



# HCAE aircooler „High efficiency“

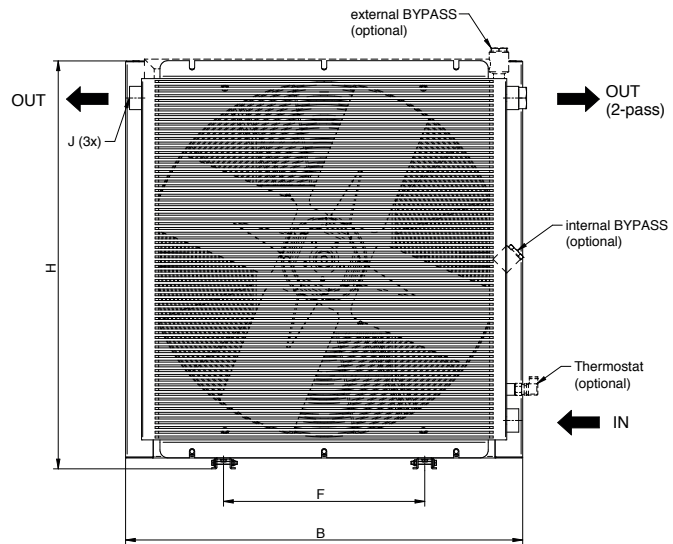
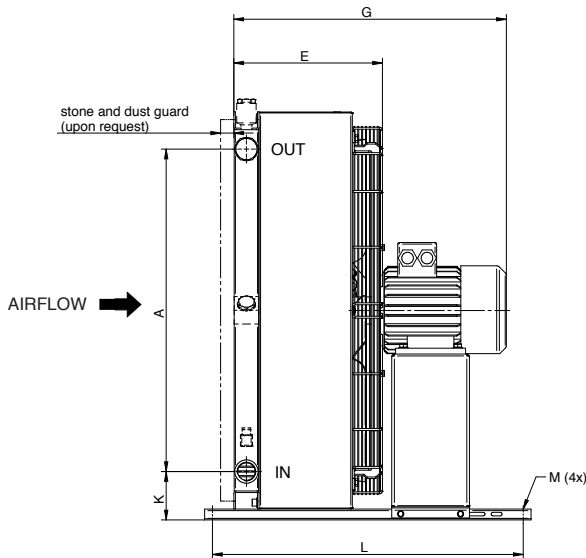
HENNLICH Cooling - Technologies GmbH

## HCAE-aircooler with AC-motor



This cooler type with alternating current motor is basically for stationary applications and has been developed for efficient cooling of hydraulic and lubrication oil and for water/glycol mixtures (at least 20 % glycol). This design enables higher cooling capacities compared to the standard range of HCA.

Material	
Cooling element	Aluminium (copper or stainless steel upon request)
Air fan	Glass fibre reinforced plastic (PAG/PPG)
Sheet metall parts	C-steel powder coated
Protection grid	C-steel galvanised (Cr-VI-free)
Main parts	black color RAL 9005 (excl. air fan, grid and motor)



HENNLICH Cooling-Technologies GmbH		Noise level LpA dB (A) 1m*	Pole-Power [kW]	Mass [kg]	B	F	H	J	L	A	E	G	Mø
HCAE sizes													
HCAE	C33.26-2 1-phasig**	76	2-0.14	11	340	300	345	G1"	130	160	189	200	9
HCAE	C33.26-2 3-phasig**	77	2-0,18	12	340	300	345	G1"	130	160	189	200	9
HCAE	C33.26-4 3-phasig	63	4-0.25	16	367	203	396	G1"	510	159	225	440	13
HCAE	C33.26-2 3-phasig	78	2-0.55	18	367	203	396	G1"	510	159	225	440	13
HCAE	C40.33-4 3-phasig	68	4-0.25	21	442	203	471	G1"	510	234	245	460	13
HCAE	C40.33-2 3-phasig	81	2-1.10	27	442	203	471	G1"	510	234	245	490	13
HCAE	C47.40-6 3-phasig	62	6-0.18	25	498	203	527	G1"	510	225	265	480	13
HCAE	C47.40-4 3-phasig	71	4-0.75	29	498	203	527	G1"	510	225	265	500	13
HCAE	C47.40-2 3-phasig	81	2-1.10	31	498	203	527	G1"	510	225	265	510	13
HCAE	C55.48-6 3-phasig	65	6-0.18	37	582	356	611	G1"	510	308	280	490	13
HCAE	C55.48-4 3-phasig	74	4-0.75	40	582	356	611	G1"	510	308	280	530	13
HCAE	C64.59-6 3-phasig	72	6-0.55	53	694	356	723	G1¼"	510	415	315	540	13
HCAE	C64.59-4 3-phasig	82	4-2.20	59	694	356	723	G1¼"	510	415	315	660	13
HCAE	C64.76-6 3-phasig	73	6-0.55	72	694	356	867	G1¼"	510	593	340	570	13
HCAE	C64.76-4 3-phasig	83	4-2.20	75	694	356	867	G1¼"	510	593	340	680	13
HCAE	C81.76-8 3-phasig	73	8-0.75	78	870	508	900	G1¼"	510	585	380	730	13
HCAE	C81.76-6 3-phasig	78	6-1.50	82	870	508	900	G1¼"	510	585	380	730	13
HCAE	C81.76-4 3-phasig	84	4-2.20	83	870	508	900	G1¼"	510	585	380	730	13
HCAE	D94.93-8 3-phasig	78	8-1.50	146	1025	518	1053	G2"	800	830	410	780	14



# HCAE aircooler „High efficiency“

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## HCAE-aircooler with AC-motor

HENNLICH Cooling-Technologies GmbH		Noise level LpA dB (A) 1m*	Power [kW]	Mass [kg]	B	F	H	J	L	A	E	G	Mø
HCAE sizes													
HCAE	D94.93-6 3-phasig	85	6-2.20	157	1025	518	1053	G2"	800	830	410	780	14
HCAE	C113.109-8 3-phasig	84	8-2.20	172	1190	600	1220	G2"	800	990	415	830	14
HCAE	C113.109-6 3-phasig	90	6-5.50	182	1190	600	1220	G2"	800	990	415	830	14
HCAE	E112.112-4 3-phasig	92	4-7.50	250	1190	600	1220	SAE2"	800	982	460	880	14

\* Dimension „G“ variable acc. motordesign

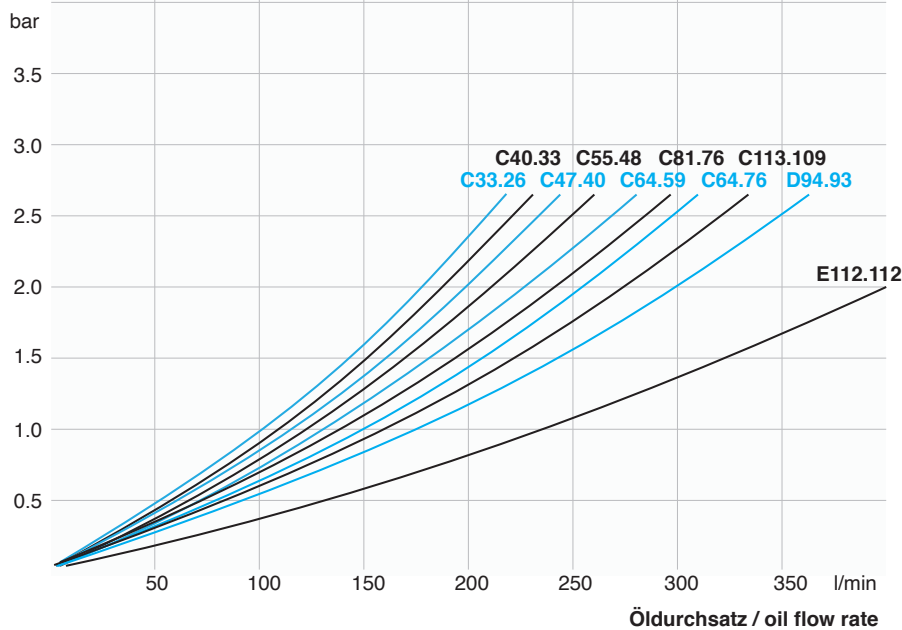
\*\* 1- and 3-phase motor as external rotor

Other cooler types / dimensions upon request

Noise level tolerance +/- 3 dB(A)

### TYP HCAE Druckverlust / pressure drop

30 cSt 1-pass



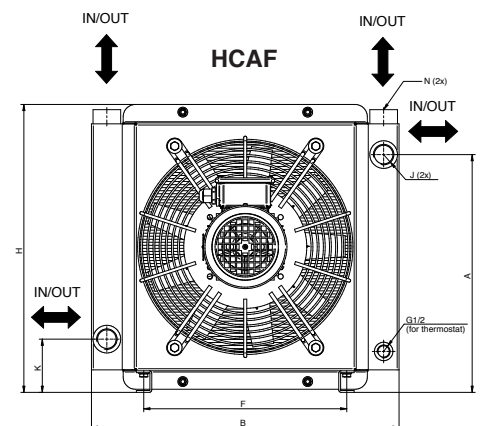
### Special HCAF:

The Flex-Design => with in and outlets in all directions => for flexible connection

### General motor data

3-phase motor
IP55, Insulation class F temperature class B
* 1- and 3-phase motor as external rotor
IP44, Insulation class B temperature class B

Max. oil temperature [Tmax]
120 °C
Max. oil pressure
26 bar (for sizes CXX.XX) (statically, standard conditions)



### Selection of cooler (acc. following graphs):

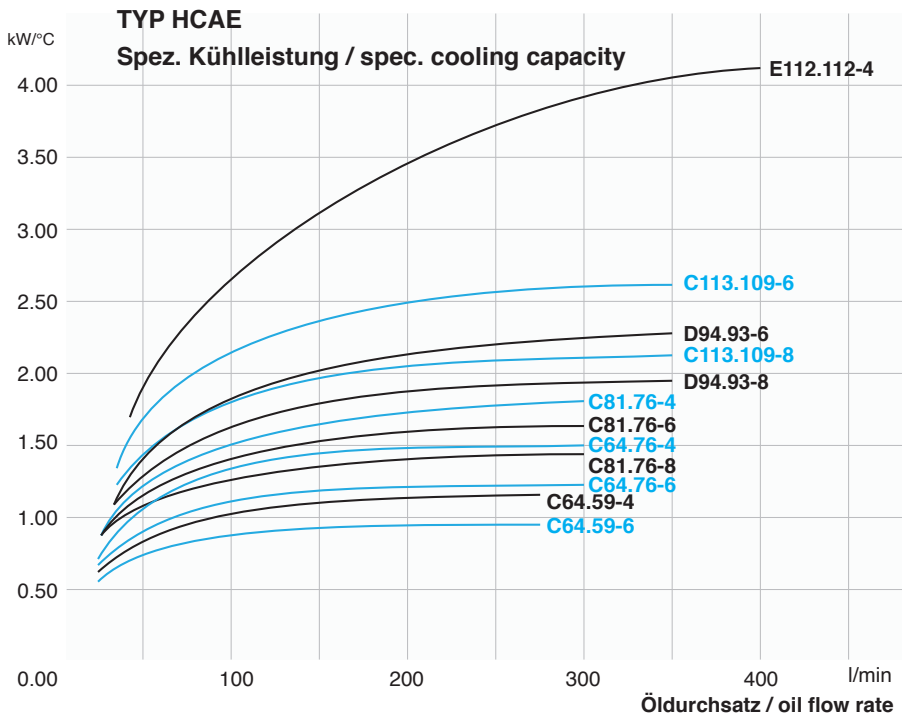
The pressure drop can be determined for each type by using the oil flow rate based on a viscosity of 30cst. For other viscosities please ask our application engineers.

The specific cooling capacity (y-axis) can be determined with the oil flow rate (x-axis) and the intersection of the cooler type. In order to get the actual cooling capacity it has to be multiplied with the temperature-difference of the max. oil temperature (= cooler inlet) and the max. air temperature suctioned to the cooler.



# HCAE aircooler „High efficiency“

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**Example:**

Max. oil temperature: 70 °C  
Max. air temperature: 30 °C  
( $\Delta t = 40$  °C temperature difference)  
Oil flow rate: 300 l/min

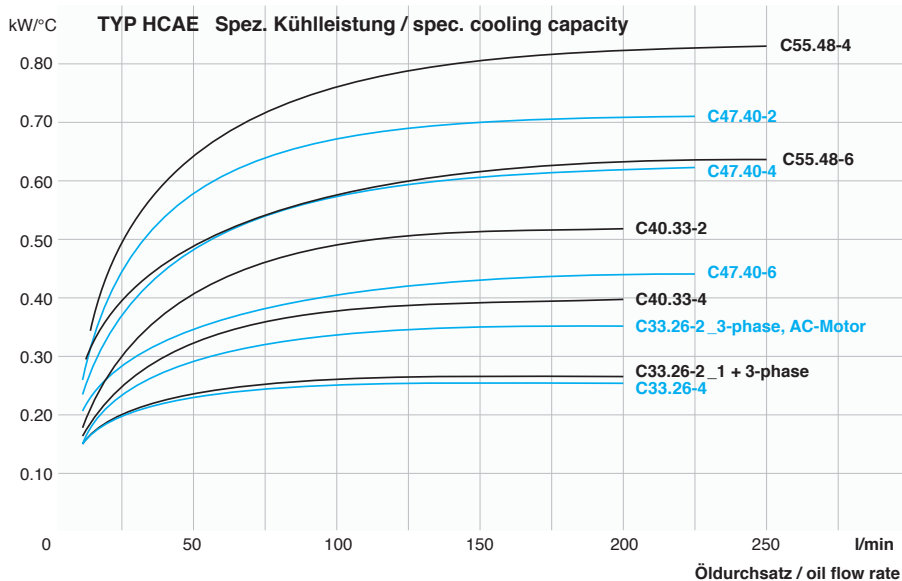
For cooler type C113.109-6 with spec. cooling capacity of 2,6 kW / °C (acc. chart) multiplied by  $\Delta t = 40$  °C results a cooling capacity of 104 kW.

To calculate thermal dissipation loss or cooling power we provide support in any case!

The characteristic curves are based on data of typical hydraulic oil at 60 °C and can differ due to other physical figures.

Please note that dust, dirt or circulating air can cause a loss of cooling capacity. Therefore consider some safety or contact:

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The Motor type plate has to be noted as well.

For higher temperatures up to 250 °C compact solutions are going to be provided.

Higher pressure rates upon request.

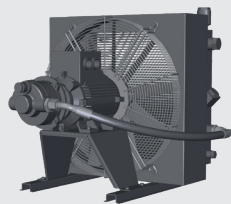
If water/glycol is used, the cooling characteristics are better.

Please send us the mixture and the technical data or fill in and send us the questionnaire on our website: [www.hennlich.at](http://www.hennlich.at)

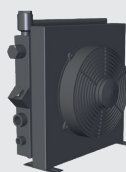
**Weitere Typen:**



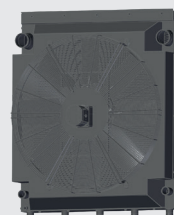
HCH with hydraulic motor



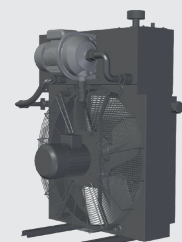
HCP with AC-Motor + pump



HCD with 12/24VDC



HCC for diesel engines



HCS cooling systems



# HCAE aircooler „High efficiency“

HENNLICH Cooling - Technologies GmbH

## Key code

## HCAE - C33.26 – 4D - 100 - TSS - Z

Cooler type	
HCA	Air cooler with AC-motor
HCAE	Air cooler as „High Efficiency“
HCAF	Flex-design with AC-motor
HCAX	Aircooler with ATEX-design
HCAM	Aircooler with marine-design
Cooler size	
C33.26 to XXXX	acc. table
Pole quantity	
2	2-pole (3000 1/min)
4	4-pole (1500 1/min)
6	6-pole (1000 1/min)
8	8-pole (750 1/min)
Z	special
Motor voltage	
A	230/400V, 50 Hz / 3-phase
B	265/460V, 60 Hz / 3-phase
C	230V, 50/60 Hz / 1-phase
D	230/400V, 50 Hz; 265/460V, 60 Hz
E	500V, 50 Hz / 3-phase
F	400/690 V, 50 Hz / 3-phase
G	special voltage
Z	special motor
X	without motor
Bypass-accessories	
1XX	1-pass excl. bypass valve)
2XX	standard 2-pass
3XX	standard 3-pass
5XX	2-pass with accesories
X2X	bypass valve (2bar)
X5X	bypass valve (5bar)
XX4	thermostat 40°
XX5	thermostat 50°
XX6	thermostat 60°
XX7	thermostat 70°
XX8	thermostat 80°
XX9	thermostat 90°
X25	with thermal-bypass (2 bar, 50 °C)
Internal codes	
TSS	internal codes
Internal codes	
Z	Options for stone and dust guard, painting, filter, accessories, ...

