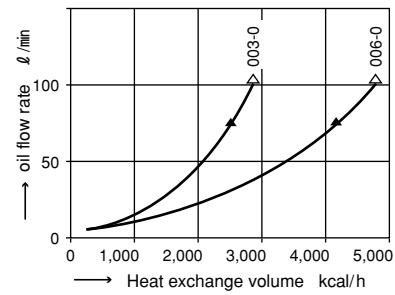
## ► Cooler selection graph

Condition

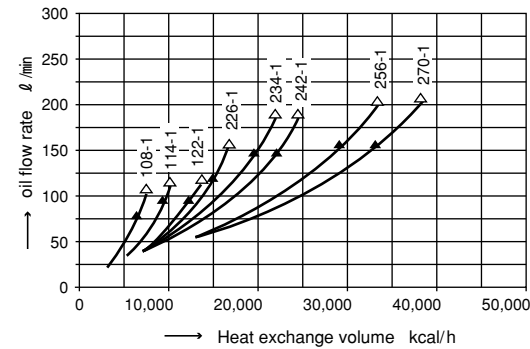
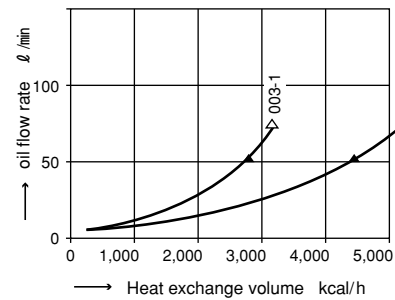
Fluid : ISO-VG46 or equivalent  
 Oil inlet temp. : 55°C  
 Water inlet temp. : 30°C  
 Water flow rate : 1/2 of oil flow (Reference table to right)  
 Oil side pressure drop : ▲...0.1MPa △...0.15MPa  
 Water side pressure drop : 0.01~0.03MPa

Model	Water flow	Minimum	Maximum
FCF-003~006	5 ℓ/min	5 ℓ/min	18 ℓ/min
FCF-108~122	10 ℓ/min	10 ℓ/min	35 ℓ/min
FCF-226~270	20 ℓ/min	20 ℓ/min	80 ℓ/min
FCF-350~316	30 ℓ/min	30 ℓ/min	110 ℓ/min
FCF-411~420	45 ℓ/min	45 ℓ/min	170 ℓ/min

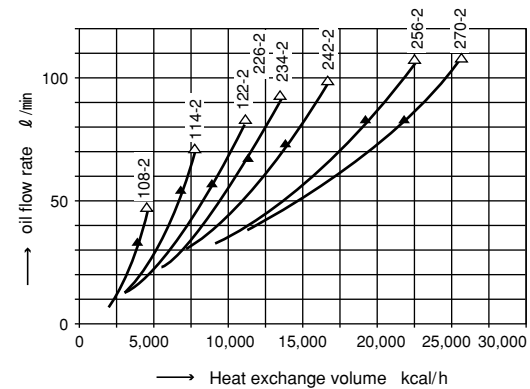
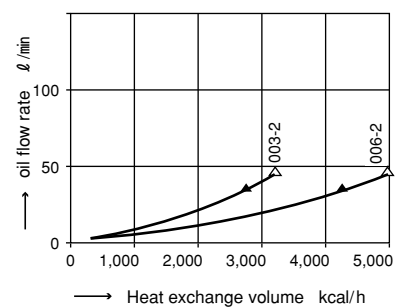
### FCF-003~270-0 type



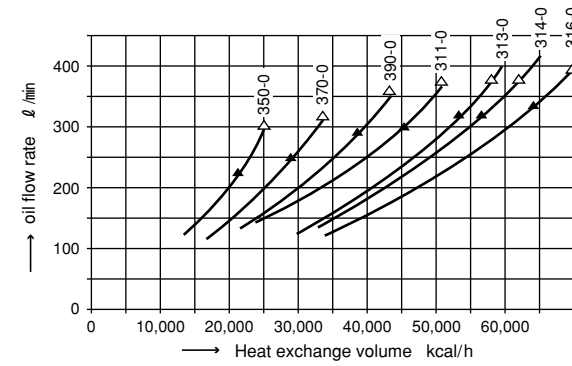
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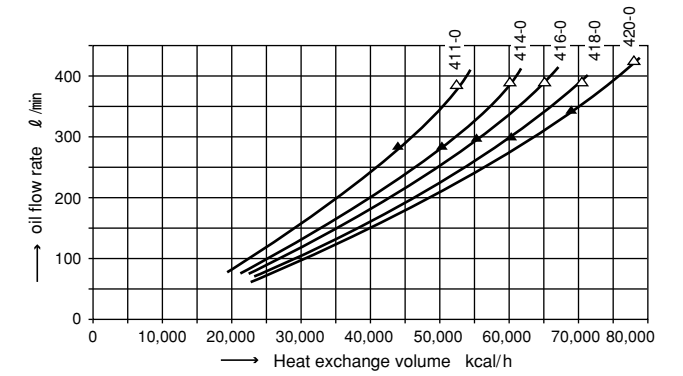
### FCF-003~270-2 type



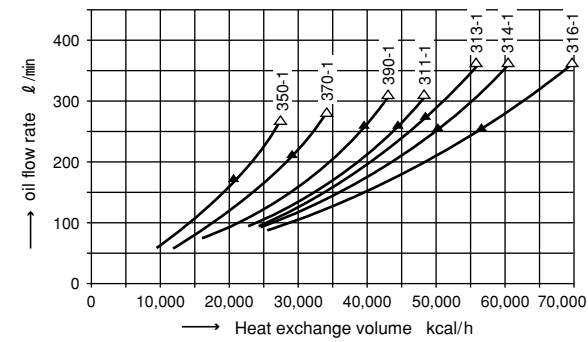
### FCF-350~316-0 type



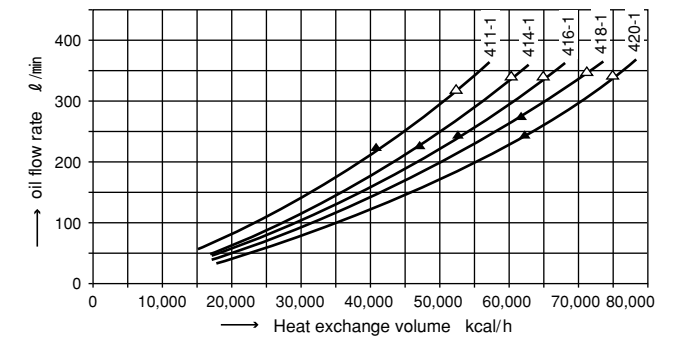
### FCF-411~420-0 type



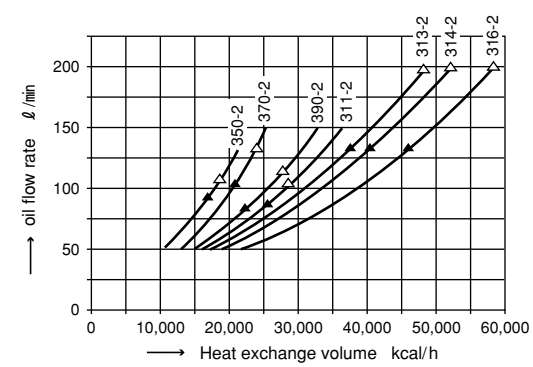
### FCF-350~316-1 type



### FCF-411~420-1 type



### FCF-350~316-2 type



### FCF-411~420-2 type

