

苏州贺普恩流体设备有限公司

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EHP HOPEN

风冷却器
Air Oil Cooler









苏州贺普恩流体设备有限公司
Suzhou Hopen Fluid Equipment Co.,Ltd





公司介绍 >

贺普恩是全球知名的换热器及液压附件工业品服务集团，更是世界级工业产品一站式服务的杰出供应商。中国工厂于 2013 年成立，采用中外合作模式开展生产经营，自创立之初便聚焦市场需求，始终致力于为客户提供优质产品与全方位服务。凭借多年行业深耕，贺普恩能精准把握市场导向，为客户的购买决策提供专业指引。

经过多年市场实践验证，贺普恩的标准油风冷却器已具备适配各类工况的成熟性能，可为不同行业客户提供稳定可靠的散热解决方案。

核心业务与研发布局

十多年来，贺普恩专注于换热器的研究、开发、设计制造及销售服务。目前已在中国、澳大利亚、德国、捷克设立产品研发及销售中心，精准覆盖当地及周边市场需求，构建起全球化的技术支撑与市场响应网络。

服务网络与应用场景

依托全球销售点、授权商及代理商组成的完善服务网络，贺普恩为全球客户提供全方位服务与支持。产品应用场景广泛，涵盖楼宇换热、冶金设备、矿山机械、机床设备、能源设备、工程机械、船舶设备等多个行业，可充分满足各类特殊工况下的应用需求。

核心产品系列（油风冷却器相关）/ 目录　　页码

1 交流电机驱动型散热器（HAC）.....04

2 紧凑型交流电机驱动型散热器（HSAC）.....11

3 油泵电机系列散热器（HPC）.....17

4 直流电机驱动型冷却器（HDC）.....23

5 液压马达驱动型冷却器（HHC）.....29

6 泵＆电机组（EPM）.....36

7 安装EPM前注意事项.....40

8 配件选择.....41

9 安装说明.....42

COMPANY INTRODUCTION

Hopen is a world-renowned industrial service group specializing in heat exchangers and hydraulic accessories, as well as an outstanding one-stop service supplier of world-class industrial products. Its Chinese factory was established in 2013 and adopts a Sino-foreign cooperative model for production and operation. Since its founding, it has focused on market demands and has always been committed to providing customers with high-quality products and comprehensive services. With years of in-depth experience in the industry, Hopen can accurately grasp market trends and provide professional guidance for customers' purchasing decisions.

Verified through years of market practice, Hopen's standard Oil-Air coolers have mature performance adaptable to various working conditions and can provide stable and reliable heat dissipation solutions for customers in different industries.

Core Business and R&D Layout

Over the past decade, Hopen has focused on the research, development, design, manufacturing, and sales services of heat exchangers. Currently, it has established product R&D and sales centers in China, Australia, Germany, and the Czech Republic, which accurately meet the needs of local and surrounding markets and build a global network for technical support and market response.

Service Network and Application Scenarios

Relying on a comprehensive service network composed of global sales points, authorized dealers, and agents, Hopen provides all-round services and support to customers worldwide. Its products have a wide range of application scenarios, covering multiple industries such as building heat exchange, metallurgical equipment, mining machinery, machine tool equipment, energy equipment, construction machinery, and marine equipment, which can fully meet the application needs under various special working conditions.

Core Product Series (Related to Oil-Air Coolers)/Table of contents　　page

1 AC Driven Fan Cooler (HAC).....04

2 Simplified AC Driven Fan Cooler (HSAC).....11

3 Fan Cooler with Pump (HPC).....17

4 DC Driven Fan Cooler (HDC).....23

5 Hydraulic motor Driven Fan Cooler (HHC).....29

6 Pump & Motor Unit (EPM).....36

7 Consider this before installation for EPM.....40

8 Choose the Right Accessories.....41

9 Installation instructions.....42

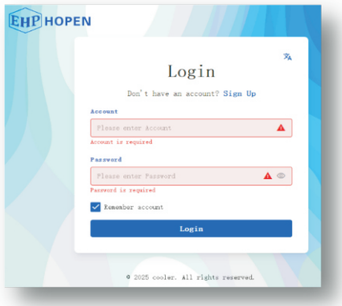
冷却器产品在线选型

Online Selection of the Right Cooler Type.

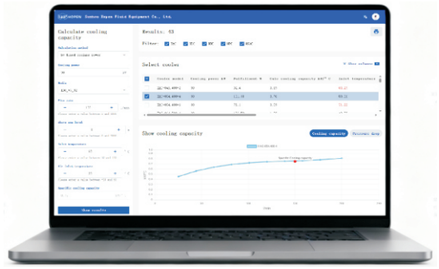
产品选型网址 website：

https://support.hopensz.com

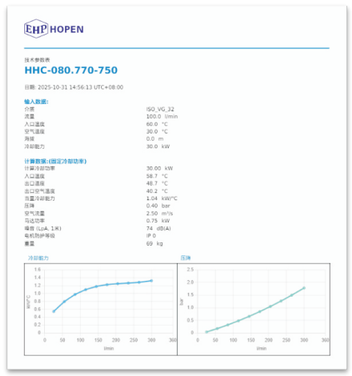
登录和注册 login & Sign up



选型页面 Selection page



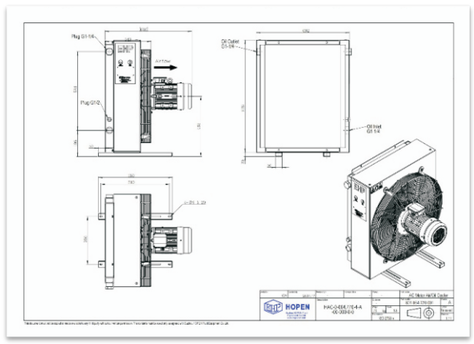
性能报告 Performance Report



*3D模型联系我们

* Contact us for 3D models

尺寸图纸 Dimensions Drawing



冷却器的选型 >

符号和单位

Pv	=	冷却功率 [kW]
P_1	=	当量冷却能力 [kW/°C]
ρ_{oil}	=	油密度 [0.85 kg/L]
C_{oil}	=	油比热[2.1kJ/kg°C]
T_{oil}	=	最高油温 [°C]
T_{air}	=	空气温度 [°C]
V	=	系统油液容积 [L]
ΔT	=	系统温升 [°C]
t	=	工作时长 [min]
η	=	安全系数，一般取 1.1

选型方法

■ 已知冷却功率

冷却功率	=	16 [kW]
最高油温	=	70 [°C]
空气温度	=	30 [°C]

$$P_1 = \frac{Pv}{T_{oil}-T_{air}} \cdot \eta$$
$$= \frac{16}{70-30} \cdot 1.1$$
$$= 0.44[kW/°C]$$

* 根据油流量来选择冷却器的当量冷却功率大于 0.44 [kW/°C]

■ 估算系统发热功率

一般液压系统取系统总功率的1/3 作为系统的发热功率，系统总功率指系统驱动发动机或电机功率。

发动机/电机功率	=	30 [kW]
冷却功率	=	30/3=10 [kW]
最高油温	=	70 [°C]
空气温度	=	30 [°C]

$$P_1 = \frac{Pv}{T_{oil}-T_{air}} \cdot \eta$$
$$= \frac{10}{70-30} \cdot 1.1$$
$$= 0.28[kW/°C]$$

* 根据油流量来选择冷却器的当量冷却功率大于 0.28 [kW/°C]

■ 测量系统热功率

系统油液容积	=	150 [L]
最高油温	=	70 [°C]
空气温度	=	30 [°C]

例：在没有冷却的情况下，系统工作油温在20分钟内从20°C增加到50°C。

ΔT = 50-20 = 30°C

t = 20 min = 1200 s

发热功率[kW]:

$$Pv = \frac{\rho_{oil} x C_{oil} x V x \Delta T}{t}$$
$$= \frac{0.85x2.1x150x30}{1200}$$
$$= 6.70\,kW$$

当量冷却能力[kW/°C]:

$$P_1 = \frac{Pv}{T_{oil}-T_{air}} \cdot \eta$$
$$= \frac{6.70}{70-30} \cdot 1.1$$
$$= 0.18[kW/°C]$$

* 根据油流量来选择冷却器的当量冷却功率大于 0.18 [kW/°C]

单位换算

1 kcal/sec.	=	4.187 kW
1 hp	=	0.7358 kW
1 BTU/sec.	=	1.053 kW
1 cfm	=	4.72 x 10^-4 m3/sec.

Cooler selection >

Symbols and unit

Pv	=	Cooling power [kW]
P_1	=	Cooling capacity [kW/°C]
ρ_{oil}	=	Oil density [0.85 kg/L]
C_{oil}	=	Specific heat capacity [2.1kJ/kg°C]
T_{oil}	=	Max. oil temperature [°C]
T_{air}	=	Air temperature [°C]
V	=	Oil volume in the system [L]
ΔT	=	System temperature rise [°C]
t	=	Working times [min]
η	=	safety factor，Generally take 1.1

Selection method

■ If the cooling power is known

Cooling power	=	16 [kW]
Max. oil temperature	=	70 [°C]
Air temperature	=	30 [°C]

$$P_1 = \frac{Pv}{T_{oil} - T_{air}} \cdot \eta$$
$$= \frac{16}{70-30} \cdot 1.1$$
$$= 0.44$$

* According to oil flow to select the cooler of cooling capacity high than 0.44 0.44 [kW/°C]

■ Estimation of system heat generation power

Normally, the heat emission to the oil will be 1/3 of the engine/motor power (diesel engine or electric motor).

Engine/motor power	=	30 [kW]
Cooling power	=	30/3=10 [kW]
Max. oil temperature	=	70 [°C]
Air temperature	=	30 [°C]

$$P_1 = \frac{Pv}{T_{oil} - T_{air}} \cdot \eta$$
$$= \frac{10}{70-30} \cdot 1.1$$
$$= 0.28[kW/°C]$$

* According to oil flow to select the cooler of cooling capacity high than 0.28[kW/°C]

■ Measurement of system Heating power

Oil volume in the system	=	150 [L]
Max. oil temperature	=	70 [°C]
Air temperature	=	30 [°C]

Sample: Working without cooling of the system results in an increase of the oil temperature from 20 °C to 50 °C in 20 min.

ΔT = 50-20 = 30°C t = 20 min = 1200 s

Heating power[kW]:

$$Pv = \frac{\rho_{oil} x C_{oil} x V x \Delta T}{t}$$
$$= \frac{0.85x2.1x150x30}{1200}$$
$$= 6.70\,kW$$

Cooling capacity[kW/°C]:

$$P_1 = \frac{Pv}{T_{oil} - T_{air}} \cdot \eta$$
$$= \frac{6.70}{70-30} \cdot 1.1$$
$$= 0.18[kW/°C]$$

* According to oil flow to select the cooler of cooling capacity high than 0.18[kW/°C]

VALUES

1 kcal/sec.	=	4.187 kW
1 hp	=	0.7358 kW
1 BTU/sec.	=	1.053 kW
1 cfm	=	4.72 x 10^-4 m3/sec.

HAC

交流电机驱动型散热器

HAC AC Driven Fan Cooler

1



产品特性

HAC散热器由交流电机驱动，分为单相和三相交流电机2种，主要应用于工业齿轮箱冷却、液压系统、海洋钻井平台、风力发电、煤矿等领域。铝制散热器在ETD温差40°C时的最大散热功率达到300kW。

散热器动态最高工作压力为14Bar，静态最大压力为21Bar。

Products Features

HAC cooler drive by ac motor, it is divided into two categories of single-phase and three -phase AC motor and mainly used in the cooling of industrial gear box, hydraulic system, marine drilling platform, wind power generation, coal mine etc. Aluminum cooler 's maximum cooling capacity is 300kW at ETD 40℃。

Cooler's maximum dynamic operating pressure is 14 bar and maximum static operating pressure is 21 bar.

产品外形 Product outline



027.200 / 033.260/
040.330/046.400/
054.480/064.590/
064.770/080.770/
080.771



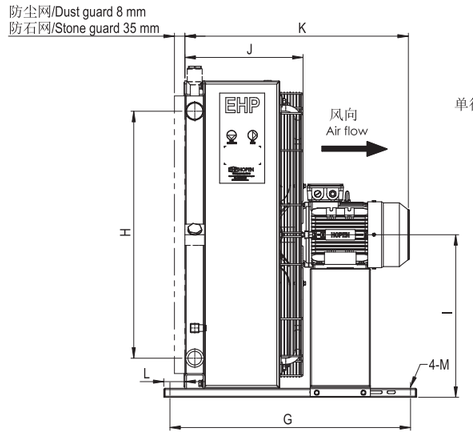
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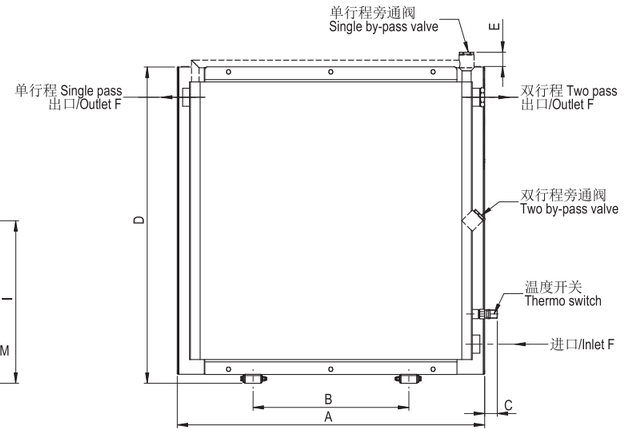
整机参数 Parameter

型号 (Type)	噪音 (LpA dB(A) 1m*)	电机极数/ 电机功率 (Pole/Capacity) kW	重量(kg) (approx.Weight)
HAC-0-027.200-2	62	2-0.18	14
HAC-0-033.260-4	62	4-0.25	21
HAC-0-033.260-2	79	2-0.55	21
HAC-0-040.330-4	67	4-0.25	26
HAC-0-040.330-2	82	2-1.10	29
HAC-0-046.400-6	60	6-0.18	29
HAC-0-046.400-4	70	4-0.37	29
HAC-0-046.400-2	86	2-1.10	33
HAC-0-054.480-6	64	6-0.18	36
HAC-0-054.480-4	76	4-0.75	42
HAC-0-064.590-6	74	6-0.55	51
HAC-0-064.590-4	84	4-2.20	65
HAC-0-064.770-6	76	6-0.55	59
HAC-0-064.770-4	85	4-2.20	73
HAC-0-080.770-8	81	8-0.55	77
HAC-0-080.770-6	73	6-1.50	86
HAC-0-080.770-4	84	4-3.00	86
HAC-0-080.771-8	74	8-0.55	86
HAC-0-080.771-6	82	6-1.50	95
HAC-0-080.771-4	85	4-3.00	95
HAC-0-094.920-8	79	8-1.10	127
HAC-0-094.920-6	86	6-2.20	137
HAC-0-094.921-8	80	8-1.10	136
HAC-0-094.921-6	87	6-2.20	146
HAC-0-113.1090-8	84	8-2.20	190
HAC-0-113.1090-6	90	6-5.50	195
HAC-0-113.1091-8	85	8-2.20	206
HAC-0-113.1091-6	91	6-5.50	212
HAC-0-113.1093-8	80	8-2.20	233
HAC-0-113.1093-6	88	6-5.50	239
HAC-0-134.1253-8	85	8-4.00	350
HAC-0-134.1253-6	92	6-7.50	365
HAC-0-150.1492-8	86	8-4.00	390
HAC-0-150.1492-6	92	6-11.00	405

噪音公差±3 db
Noise level tolerance ±3 db

安装尺寸 Installation dimensions



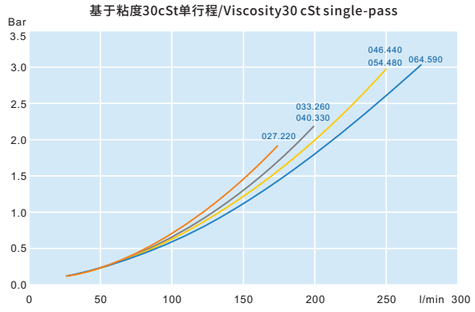


型号 Type	A	B	C	D	E	F	G	H	I	J	K	L	ΦM
HAC-0-027.200-2	270	134	60	300	26	G1	410	/	165	194	381	55	9x20
HAC-0-033.260-4	365	203	64	395	42	G1	510	160	213	225	438	50	9x20
HAC-0-033.260-2	365	203	64	395	42	G1	510	160	213	225	438	80	9x20
HAC-0-040.330-4	440	203	62	470	41	G1	510	230	250	249	462	50	9x20
HAC-0-040.330-2	440	203	62	470	41	G1	510	230	250	249	501	50	9x20
HAC-0-046.400-6	496	203	66	526	46	G1	510	230	278	272	487	50	9x20
HAC-0-046.400-4	496	203	66	526	46	G1	510	230	278	272	487	50	9x20
HAC-0-046.400-2	496	203	66	526	46	G1	510	230	278	272	522	50	9x20
HAC-0-054.480-6	580	355	63	610	44	G1	510	305	320	287	498	50	9x20
HAC-0-054.480-4	580	355	63	610	44	G1	510	305	320	287	536	50	9x20
HAC-0-064.590-6	692	356	53	722	42	G1¼	510	406	376	318	560	50	9x20
HAC-0-064.590-4	692	356	53	722	42	G1¼	510	406	376	318	621	50	9x20
HAC-0-064.770-6	692	356	53	866	59	G1¼	510	584	448	343	585	50	9x20
HAC-0-064.770-4	692	356	53	866	59	G1¼	510	584	448	343	646	50	9x20
HAC-0-080.770-8	875	508	45	905	40	G1¼	510	584	468	368	665	50	9x20
HAC-0-080.770-6	875	508	45	905	40	G1¼	510	584	468	368	671	50	9x20
HAC-0-080.770-4	875	508	45	905	40	G1¼	510	584	468	368	671	50	9x20
HAC-0-080.771-8	875	508	45	898	40	G2	510	584	468	388	665	30	9x20
HAC-0-080.771-6	875	508	45	898	40	G2	510	584	468	388	691	30	9x20
HAC-0-080.771-4	875	508	45	898	43	G2	510	584	468	388	691	30	9x20
HAC-0-094.920-8	1022	518	41	1052	45	G1½	800	821	541	393	723	70	14
HAC-0-094.920-6	1022	518	41	1052	45	G1½	800	821	541	393	747	70	14
HAC-0-094.921-8	1022	518	41	1052	45	G2	800	821	541	413	743	50	14
HAC-0-094.921-6	1022	518	41	1052	45	G2	800	821	541	413	767	50	14
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HAC-0-113.1090-6	1185	600	54	1215	45	G2	800	985	623	418	821	70	14
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HAC-0-113.1093-6	1200	600	82	1215	45	G2	860	985	623	468	871	80	14
HAC-0-134-1253-8	1340	740	82	1384	80	G2	900	1148	707	468	952	45	18
HAC-0-134-1253-6	1340	740	82	1384	80	G2	900	1148	707	468	996	45	18
HAC-0-150.1492-8	1514	1420	77	1630	70	G2	900	1285	830	476	960	37	18
HAC-0-150.1492-6	151	1420	77	1630	70	G2	900	1285	830	476	1004	37	18

压降曲线 Pressure drop curve

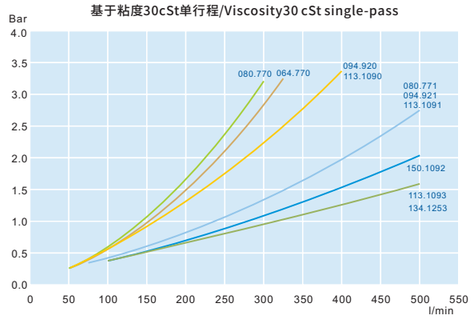
压降曲线 Pressue drop

基于粘度30cSt单行程/Viscosity30 cSt single-pass



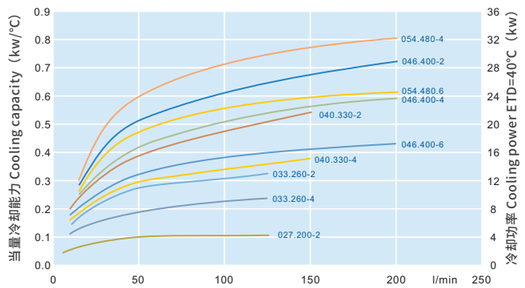
压降曲线 Pressue drop

基于粘度30cSt单行程/Viscosity30 cSt single-pass

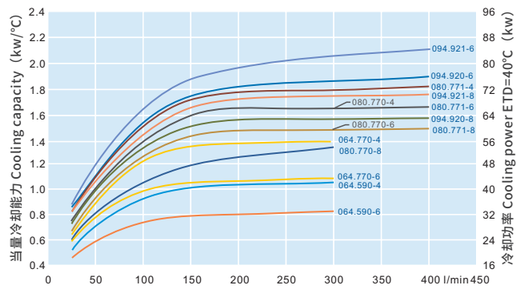


性能曲线 Performance curve

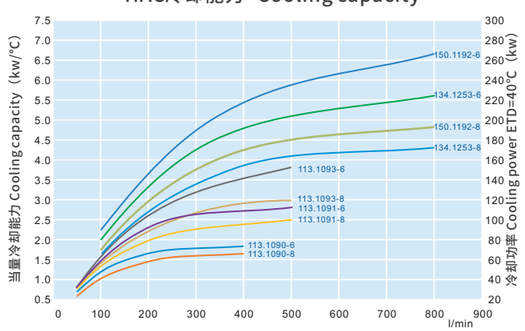
HAC冷却能力 Cooling capacity



HAC冷却能力 Cooling capacity



HAC冷却能力 Cooling capacity



技术说明

·散热器当量散热曲线基于ETD温差在40°C的情况下测试得到的曲线，例如散热器进口温度60°C时，环境温度20°C时，ETD为40°C；

·当量冷却功率公差 ± 10 % ；

·冷却功率：在ETD温差=40°C的冷却功率；

·不同电压时有不同的消耗功率本曲线仅以AC380V为例；

·风扇电机型式：标准为吸风式，IP55.F级绝缘符合国际CE标准；

·介质：矿物油，符合DIN51524，其他介质请与EHP联系。

噪音值为距离1M处的数值，因其受周围环境，粘度和反射等因素的影响，只作参考。

Technical notes

·The cooling capacity curves are base on ETD=40℃.For example, the cooler's inlet oil temperature is 60℃, the air temperature is 20℃, the ETD is 40℃;

·Cooling capacity tolerance ± 10 %;

·Cooling capacity: Cooling capacity at ETD 40℃;

·Consumed power will change when voltage change, this curve is base on AC380V;

·Motor type: standard is Air suction type, IP55.F class, in accordance with CE;

·Noise value is base on distance of 1m and just supply referance. Because it is easy to be affected by ambient environment、viscosity and reflection etc.

HAC风冷产品如何选型

订购时所有位置均需填写

例如：

HAC- 0- 040.330- 2- A- 00- 000- 0- 0

1 2 3 4 5 6 7 8 9

1.驱动方式

HAC - 表示 HOPEN 配交流电机驱动冷却器

2.使用环境

0 - 表示普通环境

M - 表示海洋性环境

X - 表示 II III 类防爆

MA - 表示 I 类防爆煤安型

3.冷却器尺寸

027.200 / 033.260/040.330/046.400/054.480

064.590/064.770/080.770/080.771/094.920/094.921

113.1090/113.1091/113.1093/134.1253/150.1492

4.电机极数

2 - 表示2极电机

4 - 表示4极电机

6 - 表示6极电机

8 - 表示8极电机

5.电机电压和频率

0 - 表示无电机

A - 表示三相 220-230-240/380-400-415V 50 Hz

B - 表示三相 440-460V 60 Hz

C - 表示单相 220-230-240V 50Hz

D - 表示三相220-230-240/380-400-415V 50 Hz 440-460V 60 Hz(1)

E - 表示三相 500V 50Hz

F - 表示三相 380/660V 400/690V 50Hz

G - 表示三相 525V 50Hz , 575V 60Hz (1)

美标NEMA电机

M - 表示三相 190/380V 50 Hz，208-230/460V 60 Hz (1)

N - 表示三相 208-230/460V 60 Hz

P - 表示三相 230/460V 60 Hz

Q - 表示三相 575V 60 Hz

R - 表示单相 115/230V 60 Hz

S - 表示单相 230V 60 Hz

X - 表示特殊电压电机，请联系销售人员

(1)仅适用027.200 / 033.260/040.330/046.400/054.480

6.温控开关

00 - 表示无温控开关

40 - 表示40°C温控开关

50 - 表示50°C温控开关

60 - 表示60°C温控开关

70 - 表示70°C温控开关

80 - 表示80°C温控开关

90 - 表示90°C温控开关

7.压力旁通阀

000 - 表示不需要旁通阀

S20 - 表示2bar单行程旁通

S50 - 表示5bar单行程旁通

S80 - 表示8bar单行程旁通

T00 - 表示双行程旁通

T20 - 表示2bar双行程旁通

T50 - 表示5bar双行程旁通

T80 - 表示8bar双行程旁通

8.防护装置

0 - 无防护装置

S - 表示防石罩

D - 表示防尘罩

P - 表示防尘和防石罩

9.特殊标志

0 - 标准散热器

Z - 表示特殊散热器，

在标准型号上有改动

Key for HAC Air cooler

All position must be filled in when ordering

Example:

HAC- 0- 040.330- 2- A- 00- 000- 0- 0

1 2 3 4 5 6 7 8 9

1.Air oil cooler
HAC - HOPEN with AC motor cooler

2.Application environment
0 - Standard
M - Marine
X - Group II III explosion proof
MA - Group I explosion proof in mines

3.Cooler size
027.200 / 033.260/040.330/046.400/054.480
064.590/064.770/080.770/080.771/094.920/094.921
113.1090/113.1091/113.1093/134.1253/150.1492

4.Number of poles Motor
2 - 2 poles
4 - 4 poles
6 - 6 poles
8 - 8 poles

5.Voltage and Frequency
0 - No motor
A - Three phase 220-230-240/380-400-415V 50 Hz
B - Three phase 440-460V 60 Hz
C - Single phase 220-230-240V 50Hz
D - Three phase220-230-240/380-400-415V 50 Hz 440-460V 60 Hz(1)
E - Three phase 500V 50Hz
F - Three phase 380/660V 400/690V 50Hz
G - Three phase 525V 50Hz , 575V 60Hz (1)
American standard NEMA motor
M - Three phase 190/380V 50 Hz, 208-230/460V 60 Hz (1)
N - Three phase 208-230/460V 60 Hz
P - Three phase 230/460V 60 Hz
Q - Three phase 575V 60 Hz
R - Single phase 115/230V 60 Hz
S - Single phase 230V 60 Hz
X - Motor for special, Contact our sales
(1)For use only 027.200 / 033.260/040.330/046.400/054.480

6.Thermo contact
00 - No Thermo contact
40 - 40°C Thermo contact
50 - 50°C Thermo contact
60 - 60°C Thermo contact
70 - 70°C Thermo contact
80 - 80°C Thermo contact
90 - 90°C Thermo contact

7.Cooler Matrix
000 - Standard
S20 - 2bar single pass
S50 - 5bar single pass
S80 - 8bar single pass
T00 - Two pass
T20 - 2bar Two pass
T50 - 5bar Two pass
T80 - 8bar Two pass

8.Matrix Guard
0 - No Guard
S - Stone Guard
D - Dust Guard
P - Dust and Stone Guard

9.Standard/Special
0 - Standard
Z - Special

零件配置 Technical specification

适用液体 Fluid combinations

矿物油	符合DIN 51524的HL/HLP	Mineral oil	DIN 51524的HL/HLP
油/水乳状液	符合CETOP RP77HFA的HFB	Oil /Water emulsion	CETOP RP77HFA的HFB
水-乙二醇	符合CETOP RP77H的HFC	Water Glycol	CETOP RP77H的HFC
磷酸酯	符合CETOP RP77H的HFD-R	Phosphate ester	CETOP RP77H的HFD-R

散热片适用压力范围 Cooler Matrix

最大静态工作压力	21 bar	Maximum static working pressure	21 bar
动态工作压力	14 bar	Dynamic working pressure	14 bar
传热公差	±6%	Heat transfer tolerance	±6%
最高进油温度	120°C	Maximum oil inlet temperature	120°C
测试压力按照ISO/DIS 10771-1		Tested in accordance with ISO/DIS 10771-1	

冷却曲线说明 Cooling capacity curves

本样本中的曲线基于EN 1048A进行测试所得，且使用60°C ISO VG46号油进行试验。

The cooling capacity curves in this technical data sheet are based on tests in accordance with EN1048 and have been made using oil type ISO VG46 at 60°C.

特殊情况联系销售人员 Contact Hopen for Advice on

油温>120°C	油的粘度>100 cst	Oil temperatures >120°C	Oil viscosity>100 cst
腐蚀环境	周围空气含可燃粉尘和气体	Aggressive environments	Ambient air rich in particles
海拔1000米以上		High-Altitude locations	

材料 Material

散热片	铝	Matrix	Aluminum
风扇叶片/风扇盘	强化聚丙烯/铝	Fan blades/Hub	Glass fibre reinforced polypropylene/Aluminum
风扇外壳	钢	Fan housing	Steel
风扇防护装置	钢	Fan guard	Steel
其它零件	钢	Other parts	Steel
表面处理	静电喷涂	Surface treatment	Electrostatically power-coated

3-相电机参数 3-phase motor

三相电机根据DIN 57530/VDE 0530三相异步电机符合IEC 60034-1并且符合IEC 60072		3-phase asynchronous motors in accordance with IEC 60034-1 and IEC 60072 in accordance with DIN 57530/VDE 0530	
绝缘等级	F	Insulation class	F
温升等级	B	Rise of temperature	B
防尘防水等级	IP55	Protection class	IP55

HSAC

紧凑型交流电机驱动型散热器

HSAC Simplified AC Driven Fan Cooler

2



产品特性

HSAC散热器采用外转子轴流风机，产品具有结构紧凑、安装方便、运行可靠，噪音低、节能高效，并且具有很强的适用性。产品分为单相和三相交流电机2种，主要应用于小型液压站、液压系统、机床等领域。铝制散热器在ETD温差40°C时的最大散热功率达到40KW。

散热器动态最高工作压力为14Bar，静态最大压力为21Bar。

Products Features

HSAC cooler is driven by a AC external rotor axial fan , the product features a compact structure, easy installation, reliable operation, low noise, energy efficiency and high performance, as well as strong applicability. It is available in two types single-phase and three phases AC motor. It is mainly applied in small hydraulic stations, hydraulic systems, machine tools and other fields. The maximum cooling capacity is 40 kW at ETD 40°C.

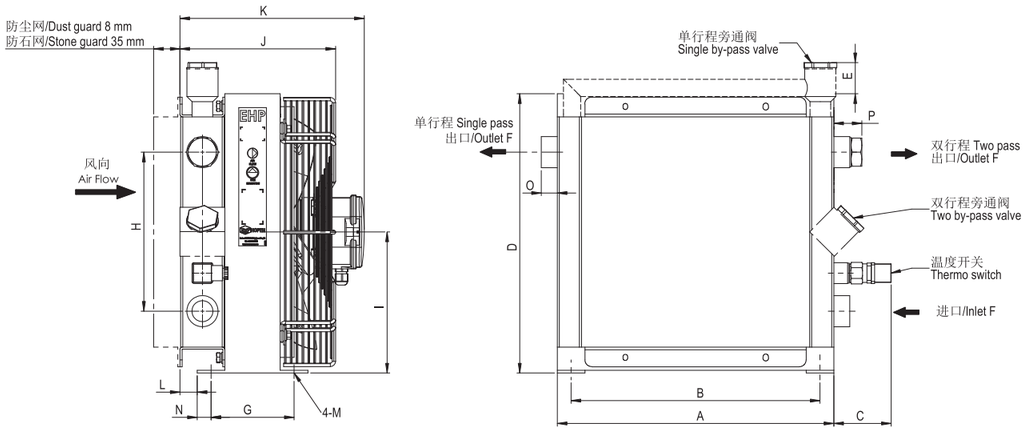
Cooler's maximum dynamic operating pressure is14 bar and maximum static operating pressure is 21 bar.

整机参数 Parameter

型号 (Type)	噪音 (LpA dB(A) 1m*)	电机极数/ 电机功率 (Pole/Capacity) kW	重量(kg) (approx.Weight)
HSAC-0-027.200-2	52	2-0.06	6.5
HSAC-0-033.260-4	60	4-0.08	11
HSAC-0-033.260-2	65	2-0.15	11
HSAC-0-040.330-4	64	4-0.13	16
HSAC-0-046.400-4	69	4-0.18	20
HSAC-0-054.480-4	71	4-0.40	31
HSAC-0-064.590-4 (单相 single phase)	75	4-0.75	48
HSAC-0-064.590-4 (三相 3-phases)	78	4-1.35	55

噪音偏差±3 db
Noise level tolerance ±3 db

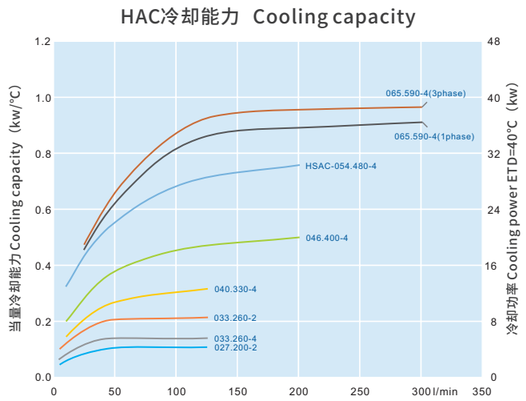
安装尺寸 Installation size



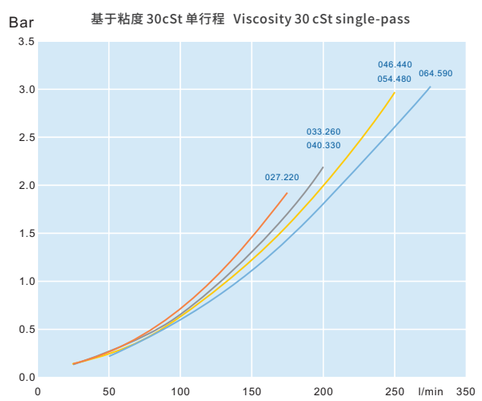
型号 Type	A	B	C	D	E	F	G	H	I	J	K*	L	ΦM	N	O	P
HSAC-0-027.200-2	267	227	82	254	70	G1	110	90	129	176	225	25	9x20	15	23	23
HSAC-0-033.260-4	335	295	82	339	58	G1	100	160	170	206	235	25	9x20	20	23	30
HSAC-0-033.260-2	335	295	82	339	58	G1	100	160	170	206	235	25	9x20	20	23	30
HSAC-0-040.330-4	400	360	82	404	62	G1	120	230	204	225	267	25	9x25	20	23	33
HSAC-0-046.400-4	465	416	82	470	62	G1	120	230	237	235	277	25	9x30	20	23	41
HSAC-0-054.480-4	545	356	82	575	57	G1	290	305	298	255	290	(50)	13	15	22	40
HSAC-0-064.590-4	692	356	53	722	42	G1¼	320	406	376	340	375	(40)	9x20	25	/	17

* 三相电机不带接线盒
Three phase motor without connection box

性能曲线 Performance curve



压降曲线 Pressure drop curve



技术说明

·散热器当量散热曲线基于ETD温差在40°C的情况下测试得到的曲线，例如散热器进口温度60°C时，环境温度20°C时，ETD为40°C；

·当量冷却功率公差 ± 10 % ；

·冷却功率：在ETD温差=40°C的冷却功率；

·介质：矿物油，符合DIN51524，其他介质请与EHP联系；

·噪音值为距离1M处的数值，因其受周围环境，粘度和反射等因素的影响，只作参考。

Technical notes

·The cooling capacity curves are base on ETD=40℃.For example, the cooler's inlet oil temperature is 60℃, the air temperature is 20℃, the ETD is 40℃;

·Cooling capacity tolerance ± 10 %;

·Cooling capacity: Cooling capacity at ETD 40℃;

·Medium: Mineral oil, in accordance with DIN 51524, For other medium, please contact EHP;

·Noise value is base on distance of 1m and just supply referance. Because it is easy to be affected by ambient enviroment、viscosity and reflection etc.

HSAC风冷产品如何选型

订购时所有位置均需填写

例如：

HSAC- 0- 040.330– 2- A- 00- 000- 0- 0

1 2 3 4 5 6 7 8 9

1.驱动方式

HSAC-表示HOPEN 配一体式风机冷却器

2.使用环境

0 表示普通环境

3.冷却器尺寸

027.200 / 033.260/040.330/046.400 /054.480/064.590

4.电机极数

2-表示2极电机

4-表示4极电机

5.电机电压和频率

0 - 表示无电机

A - 表示三相380V 50/60 HZ (*1)

B - 表示单相110V 50/60 HZ (*1)

C - 表示单相220V 50/60 HZ (*1)

D - 表示三相220V 50/60 HZ (*1)

E - 表示三相380V 50 HZ (*2)

F - 表示单相220V 50 HZ (*2)

G - 表示三相380V 60 HZ (*2)

H - 表示单相220V 60 HZ (*2)

X - 表示特殊电压电机，请联系销售人员

(*1) 适用型号 027.200 / 033.260/040.330/046.400

(*2) 适用型号 054.480/064.590

6.温控开关

00 - 表示无温控开关

40 - 表示40°C温控开关

50 - 表示50°C温控开关

60 - 表示60°C温控开关

70 - 表示70°C温控开关

80 - 表示80°C温控开关

90 - 表示90°C温控开关

7.压力旁通阀

000 - 表示不需要旁通阀

S20 - 表示2bar单行程旁通

S50 - 表示5bar单行程旁通

S80 - 表示8bar单行程旁通

T00 - 表示双行程旁通

T20 - 表示2bar双行程旁通

T50 - 表示5bar双行程旁通

T80 - 表示8bar双行程旁通

8.防护装置

0 - 无防护装置

S - 表示防石罩

D - 表示防尘罩

P - 表示防尘和防石罩

9.特殊标志

0 - 标准散热器

Z - 表示特殊散热器，在标准型号上有改动

Key for HSAC Air cooler

All position must be filled in when ordering

Example:

HSAC- 0- 040.330– 2- A- 00- 000- 0- 0

1 2 3 4 5 6 7 8 9

1.Air oil cooler
HSAC - HOPEN with simplified AC fan cooler

2.Application environment
0 Standard

3.Cooler size
027.200 / 033.260/040.330/046.400/ 054.480/064.590

4.Number of poles Motor
2 - 2 poles
4 - 4 poles

5.Voltage and Frequency
0 - No motor
A - Three phase 380V 50/60 HZ (*1)
B - Single phase 110V 50/60 HZ (*1)
C - Single phase 220V 50/60 HZ (*1)
D - Three phase 220V 50/60 HZ (*1)
E - Three phase 380V 50 HZ (*2)
F - Single phase 220V 50 HZ (*2)
G - Three phase 380V 60 HZ (*2)
H - Single phase 220V 60 HZ (*2)
X - Motor for special, Contact our sales
(*1) Applicable model 027.200/033.260/040.330/046.400
(*2) Applicable model 054.480/064.590

6.Thermo contact
00 - No Thermo contact
40 - 40°C Thermo contact
50 - 50°C Thermo contact
60 - 60°C Thermo contact
70 - 70°C Thermo contact
80 - 80°C Thermo contact
90 - 90°C Thermo contact

7.Cooler Matrix
000 - Standard
S20 - 2bar single pass
S50 - 5bar single pass
S80 - 8bar single pass
T00 - Two pass
T20 - 2bar Two pass
T50 - 5bar Two pass
T80 - 8bar Two pass

8.Matrix Guard
0 - No Guard
S - Stone Guard
D - Dust Guard
P - Dust and Stone Guard

9.Standard/Special
0 - Standard
Z - Special

零件配置 Technical specification

适用液体 Fluid combinations

矿物油	符合DIN 51524的HL/HLP	Mineral oil	DIN 51524的HL/HLP
油/水乳状液	符合CETOP RP77HFA的HFB	Oil /Water emulsion	CETOP RP77HFA的HFB
水-乙二醇	符合CETOP RP77H的HFC	Water Glycol	CETOP RP77H的HFC
磷酸酯	符合CETOP RP77H的HFD-R	Phosphate ester	CETOP RP77H的HFD-R

散热片适用压力范围 Cooler Matrix

最大静态工作压力	21 bar	Maximum static working pressure	21 bar
动态工作压力	14 bar	Dynamic working pressure	14 bar
传热公差	±6%	Heat transfer tolerance	±6%
最高进油温度	120°C	Maximum oil inlet temperature	120°C
测试压力按照ISO/DIS 10771-1		Tested in accordance with ISO/DIS 10771-1	

冷却曲线说明 Cooling capacity curves

本样本中的曲线基于EN 1048A进行测试所得，且使用60°C ISO VG46号油进行试验。

The cooling capacity curves in this technical data sheet are based on tests in accordance with EN1048 and have been made using oil type ISO VG46 at 60°C.

特殊情况联系销售人员 Contact Hopen for Advice on

油温>120°C	油的粘度>100 cst	Oil temperatures >120°C	Oil viscosity>100 cst
腐蚀环境	周围空气含可燃粉尘和气体	Aggressive environments	Ambient air rich in particles
海拔1000米以上		High-Altitude locations	

材料 Material

散热片	铝	Matrix	Aluminum
风扇叶片/风扇盘	钢	Fan blades/Hub	Steel
风扇外壳	钢	Fan housing	Steel
风扇防护装置	钢	Fan guard	Steel
其它零件	钢	Other parts	Steel
表面处理	静电喷涂	Surface treatment	Electrostatically power-coated

3-相电机参数 3-phase motor

三相电机根据DIN 57530/VDE 0530三相异步电机符合IEC 60034-1并且符合IEC 60072		3-phase asynchronous motors in accordance with IEC 60034-1 and IEC 60072 in accordance with DIN 57530/VDE 0530	
绝缘等级	F	Insulation class	F
温升等级	B	Rise of temperature	B
防尘防水等级	IP44	Protection class	IP44

1-单相电机 1-phase motor

绝缘等级	B	Insulation class	B
温升等级	B	Rise of temperature	B
防尘防水等级	IP44	Protection class	IP44

HPC

油泵电机系列散热器

HPC Fan Cooler With Pump

3



产品特性

HPC散热器由交流电机驱动风扇同时驱动油泵，由油泵主动泵油经过散热片冷却回油箱。又称为旁路冷却系统。主要应用于工业齿轮箱冷却、液压动力站、润滑系统等领域。泵和电机一体的冷却系统最大冷却功率在ETD温差时40℃的最大散热功率达到46KW。

该系列采用特殊的电机，使油泵，电机和风扇成为一体，节省安装空间，尤其适合对空间有特别限制的场合。可形成独立的旁路循环冷却回路，避免系统回油冲击，也可以在冷却单元上加装过滤器，形成冷却过滤系统。

Products Features

HPC cooler drive by AC motor ,An integrated circulation pump makes it possible to cool and treat the oil in a separate circuit - offline cooling . It mainly used in the cooling of industrial gearbox , hydraulic system, lubrication system. HPC cooler maximum cooling capacity is 46KW at ETD40℃。

This cooler use the special motor to make the oil pump, motor and fan together to save space, specially fit limited space. This unique design can form independent offline cooling circuit to avoid the lash from system returning oil, also can install filter in cooling unit to form a cooling filtrantion system .

技术规格 Technical specification

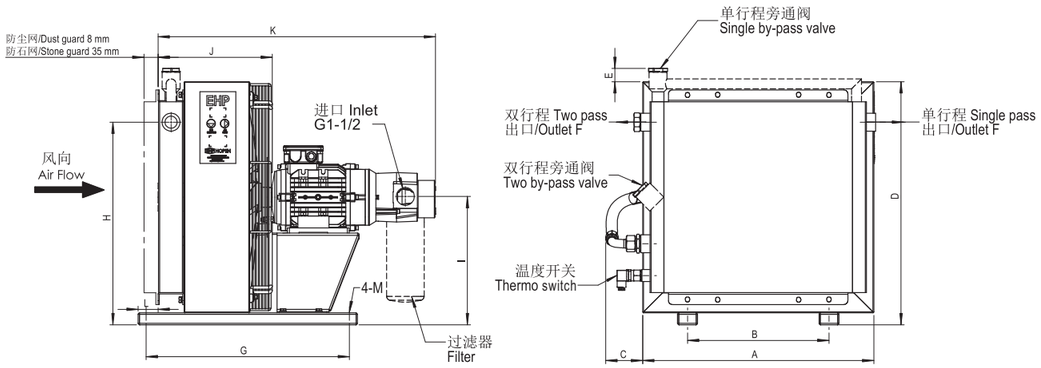
型号 Type	油流量 Flow rate (l/min)	冷却功率 Cooling capacity at EDT 40 °C (kW)	当量冷却功率 Cooling capacity (kW/°C)	噪音 Noise level (dB(A) 1m)*	电机级数/电机功率 (poles/capacity) kW*	重量 (approx Weight) kg
HPC-0-0-027.200-4-D-A	20	2.7	0.07	57	4-0.75	21
HPC-0-0-033.260-4-D-A	20	5.6	0.14	64	4-0.75	29
HPC-0-0-033.260-4-D-B	40	7.2	0.18	64	4-0.75	29
HPC-0-0-033.260-4-D-C	60	8.0	0.20	65	4-1.50	37
HPC-0-0-033.260-4-D-D	80	8.4	0.21	65	4-1.50	37
HPC-0-0-040.330-4-D-A	20	9.2	0.23	70	4-0.75	34
HPC-0-0-040.330-4-D-B	40	10.4	0.26	70	4-0.75	34
HPC-0-0-040.330-6-D-C	40	7.6	0.19	61	6-1.10	45
HPC-0-0-040.330-6-D-D	55	8.8	0.22	61	6-1.10	45
HPC-0-0-040.330-4-D-C	60	12.0	0.30	70	4-1.50	45
HPC-0-0-040.330-4-D-D	80	13.2	0.33	70	4-1.50	45
HPC-0-0-046.400-4-D-A	20	11.2	0.28	74	4-1.50	49
HPC-0-0-046.400-4-D-B	40	15.6	0.39	74	4-1.50	49
HPC-0-0-046.400-6-D-C	40	12.4	0.31	64	6-1.10	49
HPC-0-0-046.400-6-D-D	55	14.0	0.35	64	6-1.10	49
HPC-0-0-046.400-4-D-C	60	18.0	0.45	74	4-1.50	49
HPC-0-0-046.400-4-D-D	80	19.6	0.49	74	4-1.50	49
HPC-0-0-054.480-4-D-B	40	21.2	0.53	77	4-1.50	57
HPC-0-0-054.480-6-D-C	40	16.8	0.42	67	6-1.10	57
HPC-0-0-054.480-6-D-D	55	18.4	0.46	67	6-1.50	57
HPC-0-0-054.480-4-D-C	60	24.4	0.61	77	4-2.20	68
HPC-0-0-054.480-4-D-D	80	26.8	0.67	77	4-2.20	68
HPC-0-0-064.590-6-A-D	55	26.0	0.65	74	6-2.20	90
HPC-0-0-064.590-4-A-C	60	32.0	0.80	85	4-3.00	81
HPC-0-0-064.590-4-A-D	80	34.8	0.87	85	4-3.00	81
HPC-0-0-064.770-6-A-D	55	34.0	0.85	77	6-2.20	97
HPC-0-0-064.770-4-A-C	60	40.0	1.00	86	4-3.00	89
HPC-0-0-064.770-4-A-D	80	44.8	1.12	86	4-3.00	89

* 噪音公差 Noise level tolerance ±3 db

* 指定的电机在最大的工作压力6bar在125cst，50Hz，4bar在125cst，60Hz下计算的。
如果要求更高的工作压力，请与我们联系，选择适合较高功率的电机。

* The AC motor capacity caculated at the maximum working pressure 6bar at oil viscosity 125cst and frequency 50Hz , 4bar at oil viscosity 125cst and frequency 60Hz.
If you require higher pressure, please contact us and choose a motor with a higher power capacity.

安装尺寸 Installation size



型号 Type	A	B	C	D	E	F	G	H	I	J	K	L	ΦM
HPC-0-027.200-4-D-A	267	134	111	284	63	G1	510	206	159	164	524	55	9x20
HPC-0-033.260-4-D-A	365	203	93	395	42	G1	510	292	214	225	580	50	9x20
HPC-0-033.260-4-D-B	365	203	93	395	42	G1	510	292	214	225	593	50	9x20
HPC-0-033.260-4-D-C	365	203	113	395	42	G1	510	292	214	225	621	50	9x20
HPC-0-033.260-4-D-D	365	203	113	395	42	G1	510	292	214	225	634	50	9x20
HPC-0-040.330-4-D-A	440	203	91	470	41	G1	510	366	252	248	604	50	9x20
HPC-0-040.330-4-D-B	440	203	91	470	41	G1	510	366	252	250	616	50	9x20
HPC-0-040.330-6-D-C	440	203	91	470	41	G1	510	366	252	250	672	50	9x20
HPC-0-040.330-6-D-D	440	203	91	470	41	G1	510	366	252	250	685	50	9x20
HPC-0-040.330-4-D-C	440	203	111	470	41	G1	510	366	252	250	672	50	9x20
HPC-0-040.330-4-D-D	440	203	111	470	41	G1	510	366	252	250	685	50	9x20
HPC-0-046.400-4-D-A	496	203	95	526	46	G1	510	427	280	276	672	50	9x20
HPC-0-046.400-4-D-B	496	203	95	526	46	G1	510	427	280	276	684	50	9x20
HPC-0-046.400-6-D-C	496	203	95	526	46	G1	510	427	280	276	697	50	9x20
HPC-0-046.400-6-D-D	496	203	95	526	46	G1	510	427	280	276	710	50	9x20
HPC-0-046.400-4-D-C	496	203	115	526	46	G1	510	427	280	276	697	50	9x20
HPC-0-046.400-4-D-D	496	203	115	526	46	G1	510	427	280	276	710	50	9x20
HPC-0-054.480-4-D-B	580	355	93	610	44	G1	510	509	322	287	696	50	9x20
HPC-0-054.480-6-D-C	580	355	93	610	44	G1	510	509	322	287	709	50	9x20
HPC-0-054.480-6-D-D	580	355	112	610	44	G1	510	509	322	287	767	50	9x20
HPC-0-054.480-4-D-C	580	355	112	610	44	G1	510	509	322	287	754	50	9x20
HPC-0-054.480-4-D-D	580	355	112	610	44	G1	510	509	322	287	767	50	9x20
HPC-0-064.590-6-A-D	692	356	104	722	44	G1¼	610	619	378	318	803	70	14
HPC-0-064.590-4-A-C	692	356	104	722	44	G1¼	610	619	378	318	777	70	14
HPC-0-064.590-4-A-D	692	356	104	722	44	G1¼	610	619	378	318	790	70	14
HPC-0-064.770-6-A-D	692	356	104	866	59	G1¼	610	780	450	343	828	70	14
HPC-0-064.770-4-A-C	692	356	104	866	59	G1¼	610	780	450	343	797	70	14
HPC-0-064.770-4-A-D	692	356	104	866	59	G1¼	610	780	450	343	810	70	14

HPC风冷产品如何选型

订购时所有位置均需填写

例如：

HPC - 0 - 040.330 - 2 - A - B - 00 - 000 - 0 - 00 - 0

1 2 3 4 5 6 7 8 9 10/11 12

1.驱动方式
HPC表示配油泵冷却系统

2.使用环境
0 - 表示普通环境
M - 表示海洋性环境
X - 表示II III类防爆
MA - 表示I类防爆煤安型

3.冷却器尺寸
027.200 / 033.260/040.330/046.400/
054.480/064.590/064.770

4.电机极数
4 - 表示4极电机
6 - 表示6极电机
8 - 表示8极电机

5.电机电压和频率
0 - 表示无电机
A - 表示三相 220-230-240/380-400-415V 50 Hz
B - 表示三相 440-460V 60 Hz
C - 表示三相 440-460V 60 Hz
D - 表示三相220-230-240/380-400-415V 50 Hz 440-460V 60 Hz (1)
E - 表示三相 500V 50Hz
F - 表示三相 380/660V 400/690V 50Hz
G - 表示三相 525V 50Hz ,575V 60Hz (1)

美标NEMA电机

M - 表示三相 190/380V 50 Hz, 208-230/460V 60 Hz (1)
N - 表示三相 208-230/460V 60 Hz
P - 表示三相 230/460V 60 Hz
Q - 表示三相 575V 60 Hz
R - 表示单相 115/230V 60 Hz
S - 表示单相 230V 60 Hz
X - 表示特殊电压电机，请联系销售人员
(1) 仅适用027.200 / 033.260/040.330/046.400/054.480

6.泵的尺寸
A = 15cm³/r
B = 30cm³/r
C = 45cm³/r
D = 60cm³/r
X = 特殊

7.温控开关
00 - 表示无温控开关
40 - 表示40°C温控开关
50 - 表示50°C温控开关
60 - 表示60°C温控开关
70 - 表示70°C温控开关
80 - 表示80°C温控开关
90 - 表示90°C温控开关

8.压力旁通阀
000 - 表示不需要旁通阀
S20 - 表示2bar单行程旁通
S50 - 表示5bar单行程旁通
S80 - 表示8bar单行程旁通
T00 - 表示双行程旁通
T20 - 表示2bar双行程旁通
T50 - 表示5bar双行程旁通
T80 - 表示8bar双行程旁通

9.防护装置
0 - 无防护装置
S - 表示防石罩
D - 表示防尘罩
P - 表示防尘和防石罩

10.FH3过滤器
0 - 无过滤器
F - 过滤器

11.压降指示器
0 - 无压差指示器
V - 目视压差发讯器
E - 目/电压差发讯器

12.特殊标志
0 - 标准散热器
Z - 表示特殊散热器，
在标准型号上有改动

Key for HPC Air cooler

All position must be filled in when ordering

Example:

HPC - 0 - 040.330 - 2 - A - B - 00 - 000 - 0 - 0 0 - 0

1 2 3 4 5 6 7 8 9 10/11 12

1.Drive mode
HPC - HOPEN with pump cooling system

2.Application environment
0 - Standard
M - Marine
X - Group II IIIexplosion proof
MA - Group I explosion proof in mines

3.Cooler size
027.200 / 033.260/040.330/046.400/ 054.480/064.590/064.770

4.Number of poles Motor
4 - 4 poles
6 - 6 poles
8 - 8 poles

5.Voltage and Frequency
0 - No motor
A - Three phase 220-230-240/380-400-415V 50 Hz
B - Three phase 440-460V 60 Hz
C - Single phase 220-230-240V 50Hz
D - Three phase220-230-240/380-400-415V 50 Hz 440 -460V 60 Hz(1)
E - Three phase 500V 50Hz
F - Three phase 380/660V 400/690V 50Hz
G - Three phase 525V 50Hz , 575V 60Hz (1)
American standard NEMA motor
M - Three phase 190/380V 50 Hz, 208-230/460V 60 Hz (1)
N - Three phase 208-230/460V 60 Hz
P - Three phase 230/460V 60 Hz
Q - Three phase 575V 60 Hz
R - Single phase 115/230V 60 Hz
S - Single phase 230V 60 Hz
X - Motor for special, Contact our sales
(1)For use only 027.200 / 033.260/040.330/046.400 /054.480

6.Pump size
A= 15cm³/r
B= 30cm³/r
C= 45cm³/r
D= 60cm³/r
X= special

7.Thermo contact
00 - No Thermo contact
40 - 40°C Thermo contact
50 - 50°C Thermo contact
60 - 60°C Thermo contact
70 - 70°C Thermo contact
80 - 80°C Thermo contact
90 - 90°C Thermo contact

8.Cooler Matrix
000-Standard
S20-2bar single pass
S50-5bar single pass
S80-8bar single pass
T00-Two pass
T20-2bar Two pass
T50-5bar Two pass
T80-8bar Two pass

9.Matrix Guard
0-No Guard
S-Stone Guard
D-Dust Guard
P-Dust and Stone Guard

10.Filter
0-No filter
F-filter

11.Pressure drop indicator
0 - No pressure drop indicator
V - Visual indicator
E - Visual/Electric indicator

12.Standard/Special
0-Standard
Z-Special

零件配置 Technical specification

·HPC主要为合成油，植物油和矿物油HL/HLP根据DIN51524设计的。最高油温是100℃，油的粘度低于100cst。

·吸入管路与充油泵连接的最高负压是0.4，泵的吸入侧最高压力是0.5bar。

·泵的最高工作压力是10bar。泵的进口与液面的距离不得超过0.5m，最好位于液面以下（最大 5m)。

·The major cooling medium of HPC is synthetic oil, vegetable oil and mineral oil what is designed according with DIN51524 , oil's maximum temperature is 100℃ and viscosity is less than 100cst.

·The maximum negative pressure of the connection of between inlet line and booster oil well pump is 0.4.The maximum pressure of the pump's suction side is 0.5bar.

·The maximum working pressure is 10bar,the distance between the inlet of the pump and liquid level is not exceed 0.5m, best located below the surface of the liquid (maximum 5m).

过滤器为选择性配置 Filter is optional unit

特殊情况联系销售人员 Contact Hopen for Advice on

油温>120℃	油的粘度>100 cst	Oil temperatures >120℃	Oil viscosity>100 cst
腐蚀环境	周围空气含可燃粉尘和气体	Aggressive environments	Ambient air rich in particles
海拔1000米以上		High-Altitude locations	

材料 Material

泵壳/散热片	铝	Pump house/Matrix	Aluminum
风扇叶片/风扇盘	强化聚丙烯/铝	Fan blades/Hub	Glass fibre reinforced polypro pylene/Aluminum
风扇外壳	钢	Fan housing	Steel
风扇防护装置	钢	Fan guard	Steel
其它零件	钢	Other parts	Steel
表面处理	静电喷涂	Surface treatment	Electrostatically power-coated

3-相电机参数 3-phase motor

三相电机符合IEC 60034-1并且符合IEC 60072		3-phase asynchronous motors in accordance with IEC 60034-1 and IEC 60072 in accordance with DIN 57530/VDE 0530	
绝缘等级	F	Insulation class	F
温升等级	B	Rise of temperature	B
防尘防水等级	IP55	Protection class	IP55
		Propositional environmental temperature	-20℃-+40℃

*=参照电机的独立使用说明

*=refer to motor's independent instructions

HDC

直流电机驱动型散热器

HDC DC Driven Fan Cooler

4



产品特性

HDC散热器由直流电机驱动，分为12VDC和24VDC两种，主要应用于移动设备，如工程机械，特种车辆等。直流电机驱动的散热器广泛应用于各种环境中。直流电机驱动的散热器在ETD温差40°C时的最大散热功率达到30kW。

直流电机散热器动态最高工作压力为14Bar，静态最大压力为21Bar。

直流电机驱动散热器设计紧凑，方便维护，选择低噪音的集成风扇电机驱动。

我们同时提供智能直流电机驱动的散热器，采用智能直流电机驱动通过油温进行控制电机的转速，是一种绿色环保的新产品，同时也有助于延长电机的使用寿命。

Products Features

HDC cooler is driven by a DC motor and is available in two types: 12VDC and 24VDC. It is mainly applied in mobile devices, such as construction machinery and special vehicles. HDC cooler is suitable for installation in most applications and environments. The maximum cooling capacity is 30 kW at ETD 40°C.

Cooler's maximum dynamic operating pressure is

14 bar and maximum static operating pressure is 21 bar.

We also offer smart drive system for DC motors. The smart drive system control the motor speed by oil temperature. It is a new type of green and environmentally friendly product and also helps to extend the service life of the motor.

产品外形 Product outline

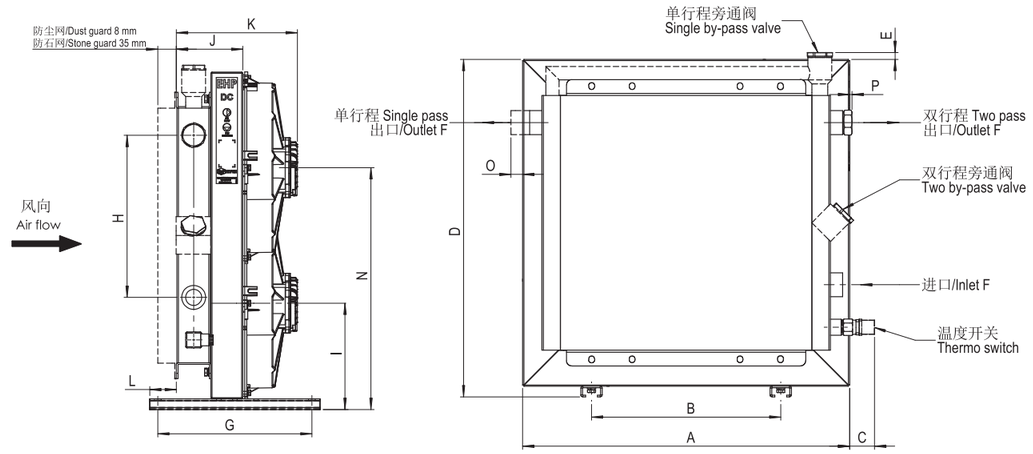


027.200 / 033.260/040.330
/046.400/051.440



054.480/064.590

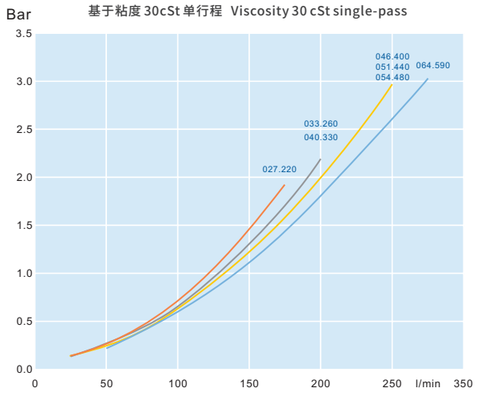
■ 安装尺寸 Installation size



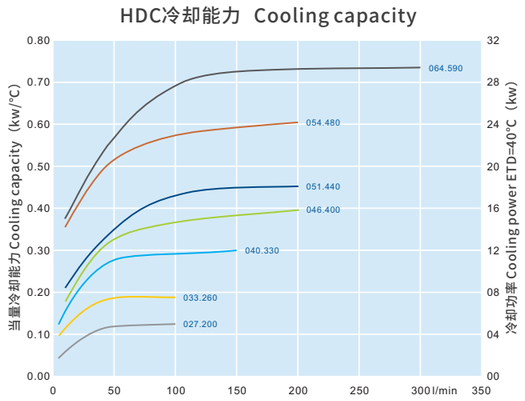
型号 Type	A	B	C	D	E	F	G	H	I	J	K	L	ØM	N	O	P	重量 kg (近似) weight	噪音 LpA dB(A) 1m* Noise
HDC-0-027.200	267	210	83	254	66	G1	90	90	129	115	191	-	9x20	-	23	36	7	73
HDC-0-033.260	335	295	81	339	54	G1	80	160	172	105	208	-	9x20	-	21	38	9	75
HDC-0-040.330	400	360	83	396	62	G1	101	230	200	125	228	-	9x29	-	23	40	12	75
HDC-0-046.400	465	416	83	466	60	G1	101	230	235	125	228	-	9x29	-	23	40	15	75
HDC-0-051.440	510	470	83	510	58	G1	100	280	257	125	203	-	9x20	-	23	40	18	77
HDC-0-054.480	615	356	47	635	23	G1	290	305	200	125	228	50	13	455	-	5	25	77
HDC-0-064.590	635	356	83	678	55	G1¼	290	406	220	165	268	50	13	478	25	44	33	77

噪音公差±3 db(A)
Noise level tolerance ±3 db(A)

压降曲线 Pressure drop curve



性能曲线 Performance curve



技术说明

·冷却功率：在ETD温差=40°C的冷却功率；

·不同电压时有不同的消耗功率本曲线仅以DC12V、 DC24V为例；

·直流无刷风扇：标准为吸风式，IP68.F级绝缘符合国际CE标准；

·介质：矿物油，符合DIN51524，其他介质请与EHP联系；

·噪音值为距离1M处的数值，因其受周围环境，粘度和反射等因素的影响，只作参考；

·当量冷却功率公差 ± 10 %。

Technical notes

·Cooling capacity: Cooling capacity at ETD 40°C;

·Consumed power will change when voltage change, this curve is base on DC12V and DC24V;

·Bushless motor type: standard is Air suction type，IP68.F class, in accordance with CE;

·Medium: Mineral oil ，in accordance with DIN 51524，For other medium, please contact EHP;

·Noise value is base on distance of 1m and just supply referance. Because it is easy to be affected by ambient;

·Cooling capacity tolerance ± 10 %.

HDC风冷产品如何选型

订购时所有位置均需填写

例如：

HDC - 0 - 040.330 - B - 00 - 000 - 0 - 0

1 2 3 4 5 6 7 8

1.驱动方式

HDC - 表示HOPEN 配直流电机驱动冷却器

2.使用环境

0 - 表示普通环境

M - 表示海洋性环境

3.冷却器尺寸

027.200 / 033.260/040.330/046.400

051.440/054.480/064.590

4.电机电压

A-表示12V电压

B-表示24V电压

5.温控开关

00 - 表示无温控开关

40 - 表示40°C温控开关

50 - 表示50°C温控开关

60 - 表示60°C温控开关

70 - 表示70°C温控开关

80 - 表示80°C温控开关

90 - 表示90°C温控开关

6.压力旁通阀

000 - 表示不需要旁通阀

S20 - 表示2bar单行程旁通

S50 - 表示5bar单行程旁通

S80 - 表示8bar单行程旁通

T00 - 表示双行程旁通

T20 - 表示2bar双行程旁通

T50 - 表示5bar双行程旁通

T80 - 表示8bar双行程旁通

7.防护装置

0 - 无防护装置

S - 表示防石罩

D - 表示防尘罩

P - 表示防尘和防石罩

8.特殊标志

0 - 标准散热器

Z - 表示特殊散热器，在标准型号上有改动

Key for HDC Air cooler

All position must be filled in when ordering

Example:

HDC - 0 - 040.330 - B - 00 - 000 - 0 - 0
1 2 3 4 5 6 7 8

1.Drive mode
HDC - HOPEN with DC motor driven cooler

2.Application environment
0 - Standard
M - Marine

3.Cooler size
027.200 / 033.260/040.330/046.400
051.440/054.480/064.590

4.Voltage
A-12V
B-24V

5.Thermo contact
00 - No Thermo contact
40 - 40°C Thermo contact
50 - 50°C Thermo contact
60 - 60°C Thermo contact
70 - 70°C Thermo contact
80 - 80°C Thermo contact
90 - 90°C Thermo contact

6.Cooler Matrix
000 - Standard
S20 - 2bar single pass
S50 - 5bar single pass
S80 - 8bar single pass
T00 - Two pass
T20 - 2bar Two pass
T50 - 5bar Two pass
T80 - 8bar Two pass

7.Matrix Guard
0 - No Guard
S - Stone Guard
D - Dust Guard
P - Dust and Stone Guard

8.Standard/Special
0 - Standard
Z - Special

零件配置 Technical specification

适用液体 Fluid combinations

矿物油	符合DIN 51524的HL/HLP	Mineral oil	DIN 51524的HL/HLP
油/水乳状液	符合CETOP RP77HFA的HFB	Oil /Water emulsion	CETOP RP77HFA的HFB
水-乙二醇	符合CETOP RP77H的HFC	Water Glycol	CETOP RP77H的HFC
磷酸酯	符合CETOP RP77H的HFD-R	Phosphate ester	CETOP RP77H的HFD-R

散热片适用压力范围 Cooler Matrix

最大静态工作压力	21 bar	Maximum static working pressure	21 bar
动态工作压力	14 bar	Dynamic working pressure	14 bar
传热公差	±6%	Heat transfer tolerance	±6%
最高进油温度	120°C	Maximum oil inlet temperature	120°C
测试压力按照ISO/DIS 10771-1		Tested in accordance with ISO/DIS 10771-1	

冷却曲线说明 Cooling capacity curves

本样本中的曲线基于EN 1048A进行测试所得，且使用60°C ISO VG46号油进行试验。

The cooling capacity curves in this technical data sheet are based on tests in accordance with EN1048 and have been made using oil type ISO VG46 at 60°C.

特殊情况联系销售人员 Contact Hopen for Advice on

油温>120°C	油的粘度>100 cst	Oil temperatures >120°C	Oil viscosity>100 cst
腐蚀环境	周围空气含可燃粉尘和气体	Aggressive environments	Ambient air rich in particles
海拔1000米以上		High-Altitude locations	

材料 Material

散热片	铝	Matrix	Aluminum
风扇叶片	强化聚丙烯	Fan blades	Glass fibre reinforced polypropylene
风扇外壳	强化聚丙烯	Fan housing	Glass fibre reinforced polypropylene
风扇防护装置	强化聚丙烯	Fan guard	Glass fibre reinforced polypropylene
其它零件	钢	Other parts	Steel
表面处理	静电喷涂	Surface treatment	Electrostatically power-coated

直流电机电压及电流参数 Electric Motor

HDC	027.200	033.260 040.330 046.400	051.440	054.480 064.590
转速（rpm）	3400	3200	2600	3200
防护等级 IP	IP68	IP 68	IP68	IP68
绝缘等级	H	H	H	H
适用温度范围	-40°C~85°C			
电流（A）12V	10	20	20	20x2
（A）24V	5	13	13	13x2

HDC		027.200	033.260 040.330 046.400	051.440	054.480 064.590
speed（rpm）		3400	3200	2600	3200
Protection std IP		IP68	IP 68	IP68	IP68
Insulation class		H	H	H	H
Ambient temp		-40°C~85°C			
Power consump(A)	12V	10	20	20	20x2
	24V	5	13	13	13x2

*备注：当电流大于下面情况时需要使用继电器12V时电流大于8A，24V时电流大于6A。

Remarks: When the current is greater than the following conditions, the relay shall be used, and the current shall be greater than 8A when the current is 12V, and greater than 6A when the current is 24V.

HHC

液压马达驱动型散热器

HHC Hydraulic Motor Driven Fan Cooler

5



产品特性

HHC散热器，主要应用于移动机械、泵车、汽车起重机、旋挖钻机、铁路机械、矿用移动设备及液压系统中。铝制散热器在ETD温差40℃时的最大散热功率达到160kW。

散热器动态最高工作压力为14Bar，静态最大压力为21Bar。

该散热器采用由高性能的双向齿轮液压马达驱动，可以进行长时间不间断的工作。

Products Features

HHC cooler drive by hydraulic motor,it is mainly used in the cooling of mobile, hydraulic system, marine driling platform, wind power generation, coal mine etc. Aluminum cooler's maximum cooling capacity is 160 kW at ETD 40℃.

Cooler's maximum dynamic operating pressure is 14 bar and maximum static operating pressure is 21 bar.

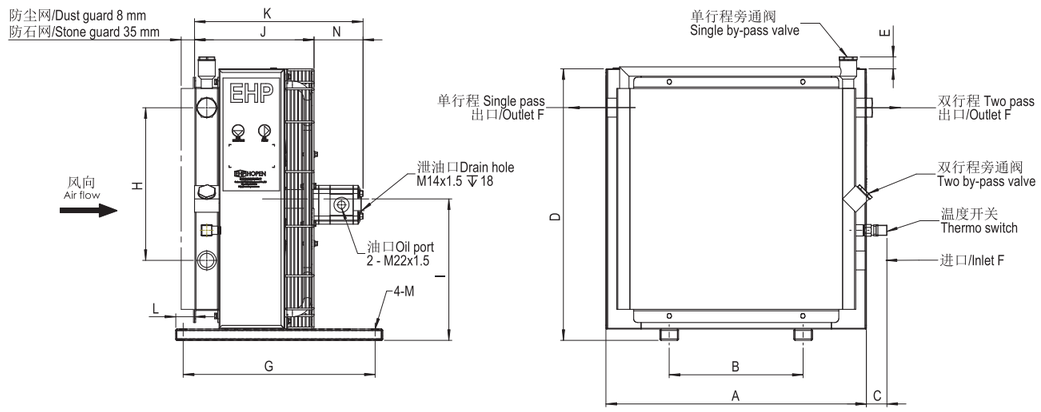
This radiator is driven by a high performance bidirectional gear hydraulic motor, enabling it to operate continuously for a long period of time.

整机参数 Parameter

型号 Type	风扇转速 Fanspeed (rpm)	风扇功率 Fan capacity (kW)	重量 (近似) Weight (appr.) (kg)	最大转速 Max speed (rpm)	噪音 Acoustic pressure level LpA dB(A) 1m*
HHC-0-033.260	1500	0.10	10	3000	62
	3000	0.65	10	3000	79
HHC-0-040.330	1500	0.20	15	3000	67
	3000	1.50	15	3000	82
HHC-0-046.400	1000	0.10	18	3000	60
	1500	0.35	18	3000	70
	3000	2.50	18	3000	86
HHC-0-054.480	1000	0.15	30	2840	64
	1500	0.50	30	2840	76
HHC-0-064.590	1000	0.65	40	2350	75
	1500	2.00	40	2350	85
HHC-0-064.770	1000	0.70	56	2350	77
	1500	2.00	56	2350	86
HHC-0-080.770	750	0.75	70	1850	74
	1000	1.80	70	1850	82
HHC-0-080.771	750	0.75	77	1850	75
	1000	1.80	77	1850	83
HHC-0-094.920	750	0.70	105	1690	80
	1000	1.60	105	1690	87
HHC-0-094.921	750	0.70	111	1690	81
	1000	1.60	111	1690	88
HHC-0-113.1090	750	1.70	117	1440	85
	1000	4.00	117	1440	91
HHC-0-113.1091	750	1.70	125	1440	86
	1000	4.00	125	1440	92
HHC-0-113.1092	750	1.70	184	1440	87
	1000	4.00	184	1440	93

噪音公差 ±3 db
Noise level tolerance ±3 db

安装尺寸 Installation size

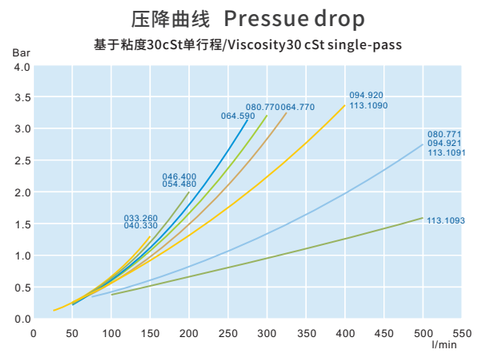


型号 Type	A	B	C	D	E	F	G	H	I	J	K	L	øM
HHC-0-033.260	365	203	64	395	42	G1	510	160	213	225	J+N	50	9x20
HHC-0-040.330	440	203	62	470	41	G1	510	230	250	249	J+N	50	9x20
HHC-0-046.400	496	203	66	526	46	G1	510	230	278	272	J+N	50	9x20
HHC-0-054.480	580	355	63	610	44	G1	510	305	320	287	J+N	50	9x20
HHC-0-064.590	692	356	53	722	42	G1¼	510	406	376	318	J+N	50	9x20
HHC-0-064.770	692	356	53	866	59	G1¼	510	584	448	343	J+N	50	9x20
HHC-0-080.770	875	508	45	905	40	G1¼	510	584	468	368	J+N	50	9x20
HHC-0-080.771	875	508	45	898	43	G2	510	584	468	388	J+N	30	9x20
HHC-0-094.920	1022	518	41	1052	45	G1½	610	821	541	393	J+N	70	14
HHC-0-094.921	1022	518	41	1052	45	G2	610	821	541	413	J+N	50	14
HHC-0-113.1090	1185	600	54	1215	45	G2	610	985	623	418	J+N	70	14
HHC-0-113.1091	1185	600	54	1215	45	G2	610	985	623	438	J+N	50	14
HHC-0-113.1093	1200	600	82	1215	45	G2	610	985	623	468	J+N	130	14

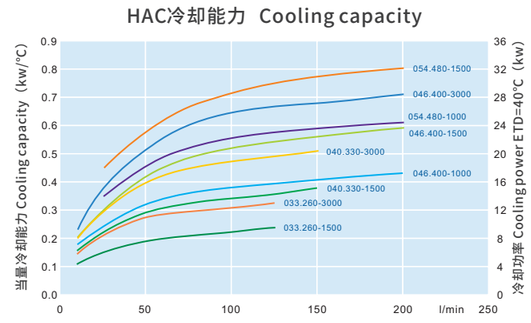
液压马达参数 Hydraulic motor parameter

排量 Displacement (cm3/r)	N (mm)	最大工作压力 Max working pressure (bar)
04	120	200
06	123	200
08	117	200
10	120	200
12	125	200
16	130	200
20	137	200
25	146	200

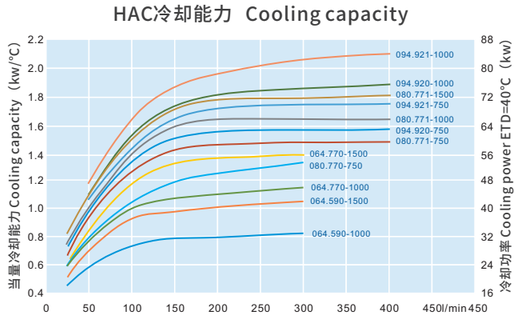
压降曲线 Pressure drop curve

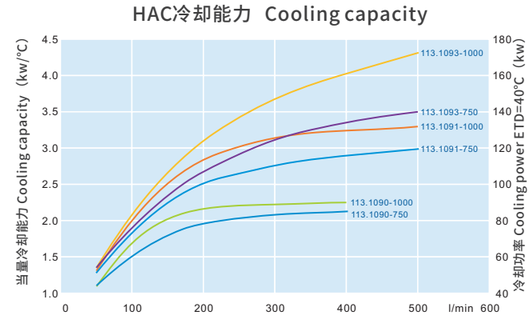


性能曲线 Performance curve



性能曲线 Performance curve





技术说明

·散热器当量散热曲线基于ETD温差在40°C的情况下测试得到的曲线，例如散热器进口温度60°C时，环境温度20°C时，ETD为40°C；

·当量冷却功率公差 ± 10 %；

·冷却功率：在ETD温差=40°C的冷却功率；

·介质：矿物油，符合DIN51524，其他介质请与EHP联系；

·噪音值为距离1M处的数值，因其受周围环境，粘度和反射等因素的影响，只作参考。

Technical notes

·The cooling capacity curves are base on ETD=40°C. For example, the cooler's inlet oil temperature is 60°C, the air temperature is 20°C, the ETD is 40°C;

·Cooling capacity tolerance ± 10 %;

·Cooling capacity: Cooling capacity at ETD 40°C;

·Medium: Mineral oil , in accordance with DIN 51524, For other medium, please contact EHP;

·Noise value is base on distance of 1m and just supply referance. Because it is easy to be affected by ambient enviroment、viscosity and reflection etc.

HHC风冷产品如何选型

订购时所有位置均需填写

例如：

HHC - 0 - 040.330 - 08 - 00 - 000 - 0 - 0

1 2 3 4 5 6 7 8

1.驱动方式

HHC -表示HOPEN配液压马达驱动冷却器

2.使用环境

0 - 表示普通环境
M - 表示海洋性环境
X - 表示 II III 类防爆
MA - 表示 I 类防爆煤安型

3.冷却器尺寸

033.260/040.330/046.400/054.480/064.590/
064.770/080.770/080.771/094.920/094.921
113.1090/113.1091/113.1093

4.液压马达排量

04 - 表示马达排量04 cm^3/r
06 - 表示马达排量06 cm^3/r
08 - 表示马达排量08 cm^3/r
10 - 表示马达排量10 cm^3/r
12 - 表示马达排量12.5 cm^3/r
16 - 表示马达排量16 cm^3/r
20 - 表示马达排量20 cm^3/r
25 - 表示马达排量25 cm^3/r
* 其他排量可按需求定义

5.温控开关

00-表示无温控开关
40-表示40°C温控开关
50-表示50°C温控开关
60-表示60°C温控开关
70-表示70°C温控开关
80-表示80°C温控开关
90-表示90°C温控开关

6.压力旁通阀

000-表示不需要旁通阀
S20-表示2bar单行程旁通
S50-表示5bar单行程旁通
S80-表示8bar单行程旁通
T00-表示双行程旁通
T20-表示2bar双行程旁通
T50-表示5bar双行程旁通
T80-表示8bar双行程旁通

7.防护装置

0-无防护装置
S-表示防石罩
D-表示防尘罩
P-表示防尘和防石罩

8.特殊标志

0-标准散热器
Z-表示特殊散热器，
在标准型号上有改动

Key for HHC Air cooler

All position must be filled in when ordering

Example:

HHC - 0 - 040.330 - 08 - 00 - 000 - 0 - 0

1 2 3 4 5 6 7 8

1.Air oil cooler

HHC - HOPEN with hydraulic motor driven cooler

2.Application environment

0 - Standard
M - Marine
X - Group II III explosion proof
MA - Group I explosion proof in mines

3.Cooler size

033.260/040.330/046.400/054.480/064.590/
064.770/080.770/080.771/094.920/094.921
113.1090/113.1091/113.1093

4.Hydraulic motor Displacement

04 - Represents motor displacement 04 cm^3/r
06 - Represents motor displacement 06 cm^3/r
08 - Represents motor displacement 08 cm^3/r
10 - Represents motor displacement 10 cm^3/r
12 - Represents motor displacement 12.5 cm^3/r
16 - Represents motor displacement 16 cm^3/r
20 - Represents motor displacement 20 cm^3/r
25 - Represents motor displacement 25 cm^3/r
*Other discharges can be defined as required

5.Thermo contact

00-No Thermo contact
40-40°C Thermo contact
50-50°C Thermo contact
60-60°C Thermo contact
70-70°C Thermo contact
80-80°C Thermo contact
90-90°C Thermo contact

6.Cooler Matrix

000-Standard
S20-2bar single pass
S50-5bar single pass
S80-8bar single pass
T00-Two pass
T20-2bar Two pass
T50-5bar Two pass
T80-8bar Two pass

7.Matrix Guard

0-No Guard
S-Stone Guard
D-Dust Guard
P-Dust and Stone Guard

8.Standard/Special

0-Standard
Z-Special
Changes on standard model

零件配置 Technical specification

适用液体 Fluid combinations

矿物油	符合DIN 51524的HL/HLP	Mineral oil	DIN 51524的HL/HLP
油/水乳状液	符合CETOP RP77HFA的HFB	Oil /Water emulsion	CETOP RP77HFA的HFB
水-乙二醇	符合CETOP RP77H的HFC	Water Glycol	CETOP RP77H的HFC
磷酸酯	符合CETOP RP77H的HFD-R	Phosphate ester	CETOP RP77H的HFD-R

散热片适用压力范围 Cooler Matrix

最大静态工作压力	21 bar	Maximum static working pressure	21 bar
动态工作压力	14 bar	Dynamic working pressure	14 bar
传热公差	±6%	Heat transfer tolerance	±6%
最高进油温度	120℃	Maximum oil inlet temperature	120℃
测试压力按照ISO/DIS 10771-1		Tested in accordance with ISO/DIS 10771-1	

冷却曲线说明 Cooling capacity curves

本样本中的曲线基于EN 1048A进行测试所得，且使用60℃ ISO VG46号油进行试验。

The cooling capacity curves in this technical data sheet are based on tests in accordance with EN1048 and have been made using oil type ISO VG46 at 60℃.

特殊情况联系销售人员 Contact Hopen for Advice on

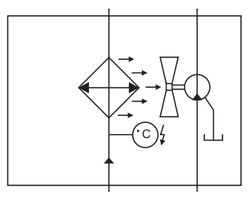
油温>120℃	油的粘度>100 cst	Oil temperatures >120℃	Oil viscosity>100 cst
腐蚀环境	周围空气含可燃粉尘和气体	Aggressive environments	Ambient air rich in particles
海拔1000米以上		High-Altitude locations	

材料 Material

散热片	铝	Matrix	Aluminum
风扇叶片/风扇盘	强化聚丙烯/铝	Fan blades/Hub	Glass fibre reinforced polypropylene/Aluminum
风扇外壳	钢	Fan housing	Steel
风扇防护装置	钢	Fan guard	Steel
其它零件	钢	Other parts	Steel
表面处理	静电喷涂	Surface treatment	Electrostatically power-coated

液压马达驱动散热器连接图。

Connection chart for HC air oil cooler.

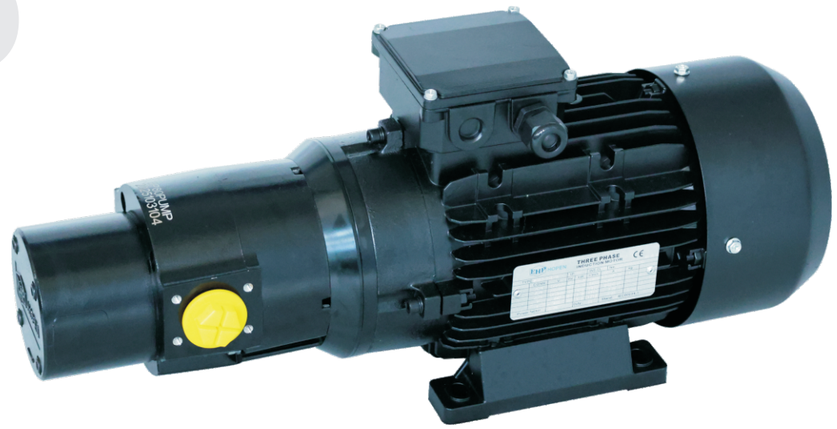


EPM

泵&电机组

Pump & Motor Unit

6



产品特性

EPM泵和电机组是结构紧凑，重量轻的内转子循环泵，EPM泵组具有高性能，低噪音和低能耗。低压EPM泵组具有双轴轴承和弹性连接，确保产品长时间安全可靠的运行。 特殊的泄压槽设计确保了流体低脉冲和低噪音。内部零件少，使泵轻便紧凑。

应用范围：

·冷却和过滤系统油的循环
·工业液压系统中油的循环
·油箱中油液的加注和排空
·油液存储的传输和转移

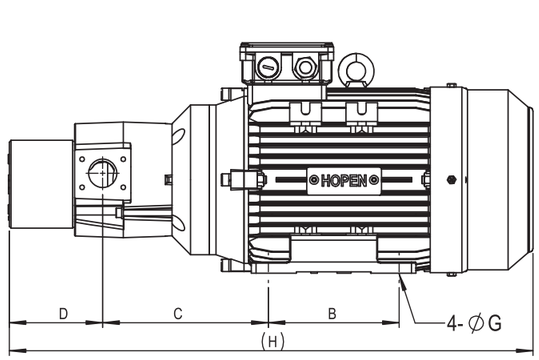
Products Features

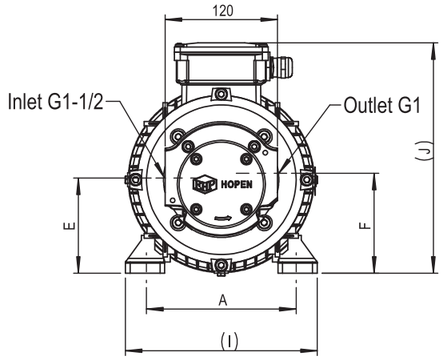
The EPM pump and motor unit are compact and lightweight inner rotor circulation pumps. The EPM pump unit have high performance, low noise and low energy consumption. The low-pressure EPM pump unit is equipped with double-shaft bearings and elastic connections, ensuring the long-term safe and reliable operation.The special design of the pressure relief groove ensures low flow pulsations and low noise levels. Few internal parts make the pump light and compact.

Applications:

·Circulation of oil in cooling and oil filter systems
·Circulation of oil in industrial hydraulic systems
·Filling and draining of oil in tanks
·Transfer of oil in stationary or mobile oil storage depots

整机参数 Parameter





型号 Type	电机极数 No. of Poles	电机功率 Motorpower (kW)	流量 flow (L/min)	重量 Weight (kg*)	噪音 Noise level dB(A) 1m**
EPM-20	4	0.75	20	17	65
EPM-40	4	1.5	40	20	66
EPM-60	4	1.5	60	21	66
EPM-80	4	2.2	80	33	67

安装尺寸 Installation size

型号 Type	A	B	C	D	E	F	G	H*	I*	J*
EPM-20	120	100	139	62	82	87	10	409	160	206
EPM-40	140	125	157	74	92	97	10	487	177	222
EPM-60	140	125	157	87	92	97	10	800	177	222
EPM-80	160	140	177	100	102	107	12	560	205	247

*取决于电机 Depending on the motor

**噪音公差 Noise level tolerance ±3 db

EPM 泵&电机组的选型

订购时所有位置均需填写

例如：

EPM - 40 - 4 - 1.50 - A - 0

1 2 3 4 5 6

1.产品类别

EPM - 泵&电机组

2.流量

20 - 20 L/min

40 - 40 L/min

60 - 60 L/min

80 - 80 L/min

3. 电机极数

4 - 表示 4 极电机

6 - 表示 6 极电机

4.电机功率

0.75 - 表示 0.75kW

1.50 - 表示 1.5kW

2.20 - 表示 2.2kW

5.电机电压和频率

0 - 表示无电机

A - 表示三相 220-230-240/380-400-415V 50 Hz

B - 表示三相 440-460V 60 Hz

C - 表示单相 220-230-240V 50Hz

X - 表示特殊电压电机，请联系销售人员

6.特殊标志

0 - 标准型号

Z - 表示特殊型号，在标准型号上有改动

技术规格

技术参数

- 泵壳体 铝 表面阳极氧化
- 粉末冶金钢转子
- 丁腈橡胶 O 形圈/密封件
- 电机配备底脚和法兰
- 泵流量范围 10-80 L/min

电机参数

- 防护等级 IP 55
- 绝缘等级 F
- 温升等级 B
- 冷却方式 IC 411
- 执行标准 IEC 60034-1, IEC 60072.

注意事项

- 电机要有过载保护装置
- 当 EPM 安装在有水从上方进入电动机的环境中时，应使用防护罩（可选设备）。

EPM Pump & Motor Unit Sizing

All position must be filled in when ordering

Example:

EPM - 40 - 4 - 1.50 - A - 0
1 2 3 4 5 6

1.Product category
EPM - Pump&Motor Unit

2.Flow
20 - 20 L/min
40 - 40 L/min
60 - 60 L/min
80 - 80 L/min

3. Number of motor poles
4 - 4 Pole
6 - 6 Pole

4.Motor power
0.75 - 0.75kW
1.50 - 1.50kW
2.20 - 2.20kW

5.Motor voltage and frequency
0 - No motor
A - Three phase 220-230-240/380-400-415V 50 Hz
B - Three phase 440-460V 60 Hz
C - Single phase 220-230-240V 50Hz
X - Motor for special, Contact our sales

6.Standard/Special
0 - Standard model
Z - Special

Technical specification

TECHNICAL DATA

- Pump housing/pump cover aluminium with anodized surfaces
- Sintered steel gerotor
- Nitrile o-rings/sealings
- Motor equipped with support and flange
- Pump flow rate: 10-80 l/min

ELECTRIC MOTOR

- Protection standard IP 55
- Insulation class F
- Rise of temperature class B
- Cooling method IC 411
- The electric motor fulfils the requirements of standards: IEC 60034-1, IEC 60072.

Notes

- The motor should be overload protected.
- When the EPM is installed in an environment where water could enter the electric motor from above, a protective shield (optional equipment) should be used.

安装EPM前注意事项

- 建议将EPM泵组水平安装。
- 尽量减少泵入口与油箱液位之间的高度差最大不超过0.5米，最好使泵低于油箱液位(最大不超过5米)。
- 如果系统装有截止阀等，或者如果泵可能会有冷启动，则建议使用保护旁通阀，以避免泵和电机的损坏。
- 降低吸入口高度和缩短进口管路，以使泵提供最佳的性能。进口管路的直径必须等于或大于泵的进口规格。
- 为了使泵能长期稳定工作，根据 ISO 4406 标准，油的清洁度应不低于17/15。
- 可以根据现场安装需要，可以将泵头按90度递差调整泵进出口位置，
- 电动机可能因冷启动和粘稠流体运行而过载-选择合适的电动机!
- 油温不得超过100°C。在温度较高的情况下，请务必咨询EHP获取技术支持。
- 建议环境温度为- 20°C~ +40°C。
- 推荐最高工作压力：10bar。如需在较高工作压力下运行，请咨询EHP以获得支持。
- 最大允许油粘度：800 cSt。
- 最大进口侧压力：0.5 bar。
- 进口管道最大负压：0.4bar（泵内需要注油）。

Consider this before installation for EPM

- TWe recommend to install the EPM in a horizonal position.
- Minimise the difference in height between the pump inlet and the tank fluid level is not exceed 0.5m, preferably with the pump below the tank fluid level (max. 5 m).
- Use by-pass valves if the system is fitted with shutoff valves etc. or if the pump is exposed to cold starts.•
- A low suction height and a short inlet line provideoptimum pump performance. The diameter of the inlet line must be equal to, or larger than, the pump connection.
- For long service life, oil cleanliness should, according to ISO 4406, not be below 17/15.
- Can be fitted as required in steps of 90° in relationto the electric motor.
- The electric motor may be overloaded due to cold starting and operation with viscous fluids - choose the right electric motor!
- Oil temperature must not exceed 100°C. In the event of higher temperature, please consult EHP for support.
- Recommended ambient temperature -20°C - +40°C.
- Recommended max. working pressure: 10 bar. For operation at higher working pressures, consult EHP for support.
- Maximum oil viscosity: 800 cSt.
- Maximum suction side pressure: 0.5 bar.
- Maximum negative pressure in inlet line: 0.4 bar with oil filled pump.

配件选择 Choose the Right Accessories

如何选择散热器配件
How to choose the cooler's accessories

散热器作为液压附件在液压系统中起着重要的作用，选择正确散热器配件可以增加散热性能和延长使用寿命。同时降低维修成本. 所有配件的使用环境和散热器的使用环境一致。

更好的提高您的液压系统选择下面的附件时可以和专业的销售人员联系。

Supplementing a hydraulic system with a cooler, cooler accessories gives you increased availability and a longer. useful life, as well as lower service and repair costs. All applications and operating environments are unique. A well. Planned choice of the following accessories can further improve your hydraulic system. Please contact us for guidance.



集成双流程压力旁通阀

为了在压力过大的情况下保护散热片不受破坏。进出油口处于相同侧。

Two-bypass

The risk of the cooler bursting .e.g. in connection with cold starts and temporary peaks in pressure or flow available for single-pass or two-pass matrix design.



温控开关

通过开关量自动控制驱动装置的通断可以节能及更好的保护环境。

Thermo contact

Cost efficient operation and better environmental consideration through the automatic switching on and off of the fan motor.



防石罩/防尘罩

防止在粉尘多及矿山场合情况下使用。

Stone guard and dust guard

Protects components and system from tough conditions.



单流程压力旁通阀

为了在压力过大的情况下保护散热片不受破坏。

Single-bypass

Same function as the pressure-controlled bypass valve.

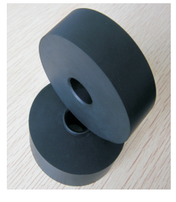


吊环

便于安装和维修。

Lifting eyes

Protects components and system from tough conditions.



减震垫

降低震动，延长散热器的使用寿命。

Rubber shock

Decrease the vibration for long

其它需求请联系我们相关的销售人员。
Please contact our salesmen if you have more requirement.

安装说明 Installation instructions

警示！有伤害身体的危险, 确保油冷却器固定牢靠。
警示！注意高温！噪音！机械伤害！（如图1）
Caution, Risk of bodily harm. Make sure that the air/oil cooler is securely fixed.
Caution, Risk of bodily harm.High temperature surface! Use hearing protection! (Figure1)



图1 Figure 1

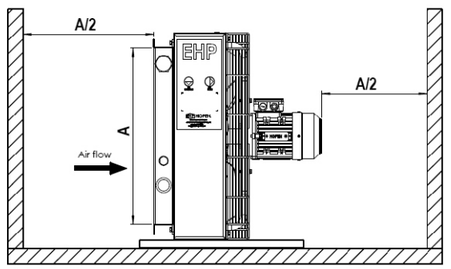


图2 Figure 2

EHP冷却器的安装

- 冷却器的安装必须避免热风回流。
- 冷却器的安装必须保证冷却空气不受阻碍地进入和排出，到墙或障碍的最小允许距离为芯高(A)的一半(A/2)。如图2
- 如果冷却器安装在封闭的空间，必须提供足够的通风，以使冷却的加热空气不会增加空间温度。
- 如果在露天安装，请注意，低环境温度会降低介质温度，从而导致粘度增加。这可能会导致机器启动时过高的峰值压力，如果这些压力峰值超过最大允许的工作压力，必须安装温度旁通阀或压力旁通阀。
- 散热片设计最大动态工作压力14bar。当冷却器安装在回流管路中时，应避免瞬时压力尖峰。如果无法避免，应该使用独立冷却系统，如HPC。

Mounting of EHP coolers

- The placing of the cooler must be chosen in such a way that recirculation of the heated air is avoided.
- Further the cooler must be placed in a way that allows a free cooling air flow in and out of the cooler. The minimum allowable distance to a wall is half the core height (A).
- In case of installation in closed rooms, sufficient ventilation must be provided in order that the heated air from the cooling will not increase the room temperature.
- In case of installation in open air, please note that low ambient temperatures will reduce the coolant temperature and consequently result in an increased viscosity. This may result in high pressure peaks when the machine is started, and if these pressure peaks exceed the max. allowable working pressure, a thermobypass or a pressure bypass must be mounted parallel to the cooler.
- The cooler matrix is designed for maximum dynami working pressure 14 bar. When the cooler is installed in a return line, there should be no pressure spikes. If this is not possible, an offline cooling system should be used, such as HPC.