

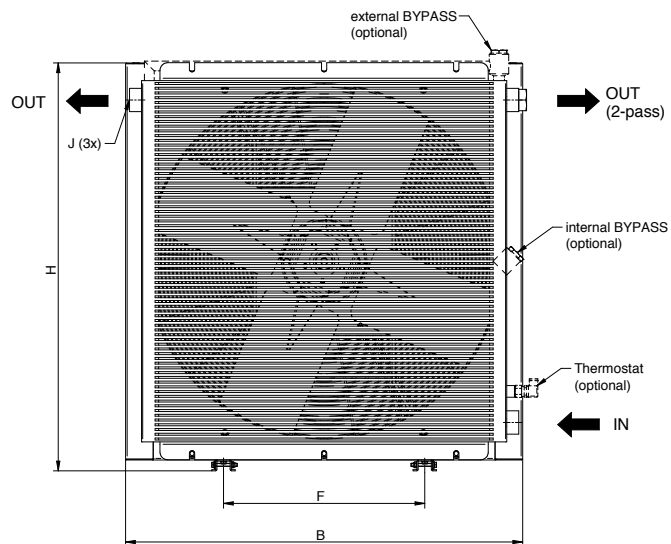
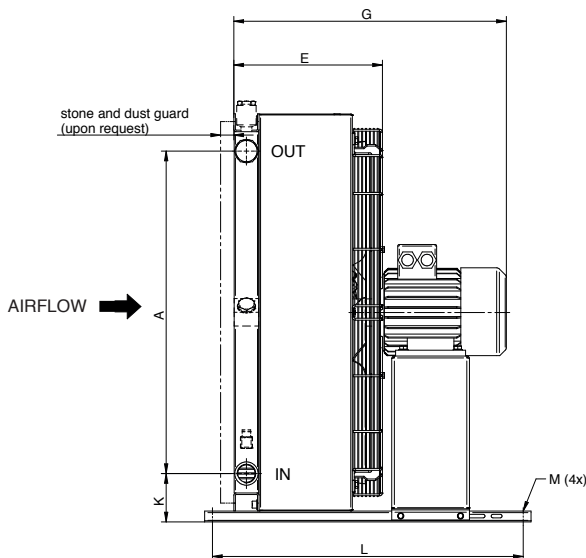


## HCA-aircooler with AC-motor



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). Designs available incl. various accessories and as 1-pass, 2-pass or 3-pass.

Material	
<b>Cooling element</b>	Aluminium (copper or stainless steel upon request)
<b>Air fan</b>	Glass fibre reinforced plastic (PAG/PPG)
<b>Sheet metall parts</b>	C-steel powder coated
<b>Protection grid</b>	C-steel galvanised (Cr-VI-free)
<b>Main parts</b>	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
HCA standard sizes													
HCA	B21.21-2 1-phase**	61	2-0.07	5	235	230	253	G <sup>3</sup> / <sub>4</sub> "	70	135	140	145	9
HCA	B21.21-2 3-phase**	62	2-0.07	6	235	230	253	G <sup>3</sup> / <sub>4</sub> "	70	135	140	145	9
HCA	C27.21-2 1-phase**	62	2-0.07	6	320	230	253	G1"	70	-	160	165	9
HCA	C27.21-2 3-phase**	64	2-0.07	7	320	230	253	G1"	70	-	160	165	9
HCA	C33.26-2 1-phase**	76	2-0.14	10	340	300	345	G1"	130	160	189	200	9
HCA	C33.26-2 3-phase**	77	2-0.18	11	340	300	345	G1"	130	160	189	200	9
HCA	C33.26-4 3-phase	63	4-0.25	15	367	203	396	G1"	510	159	225	440	13
HCA	C33.26-2 3-phase	78	2-0.55	17	367	203	396	G1"	510	159	225	440	13
HCA	C40.33-4 3-phase	68	4-0.25	20	442	203	471	G1"	510	234	245	460	13
HCA	C40.33-2 3-phase	81	2-1.10	27	442	203	471	G1"	510	234	245	490	13
HCA	C47.40-6 3-phase	62	6-0.18	23	498	203	527	G1"	510	225	265	480	13
HCA	C47.40-4 3-phase	70	4-0.37	24	498	203	527	G1"	510	225	265	480	13
HCA	C47.40-2 3-phase	81	2-1.10	30	498	203	527	G1"	510	225	265	510	13
HCA	C55.48-6 3-phase	65	6-0.18	35	582	356	611	G1"	510	308	280	490	13
HCA	C55.48-4 3-phase	74	4-0.75	39	582	356	611	G1"	510	308	280	520	13
HCA	C64.59-6 3-phase	72	6-0.55	50	694	356	723	G1 <sup>1</sup> / <sub>4</sub> "	510	415	315	540	13
HCA	C64.59-4 3-phase	82	4-2.20	57	694	356	723	G1 <sup>1</sup> / <sub>4</sub> "	510	415	315	660*	13
HCA	C64.76-6 3-phase	73	6-0.55	68	694	356	867	G1 <sup>1</sup> / <sub>4</sub> "	510	593	340	570	13
HCA	C64.76-4 3-phase	83	4-2.20	69	694	356	867	G1 <sup>1</sup> / <sub>4</sub> "	510	593	340	680*	13



## HCA-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
HCA standard sizes														
HCA	D81.76-8	3-phase	73	8-0.75	85	870	508	900	G2"	510	585	380	730*	13
HCA	D81.76-6	3-phase	78	6-1.50	86	870	508	900	G2"	510	585	380	730*	13
HCA	D81.76-4	3-phase	84	4-2.20	87	870	508	900	G2"	510	585	380	730*	13
HCA	D94.93-8	3-phase	78	8-1.50	140	1025	518	1053	G2"	800	830	410	780*	14
HCA	D94.93-6	3-phase	85	6-2.20	150	1025	518	1053	G2"	800	830	410	780*	14
HCA	C113.109-8	3-phase	84	8-2.20	165	1190	600	1220	G2"	800	990	415	830*	14
HCA	C113.109-6	3-phase	90	6-5.50	175	1190	600	1220	G2"	800	990	415	830*	14
HCA	E112.112-8	3-phase	82	8-2.20	225	1190	600	1220	SAE2"	800	982	460	880*	14
HCA	E112.112-6	3-phase	89	6-5.50	245	1190	600	1220	SAE2"	800	982	460	880*	14
HCA	F112.112-4	3-phase	92	4-7.50	260	1190	600	1220	SAE2"	800	982	460	910	14

\* Dimension „G“ variable acc. motordesign

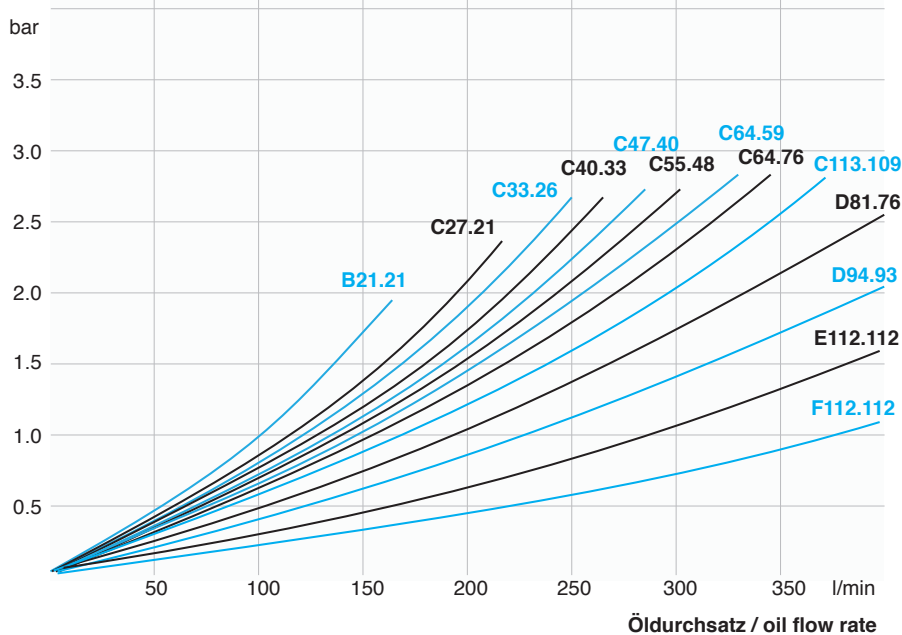
\*\* 1- and 3-phase motor as external rotor

Other cooler types / dimensions upon request

Noise level tolerance +/- 3 dB(A)

### TYP HCA Druckverlust / pressure drop

30 cSt 1-pass



### Special HCAF:

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

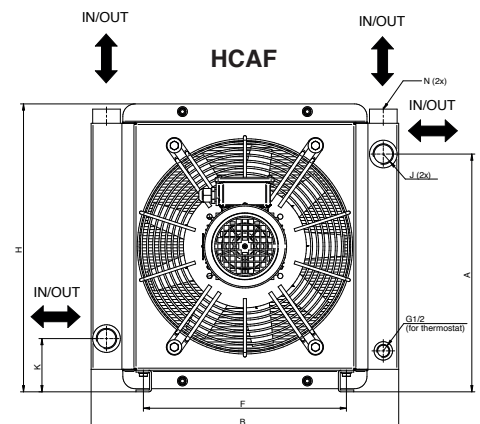
### New: High Efficiency Range HCAE:

=> significant better cooling efficiency!

### 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):

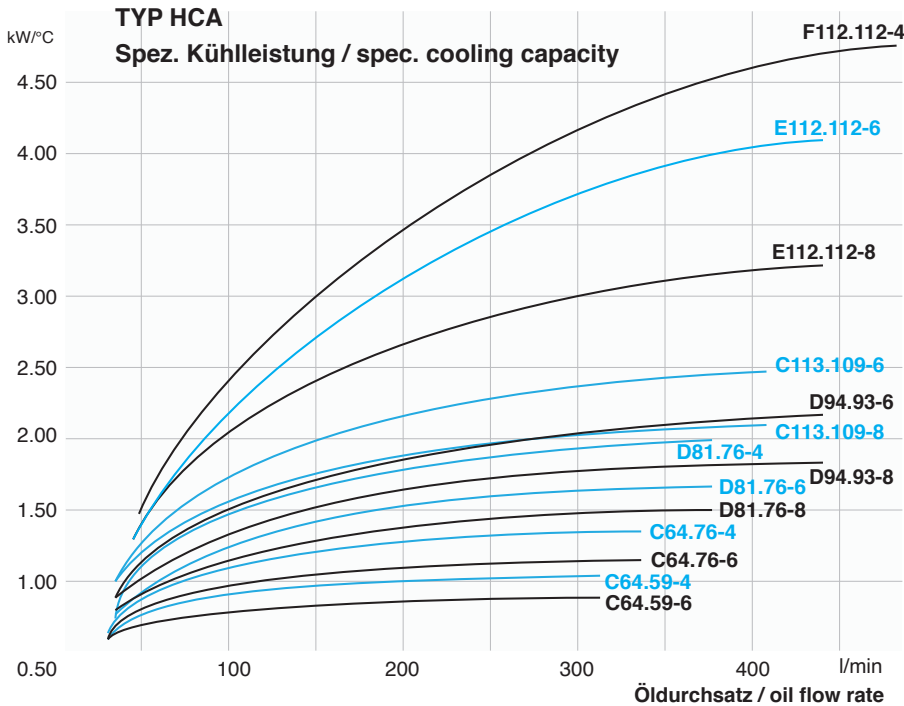
The pressure drop can be determined for each type by using the oil flow rate based on a viscosity of 30cst. For other viscosities please ask our application engineers.

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.



# HCA aircooler

HENNLICH Cooling - Technologies GmbH



**Example:**

Max. oil temperature: 70 °C  
Max. air temperature: 30 °C  
( $\Delta t = 40$  °C temperature difference)

Oil flow rate: 300 l/min

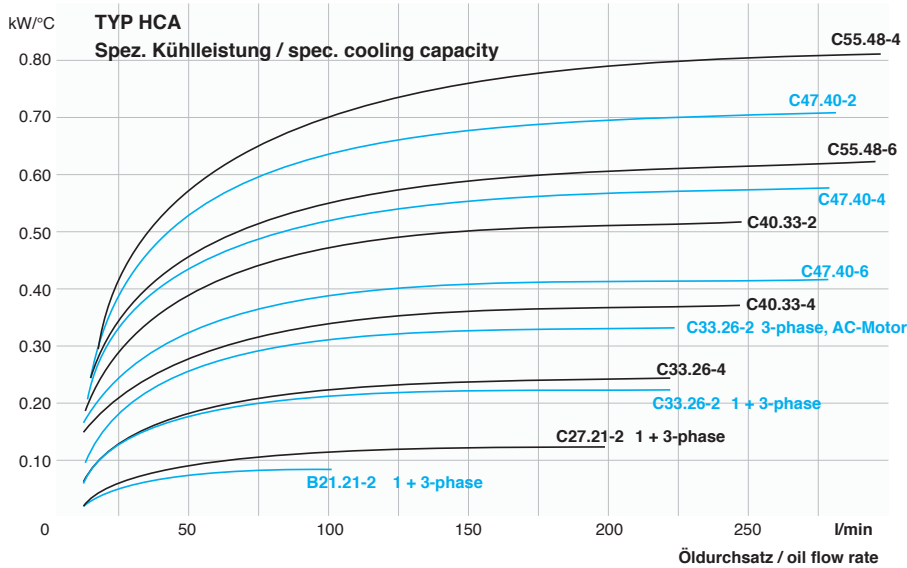
For cooler type E112.112-8 with spec. cooling capacity of 3,0 kW / °C (acc. chart) multiplied by  $\Delta t = 40$  °C results a cooling capacity of 120 kW.

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:

**HENNLICH Cooling - Technologies**



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.

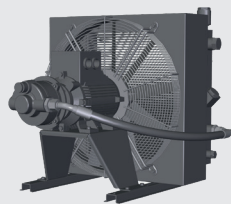
If water/glycol is used, the cooling characteristics are better.

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)

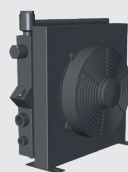
**Weitere Typen:**



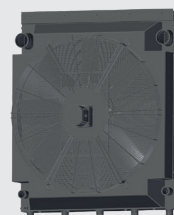
HCH with hydraulic motor



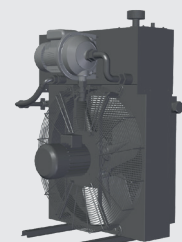
HCP with AC-Motor + pump



HCD with 12/24VDC



HCC for diesel engines



HCS cooling systems

**Key code****HCA - C33.26 – 4D - 100 - TSS - Z**

<b>Cooler type</b>	
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
<b>Cooler size</b>	
B21.21 to XXXX	acc. table
<b>Pole quantity</b>	
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
<b>Motor voltage</b>	
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
<b>Bypass-accessories</b>	
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 internal thermal-bypass (2 bar, 50 °C)
<b>Internal codes</b>	
TSS	internal codes
<b>Internal codes</b>	
Z	Options for stone and dust guard, painting, filter, accessories, ...

