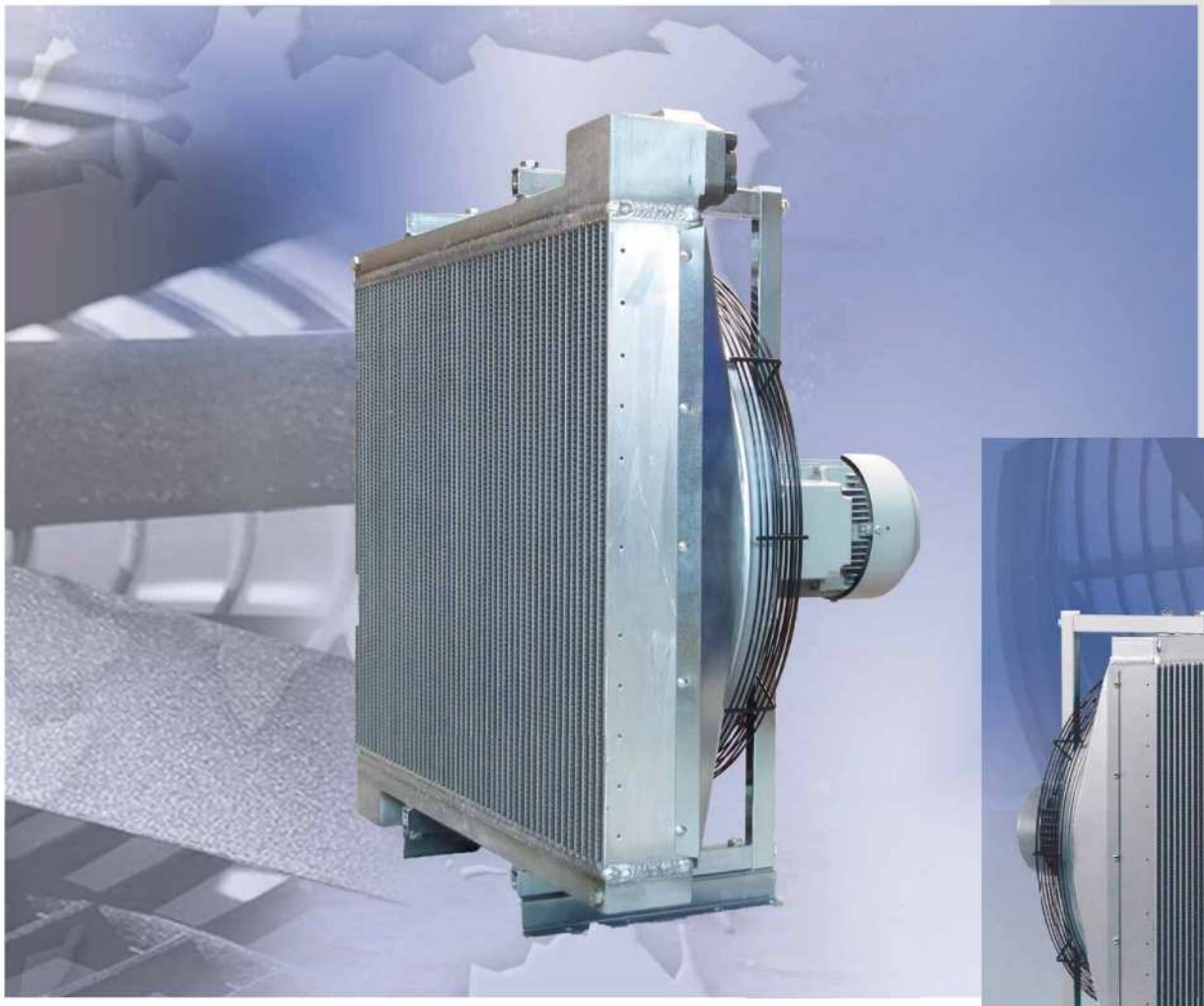
compact oil-air coolers with motor & fan

oil-air coolers



Oil / Air Cooling Units

series : Funke Okan

mdt

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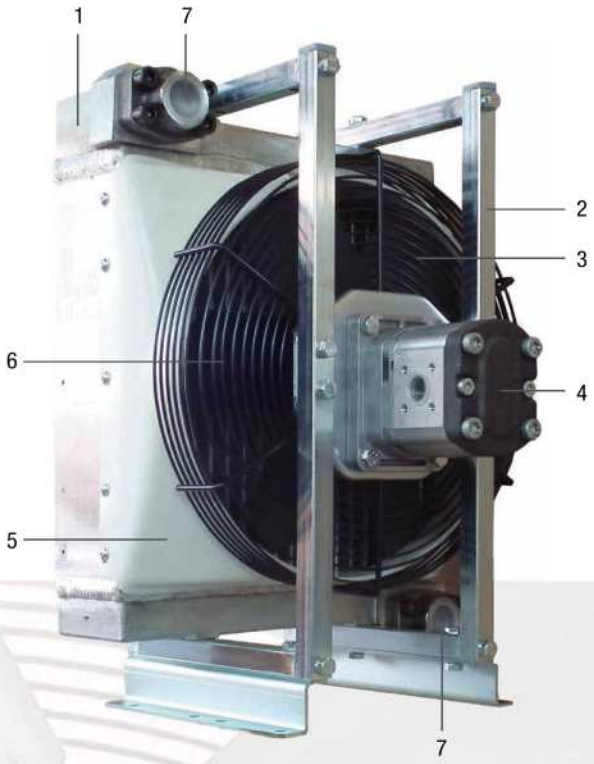
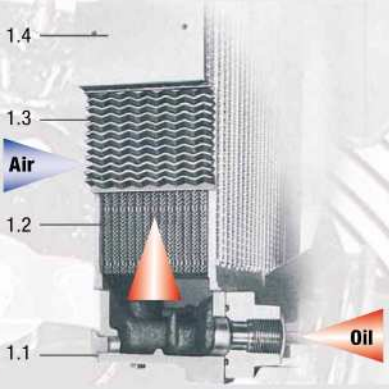
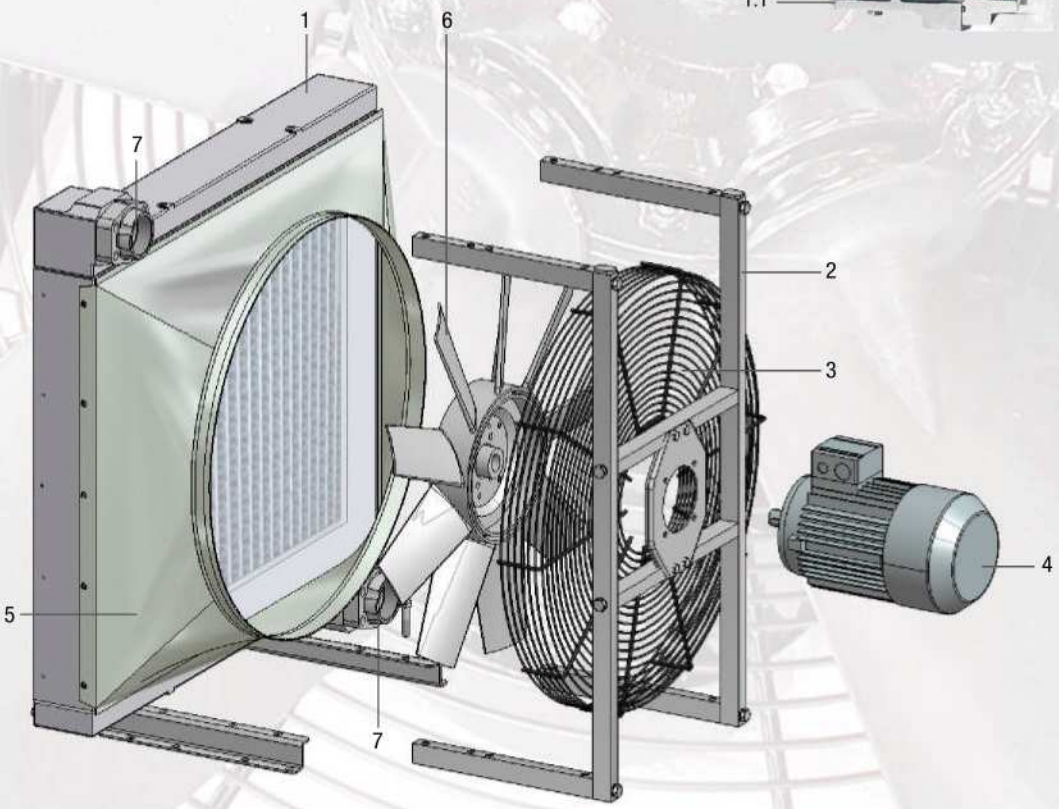
Design and function

Basic element is an aluminium cooler in bar and plate construction. The oil tubes are fitted with turbulence elements to guarantee an optimum heat transfer. Depending on the volumetric flow rate, the medium to be cooled flows through the cooler either in one pass or multiple passes and is cooled by the stream of ambient air produced by the fan. The fan is mounted behind the cooler so that the standard fan mode of operation is suction, which means that the cooling air streams from the cooler towards the motor. The fan can also be supplied in pressure mode, if so specified upon ordering. The oil and air fins, fan blades and motor power are carefully engineered and dimensioned to achieve an optimum degree of heat dissipation.



1 Cooler
1.1 Tank
1.2 Turbulence elements (oil fins)
1.3 Air fins
1.4 Side wall
2 Support brackets
3 Fan guard
4 Motor
5 Fan shroud
6 High-performance fan
7 SAE counter flange





Technical Data – Series “OKAN II”

Model with AC-motor

Model with hydraulic motor

13 sizes in frame construction for all common applications

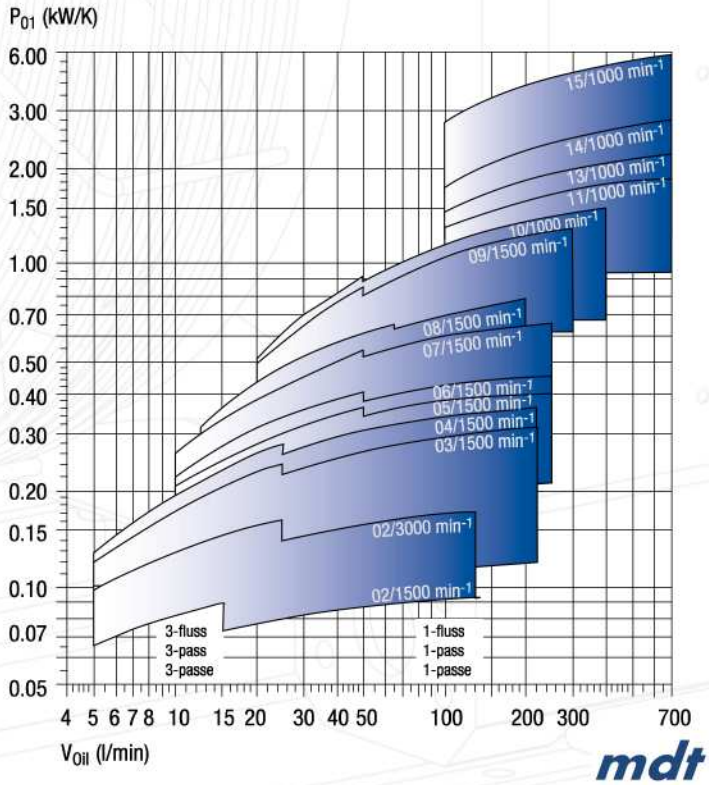
Size		02	03	04	05	06	07	08	09	10	11	13	14	15
Cooler core (m²)		0.050	0.080	0.100	0.160	0.200	0.250	0.315	0.400	0.500	0.600	0.800	1.000	1.44
Weight ≈ (kg)		16	23	25	35	38	46	51	68	78	138	177	189	300
Dimensions	B	295	350	350	455	455	550	550	660	820	820	970	970	1286
≈ (mm)	H	380	440	510	610	710	720	850	850	870	1020	1170	1360	1520
	T	425	470	470	540	540	575	575	635	635	710	810	810	800
Noise level	750 min^{-1}	-	-	-	57/45	58/46	62/50	66/54	75/63	74/62	76/64	79/67	79/67	88/76
1m / 7m (dB(A))	1000 min^{-1}	-	59/47	59/47	64/52	65/53	70/58	72/60	80/68	80/68	82/70	85/73	86/74	95/83
	1500 min^{-1}	61/49	70/58	70/58	75/63	75/63	82/70	81/69	90/78	91/79	92/80	92/80	95/83	99/87
	3000 min^{-1}	79/67	84/72	84/72	-	-	-	-	-	-	-	-	-	-

Calculation of specific heat dissipation

$$P_{01} = \frac{P_V}{t_{Oil} - t_{Al}} \text{ (kW/K)}$$

Symbols:

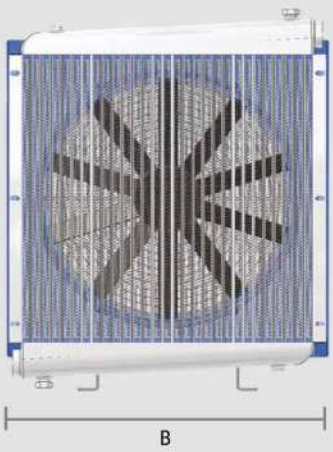
P_{01} : Specific heat dissipation (kW/K)
P_{Pl} : Power loss (kW)
t_{Oil} : Oil inlet temperature (°C)
t_{Al} : Air inlet temperature (°C)
V_{Oil} : Oil flow (l/min)



Technical data – Series “OKAN III”

AC-motor

DC-motor



The series with 65 mm core depth, especially appropriate for mobile hydraulics

- OKAN III-units are characterized by their compact design at reduced weight
- When a DC-motor is applied an installation depth of less than 400 mm can be realized!

Size		III-1	III-2	III-3	III-4
Cooler core (m²)		0.08	0.11	0.15	0.21
Weight ≈ (kg)		15	21	25	31
Dimensions	B	320	368	420	500
≈ (mm)	H	423	475	543	608
	T	400	425	425	425
Noise level	1000 min^{-1}	-	-	62/48	65/52
1m / 7m (dB(A))	1500 min^{-1}	63/51	68/54	72/58	76/63
	3000 min^{-1}	78/66	85/70	87/74	-

Tabular values apply for design with AC-motor

Calculation of specific heat dissipation

$$P_{01} = \frac{P_V}{t_{Oil} - t_{Al}} \quad (kW/K)$$

Symbols:

P_{01} : Specific heat dissipation (kW / K)
P_{Pl} : Power loss (kW)
t_{Oil} : Oil inlet temperature (°C)
t_{Al} : Air inlet temperature (°C)
V_{Oil} : Oil flow (l / min)