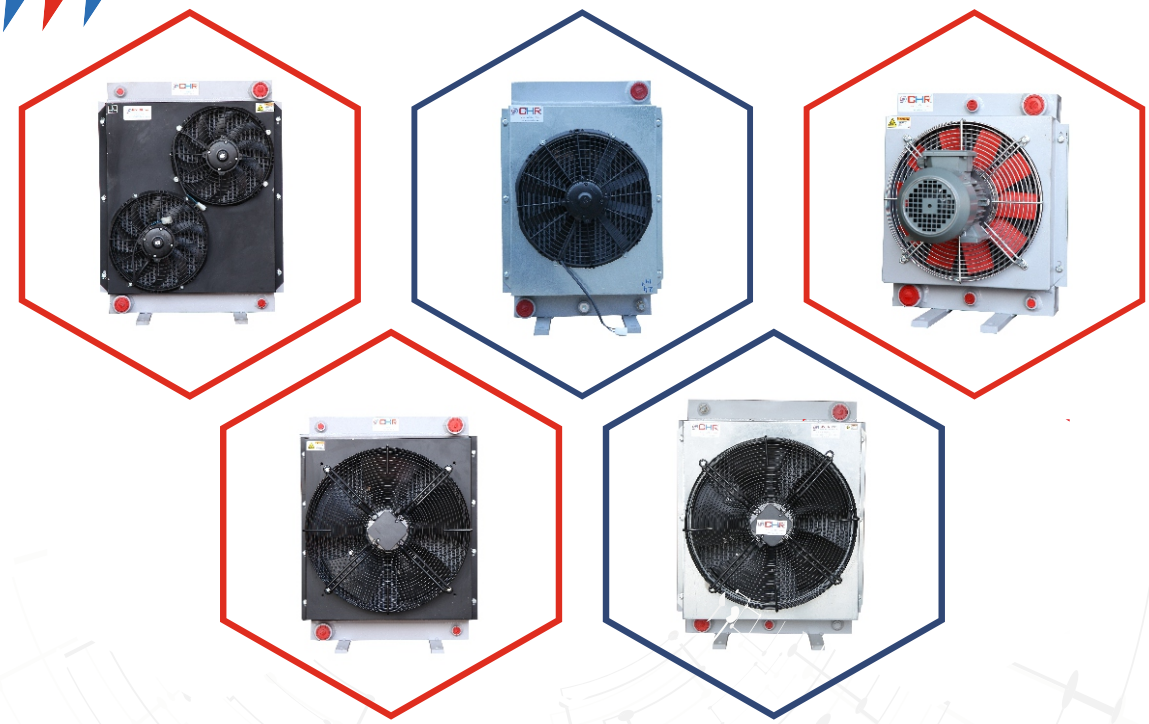
BAŞKENT RADYATÖR YAĞ SOĞUTUCU



CHR®
COOLER HEAT EXCHANGER RADIATOR

1985'den İtibaren
Yağ Soğutucu İmalatı

FANLI YAĞ SOĞUTUCU SERİSİ CHR-İ
CHR-İ SERİES OF FAN OIL-COLOR HEAT-EXCHANGERS

CHR air-oil heat exchangers are used for cooling oil hydraulic systems using as the coolant ambient air that passes over the radiant by means of a fan operated by an electric or hydraulic motor.
The cooler element, in high resistance aluminium alloy, is obtained by means of a braze-welding process carried out under vacuum.
The particular configuration of the cooling pipes increase the turbulence of the fluid consequently of the exchange capacity; moreover, the presence of special jets on the cooler finning further improves the total transmission coefficient.
The result is a very small, light and robust technologically advanced product.

Compatible fluids

. MINERAL OILS; HL; HLP.
. WATER-OIL EMULSION.
. WATER-GLYCOL.
. Consults CHR for other fluids.

Technical specification of Cooler Element

. Material: long life aluminium.
. Operating pressure: 20 bar
. Test pressure: 35 bar.
. Max operating temperature: 120°c.
. For specially aggressive atmospheres contact CHR

Installation

The exchangers can be fitted in a horizontal position, respecting the minimum distance from the wall (see fig.1) so as to ensure a natural flow of cooling air.
The exchangers is usually installed on oil tank return piping; it must also be protected from impacts and mechanical vibrations by supports and must be connected to the plant with flexible pipes.
Avoid subjecting the exchanger to sudden changes in flow, hammering and pulsations that can cause irreversible damage to the element.
We recommend installing a by-pass valve (see fig.2) to protect the exchanger from over-pressure generated when the plants is started up due to high oil viscosity.

Maintenance

You should be particularly carefully in cleaning the cooler element to guarantee a natural exchange of air, in order to prevent a reduction in thermal efficiency

Cleaning oil side

The exchanger should be dismantled to clean on the oil side. The dirt can be removed by flushing, in counter-current, de-greasing substance, compatible with aluminium. Wash with hydraulic oil before re-connecting the product to the plant.

Cleaning air side

Cleaning on the air side can be done using compressed air or water, directing the jet parallel to the fins so as not to damage them.
Oily dirt or grease can be removed with a jet of steam or hot water. During this operation, the electric motor must be disconnected from the voltage supply, and must be adequately protected.

Example of how to choose a heat exchanger

Proceed with sizing the exchanger, with a knowledge of the data as the example below shows:

Power to dissipate	:	19,5	[KW]
ISO VG 32 oil flow	:	90	[lpm]
Oil input temperature	:	60	[°c]
Ambient temperature	:	30	[°c]

Fan operating with an electric motor 230/400V-50Hz.

You can then calculate the specific heat exchange power KW/°C if you know the power to dissipate and the ΔT (the difference between the oil input temperature and the ambient temperature).

$$P = \frac{19{,}5\ KW}{60° - 30°} = 0.65\ KW/°C$$

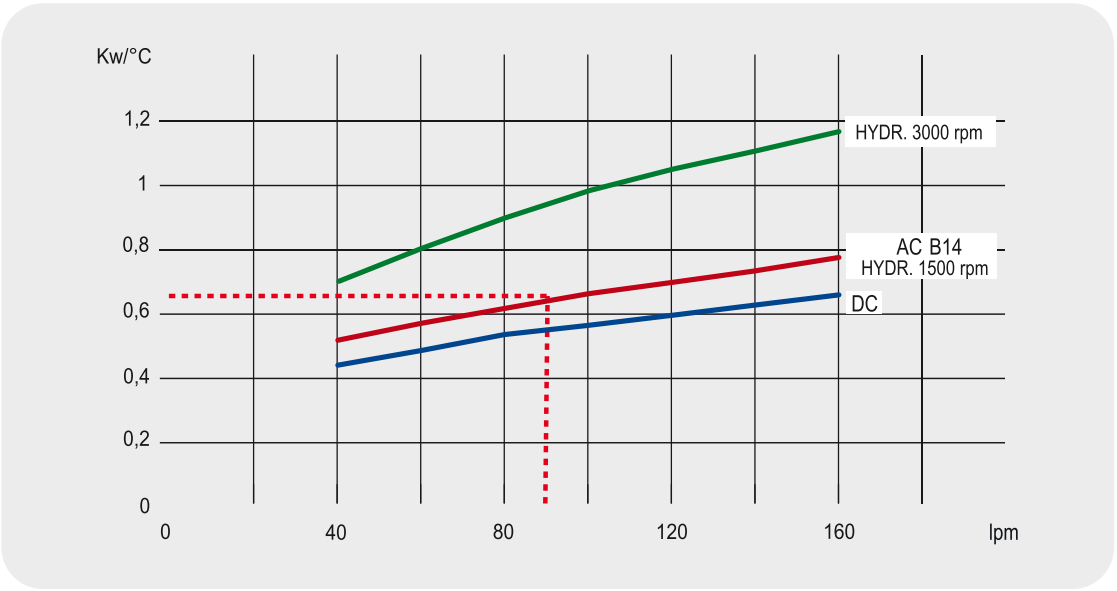
Note the oil flow (90 lpm) and specific exchange power (0.65 KW/°C), product research is made by referring to the graph in the catalogue which is relevant to each model.

Teknik Veriler / Technical Data

P/N	V	Hz	kW	A	rpm	ø Fan	dB(A)	(m³/ h)	IP	lt	Kg
243003 # # #	230-400 B14 AC 280-480 B14 AC	50 60	0,75 0,90	3,46-1,90 3,41-1,99	1394 1673	450	82	4000	55	6,8	37
243012 # # #	12 DC	/	0,115	9,58	2530	280	74	1550	65		32
243024 # # #	24 DC	/	0,125	5,20	2900	280	78	1700	65		32
243056 # # #						450			/		35

Teklif isteyiniz.

Performans Şeması / Performance diagram



The exchanger selected is the following model:
CHR 30 - 230/400 - 50Hz
cod. 243003###.

For a complete desription of the exchanger consult the PRODUCT ORDERING CODE page.If you do not know all the data required for selecting the model, contact CHR

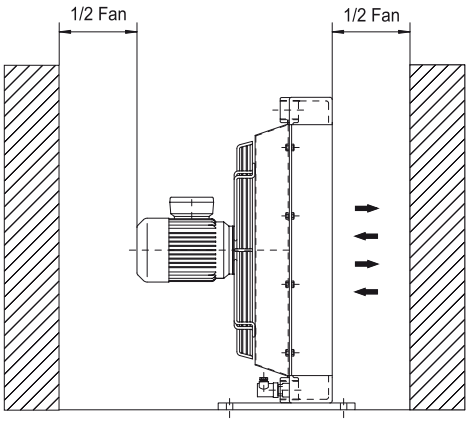


Fig.1

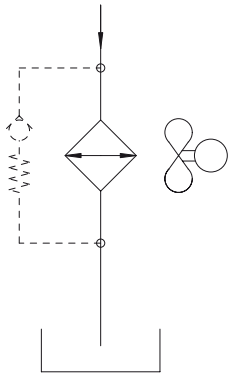
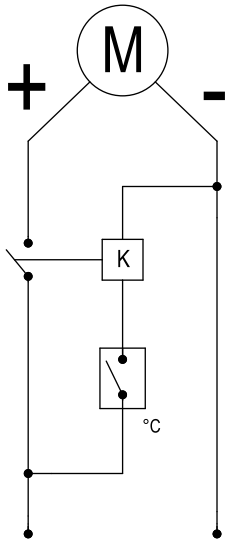


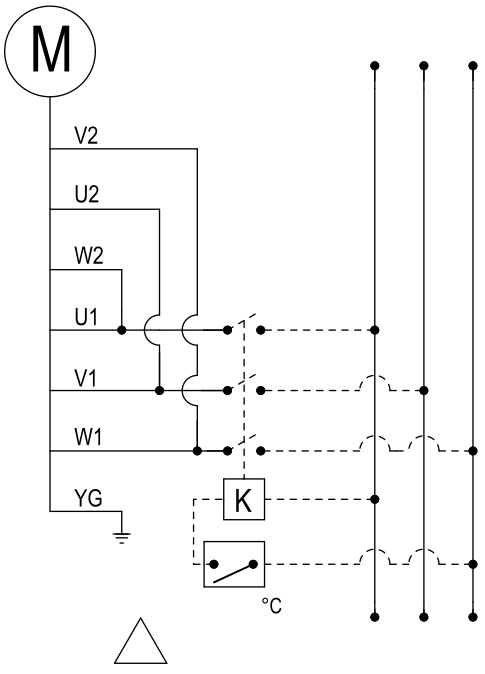
Fig.2

BAŞKENT RADYATÖR KAYNAK
YAĞ SOĞUTUCU MAK. METAL OTO. İNŞ. SAN. ve TİC. LTD. ŞTİ.

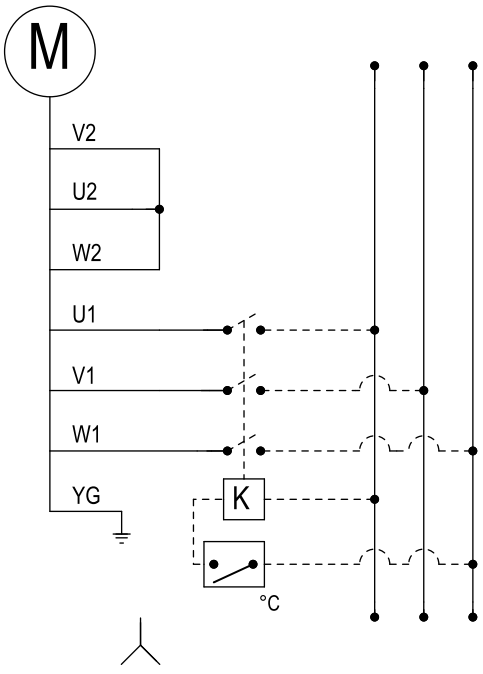
Elektrik Devresi / Electric Wiring



12-24V DC



230V-280V AC 3 PHASE



400V-480V AC 3 PHASE

°C = Thermostat No.
K = Relay

Soğutucu Seçimi İçin Levha / Sheet For Cooler Selection

ŞİRKET COMPANY	
İSİM NAME	

Hava-Yağ

YAĞ DEBİSİ OIL FLOW POWER	lmp	
TOPLAM GÜÇ TOTAL POWER	KW	
DAĞITILMASI GEREKEN GÜÇ POWE TO BE DISSIPATED	KW	
YaĞ SICAKLIK GİRİŞİ OIL TEMPERATURE INLET	°C	
MAKSİMUM ORTAM SICAKLIĞI MAX AMBIENT TEMPERATURE	°C	
YAĞ VİSKOSİTESİ AKIŞKANLIĞI OIL VISCOSITY	cst	
ÇALIŞMA BASINCI WORKING PRESSURE	bar	

FAN BİRİMİ TİPİ / TYPE OF FAN UNIT

- **DİREKT AKIM / DIRECT CURRENT**
  - 12V
  - 24V
- **HİDROLİK MOTORLAR İÇİN HAZIRLANDI / PREPARATED FOR HYDRAULIC MOTOR**
  - GR.2
  - GR.3
- **ALTERNATİF AKIM / ALTERNATE CURRENT**
  - 230-400V 280-480V *THREEPHASE*
  - **ÖZEL VOLTAJ / SPECIAL VOLTAGE**
    - 50 HZ
    - 60 HZ

BAŞKENT RADYATÖR KAYNAK
YAĞ SOĞUTUCU MAK. METAL OTO. İNŞ. SAN. ve TİC. LTD. ŞTİ.

Sipariş Kodu / Ordering Code

2	424	03	2	01

Soğutucu Serileri
Cooler Series

424	(CHR 24)

Fan Motoru Tipi
Fan Motor Type

03	AC 230V-400V 50Hz / AC 280-480 60Hz (B14)	
12	DC 12V	
24	DC 24V	
56	Pred. per mot. idr. gr.2	Pred. for hydr. mot. gr.2
58	Pred. per mot. idr. gr.3	Prep. for hydr. mot. gr.3

Termostatlar
Thermostats

1	Fixed thermostat	40-28°
2	Fixed thermostat	50-38°
3	Fixed thermostat	60-48°
4	Fixed thermostat	70-58°
5	Fixed thermostat	80-68°
6	Fixed thermostat	90-78°
7	Adjustable thermostat	0-90° (TC2)
8	Connected adjustable thermostat	0-120°(TC2)

Havalandırma Tipi
Ventilating Type

01	Suction air flow
02	Blowing air flow

CHR Series

CHR 12 pag. 8 - 9
CHR 18 pag. 10 -11
CHR 24 pag. 12 -13
CHR 30 pag. 14 -15
CHR 36 pag. 16 -17
CHR 42 pag. 18 -19
CHR 50 pag. 20 -21
CHR 52 pag. 22 -23





CHR 2pass Series

CHR 24 2 PASS pag. 24-25
CHR 30 2 PASS pag. 26-27
CHR 36 2 PASS pag. 28-29
CHR 42 2 PASS pag. 30-31
CHR 50 2 PASS pag. 32-33
CHR 52 2 PASS pag. 34-35

CHR /2 Series

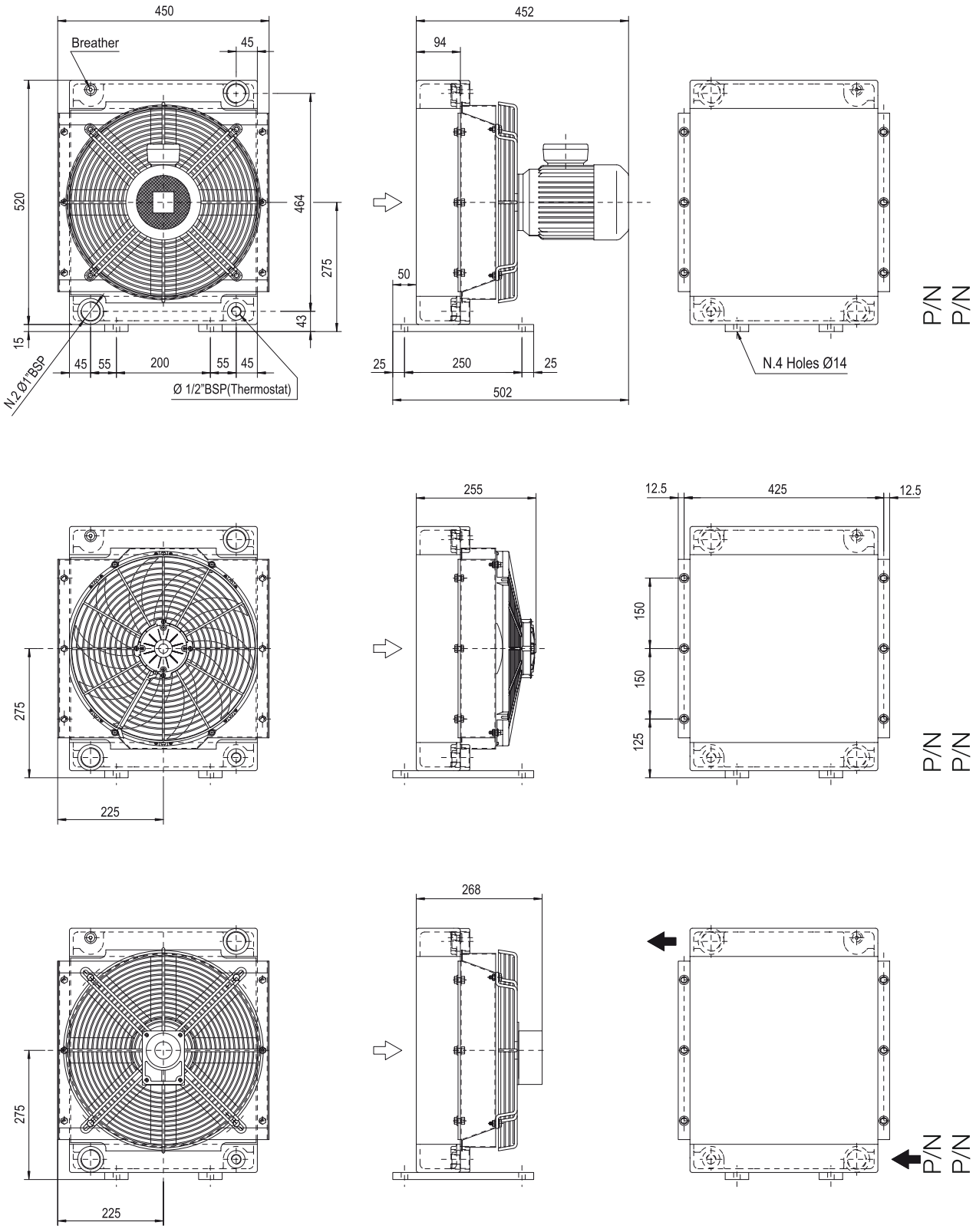
CHR 30/2 pag. 36-37
CHR 36/2 pag. 38-39
CHR 42/2 pag. 40-41
CHR 50/2 pag. 42-43
CHR 52/2 pag. 44-45

CHR 44/2 pag. 46-47
CHR 44/3 pag. 48-49

CHR 46/2 pag. 50-51
CHR 46/3 pag. 52-53



Yağ Soğutucu Boyutları / Dimensions



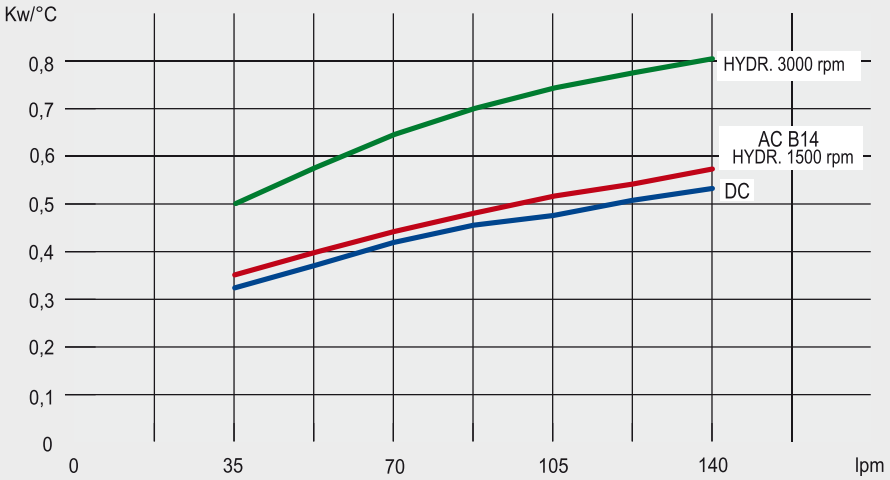
Boyutlar ve teknik özellikler bağlayıcı değildir.
Over-all dimensions and technical characteristic are not binding

Teknik Veriler / Technical Data

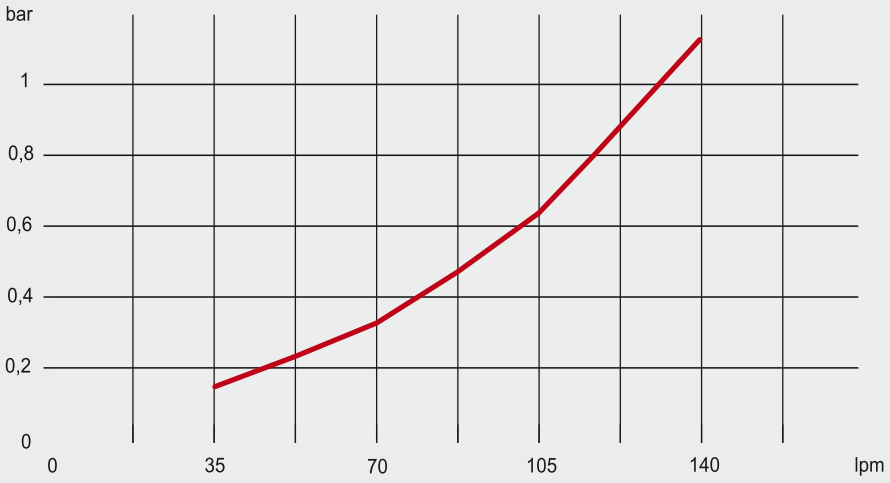
P/N	V	Hz	kW	A	rpm	ø Fan	dB(A)	(m³/ h)	IP	lt	Kg
	230-400 B14 AC 280-480 B14 AC	50 60	0,55 0,66	2,58-1,49 2,56-1,49	1391 1669	400	79 ☎	2800 ☎	55	2,9	28 28
	12 DC	/	0,187	15,6	2350	385	77	2100	65		22
	24 DC	/	0,170	7,1	2580	305	80	2250	65		22
					☎	400	☎	☎	/		23

☎ Teklif isteyiniz.

Performans Şeması / Performance diagram



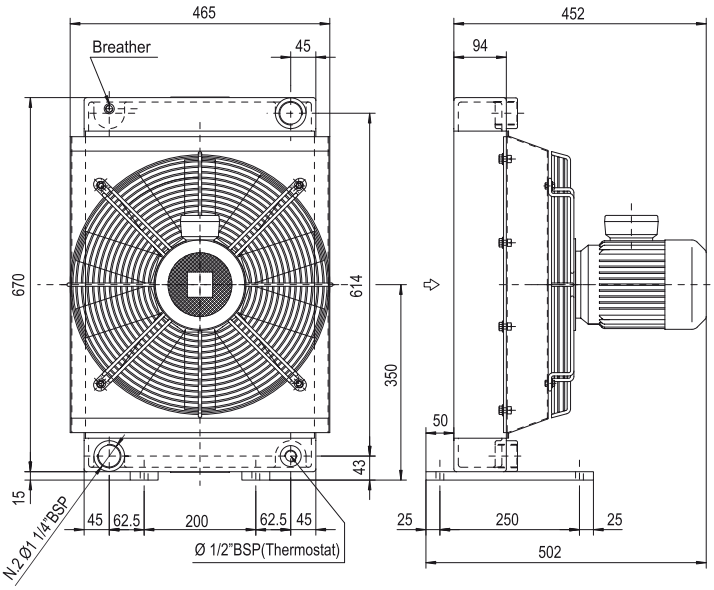
Basınç Düşmesi / Pressure drop (ISO VG 32)



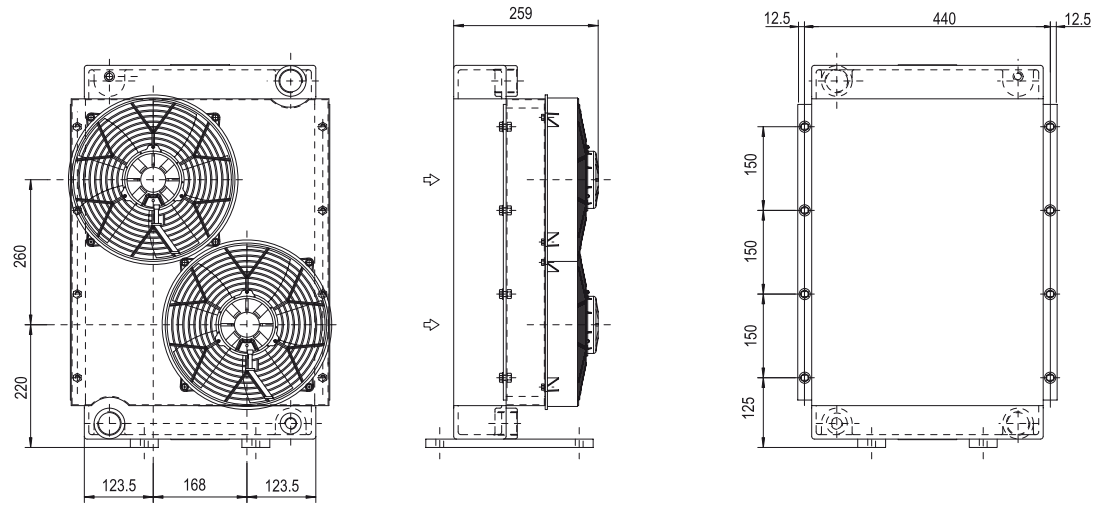
Düzeltme Faktörü -F- (Basınç Düşmesi) / Correction factor -F- (Pressure drop)

cst	10	15	20	30	40	50	60	80	100	200	300
F	0,5	0,65	0,77	1	1,2	1,4	1,6	1,9	2,1	3,3	4,3

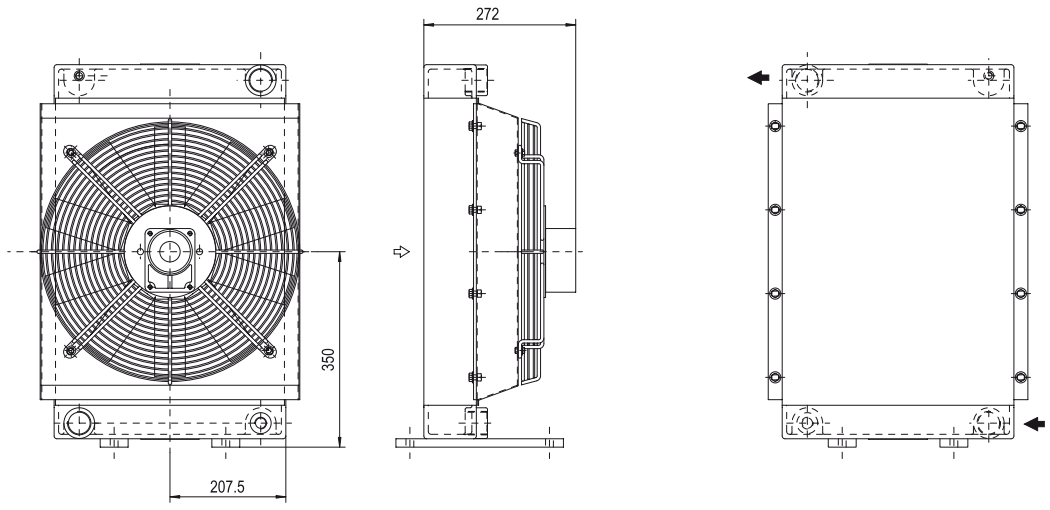
Yağ Soğutucu Boyutları / Dimensions



P/N
P/N



P/N
P/N



P/N
P/N

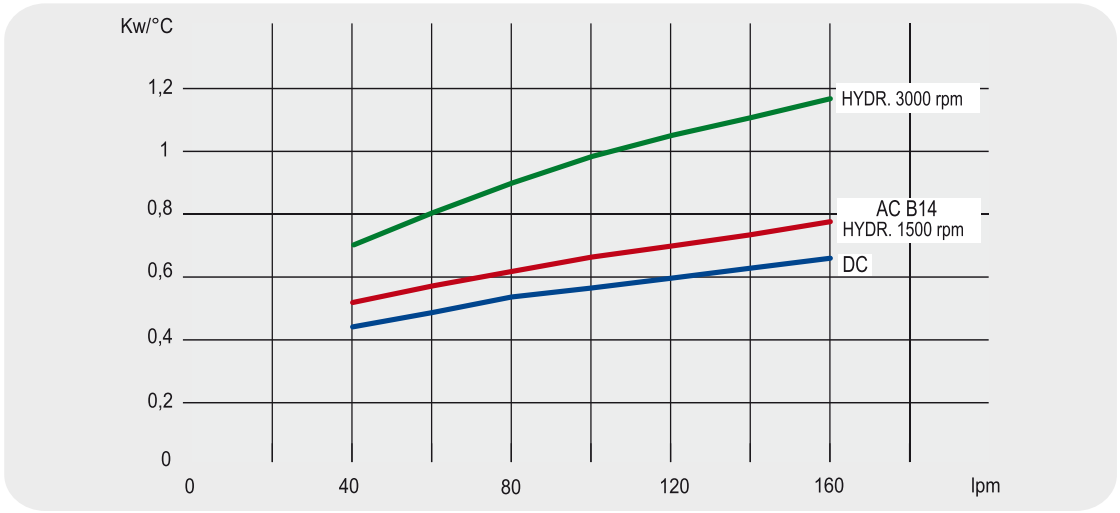
Boyutlar ve teknik özellikler bağlayıcı değildir.
Over-all dimensions and technical characteristic are not binding

Teknik Veriler / Technical Data

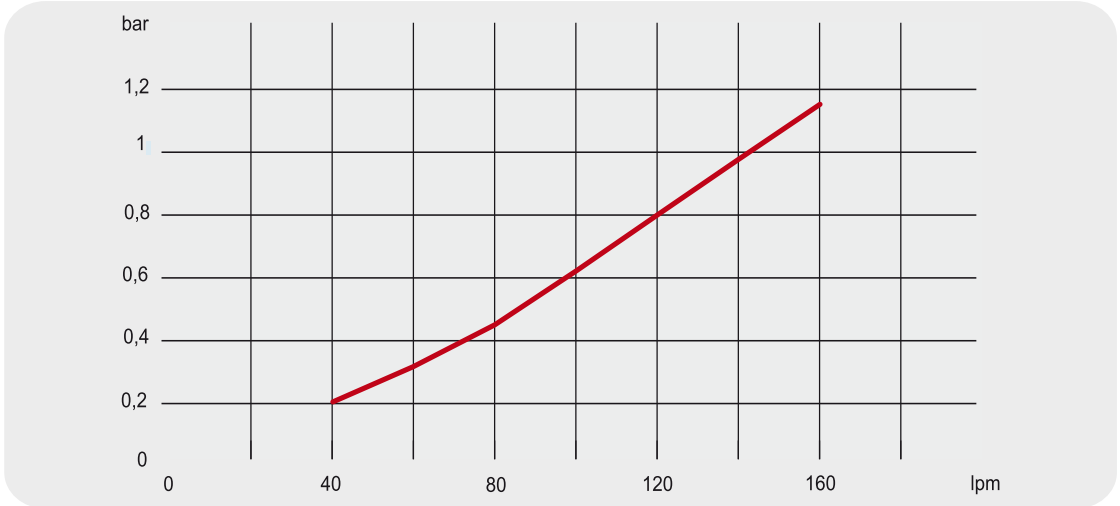
P/N	V	Hz	kW	A	rpm	ø Fan	dB(A)	(m³/ h)	IP	lt	Kg
	230-400 B14 AC 280-480 B14 AC	50 60	0,75 0,90	3,46-1,90 3,41-1,99	1394 1673	450	82 ☎	4000 ☎	55	6,8	37
	12 DC	/	0,115	9,58	2530	280	74	1550	65		32
	24 DC	/	0,125	5,20	2900	280	78	1700	65		32
					☎	450	☎	☎	/		35

☎ Teklif isteyiniz.

Performans Şeması / Performance diagram



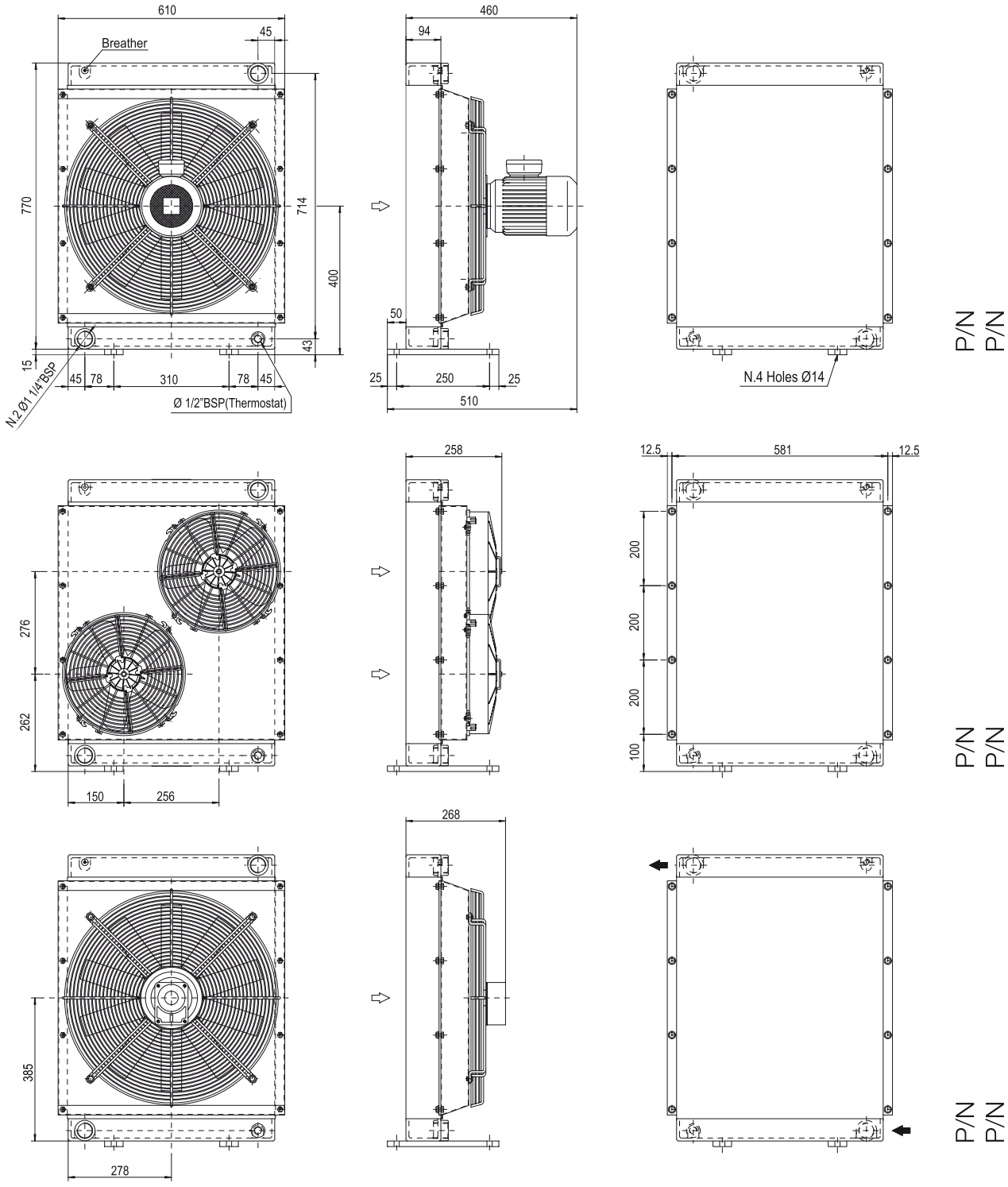
Basınç Düşmesi / Pressure drop (ISO VG 32)



Düzeltme Faktörü -F- (Basınç Düşmesi) / Correction factor -F- (Pressure drop)

cst	10	15	20	30	40	50	60	80	100	200	300
F	0,5	0,65	0,77	1	1,2	1,4	1,6	1,9	2,1	3,3	4,3

Yağ Soğutucu Boyutları / Dimensions



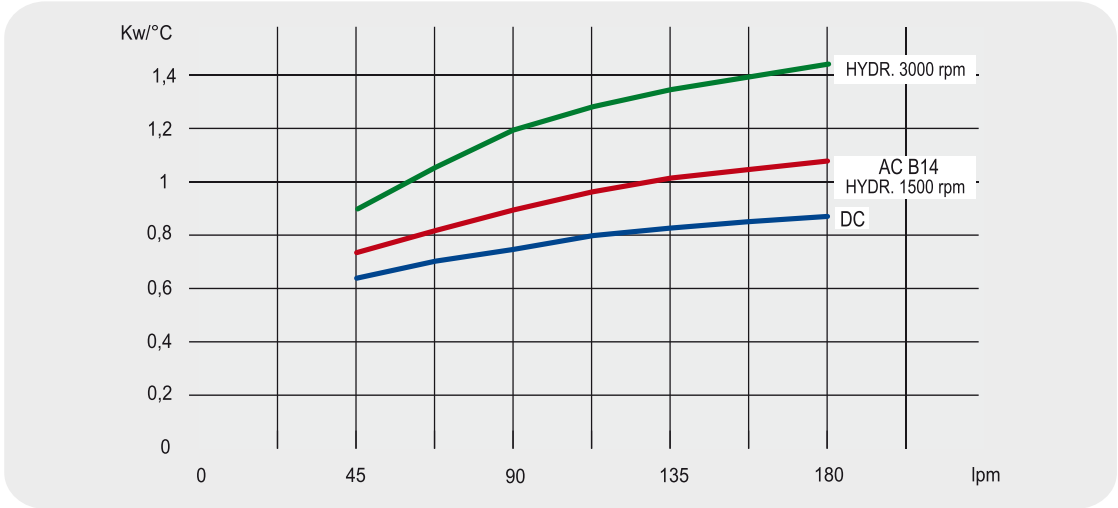
Boyutlar ve teknik özellikler bağlayıcı değildir.
Over-all dimensions and technical characteristic are not binding

Teknik Veriler / Technical Data

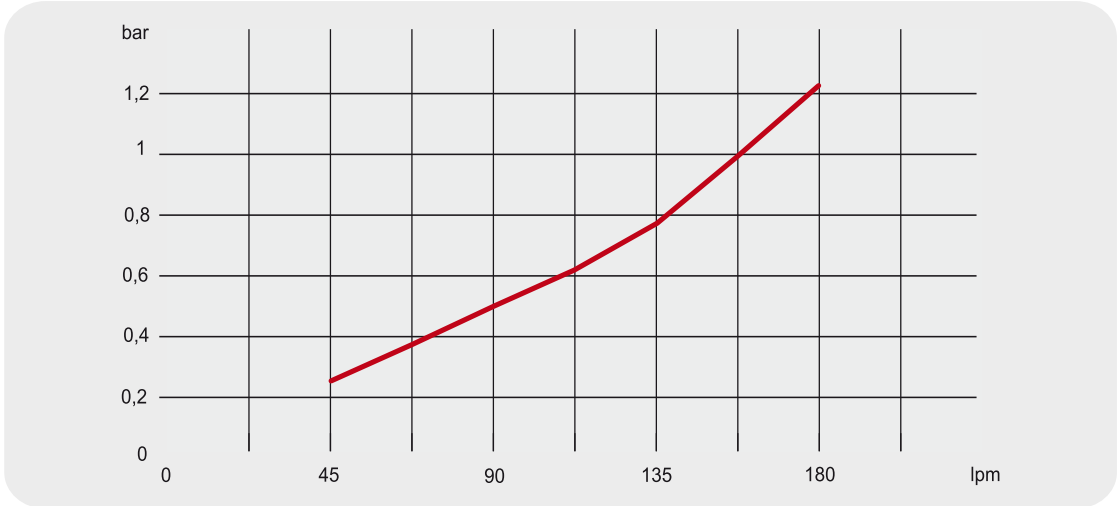
P/N	V	Hz	kW	A	rpm	ø Fan	dB(A)	(m³/ h)	IP	lt	Kg
	230-400 B14 AC 280-480 B14 AC	50 60	1,1 1,32	4,35-2,50 4,29-2,50	1378 1654	500	82 ☎	5650 ☎	55		60
	12 DC	/	0,160	13,30	2560	305	83	2100	64	9,4	50
	24 DC	/	0,177	7,35	3000	305	84	2400	64		50
					☎	450	☎	☎	/		52

☎ Teklif isteyiniz.

Performans Şeması / Performance diagram



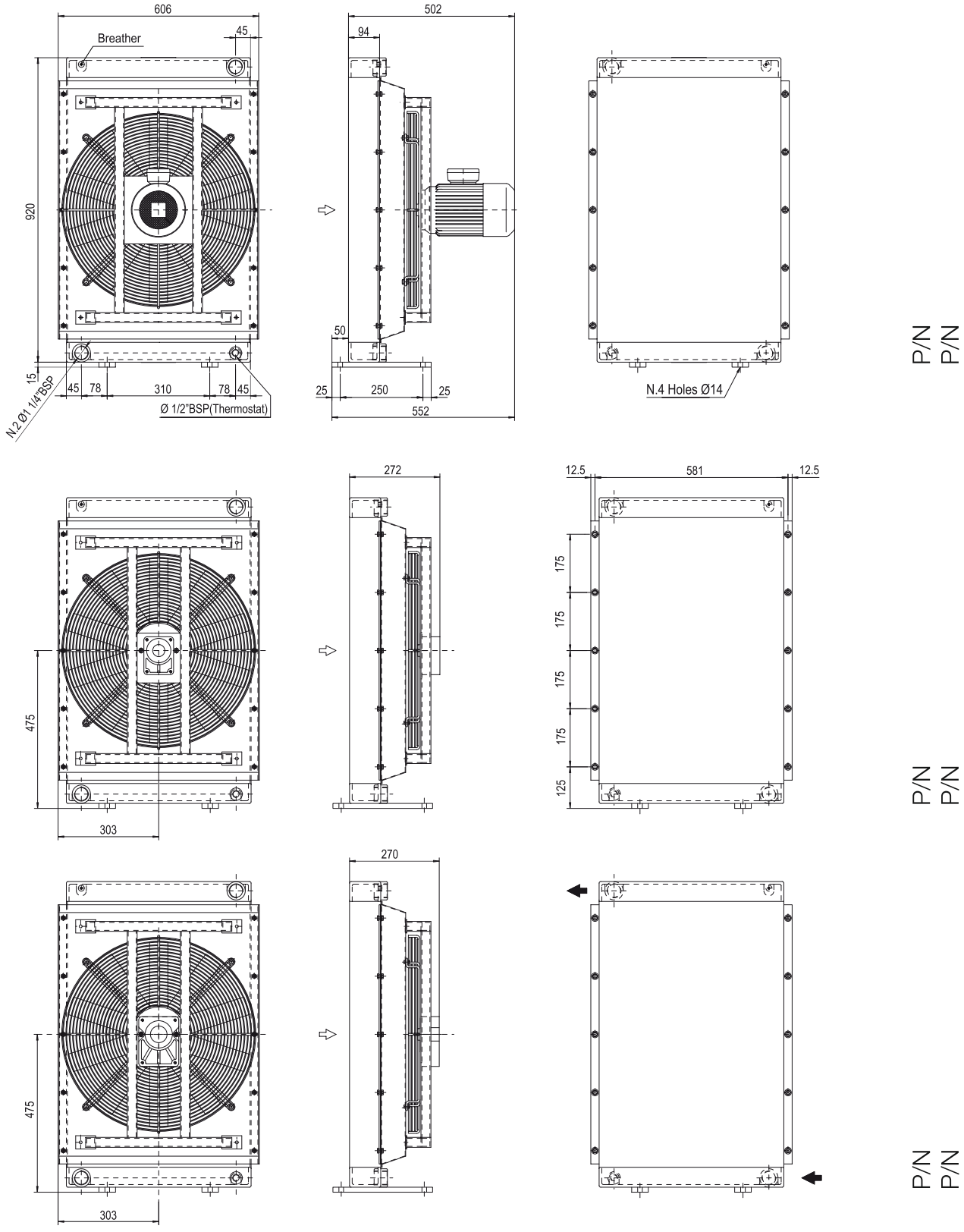
Basınç Düşmesi / Pressure drop (ISO VG 32)



Düzeltme Faktörü -F- (Basınç Düşmesi) / Correction factor -F- (Pressure drop)

cst	10	15	20	30	40	50	60	80	100	200	300
F	0,5	0,65	0,77	1	1,2	1,4	1,6	1,9	2,1	3,3	4,3

Yağ Soğutucu Boyutları / Dimensions



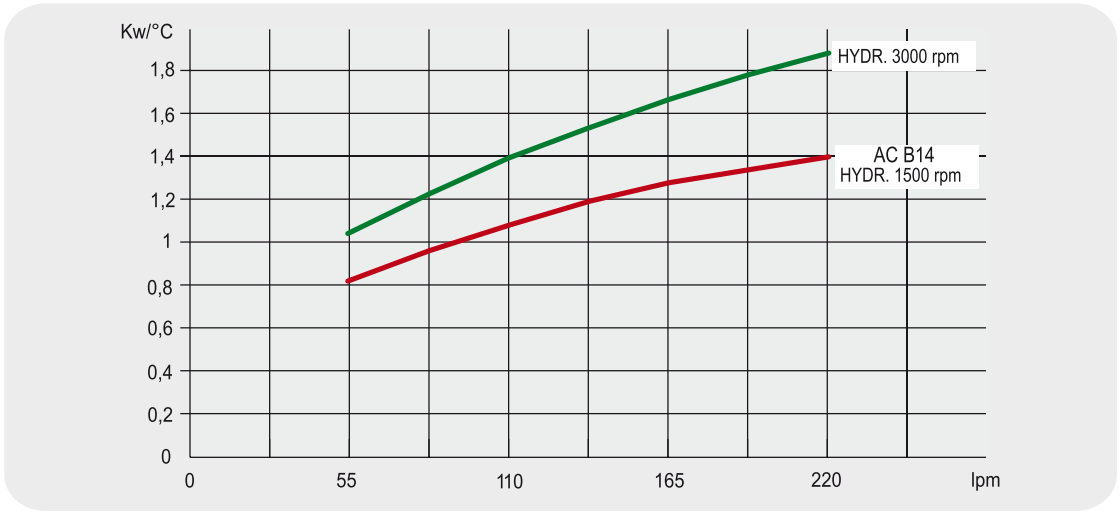
Boyutlar ve teknik özellikler bağlayıcı değildir.
Over-all dimensions and technical characteristic are not binding

Teknik Veriler / Technical Data

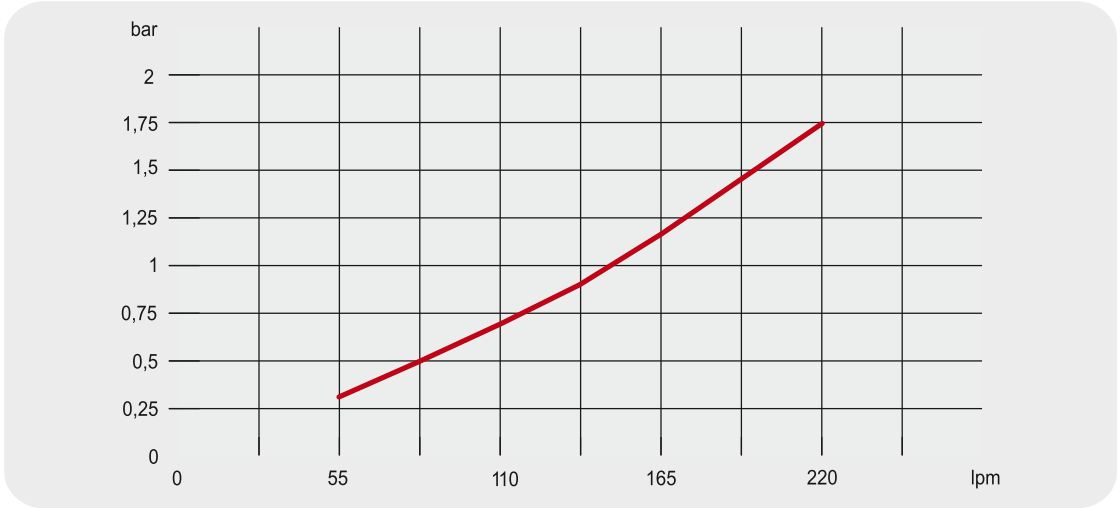
P/N	V	Hz	kW	A	rpm	ø Fan	dB(A)	(m³/ h)	IP	lt	Kg
	230-400 B14 AC 280-480 B14 AC	50 60	1,1 1,32	4,35-2,50 4,29-2,50	1378 1654	560	84	7550	55	10,6	65
						560			/		58
						560			/		58

Teklif isteyiniz.

Performans Şeması / Performance diagram



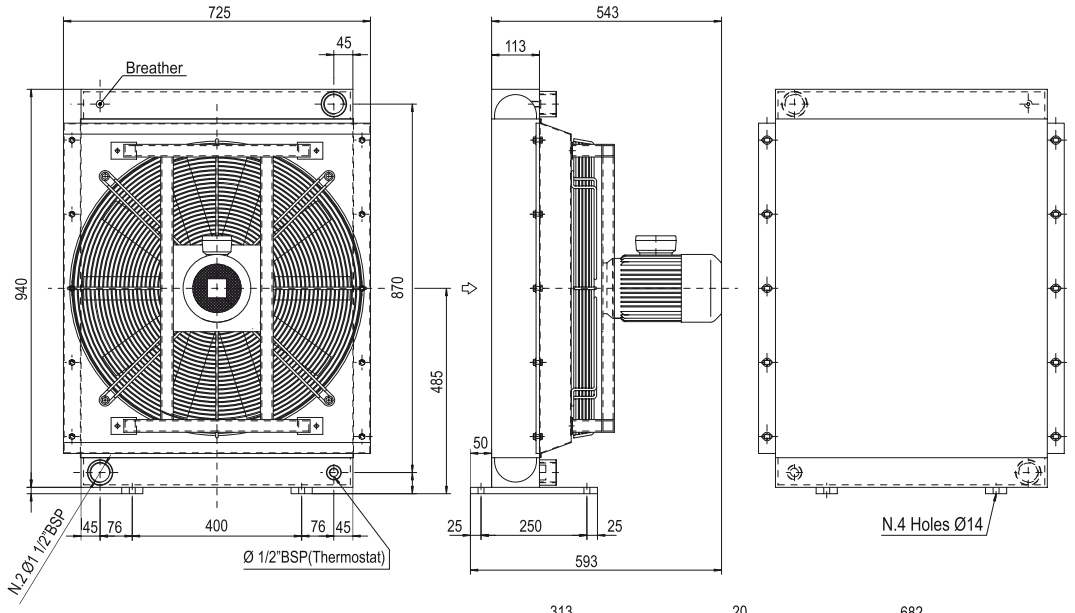
Basınç Düşmesi / Pressure drop (ISO VG 32)



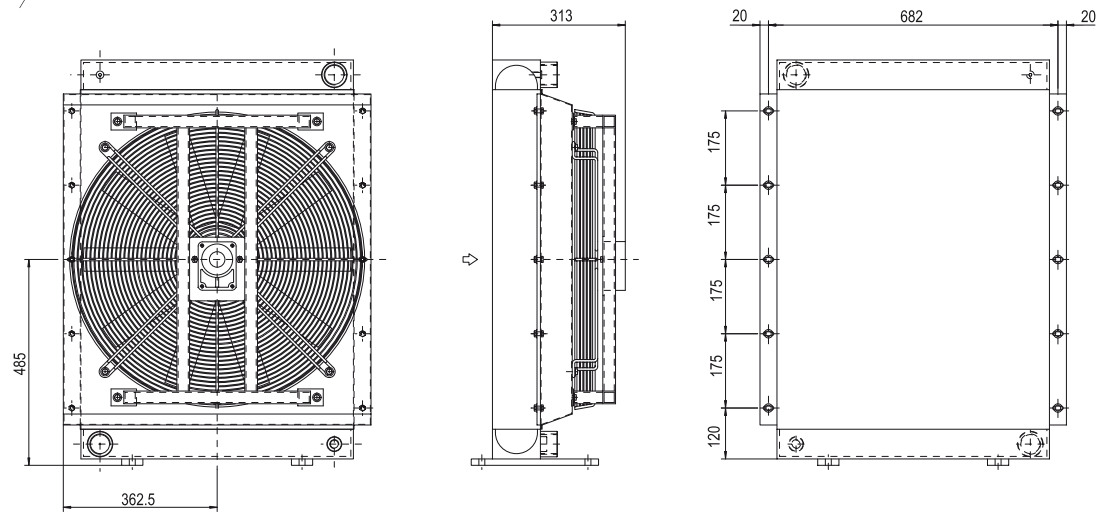
Düzeltme Faktörü -F- (Basınç Düşmesi) / Correction factor -F- (Pressure drop)

cst	10	15	20	30	40	50	60	80	100	200	300
F	0,5	0,65	0,77	1	1,2	1,4	1,6	1,9	2,1	3,3	4,3

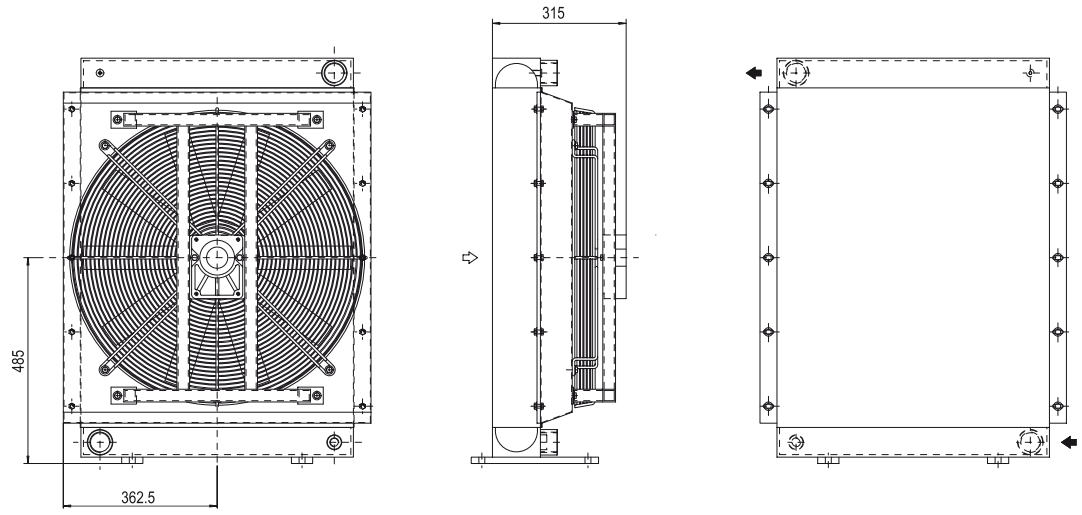
Yağ Soğutucu Boyutları / Dimensions



P/N
P/N



P/N
P/N



P/N
P/N

Boyutlar ve teknik özellikler bağlayıcı değildir.
Over-all dimensions and technical characteristic are not binding

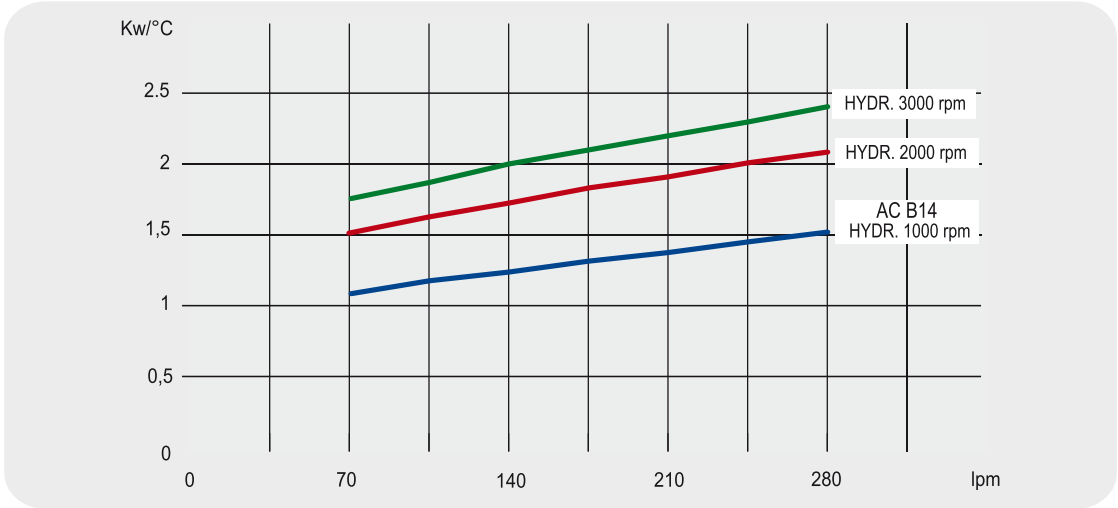
CHR - K 50
280 LT/DK

Teknik Veriler / Technical Data

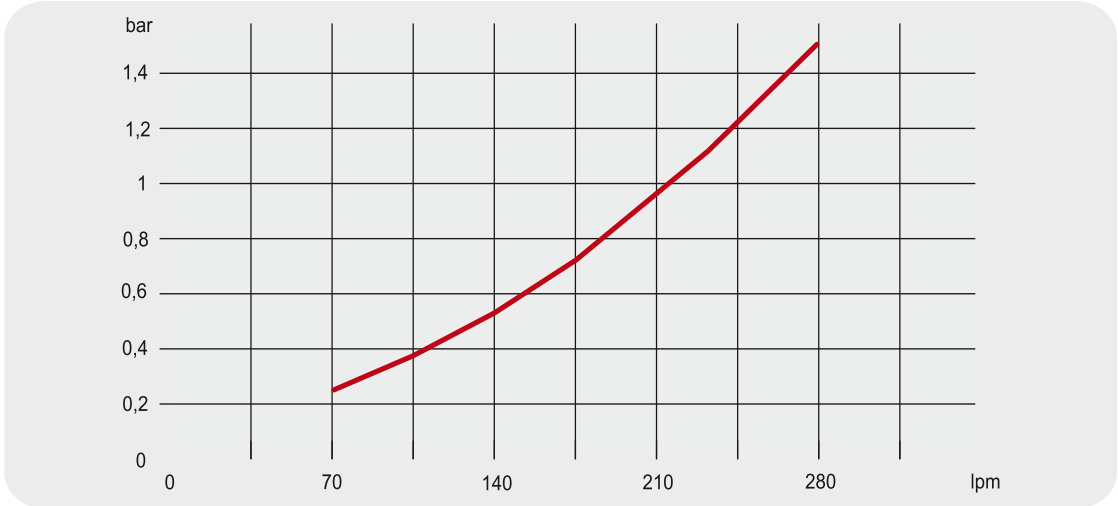
P/N	V	Hz	kW	A	rpm	ø Fan	dB(A)	(m³/ h)	IP	lt	Kg
	230-400 B14 AC 280-480 B14 AC	50 60	1,1 1,32	4,77-2,74 4,70-2,74	915 1098	630	80	7550	55	14,2	90
						630			/		83
						630			/		83

Teklif isteyiniz.

Performans Şeması / Performance diagram



Basınç Düşmesi / Pressure drop (ISO VG 32)

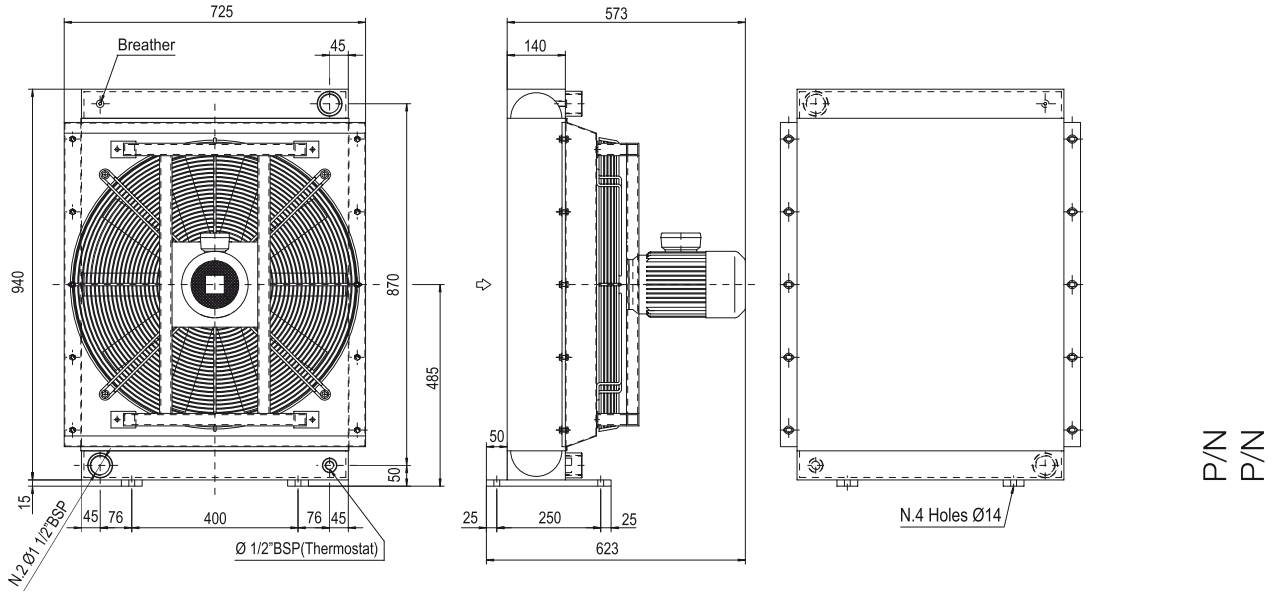


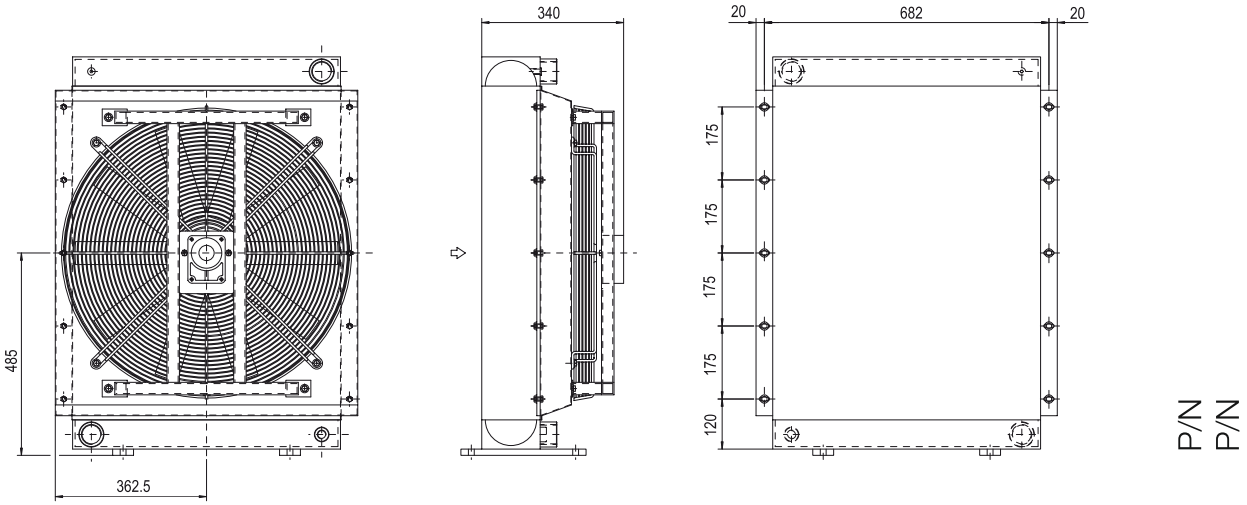
Düzeltme Faktörü -F- (Basınç Düşmesi) / Correction factor -F- (Pressure drop)

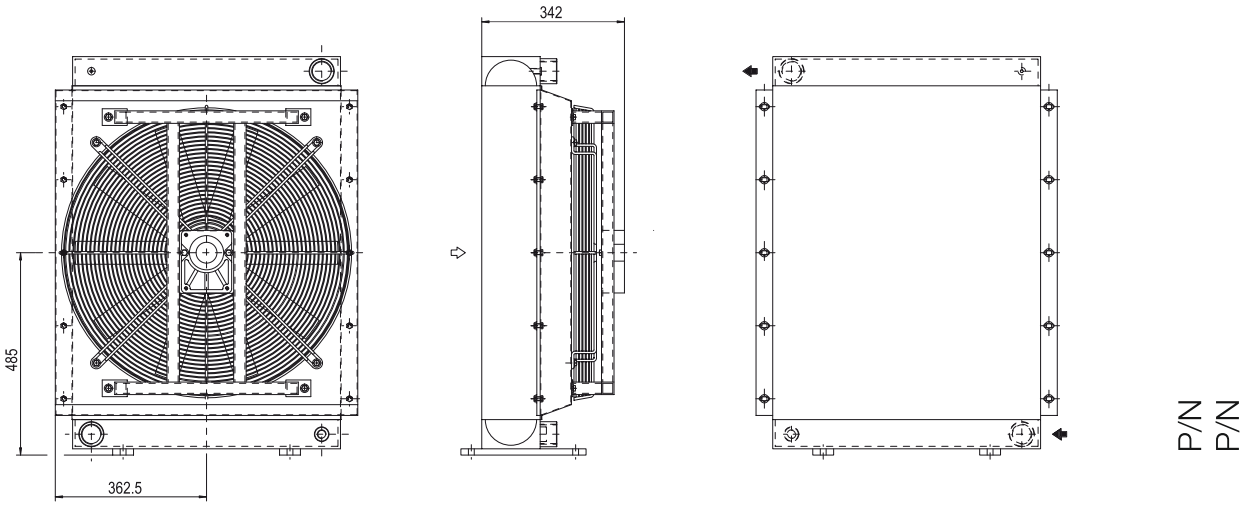
cst	10	15	20	30	40	50	60	80	100	200	300
F	0,5	0,65	0,77	1	1,2	1,4	1,6	1,9	2,1	3,3	4,3

CHR - K 50

Yağ Soğutucu Boyutları / Dimensions







Boyutlar ve teknik özellikler bağlayıcı değildir.
Over-all dimensions and technical characteristic are not binding

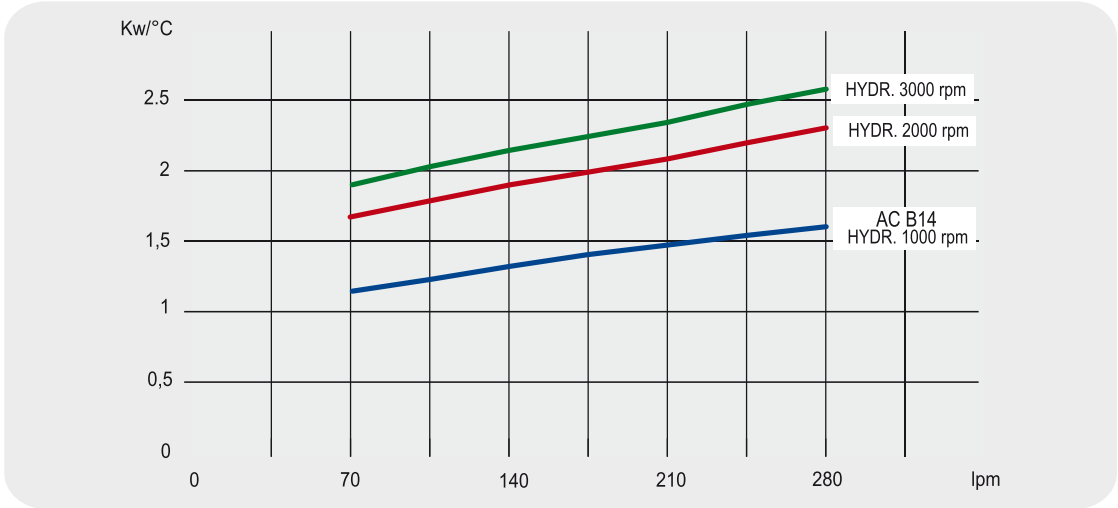
CHR - K 52
320 LT/DK

Teknik Veriler / Technical Data

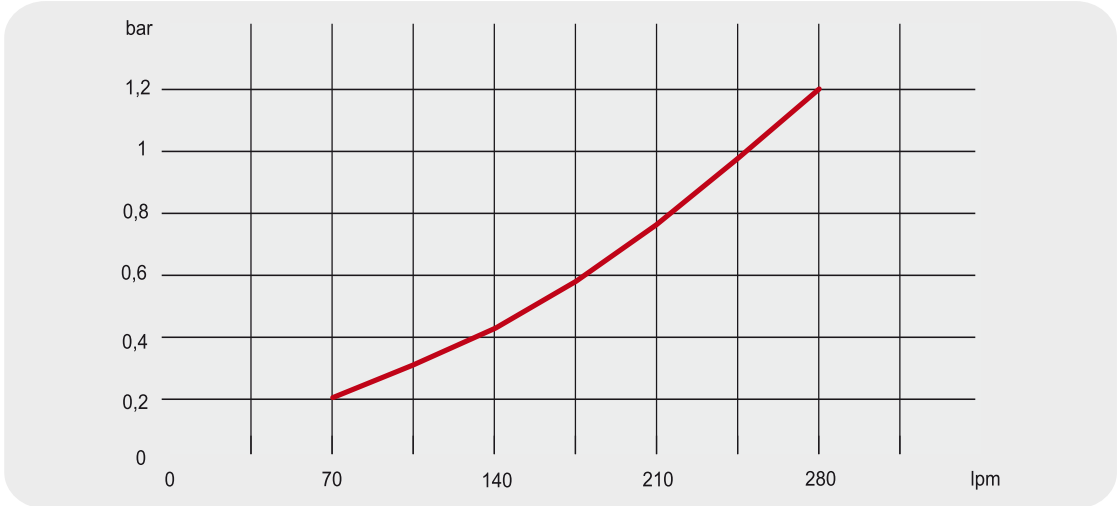
P/N	V	Hz	kW	A	rpm	ø Fan	dB(A)	(m³/ h)	IP	lt	Kg
	230-400 B14 AC 280-480 B14 AC	50 60	1,1 1,32	4,77-2,74 4,70-2,74	915 1098	630	80	7050	55	17,7	95
						630			/		89
						630			/		89

Teklif isteyiniz.

Performans Şeması / Performance diagram



Basınç Düşmesi / Pressure drop (ISO VG 32)



Düzeltme Faktörü -F- (Basınç Düşmesi) / Correction factor -F- (Pressure drop)

cst	10	15	20	30	40	50	60	80	100	200	300
F	0,5	0,65	0,77	1	1,2	1,4	1,6	1,9	2,1	3,3	4,3

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CHR®

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