



HYDAULIC AND PROCESS TECHNOLOGY



FAN COOLER

- AC MOTOR FAN COOLER
- HYDRAULIC MOTOR FAN COOLER

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YOUR SUCCESSFUL PARTNER FLUEN Co., Ltd.



GLOBAL PRESENCE



Distributed in India by Hy-Precision Technology

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특징 및 장점 - FEATURE & ADVANTAGE

Trust & Competence

공냉식 열교환기(Fan cooler)는 Hydraulic / Lubrication system 에서 발생되어지는 열에너지 가진 oil을 모터(AC/DC motor) 및 유압펌프(Hydraulic pump)를 이용하여 fan을 회전시켜 공기를 흡입하거나 토출하여 열에너지를 가진 oil를 일정하게 냉각하는 장치입니다.

- 냉각수가 없는 장소에서 유체의 온도를 일정하게 유지 가능.
- 자체 디자인을 통한 최적의 열 교환 능력 실현.
- Test 및 simulation을 통한 낮은 압력손실 구현.
- 온도 센서(Optional 사양) 부착에 따른 system 온도 제어 가능.
- 시스템의 이상 압력에 대한 fan cooler 보호용 by-pass valve (Optional 사양) 설치
- 우수한 연구인력 및 자체 개발한 Software 보유



ADVANTAGE

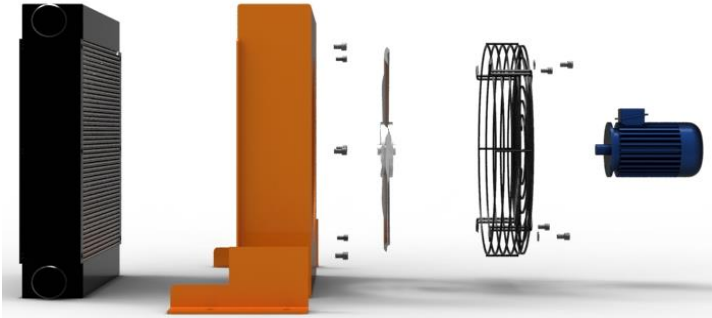
- Compact design
 - 사용 및 운용에 편리한 구조
 - 유지보수의 용이성
- High heat exchange rate & low ΔP
 - 최대 열 교환 능력
 - 최소 ΔP 실현
 - 다양한 유종 및 점도에도 적용
- Diverse power
 - 110/220V – 1phase (50/60Hz)
 - 220/380/440/690V – 3phase (50/60Hz)
- Variable application

• General industry	• Welding machine
• Power station	• CSU
• Compressor	• Winch
• Wind turbine	
• Off-shore	
• Tooling machine	
• Injection moulder	
• Crane	



SPECIFICATION

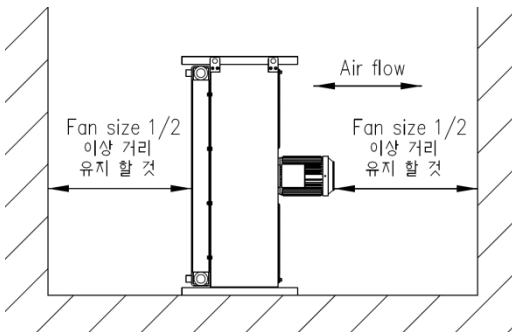
TECHNICAL SPECIFICATION



Matrix specification	
Max. operating pressure	21bar
Standard operating pressure	14bar
Max. oil temperature	100°C

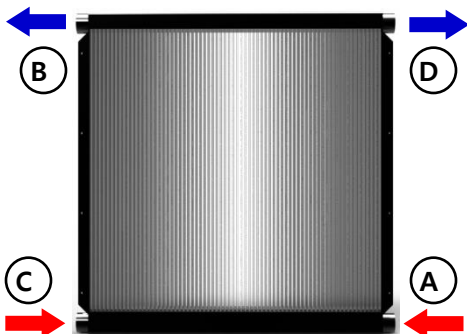
Description	Specification	
Fluid	Mineral oil Oil/Water emulsion type Water glycol type Others	
Material	Matrix	Aluminum with black coating
	Fan	Aluminum PPG (-10°C ~ +80°C) PAG (-40°C ~ +110°C)
	Grill	Steel
	Bracket	Steel

TECHNICAL SPECIFICATION



- Fan cooler 설치 공간
각 시스템에 맞게 계산 및 선정된 제품이 정상적이고 적절한 열 교환을 하기 위해서는 fan cooler를 통과하는 air flow가 제한되거나, 간섭이 있어서는 안 된다.
- Fan cooler 전/후방에 air flow의 장애물 제거.
- 전/후방의 최소 유지 거리는 fan size의 1/2(절반)이상 유지 할 것. (가능한 그림과 같이 벽과 벽 사이에는 설치 하지 말 것.)

- Fan cooler 설치 방법
진동 및 소음이 발생하지 않도록 수평면에 대해 수직으로 설치 하되, application에 따라 수직 장착도 가능하다.



- Fan cooler 배관 연결
배관 연결시 열 교환 효율을 극대화 하기 위해 In/Out 배관은 교차를 시켜 배관 연결 할 것.
예) IN "A" => OUT "B" 혹은 IN "C" => OUT "D"

다만, 설치 위치 및 공간상 제약이 있을 경우는
IN "A" => OUT "D" 혹은 IN "C" => OUT "B"
로도 할 수 있다.

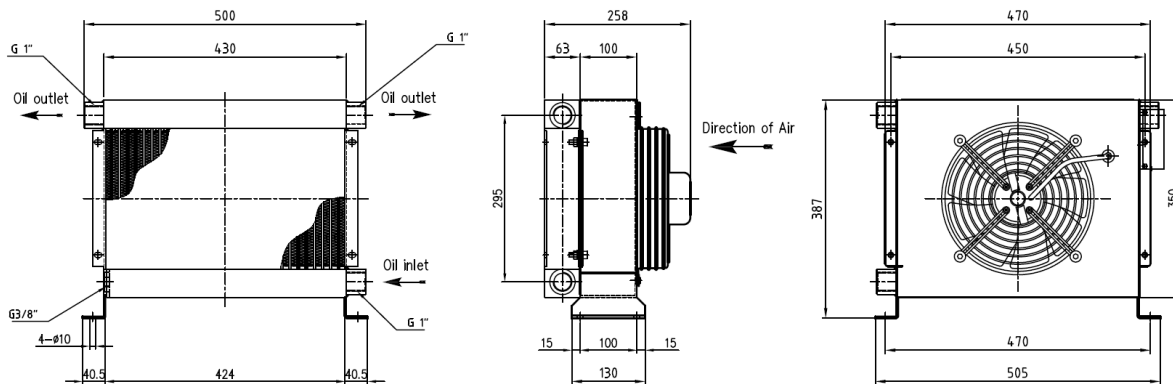
- Matrix 외부세척
고압의 물 혹은 air를 이용하여 cooling fin 세척 및 이물질 제거

AC MOTOR FAN COOLER



AC MOTOR FAN COOLER

AFA - - - 300/2



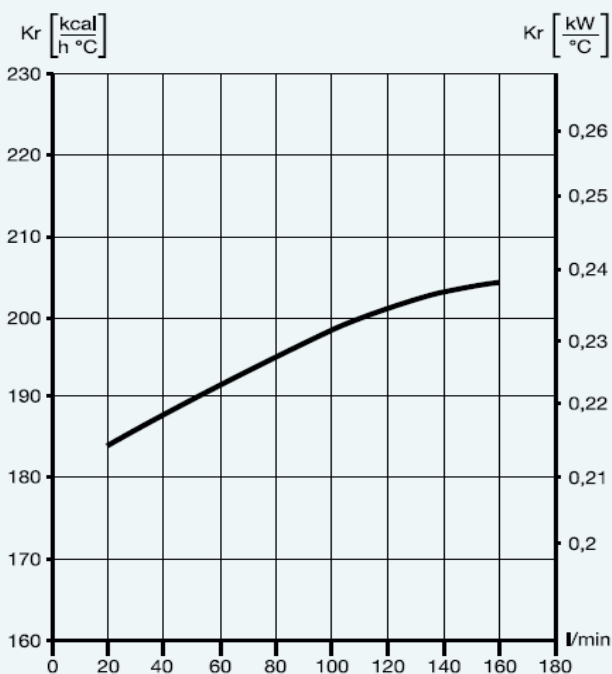
오일유량 OIL FLOW	오일체적 OIL CAPACITY	전압 VOLTAGE	모터 MOTOR	전류 FREQUENCY	전류 CURRENT	풍량 AIR FLOW	보호등급 PROTECTION	소음정도 NOISE LEVEL	중량 WEIGHT	최대사용압력* PRESSURE RANGE*
l/min	l	V	W	Hz	A	m³/hr	IP	dB(A)	Kg	bar
20~150	3.6	220 / 380	130	60	0.6 / 0.35	1,300	55	73	17	21

* 최대사용압력은 동압 기준임.

* Pressure range is based on dynamic pressure.

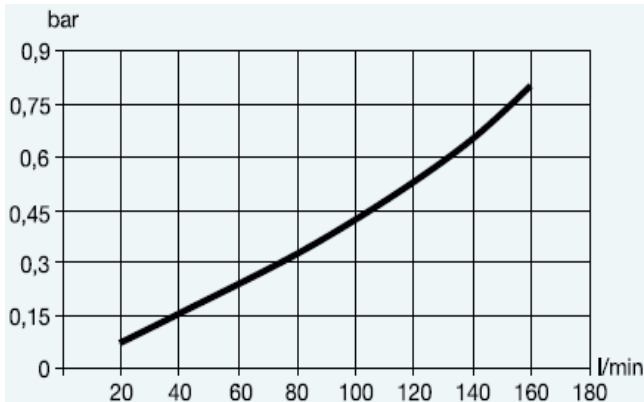
PERFORMANCE DIAGRAM

성능곡선표



LOSS OF PRESSURE DIAGRAM

차압곡선표



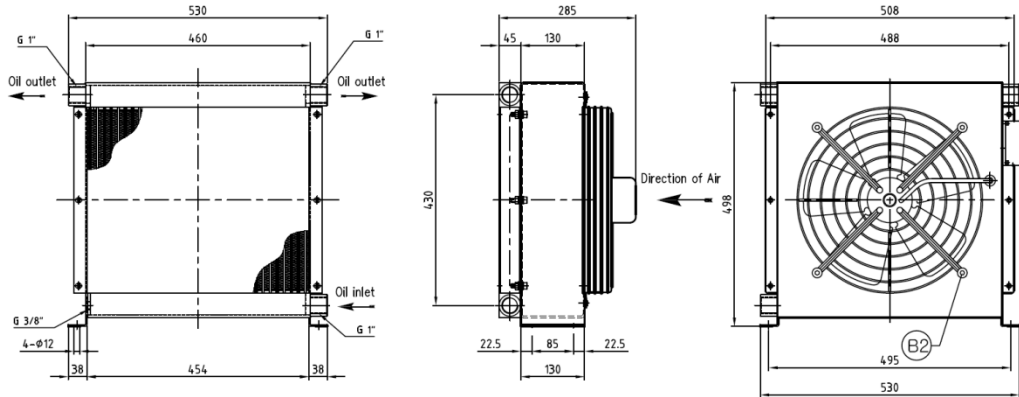
CORRECTION FACTOR

보정계수

cSt	20	30	40	60	100	200	300
F	0.8	1	1.2	1.6	2.1	3.3	4.3

AC MOTOR FAN COOLER

AFA - - - 430



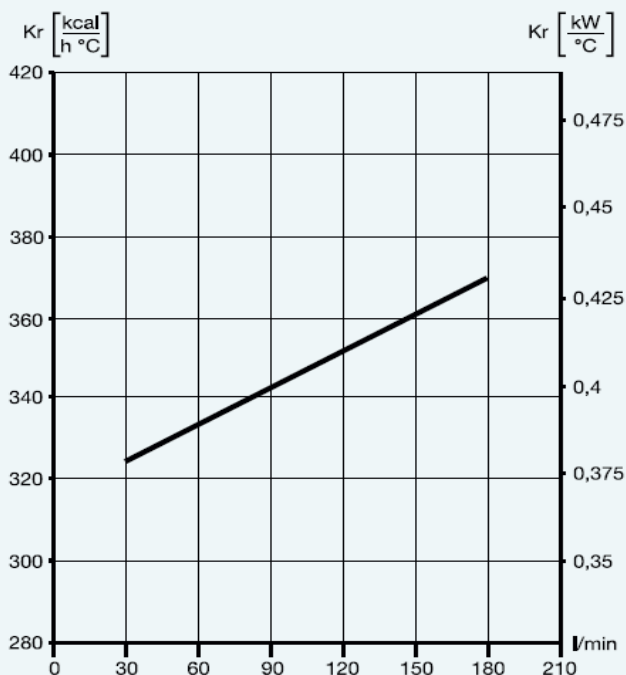
오일유량 OIL FLOW	오일체적 OIL CAPACITY	전압 VOLTAGE	모터 MOTOR	전류 FREQUENCY	전류 CURRENT	풍량 AIR FLOW	보호등급 PROTECTION	소음정도 NOISE LEVEL	중량 WEIGHT	최대사용압력* PRESSURE RANGE*
l/min	l	V	W	Hz	A	m ³ /hr	IP	dB(A)	Kg	bar
30~150	3.6	220 / 380	220	60	1.1 / 0.6	3,000	55	75	18	21

* 최대사용압력은 동압 기준임.

* Pressure range is based on dynamic pressure.

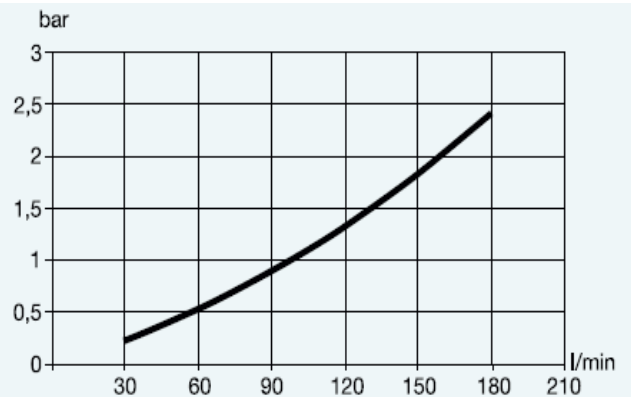
PERFORMANCE DIAGRAM

성능곡선표



LOSS OF PRESSURE DIAGRAM

차압곡선표



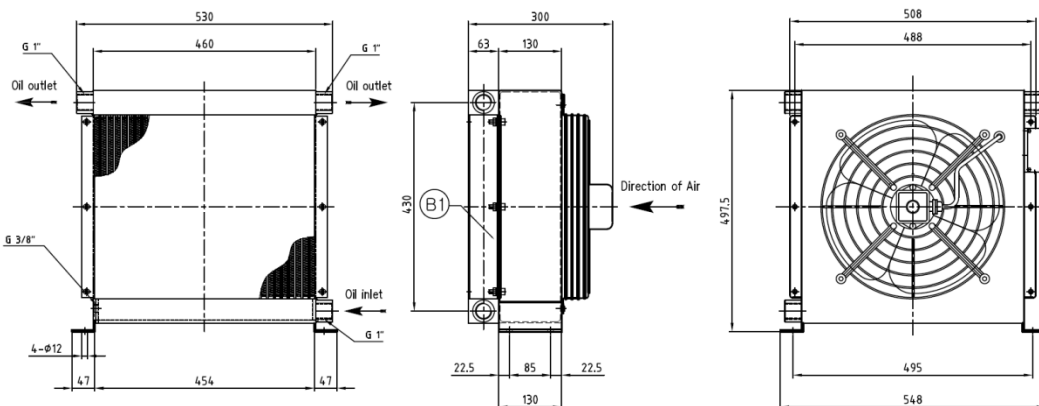
CORRECTION FACTOR

보정계수

cSt	20	30	40	60	100	200	300
F	0.8	1	1.2	1.6	2.1	3.3	4.3

AC MOTOR FAN COOLER

AFA - - - 430/2



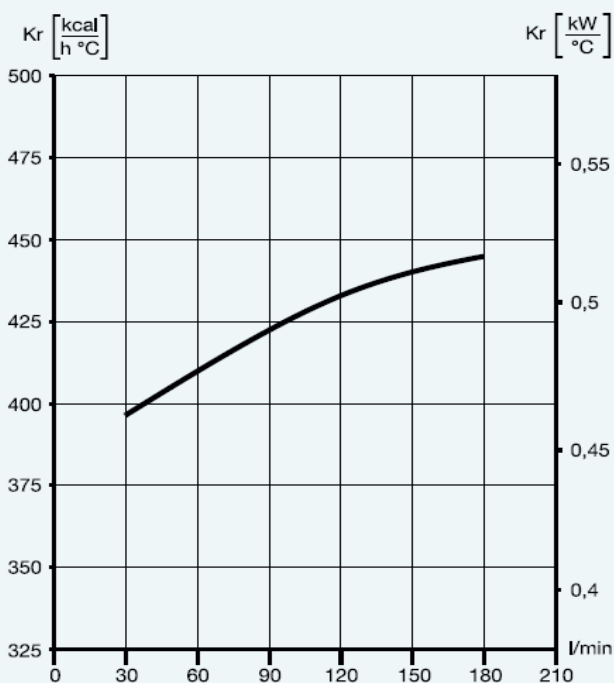
OIL FLOW	OIL CAPACITY	VOLTAGE	MOTOR	FREQUENCY	CURRENT	AIR FLOW	PROTECTION	NOISE LEVEL	WEIGHT	MAXIMUM PRESSURE RANGE*
l/min	l	V	W	Hz	A	m³/hr	IP	dB(A)	Kg	bar
30~180	5.5	220 / 380	260	60	1.2 / 0.7	3,500	55	75	24	21

* 최대사용압력은 동압 기준임.

* Pressure range is based on dynamic pressure.

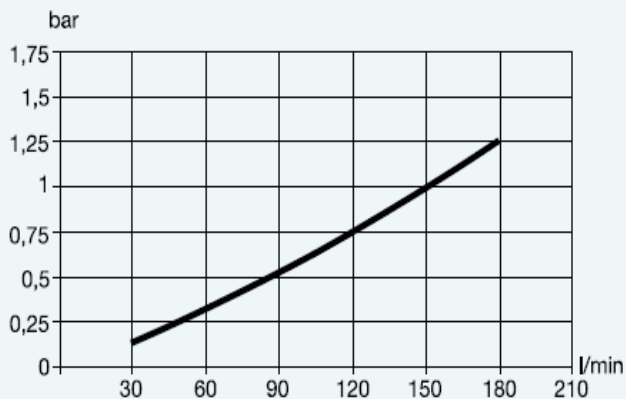
PERFORMANCE DIAGRAM

성능곡선표



LOSS OF PRESSURE DIAGRAM

차 압 곡 선 표



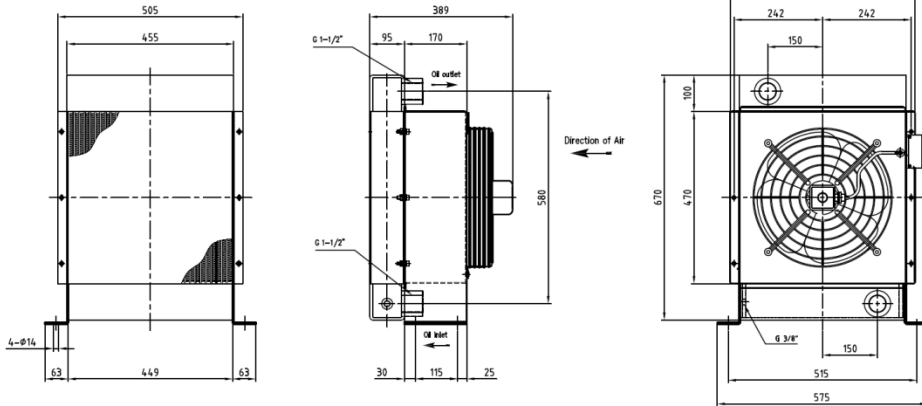
CORRECTION FACTOR

보정계수

cSt	20	30	40	60	100	200	300
F	0.8	1	1.2	1.6	2.1	3.3	4.3

AC MOTOR FAN COOLER

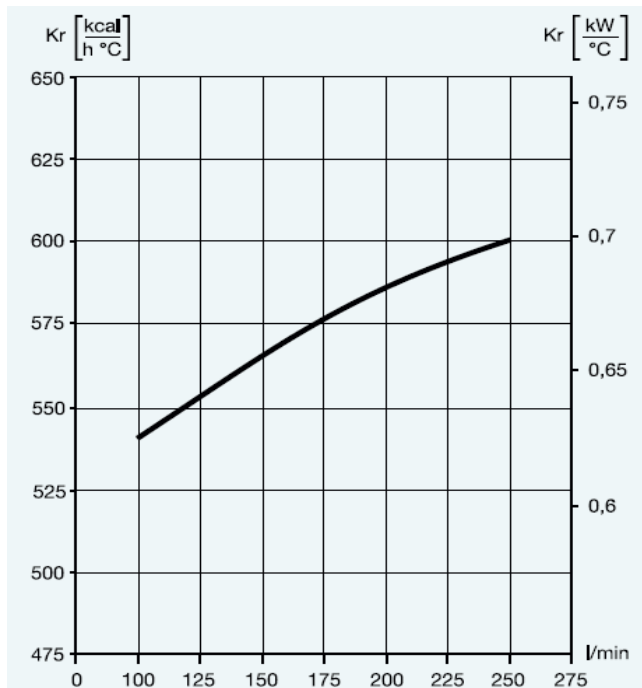
AFA - - - 580



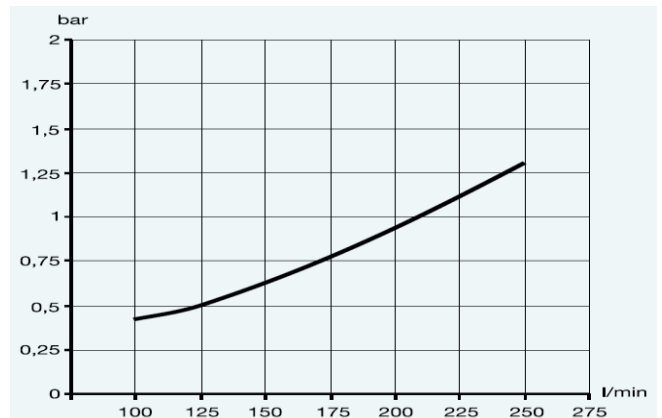
오일유량 OIL FLOW	오일체적 OIL CAPACITY	전압 VOLTAGE	모터 MOTOR	전류 FREQUENCY	전류 CURRENT	풍량 AIR FLOW	보호등급 PROTECTION	소음정도 NOISE LEVEL	중량 WEIGHT	최대사용압력* PRESSURE RANGE*
l/min	l	V	W	Hz	A	m ³ /hr	IP	dB(A)	Kg	bar
100 ~ 250	11.5	220 / 380	260	60	1.2 / 0.7	4,800	55	75	40	21

* 최대사용압력은 동압 기준임.
* Pressure range is based on dynamic pressure.

PERFORMANCE DIAGRAM 성능 곡선 표



LOSS OF PRESSURE DIAGRAM 차압 곡선 표

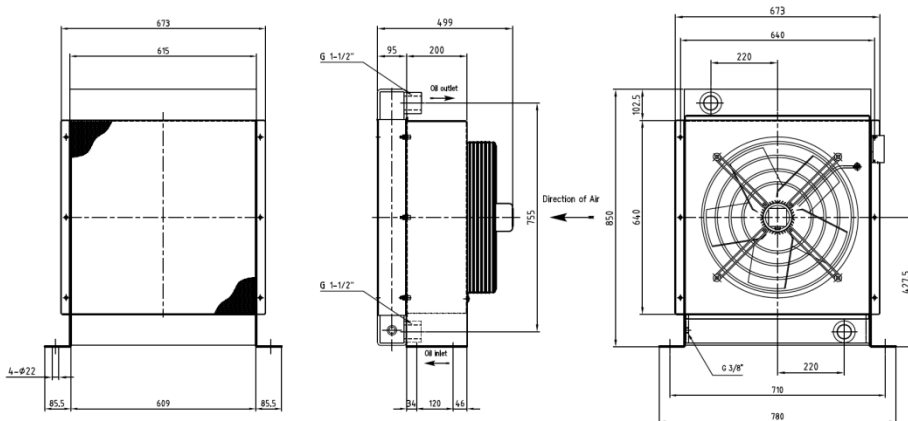


CORRECTION FACTOR 보정 계수

cSt	20	30	40	60	100	200	300
F	0.8	1	1.2	1.6	2.1	3.3	4.3

AC MOTOR FAN COOLER

AFA - - - 830



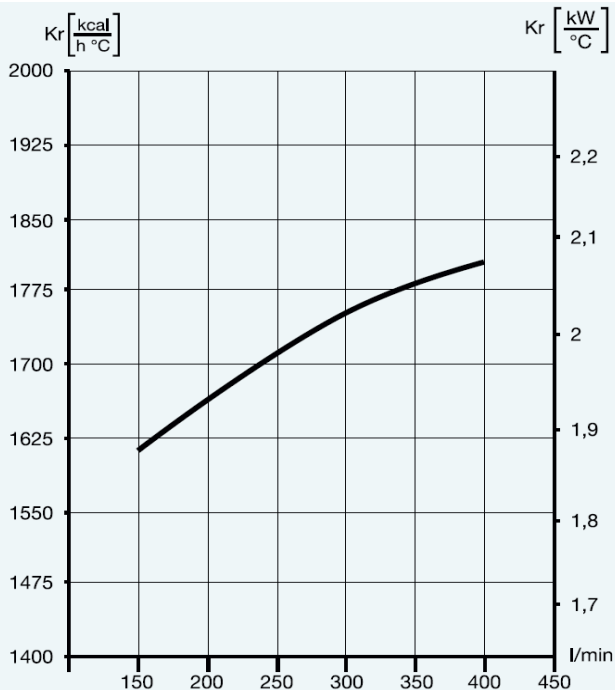
오일유량 OIL FLOW	오일체적 OIL CAPACITY	전압 VOLTAGE	모터 MOTOR	전류 FREQUENCY	전류 CURRENT	풍량 AIR FLOW	보호등급 PROTECTION	소음정도 NOISE LEVEL	중량 WEIGHT	최대사용압력* PRESSURE RANGE*
l/min	l	V	W	Hz	A	m ³ /hr	IP	dB(A)	Kg	bar
150 ~ 400	20	220 / 380	750	60	3.4 / 1.9	11,000	55	75	83	21

* 최대사용압력은 동압 기준임.

* Pressure range is based on dynamic pressure.

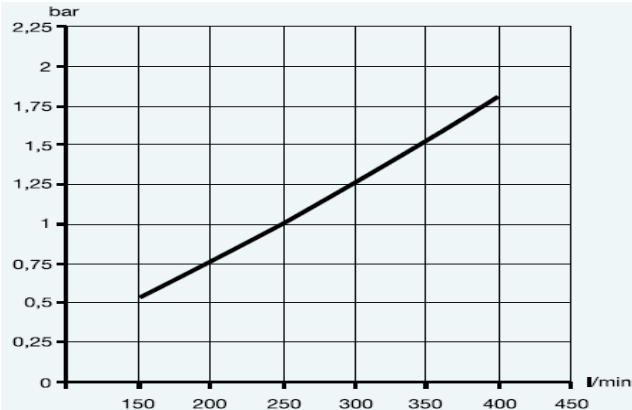
PERFORMANCE DIAGRAM

성능곡선표



LOSS OF PRESSURE DIAGRAM

차압곡선표



CORRECTION FACTOR

보정계수

cSt	20	30	40	60	100	200	300
F	0.8	1	1.2	1.6	2.1	3.3	4.3

HYDRAULIC MOTOR FAN COOLER



HYDRAULIC MOTOR FAN COOLER

AFH - - - 300

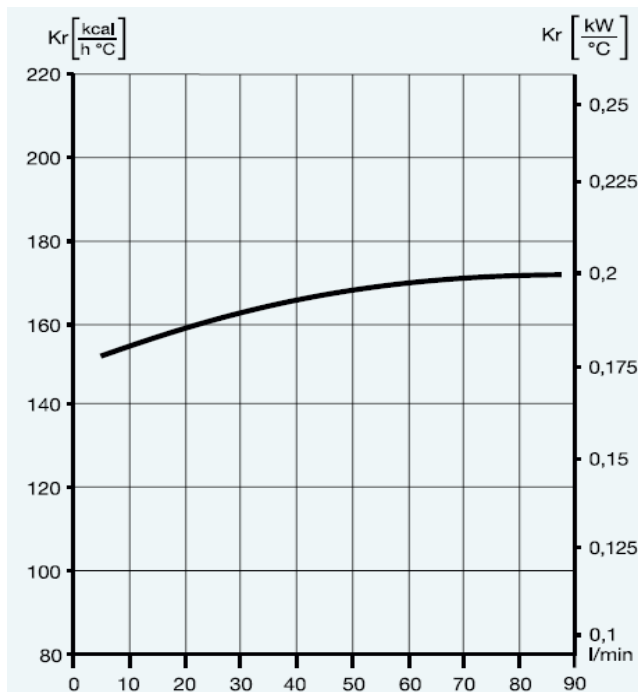
오일유량 OIL FLOW	오일체적 OIL CAPACITY	전압 VOLTAGE	모터 MOTOR	전류 FREQUENCY	전류 CURRENT	풍량 AIR FLOW	보호등급 PROTECTION	소음정도 NOISE LEVEL	중량 WEIGHT	최대사용압력* PRESSURE RANGE*
l/min	l	V	W	Hz	A	m³/hr	IP	dB(A)	Kg	bar
10 ~ 80	2	26	11.3	200	2,000	2,300	68	14	20	21

* 최대사용압력은 동압 기준임.

* Pressure range is based on dynamic pressure.

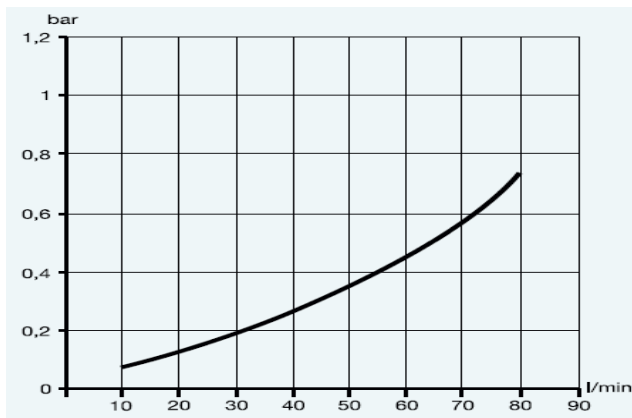
PERFORMANCE DIAGRAM

성능 곡선 표



LOSS OF PRESSURE DIAGRAM

차압 곡선 표



CORRECTION FACTOR

보정 계수

cSt	20	30	40	60	100	200	300
F	0.8	1	1.2	1.6	2.1	3.3	4.3



HYDRAULIC MOTOR FAN COOLER

AFH - - - 300/2

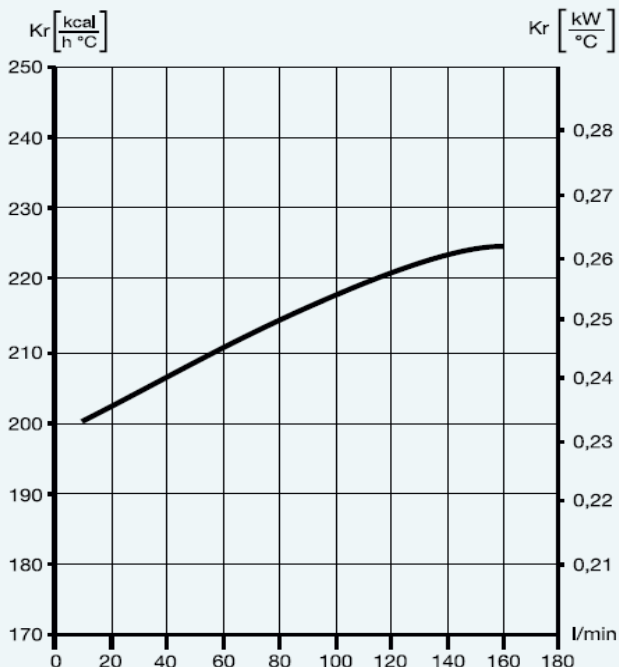
오일유량 OIL FLOW	오일체적 OIL CAPACITY	전압 VOLTAGE	모터 MOTOR	전류 FREQUENCY	전류 CURRENT	풍량 AIR FLOW	보호등급 PROTECTION	소음정도 NOISE LEVEL	중량 WEIGHT	최대사용압력* PRESSURE RANGE*
l/min	l	V	W	Hz	A	m³/hr	IP	dB(A)	Kg	bar
20 ~ 150	19	26	11.3	200	2,500	2,300	70	19	20	21

* 최대사용압력은 동압 기준임.

* Pressure range is based on dynamic pressure.

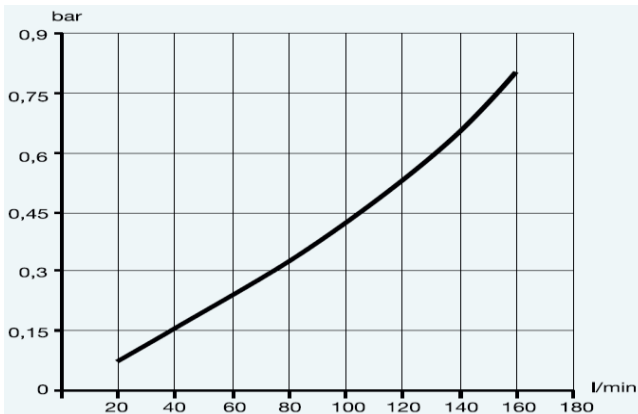
PERFORMANCE DIAGRAM

성능 곡선 표



LOSS OF PRESSURE DIAGRAM

차압 곡선 표



CORRECTION FACTOR

보정 계수

cSt	20	30	40	60	100	200	300
F	0.8	1	1.2	1.6	2.1	3.3	4.3

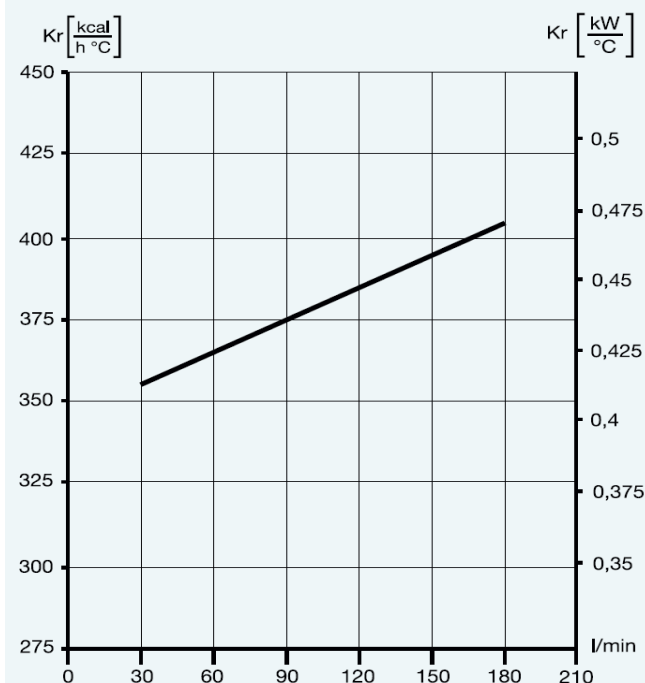
HYDRAULIC MOTOR FAN COOLER

AFH - - - 430

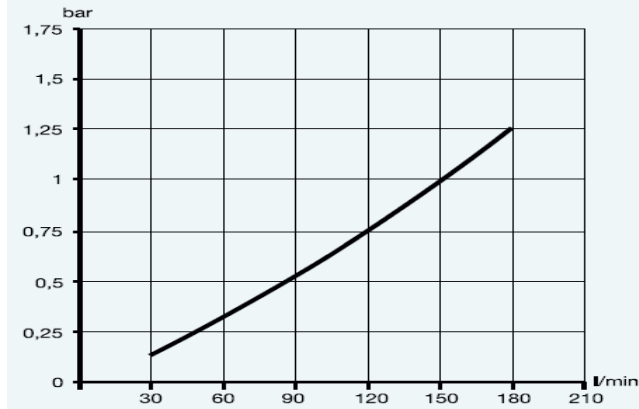
오일유량 OIL FLOW	오일체적 OIL CAPACITY	전압 VOLTAGE	모터 MOTOR	전류 FREQUENCY	전류 CURRENT	풍량 AIR FLOW	보호등급 PROTECTION	소음정도 NOISE LEVEL	중량 WEIGHT	최대사용압력* PRESSURE RANGE*
l/min	l	V	W	Hz	A	m³/hr	IP	dB(A)	Kg	bar
30 ~ 150	3.6	31	11.3	770	7,000	2,700	71	21	20	21

* 최대사용압력은 동압 기준임.
* Pressure range is based on dynamic pressure.

PERFORMANCE DIAGRAM
성능 곡선 표



LOSS OF PRESSURE DIAGRAM
차압 곡선 표



CORRECTION FACTOR
보정 계수

cSt	20	30	40	60	100	200	300
F	0.8	1	1.2	1.6	2.1	3.3	4.3



HYDRAULIC MOTOR FAN COOLER

AFH - - - 430/2

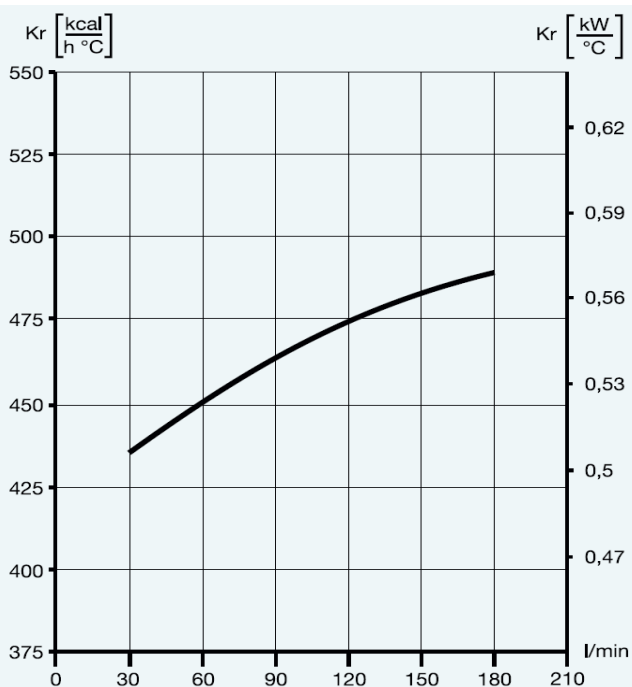
오일유량 OIL FLOW	오일체적 OIL CAPACITY	전압 VOLTAGE	모터 MOTOR	전류 FREQUENCY	전류 CURRENT	풍량 AIR FLOW	보호등급 PROTECTION	소음정도 NOISE LEVEL	중량 WEIGHT	최대사용압력* PRESSURE RANGE*
l/min	l	V	W	Hz	A	m³/hr	IP	dB(A)	Kg	bar
30 ~ 180	5.5	31	11.3	830	7,000	2,700	74	23	20	21

* 최대사용압력은 동압 기준임.

* Pressure range is based on dynamic pressure.

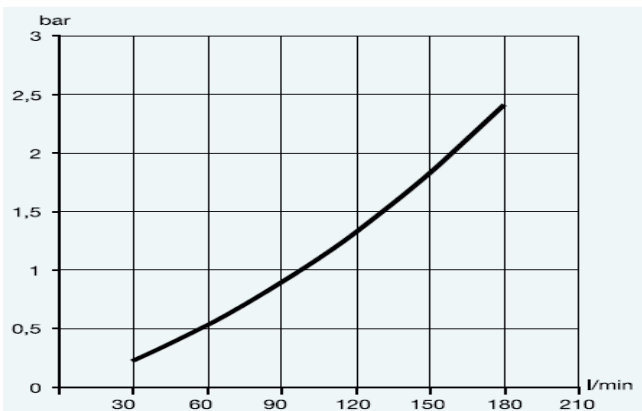
PERFORMANCE DIAGRAM

성능 곡선 표



LOSS OF PRESSURE DIAGRAM

차압 곡선 표



CORRECTION FACTOR

보정 계수

cSt	20	30	40	60	100	200	300
F	0.8	1	1.2	1.6	2.1	3.3	4.3

HYDRAULIC MOTOR FAN COOLER

AFH - - - 580

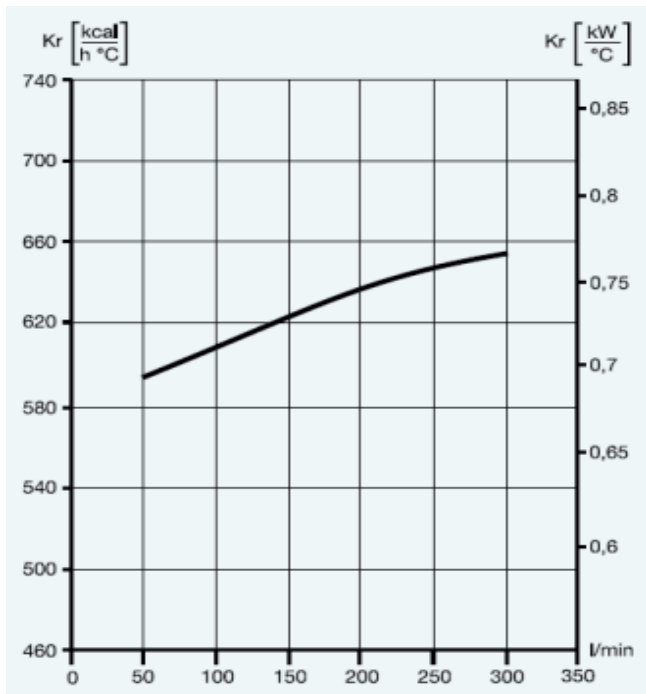
오일유량 OIL FLOW	오일체적 OIL CAPACITY	전압 VOLTAGE	모터 MOTOR	전류 FREQUENCY	전류 CURRENT	풍량 AIR FLOW	보호등급 PROTECTION	소음정도 NOISE LEVEL	중량 WEIGHT	최대사용압력* PRESSURE RANGE*
l/min	l	V	W	Hz	A	m³/hr	IP	dB(A)	Kg	bar
100 ~ 250	11.5	26	11.3	880	8,000	2,250	78	38	20	21

* 최대사용압력은 동압 기준임.

* Pressure range is based on dynamic pressure.

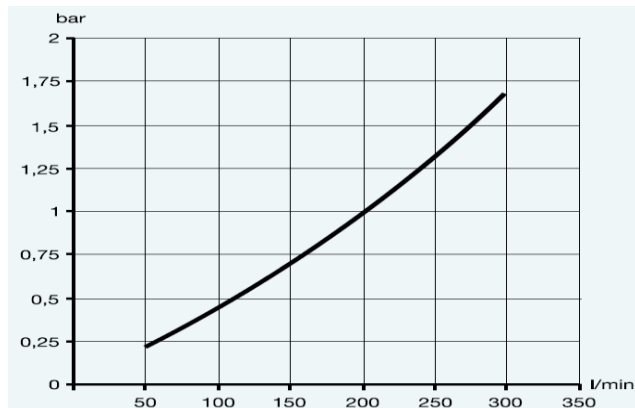
PERFORMANCE DIAGRAM

성능 곡선 표



LOSS OF PRESSURE DIAGRAM

차압 곡선 표



CORRECTION FACTOR

보정 계수

cSt	20	30	40	60	100	200	300
F	0.8	1	1.2	1.6	2.1	3.3	4.3

HYDRAULIC MOTOR FAN COOLER

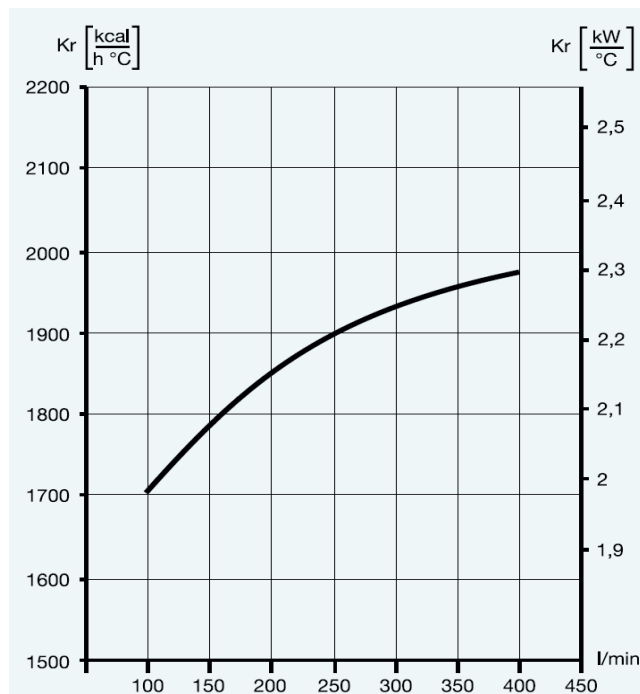
AFH - - - 830

오일유량 OIL FLOW	오일체적 OIL CAPACITY	전압 VOLTAGE	모터 MOTOR	전류 FREQUENCY	전류 CURRENT	풍량 AIR FLOW	보호등급 PROTECTION	소음정도 NOISE LEVEL	중량 WEIGHT	최대사용압력* PRESSURE RANGE*
l/min	l	V	W	Hz	A	m³/hr	IP	dB(A)	Kg	bar
150 ~ 400	20	23	11.3	1,300	15,000	1,300	82	75	20	21

* 최대사용압력은 동압 기준임.
* Pressure range is based on dynamic pressure.

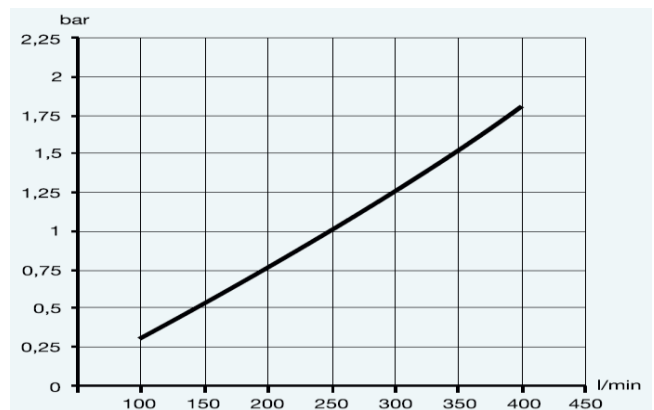
PERFORMANCE DIAGRAM

성능 곡선 표



LOSS OF PRESSURE DIAGRAM

차압 곡선 표



CORRECTION FACTOR

보정 계수

cSt	20	30	40	60	100	200	300
F	0.8	1	1.2	1.6	2.1	3.3	4.3

WIND TURBINE FAN COOLER





WIND TURBINE FAN COOLER

AFA - - - 1060

오일유량 OIL FLOW	오일체적 OIL CAPACITY	전압 VOLTAGE	모터 MOTOR	전류 FREQUENCY	전류 CURRENT	풍량 AIR FLOW	보호등급 PROTECTION	소음정도 NOISE LEVEL	중량 WEIGHT	최대사용압력* PRESSURE RANGE*
l/min	l	V	W	Hz	A	m³/hr	IP	dB(A)	Kg	bar
100 ~ 500	24.1	220 / 380	2.55	60	10.9 / 6.32	17,640	55	88	157	21
		440			5.46					

* 최대사용압력은 동압 기준임. * Pressure range is based on dynamic pressure.

CORRECTION FACTOR 보정계수							
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