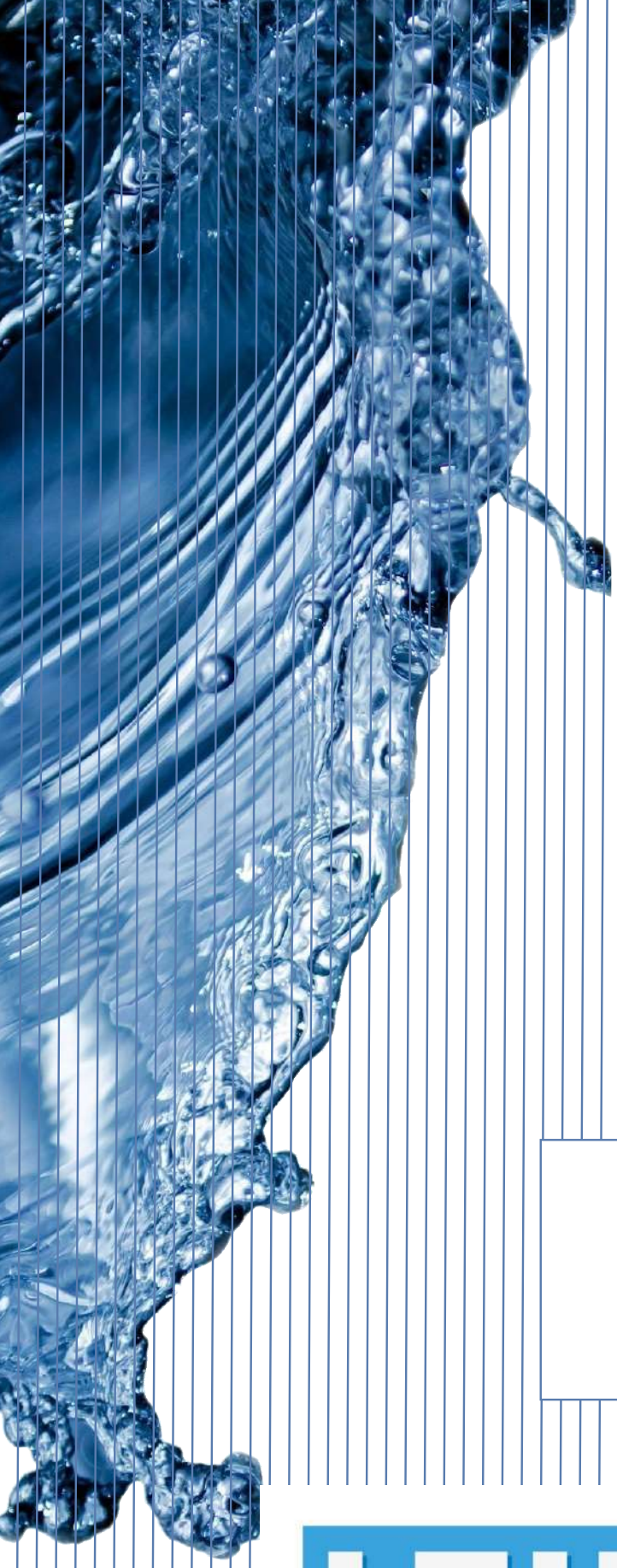


EMMEGI

Scambiatori di calore Aria/Olio

Serie HPA

LTH

HYDRAULIC
COMPONENTS
& FLUID CONTAMINATION
CONTROL

Scambiatori Aria-olio
Serie HPA

Air-oil heat-exchangers
HPA Series

EMMEGI

Introduzione

Introduction

Gli scambiatori di calore aria-olio **EMMEGI**, sono impiegati per il raffreddamento di circuiti oleodinamici usando, come fluido raffreddante, l'aria ambiente convogliata sulla radiante da una ventola azionata da un motore elettrico o idraulico.
La massa radiante, in lega d'alluminio ad alta resistenza, è ottenuta mediante un processo costuttivo di saldobrasatura sottovuoto.
La particolare configurazione dei condotti aumenta la turbolenza del fluido e di conseguenza la capacità di scanbio; inoltre, la presenza di speciali turbolatori sull' alettatura del pacco radiante, migliora ulteriormente il coefficiente di trasmissione totale.
Il risultato è un prodotto tecnologicamente avanzato di dimensioni contenute, leggero e robusto.

EMMEGI *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.

Fluidi compatibili

Compatible fluids

. OIL MINERALI, HL, HLP.
. EMULSIONI ACQUA-OLIO
. ACQUA-GLICOLE
. Per altri fluidi consultare EMMEGI.

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

Specifiche tecniche Masse Radianti

Technical specification of Cooler Element

. Materiale: alluminio "long life".
. Pressione d'esercizio: 20 bar.
. Pressione di collaudo: 35 bar.
. Temperatura max d'esercizio: 120°c
. Per particolari atmosfere aggressive consultare l'EMMEGI.

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

Installazione

Installation

Lo scambiatore può essere montato in posizione orrizontale o verticale, rispettando la distanza minima dalla parete (vedi fig. 1), in modo da assicurare un naturale afflusso e deflusso dell' aria di raffreddamento.
Lo scambiatore è installato, di norma, sulle tubazioni di ritorno dell' olio del serbatoio; deve, inoltre essere protetto da urti e vibrazioni meccaniche mediante supporti e collegato all' impianto con tubazioni flessibili. É necessario evitare che sia sottoposto a brusche variazioni di portata, colpi d' ariete e pulsazioni continue che danneggiano in modo irreversibile la radiante.
Per preservare lo scambiatore dalla sovrapressione che si genera all' avviamento dell' impianto, per elevata viscosità dell' olio, si suggerisce l' inserimento di una valvola di by-pass (vedi fig.2).

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.

Manutenzione

É buona norma prestare particolare attenzione alla pulizia della massa radiante per garantire un naturale ricambio d' aria, ed evitare una diminuzione dell' efficenza termica.

Pulizia lato olio

Per eseguire la pulizia lato olio, lo scambiatore dovrà essere smontato. Lo sporco può essere rimosso flussando in controcorrente un prodotto sgrassante, compatibile con alluminio. Effettuare un lavaggio con olio idraulico prima di ricollegare il prodotto all' impianto.

Pulizia lato aria

La pulizia lato aria può essere effettuata con aria compressa o acqua, con direzione del getto parallelo alle alette per non danneggiarle. Lo sporco oleoso o grasso può essere rimosso con getto di vapore o acqua calda. Durante questa operazione, il motore elettrico non deve essere collegato alla tensione, e drovà essere adeguatamente protetto.

Esempio di scelta dello scambiatore

Per effettuare la scelta dello scambiatore si procede come segue:

Potenza da dissipare	:	19,5	[KW]
Portata olio ISO VG 32	:	90	[lpm]
Temperatura ingresso olio	:	60	[°c]
Temperatura ambiente	:	30	[°c]

Ventola azionata da motore elettrico 230/400V-50Hz.

Si calcola la potenza specifica di scambio espressa in KW/°C, conoscendo la potenza da dissipare e il ΔT (differenza tra la temperatura olio ingresso e la temperatura ambiente).

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

Nota la portata olio (90 lpm) e la potenza specifica di scambio (0.65 KW/°C) si procede alla ricerca del prodotto avvalendosi dei grafici riportati a catalogo, relativi ai singoli modelli.

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.

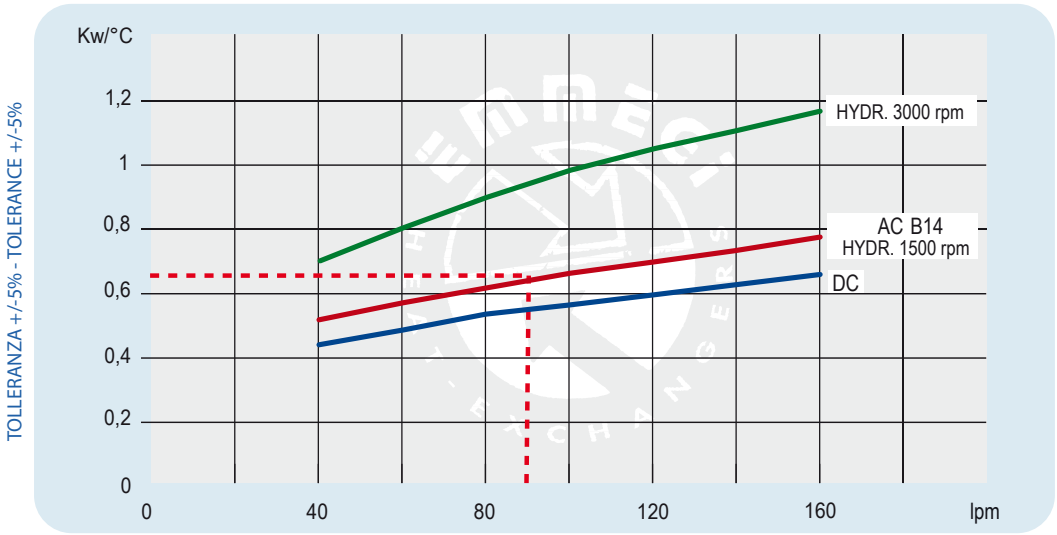
Dati tecnici Technical Data

P/N	V	Hz	kW(±10%)	A (±10%)	rpm	ø Fan	dB(A)	(m³/ h)	IP	It	Kg
243003 # # #	230-400 B14 AC 265-460 B14 AC	50 60	0,75 0,86	3 - 1,7 3 - 1,7	1440 1750	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 # # #	Prepared for Gr.2 hydraulic motor				☎	450	☎	☎	/		35

Per il 12-24V i dati sono riferiti al singolo ventilatore *For 12-24V the data refers to each ventilator*

☎ Contattare EMMEGI Contact EMMEGI

Diagramma rendimento Performance diagram



Lo scambiatore selezionato risulta il modello:
HPA 30 - 230/400 - 50Hz
cod. 243003###.

Per la completa identificazione dello scambiatore consultare la pagina "DENOMINAZIONE CODICE PRODOTTO". Nel caso non siano conosciuti tutti i dati, per la scelta prendere contatto **EMMEGI**.

The exchanger selected is the following model:
HPA 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 EMMEGI.

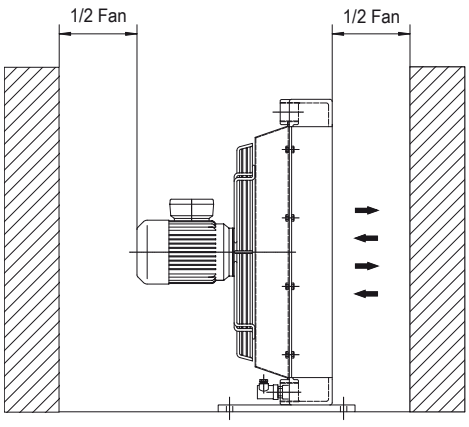


Fig.1

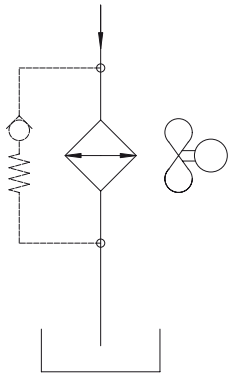
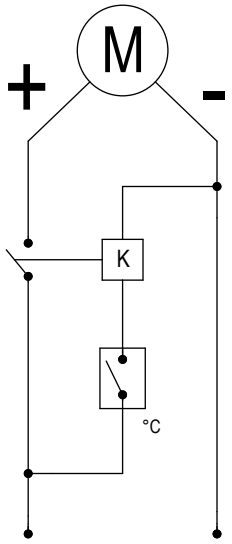


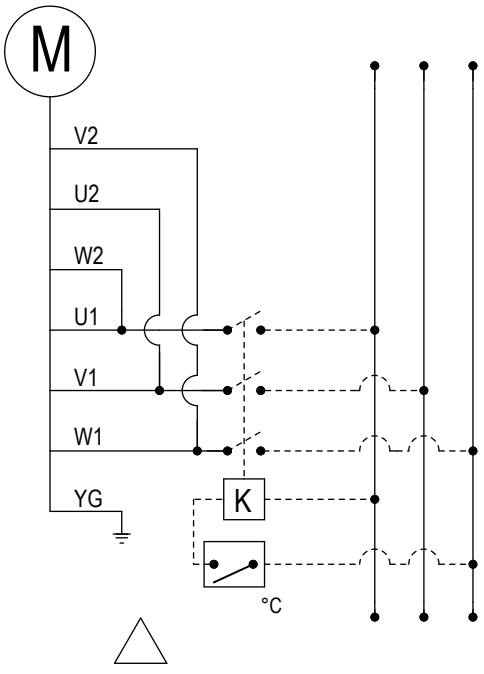
Fig.2

Collegamenti elettrici

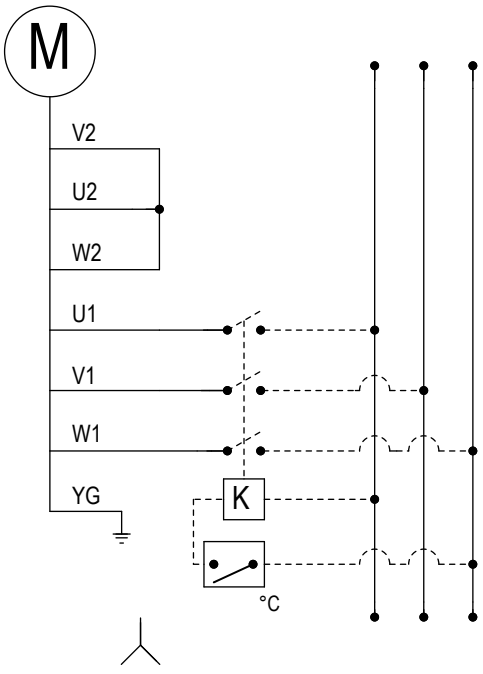
Electric Wiring



12-24V DC



230V-265V AC 3 PHASE



400V-460V AC 3 PHASE

°C = Termostato NA./Thermostat No.
K = Relè/Relay

Modulo richiesta dati

Sheet for cooler selection

CLIENTE *COMPANY*	
RICHIEDENTE *NAME*	

ARIA-OLIO *AIR-OIL*

PORTATA OLIO *OIL FLOW RATE*	**lpm**	
POTENZA INSTALLATA *TOTAL POWER*	**KW**	
POTENZA DA DISSIPARE *POWE TO BE DISSIPATED*	**KW**	
TEMPERATURA INGRESSO OLIO *OIL TEMPERATURE INLET*	**°C**	
TEMPERATURA ARIA MAX *MAX AMBIENT TEMPERATURE*	**°C**	
VISCOSITÀ OLIO *OIL VISCOSITY*	**cst**	
PRESSIONE DI LAVORO *WORKING PRESSURE*	**bar**	

TIPO DI VENTILAZIONE *TYPE OF FAN UNIT*

CORRENTE CONTINUA *DIRECT CURRENT*

- **12V**
- **24V**

PREDISTOSTO MOTORE IDRAULICO *PREPARATED FOR HYDRAULIC MOTOR*

- **GR.2**
- **GR.3**

CORRENTE ALTERNATA *ALTERNATE CURRENT*

- **TRIFASE 230-400V 265-460V** *THREEPHASE*
- **TENSIONE SPECIALE** *SPECIAL VOLTAGE*
  - **50 HZ**
  - **60 HZ**

Denominazione codice prodotto *Aria-olio Serie HPA*

Ordering code *Air-oil HPA eries*

2	424	03	2	01

TIPO DI SISTEMA *COOLER SERIES*

424 (HPA 24)

TIPO DI MOTORIZZAZIONE *FAN MOTOR TYPE*

03	*AC 230V-400V 50Hz / AC 265-460 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*

TERMOSTATI *THERMOSTATS*

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

TIPO DI VENTILAZIONE *VENTILATING TYPE*

01 Aspirante Suction air flow
02 Soffiante Blowing air flow

Indice *Index*

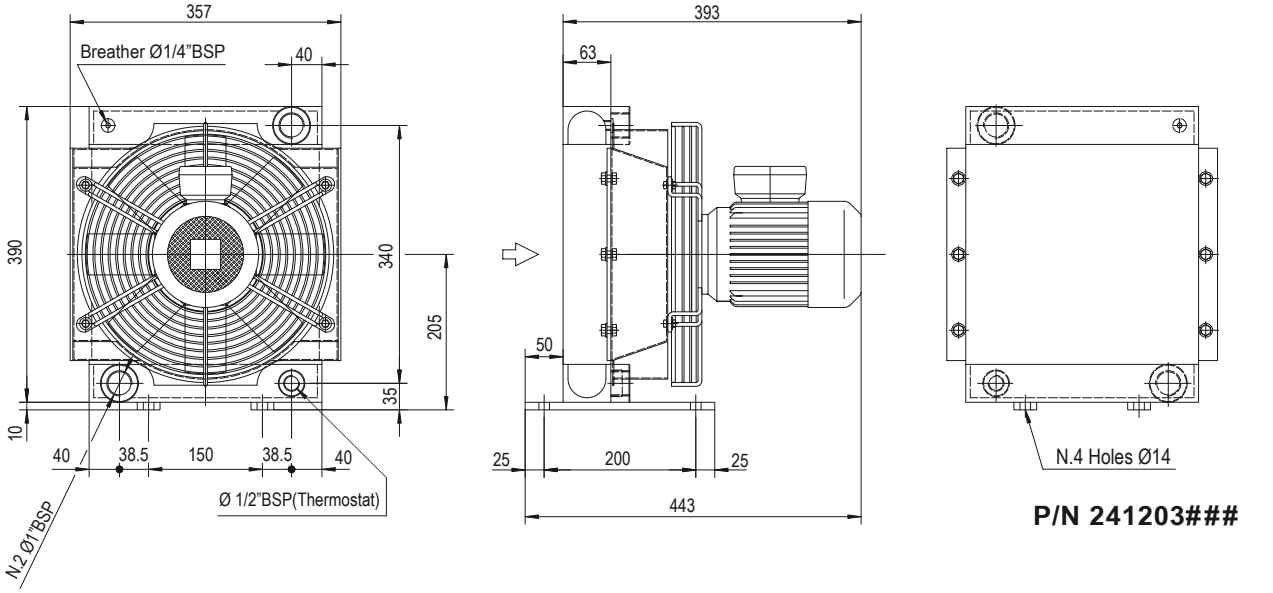
Serie HPA - *HPA Series*

Serie HPA 2 Pass - *HPA 2pass Series*

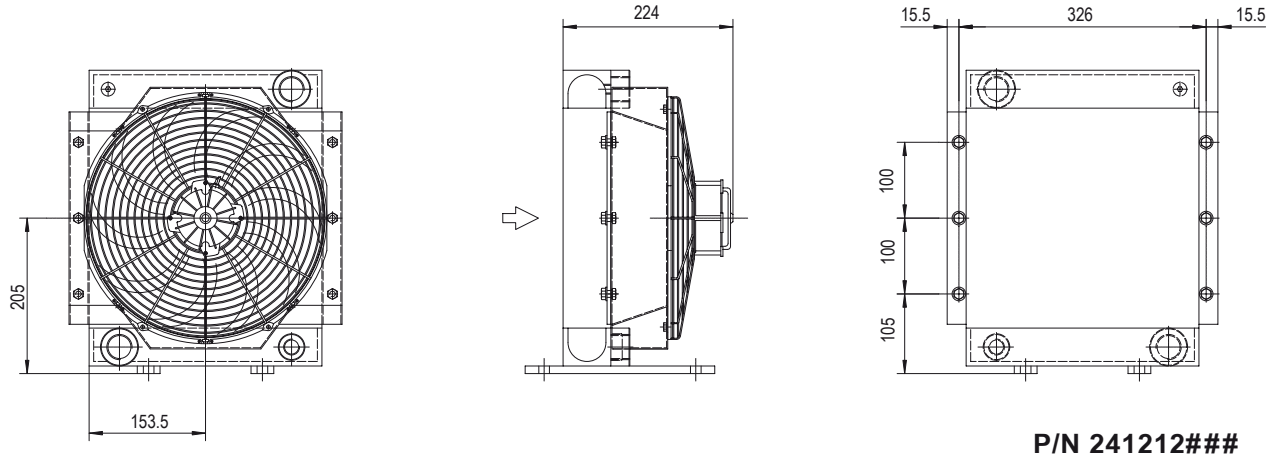
Serie HPA/2 - *HPA/2 Series*

INDEX

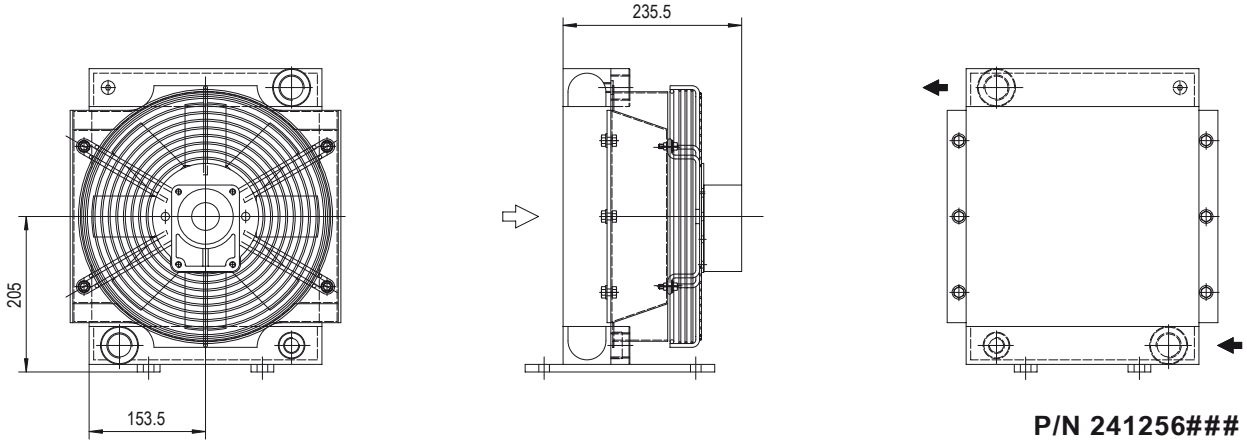
Dimensioni Dimensions



P/N 241203###



P/N 241212###
P/N 241224###



P/N 241256###

Le dimensioni di ingombro e le caratteristiche tecniche non sono impegnative
Over-all dimensions and technical characteristic are not binding

HPA 12

Dati tecnici Technical Data

P/N	V	Hz	kW(±10%)	A (±10%)	rpm	ø Fan	dB(A)	(m³/ h)	IP	lt	Kg
241203 # # #	230-400 B14 AC 265-460 B14 AC	50 60	0,25 0,29	1,7- 1 1,7- 1	1350 1620	315	72 ☎	1670 ☎	55	1,9	17
241212 # # #	12 DC	/	0,111	9,30	2600	305	77	1590	65		15
241224 # # #	24 DC	/	0,148	6,15	3100	305	80	1700	65		15
241256 # # #	Prepared for Gr.2 hydraulic motor				☎	315	☎	☎	/		16

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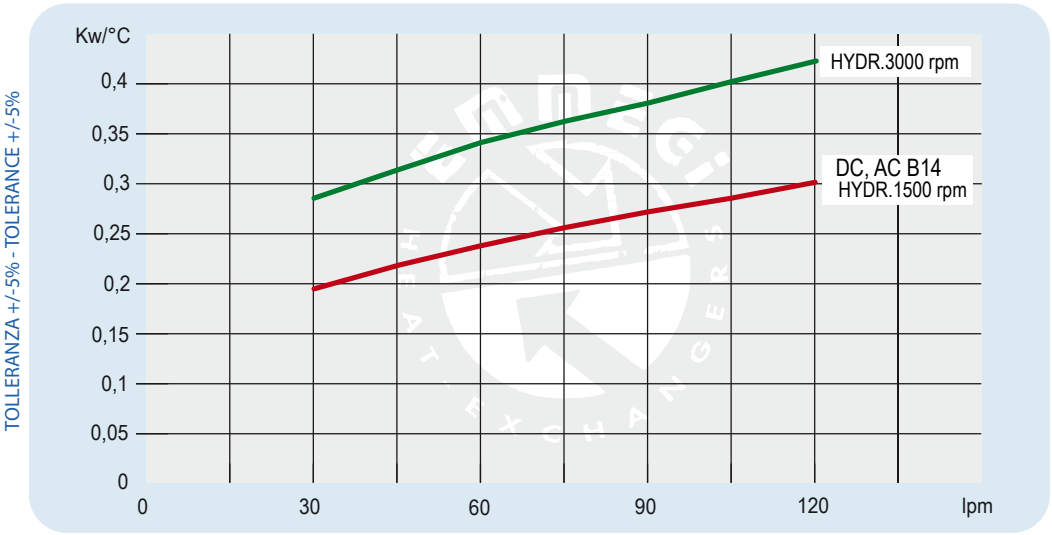
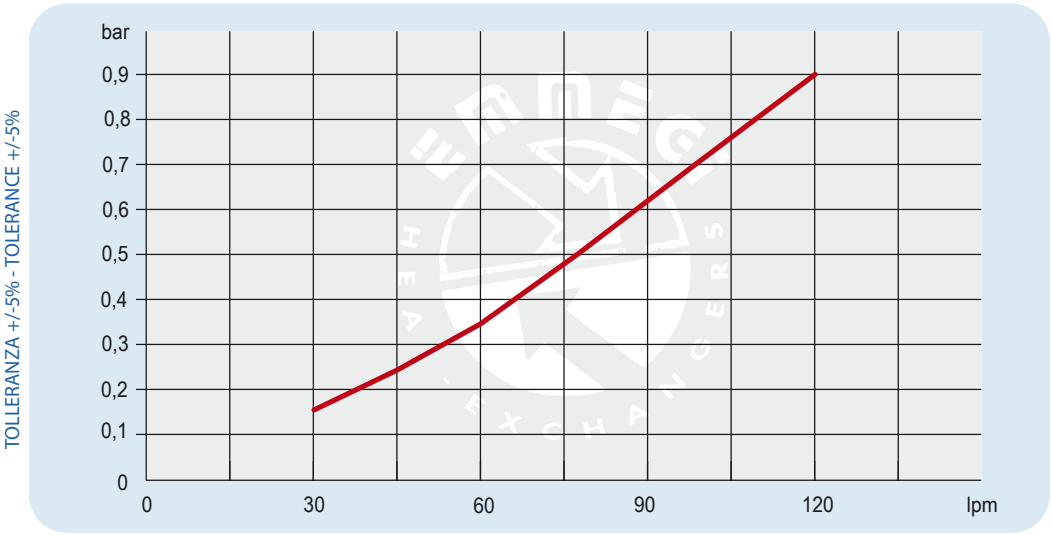
HPA 12

Diagramma rendimento Performance diagram



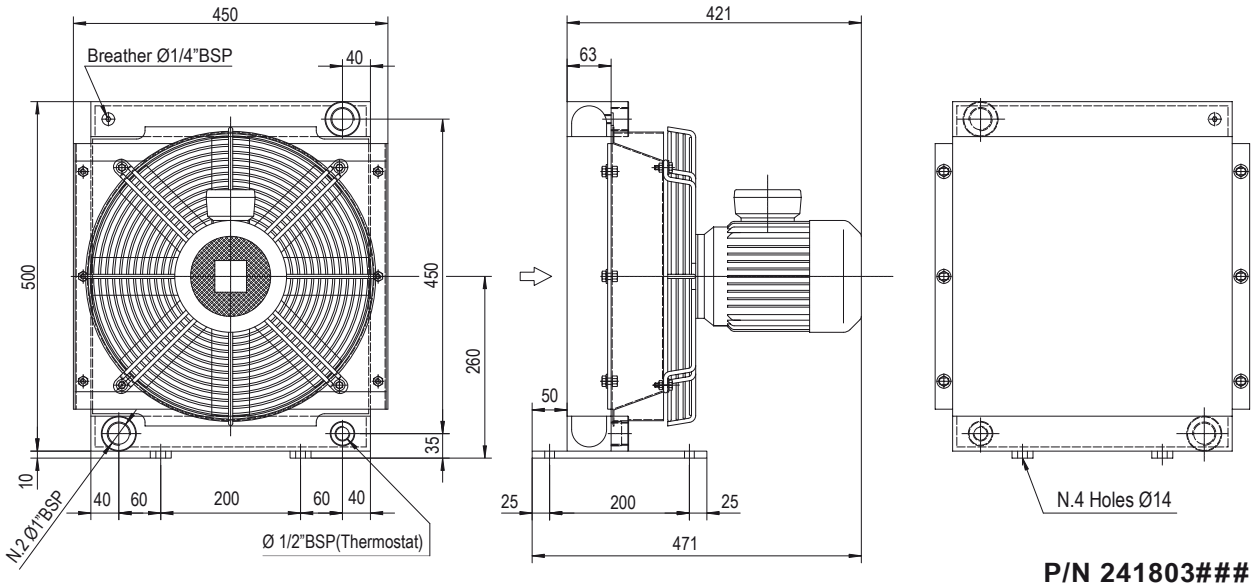
Perdite di carico Pressure drop (ISO VG 32)



Fattore di correzione - F - (perdite di carico) 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

Dimensioni Dimensions



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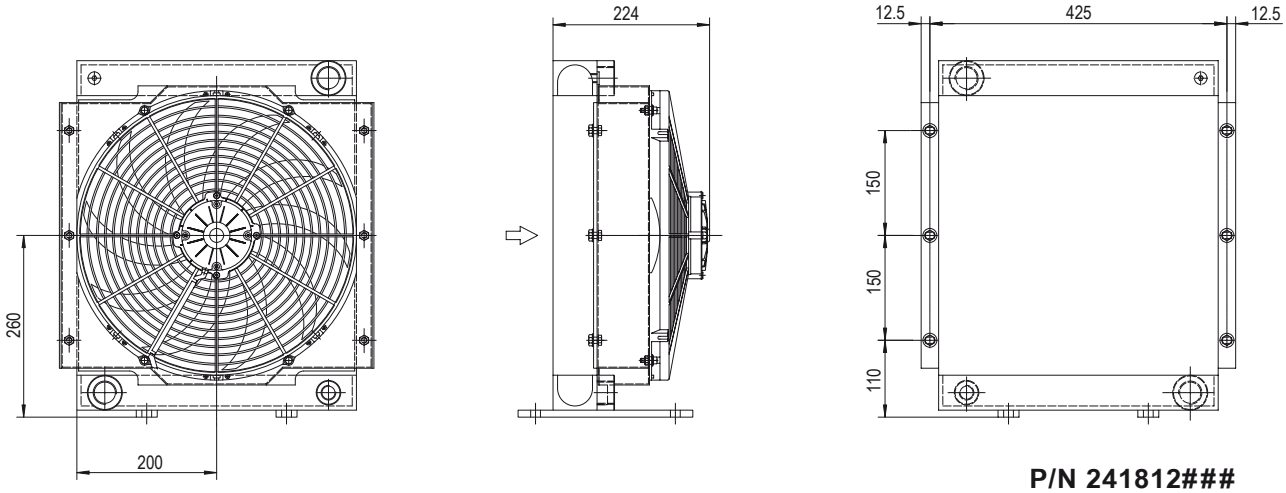
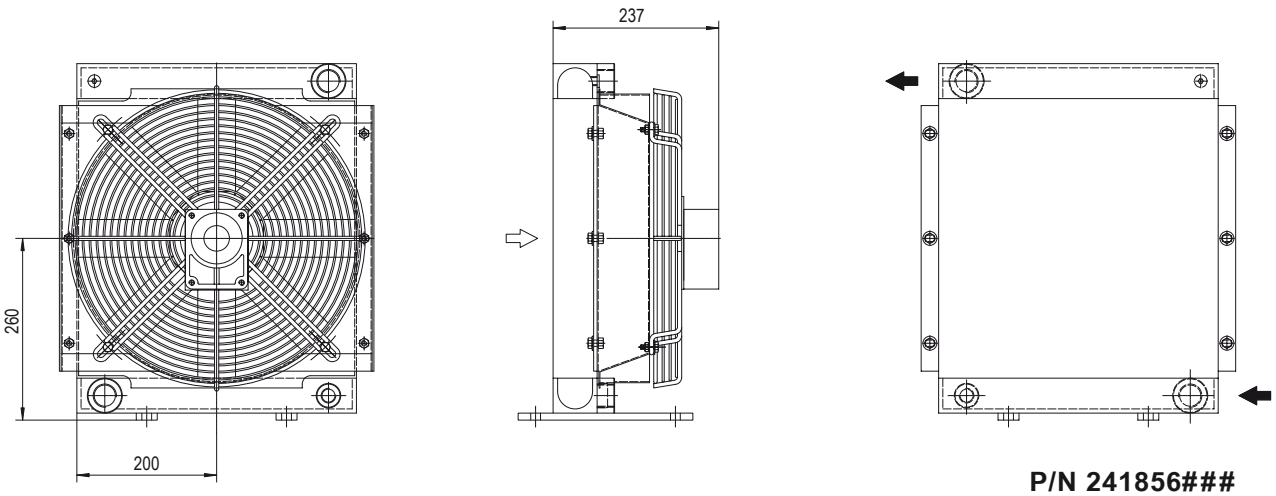


P/N 241812###
P/N 241824###



P/N 241856###

Le dimensioni di ingombro e le caratteristiche tecniche non sono impegnative
Over-all dimensions and technical characteristic are not binding

HPA 18

Dati tecnici Technical Data

P/N	V	Hz	kW(±10%)	A (±10%)	rpm	ø Fan	dB(A)	(m³/ h)	IP	lt	Kg
241803 # # #	230- 400 B14 AC 265- 460 B14 AC	50 60	0,37 0,43	1,9 - 1,1 1,9 - 1,1	1370 1650	400	77 ☎	3350 ☎	55	2,9	20
241812 # # #	12 DC	/	0,187	15,6	2350	385	77	2950	65		18
241824 # # #	24 DC	/	0,170	7,1	2580	385	81	3100	65		18
241856 # # #	Prepared for Gr.2 hydraulic motor				☎	400	☎	☎	/		19

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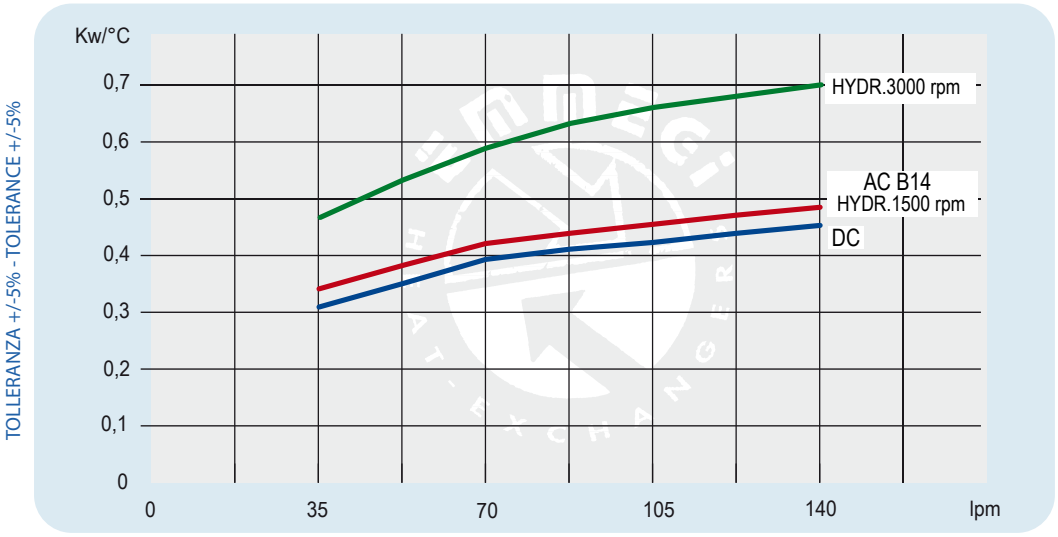
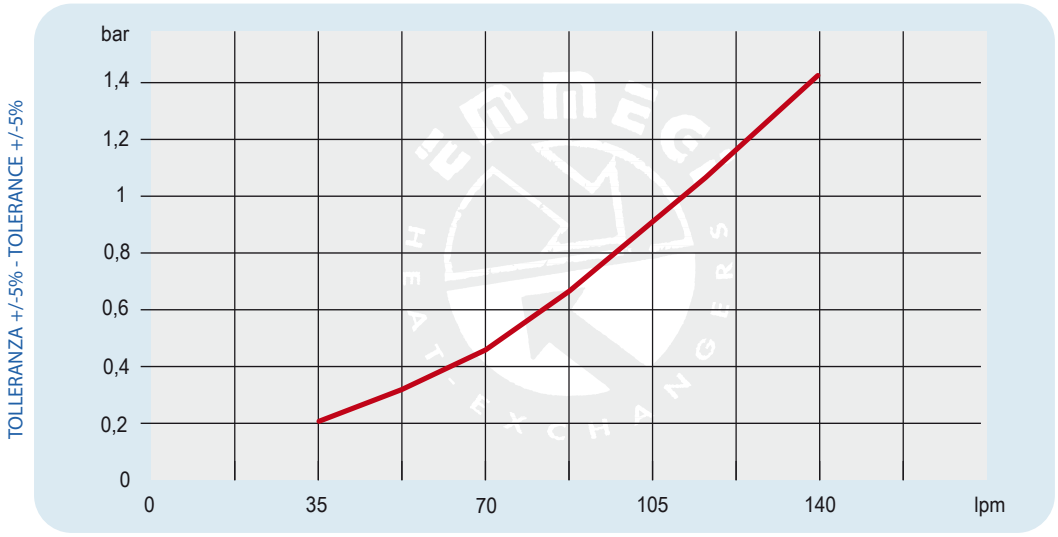
Diagramma rendimento Performance diagram



Perdite di carico Pressure drop (ISO VG 32)

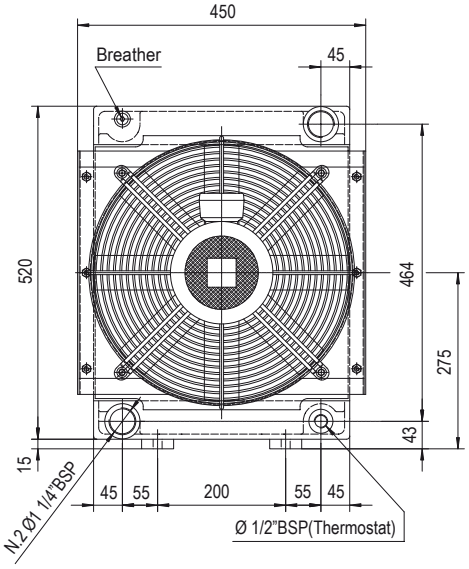


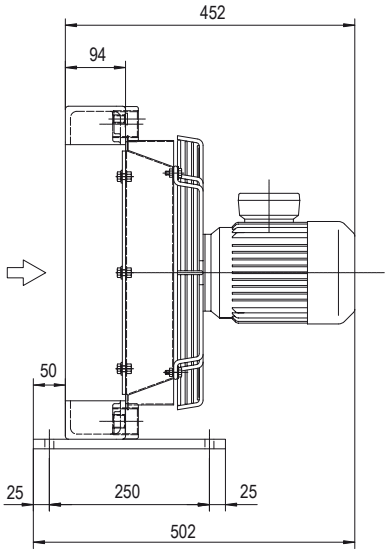
Fattore di correzione - F - (perdite di carico) Correction factor - F - (Pressure drop)

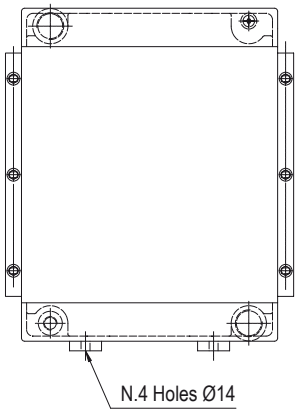
cst	10	15	20	30	40	50	60	80	100	200	300
F	0,5	0,65	0,77	1	1,2	1,4	1,6	1,9	2,1	3,3	4,3

HPA 18

Dimensioni Dimensions







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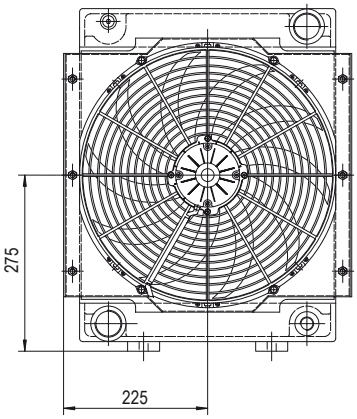
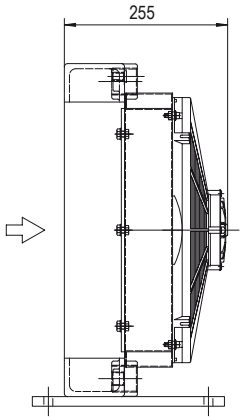
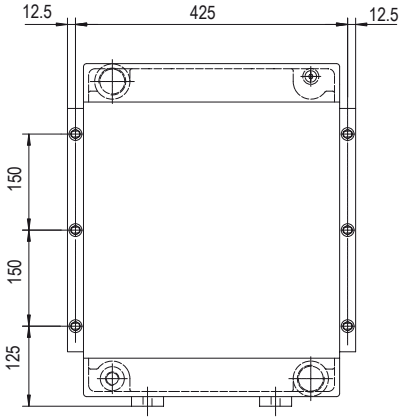
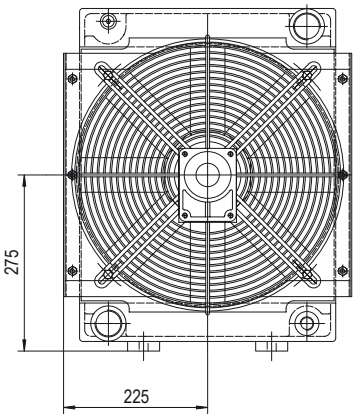
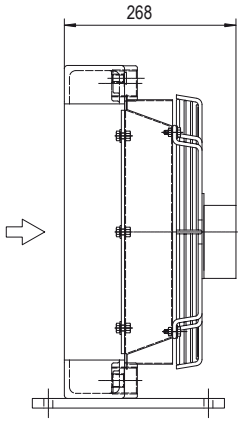


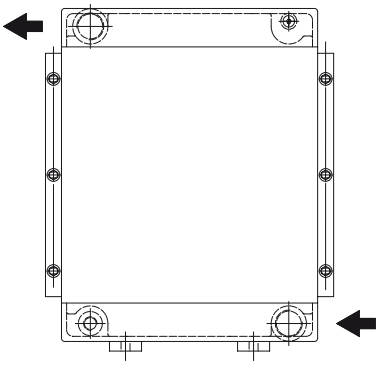




P/N 242412###
P/N 242424###







P/N 242456###

Le dimensioni di ingombro e le caratteristiche tecniche non sono impegnative
Over-all dimensions and technical characteristic are not binding

Dati tecnici Technical Data

P/N	V	Hz	kW(±10%)	A (±10%)	rpm	ø Fan	dB(A)	(m³/ h)	IP	lt	Kg
242403 # # #	230-400 B14 AC 265-460 B14 AC	50 60	0,55 0,63	2,9-1,7 2,9-1,7	1380 1690	400	79 ☎	2800 ☎	55	2,9	28 28
242412 # # #	12 DC	/	0,187	15,6	2350	385	77	2100	65		22
242424 # # #	24 DC	/	0,170	7,1	2580	305	80	2250	65		22
242456 # # #	Prepared for Gr.2 hydraulic motor				☎	400	☎	☎	/		23

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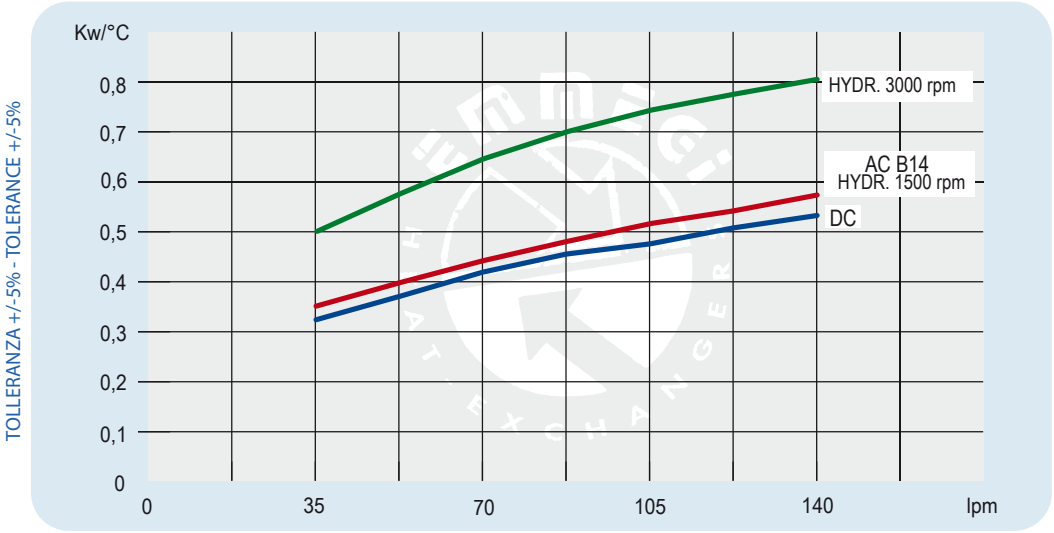
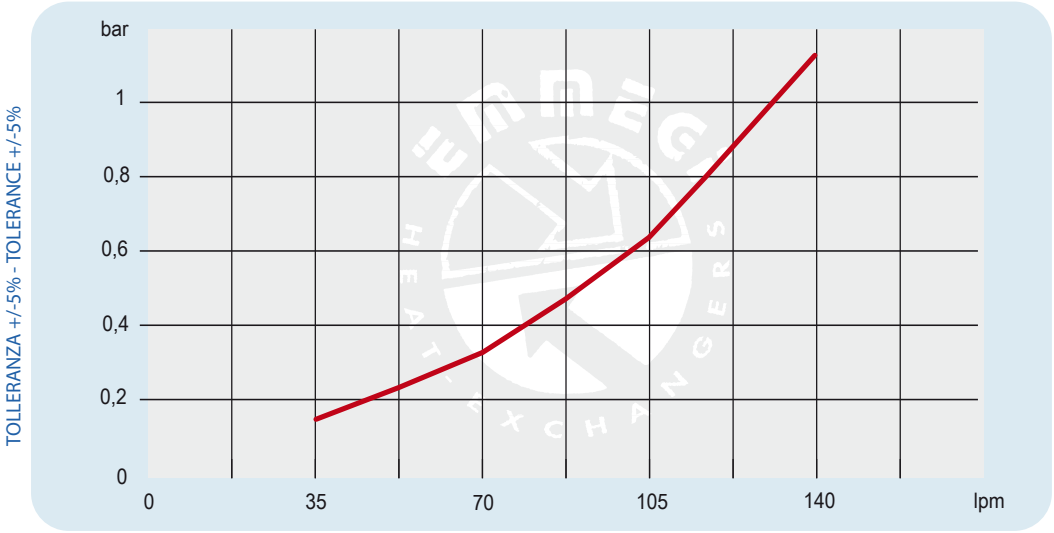
HPA 24

Diagramma rendimento Performance diagram



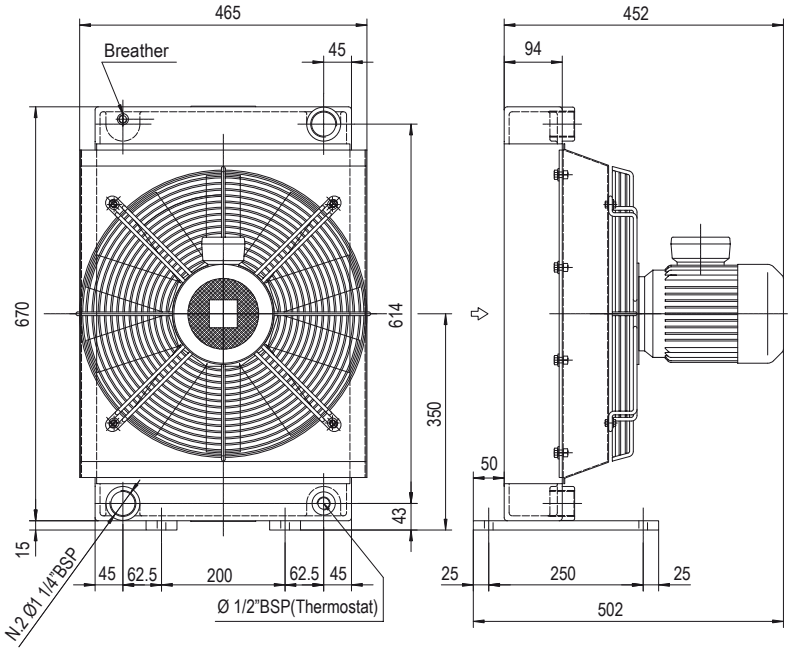
Perdite di carico Pressure drop (ISO VG 32)



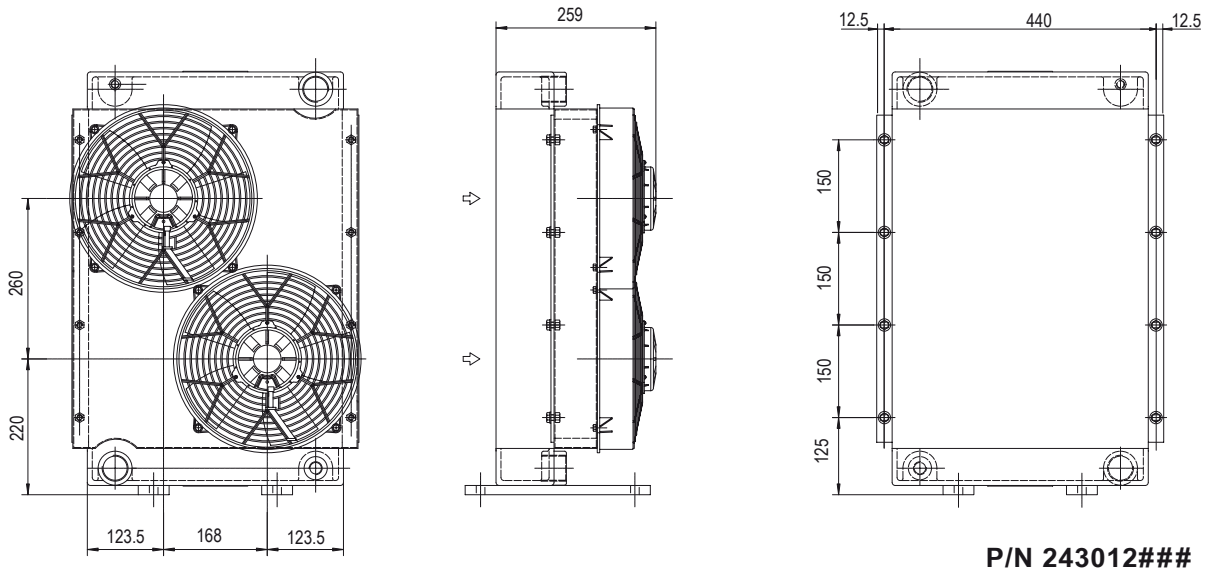
Fattore di correzione - F - (perdite di carico) Correction factor - F - (Pressure drop)

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

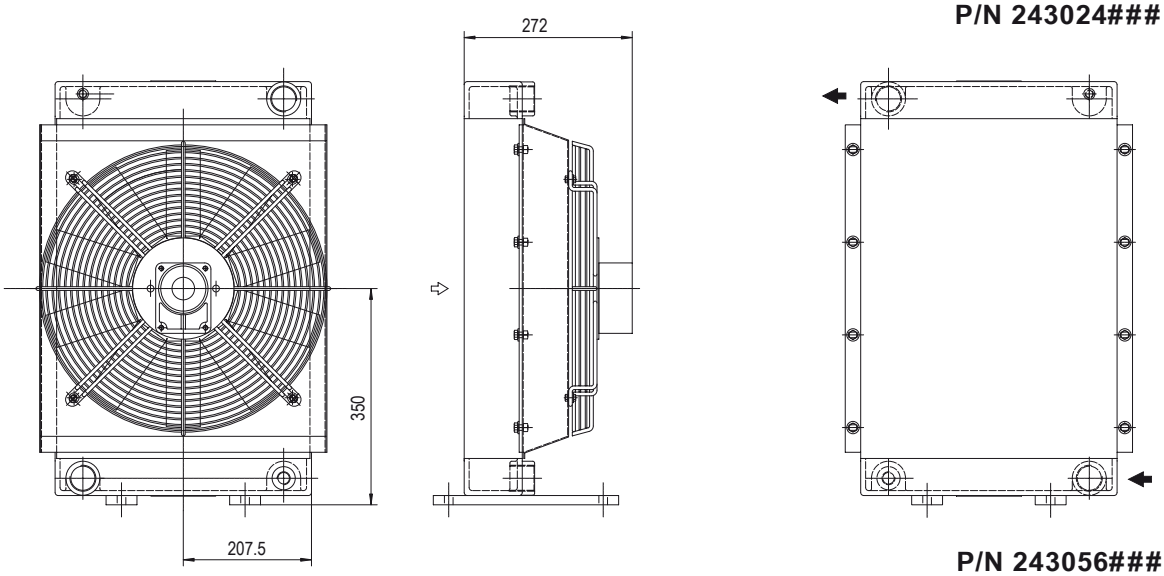
Dimensioni Dimensions



P/N 243003###



P/N 243012###
P/N 243024###



P/N 243056###

Le dimensioni di ingombro e le caratteristiche tecniche non sono impegnative
Over-all dimensions and technical characteristic are not binding

HPA 30

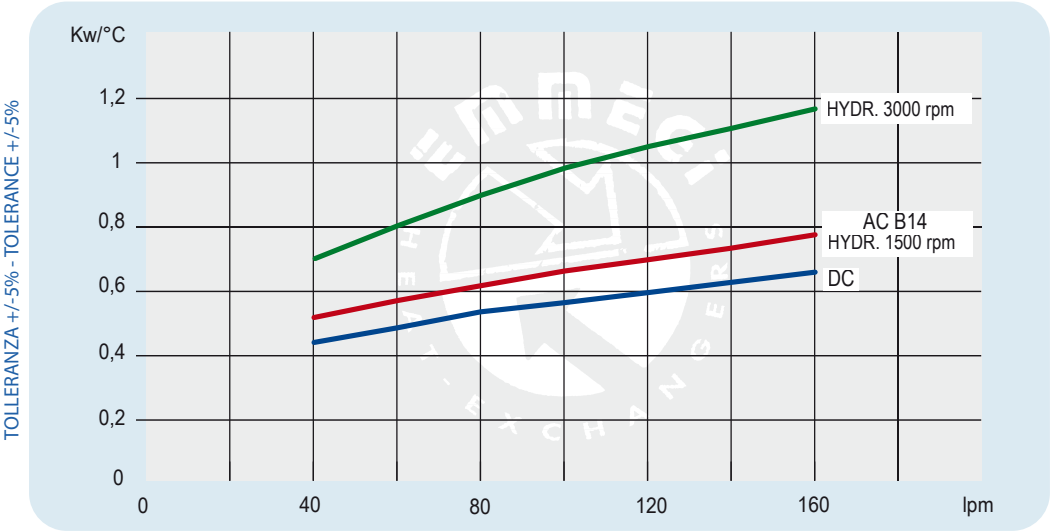
Dati tecnici Technical Data

P/N	V	Hz	kW(±10%)	A (±10%)	rpm	ø Fan	dB(A)	(m³/ h)	IP	lt	Kg
243003 # # #	230-400 B14 AC 265-460 B14 AC	50 60	0,75 0,86	3 -1,7 3 -1,7	1440 1750	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 # # #	Prepared for Gr.2 hydraulic motor				☎	450	☎	☎	/		35

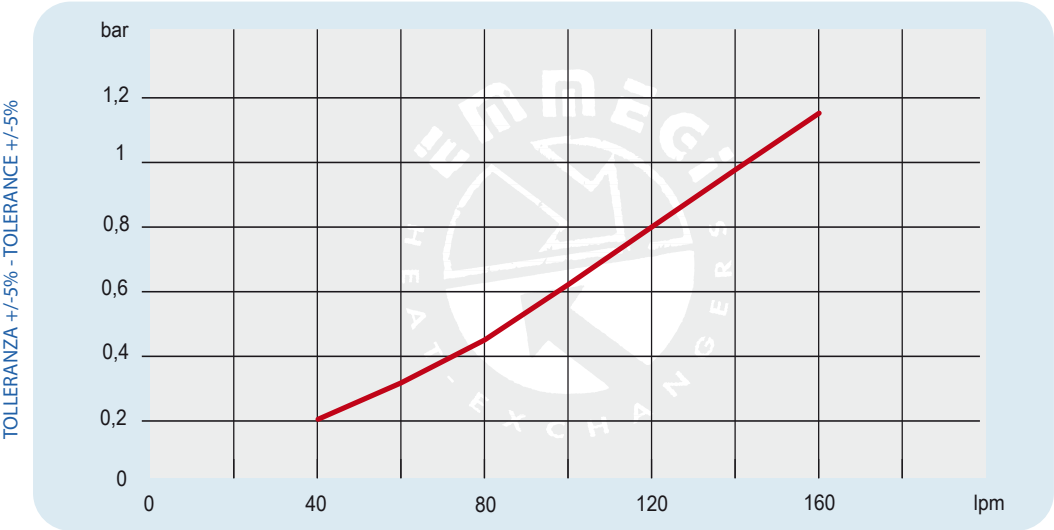
Per il 12-24V i dati sono riferiti al singolo ventilatore *For 12-24V the data refers to each ventilator*

☎ Contattare EMMEGI Contact EMMEGI

Diagramma rendimento Performance diagram



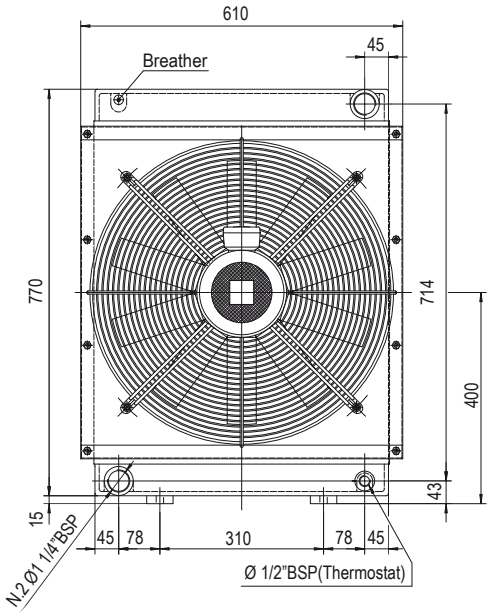
Perdite di carico Pressure drop (ISO VG 32)

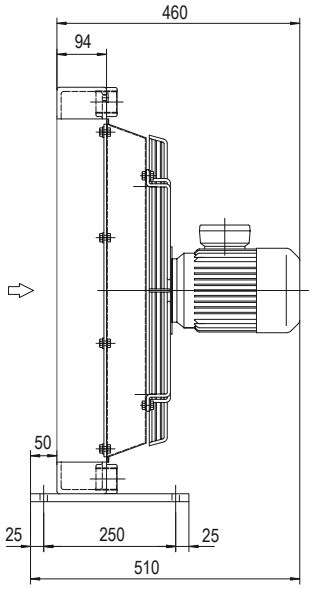


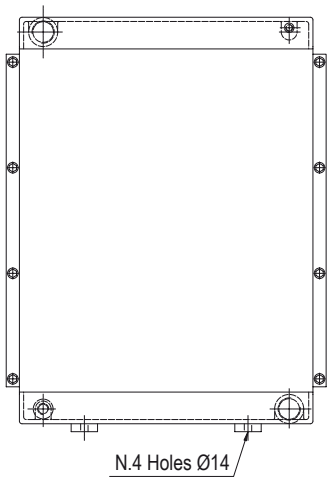
Fattore di correzione - F - (perdite di carico) Correction factor - F - (Pressure drop)

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

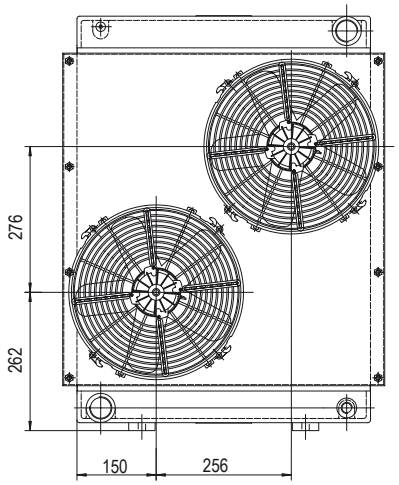
Dimensioni Dimensions

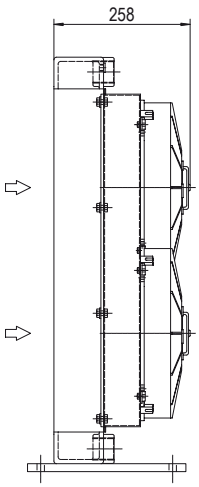


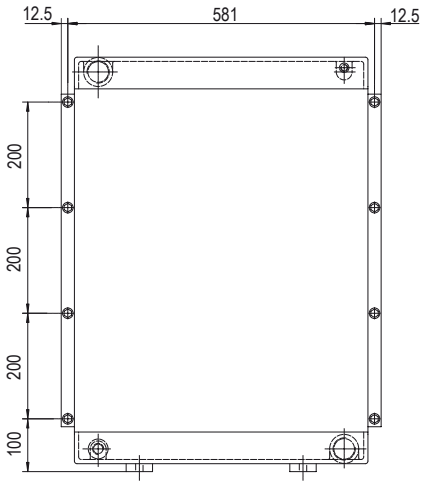




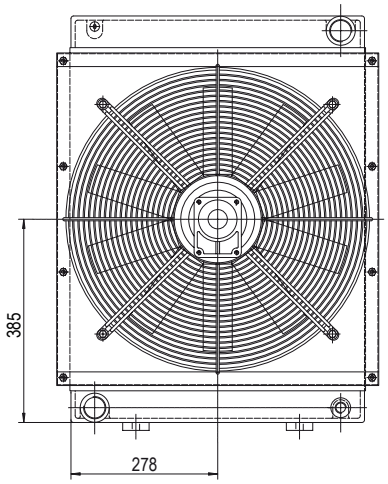
P/N 243603###

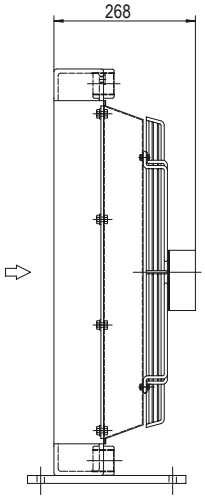


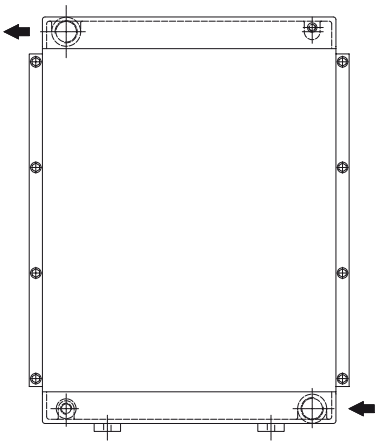




P/N 243612###
P/N 243624###







P/N 243656###

Le dimensioni di ingombro e le caratteristiche tecniche non sono impegnative
Over-all dimensions and technical characteristic are not binding

HPA 36

Dati tecnici Technical Data

P/N	V	Hz	kW(±10%)	A (±10%)	rpm	ø Fan	dB(A)	(m³/ h)	IP	lt	Kg
243603 # # #	230-400 B14 AC 265-460 B14 AC	50 60	1,1 1,3	4,5-2,6 4,5-2,6	1440 1730	500	82 ☎	5650 ☎	55	9,4	60
243612 # # #	12 DC	/	0,160	13,30	2560	305	83	2100	64		50
243624 # # #	24 DC	/	0,177	7,35	3000	305	84	2400	64		50
243656 # # #	Prepared for Gr.2 hydraulic motor				☎	450	☎	☎	/		52

Per il 12-24V i dati sono riferiti al singolo ventilatore *For 12-24V the data refers to each ventilator*

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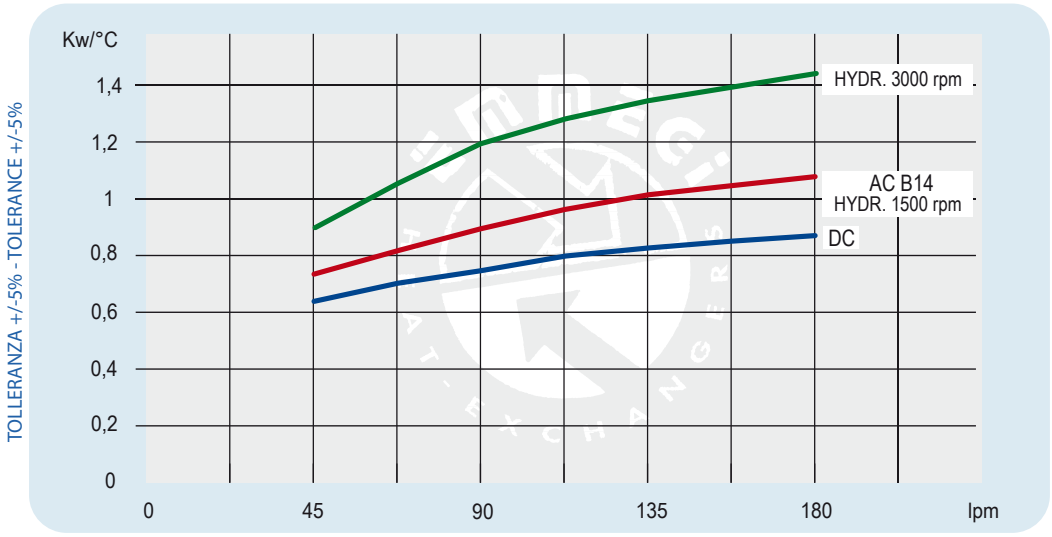
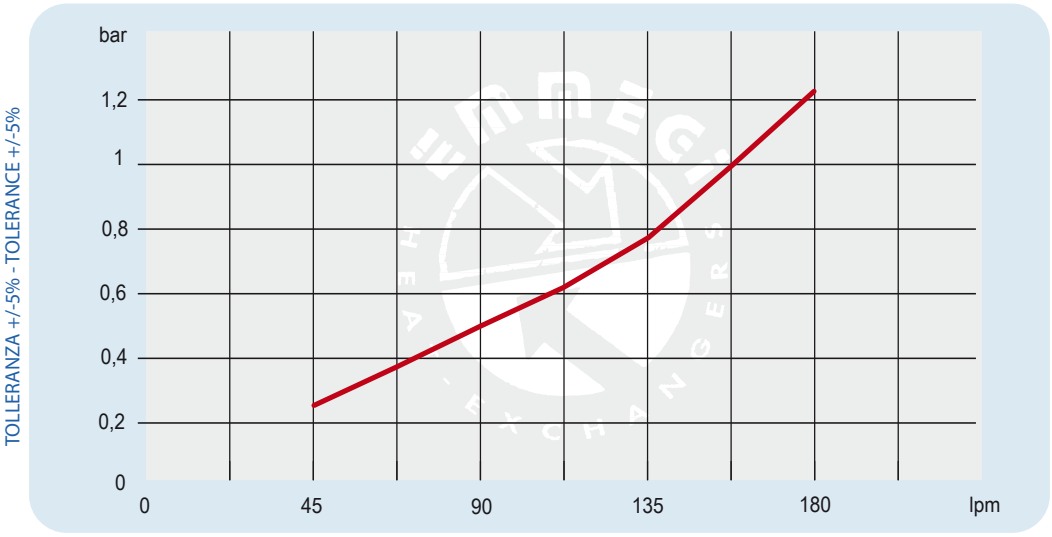
Diagramma rendimento Performance diagram



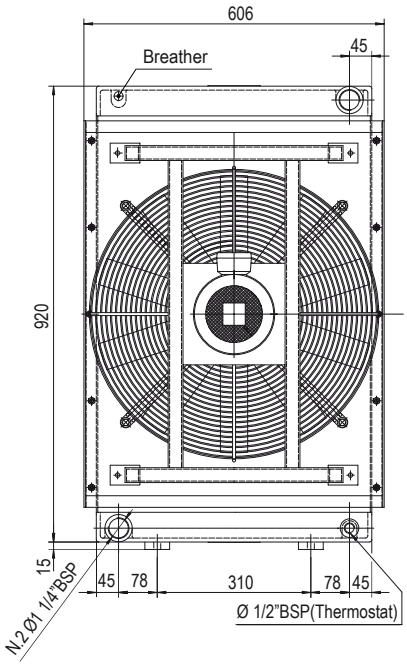
Perdite di carico Pressure drop (ISO VG 32)

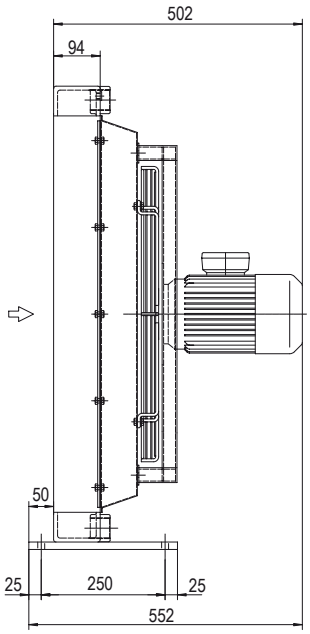


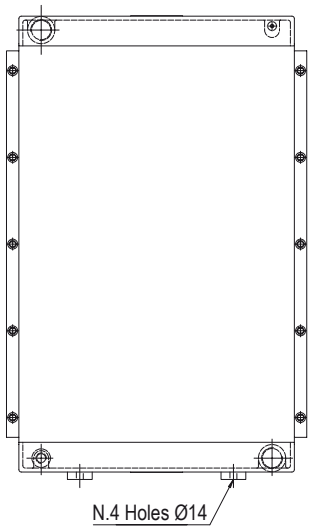
Fattore di correzione - F - (perdite di carico) Correction factor - F - (Pressure drop)

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

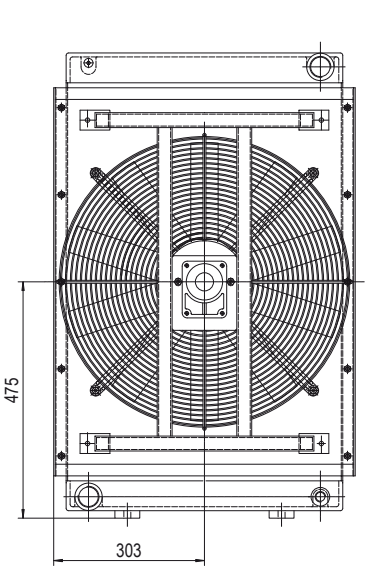
Dimensioni Dimensions

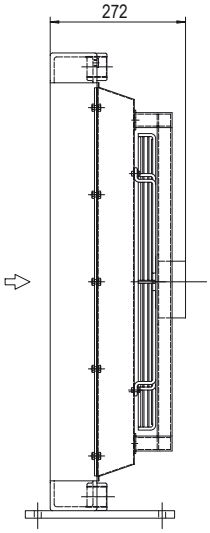


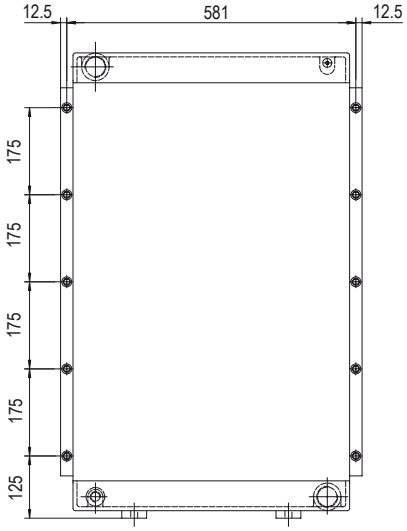




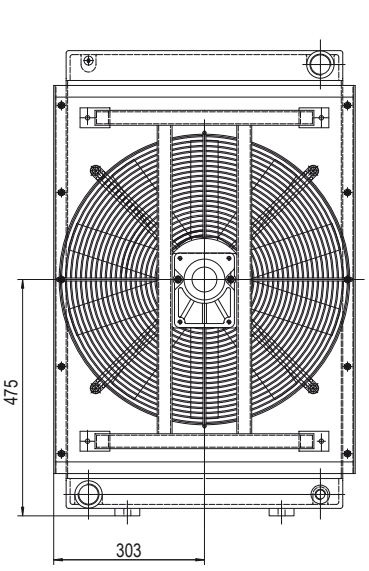
P/N 244203###

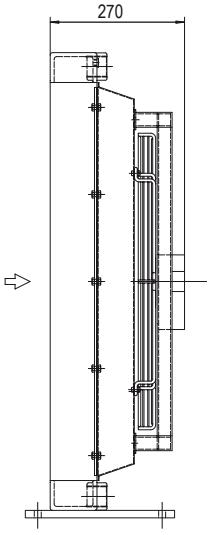


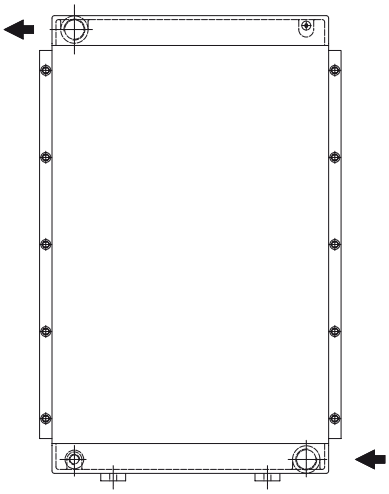




P/N 244256###







P/N 244258###

Le dimensioni di ingombro e le caratteristiche tecniche non sono impegnative
Over-all dimensions and technical characteristic are not binding

HPA 42

Dati tecnici Technical Data

P/N	V	Hz	kW(±10%)	A (±10%)	rpm	ø Fan	dB(A)	(m³/ h)	IP	lt	Kg
244203 # # #	230-400 B14 AC 265-460 B14 AC	50 60	1,1 1,3	4,5-2,6 4,5-2,6	1440 1730	560	84	7550	55	10,6	65
244256 # # #	Prepared for Gr.2 hydraulic motor					560			/		58
244258 # # #	Prepared for Gr.3 hydraulic motor					560			/		58

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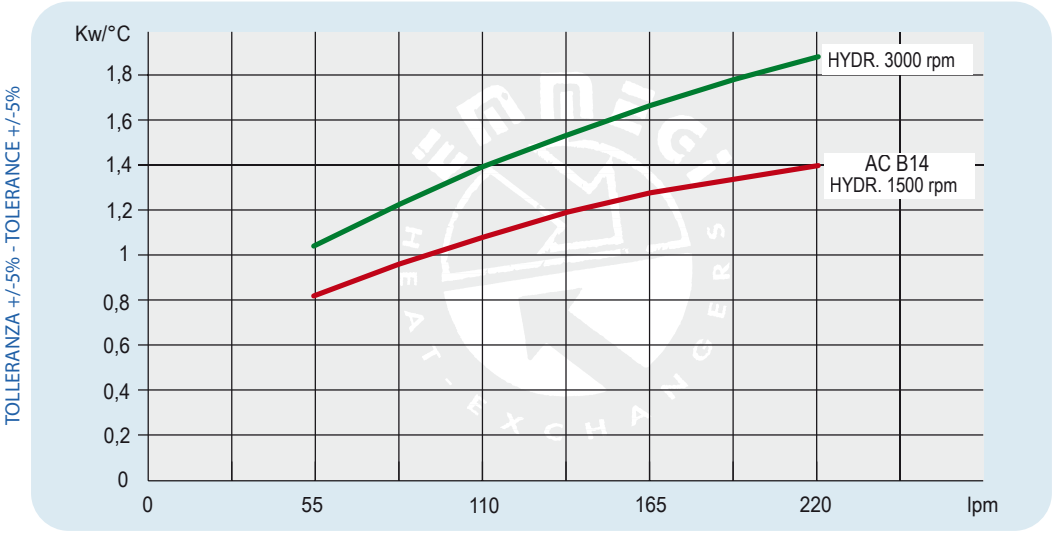
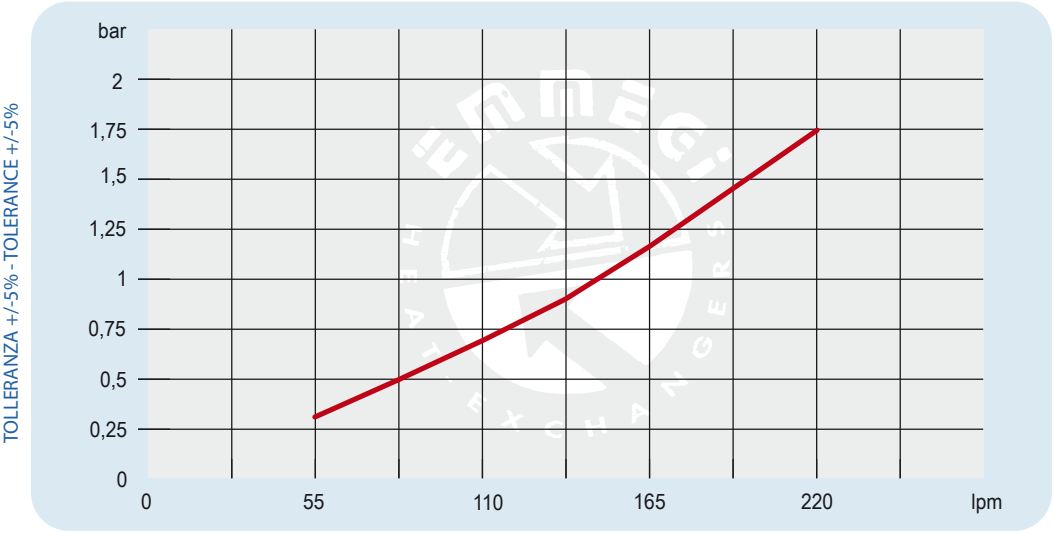
Diagramma rendimento Performance diagram



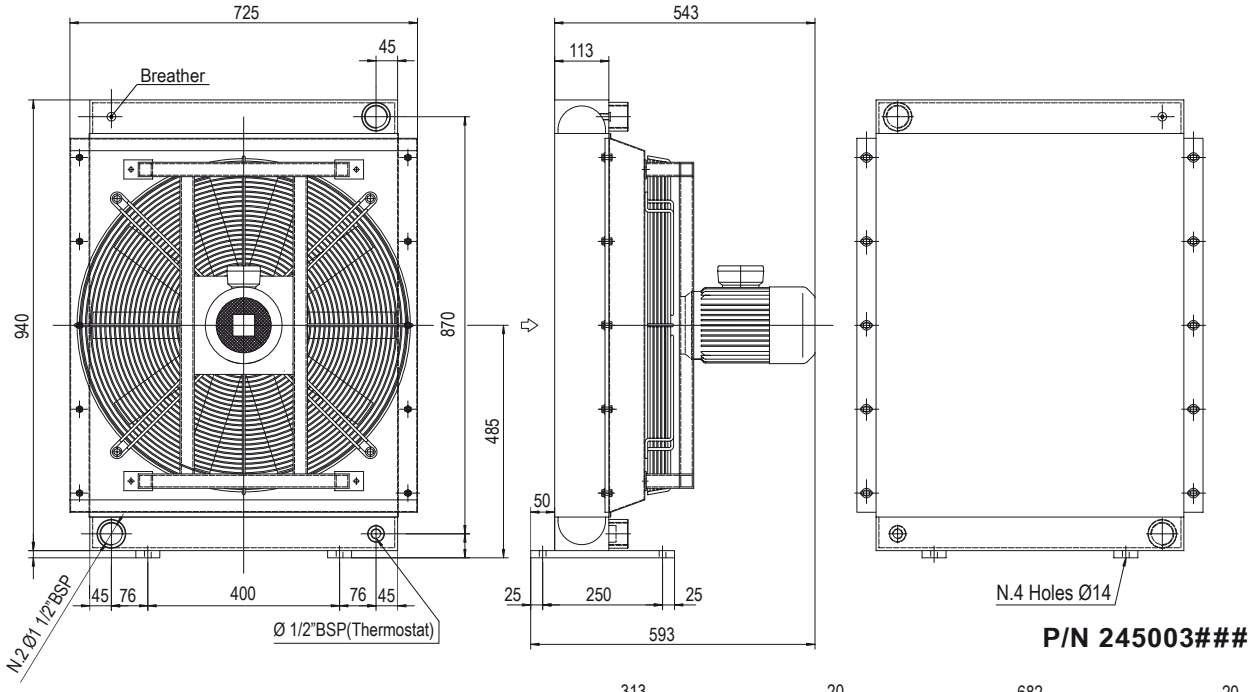
Perdite di carico Pressure drop (ISO VG 32)



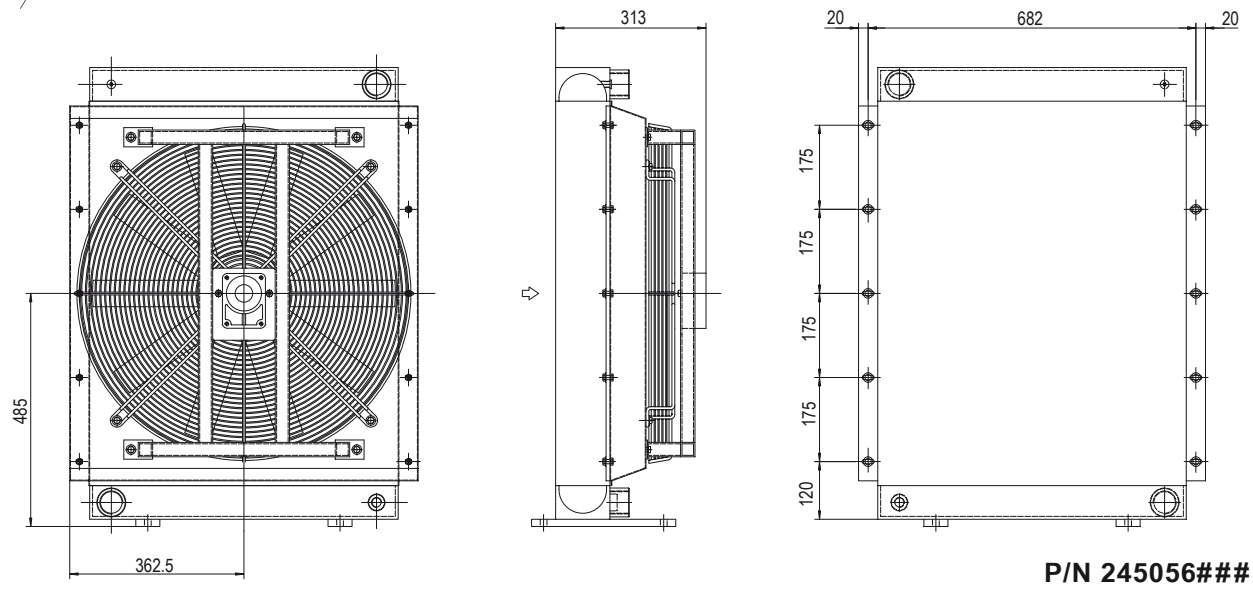
Fattore di correzione - F - (perdite di carico) Correction factor - F - (Pressure drop)

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

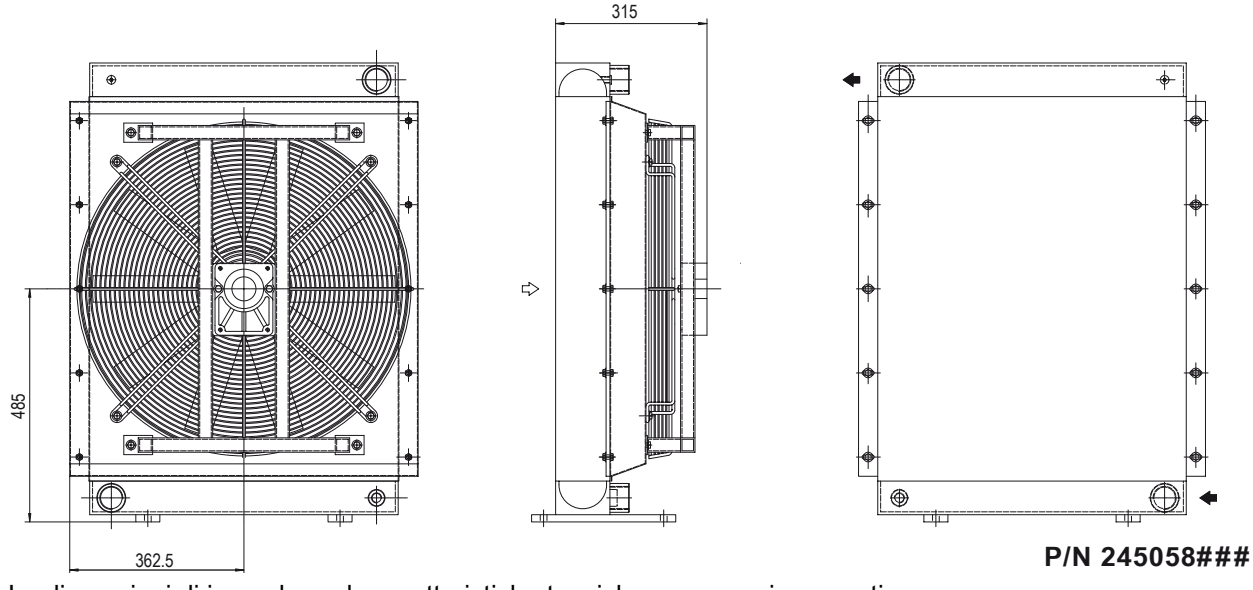
Dimensioni Dimensions



P/N 245003###



P/N 245056###



P/N 245058###

Le dimensioni di ingombro e le caratteristiche tecniche non sono impegnative
Over-all dimensions and technical characteristic are not binding

HPA 50

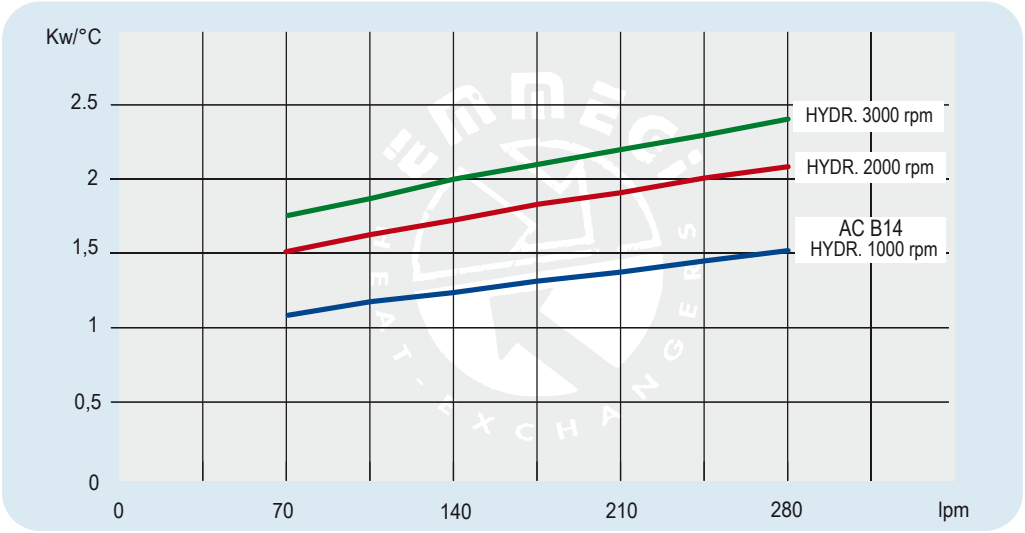
Dati tecnici Technical Data

P/N	V	Hz	kW(±10%)	A (±10%)	rpm	ø Fan	dB(A)	(m³/ h)	IP	lt	Kg
245003 # # #	230-400 B14 AC 265-460 B14 AC	50 60	1,1 1,3	5-2,9 5-2,9	936 1123	630	80	7550	55	14,2	90
245056 # # #	Prepared for Gr.2 hydraulic motor					630			/		83
245058 # # #	Prepared for Gr.3 hydraulic motor					630			/		83

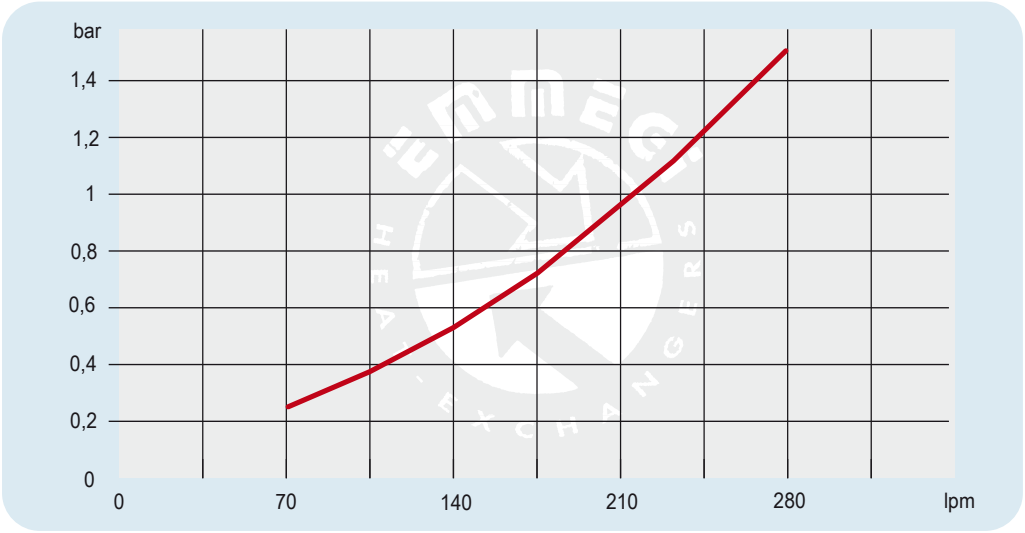
Contattare EMMEGI Contact EMMEGI

HPA 50

Diagramma rendimento Performance diagram



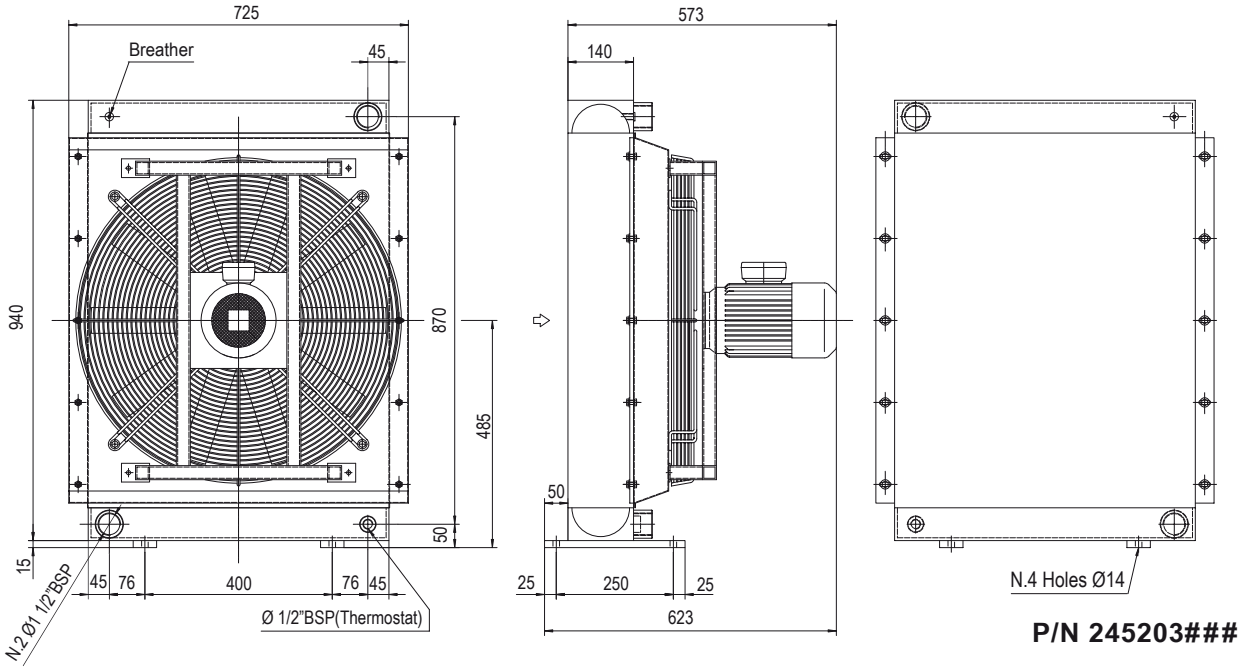
Perdite di carico Pressure drop (ISO VG 32)



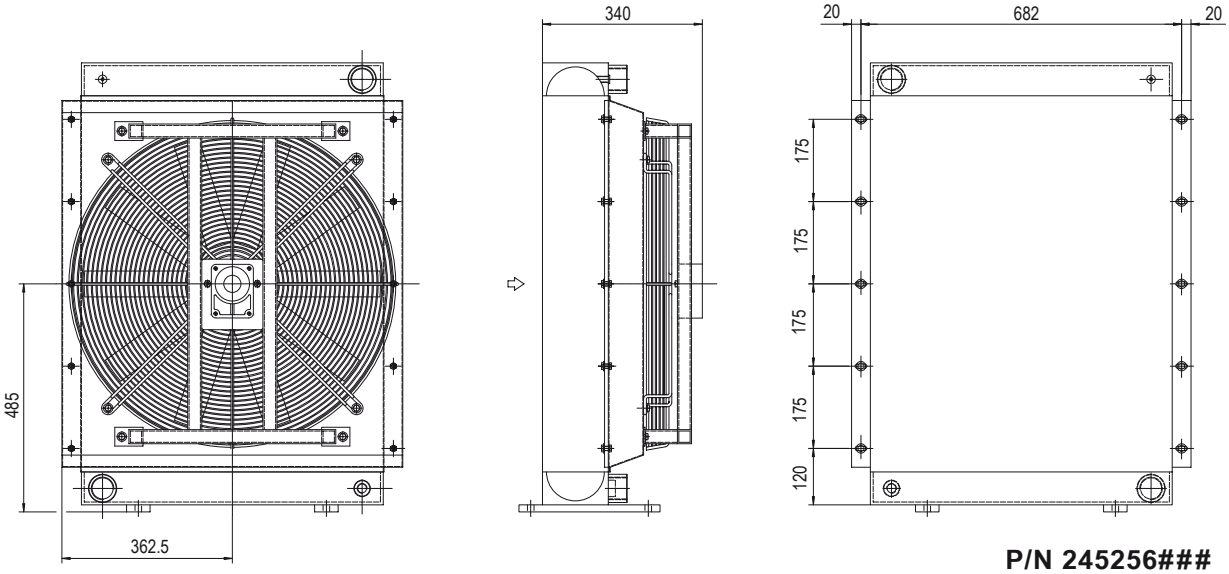
Fattore di correzione - F - (perdite di carico) Correction factor - F - (Pressure drop)

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

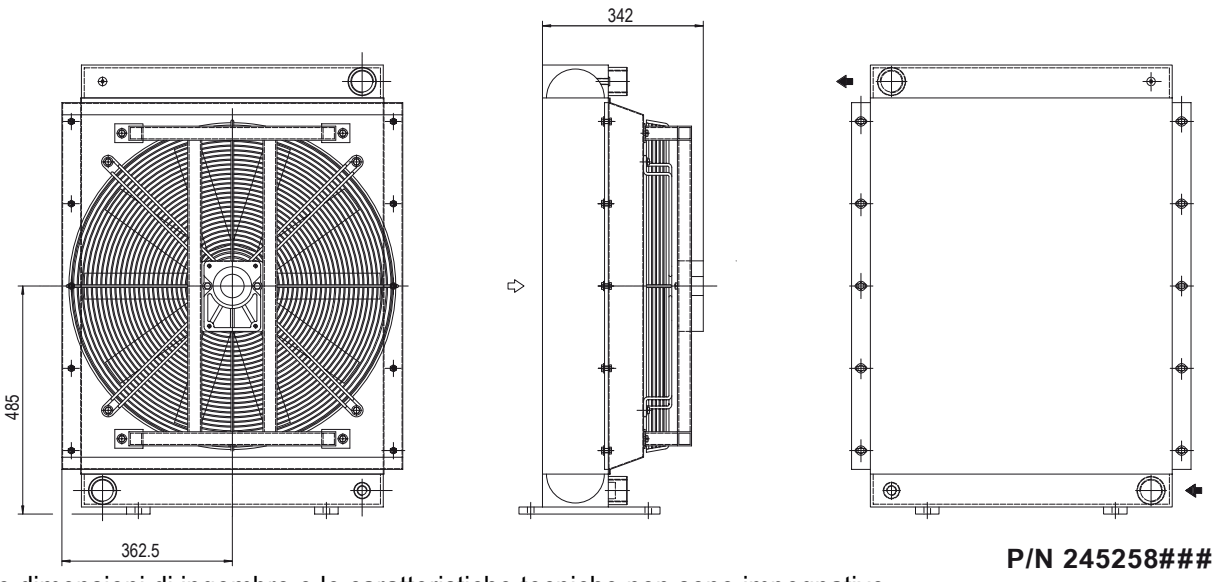
Dimensioni Dimensions



P/N 245203###



P/N 245256###



P/N 245258###

Le dimensioni di ingombro e le caratteristiche tecniche non sono impegnative
Over-all dimensions and technical characteristic are not binding

HPA 52

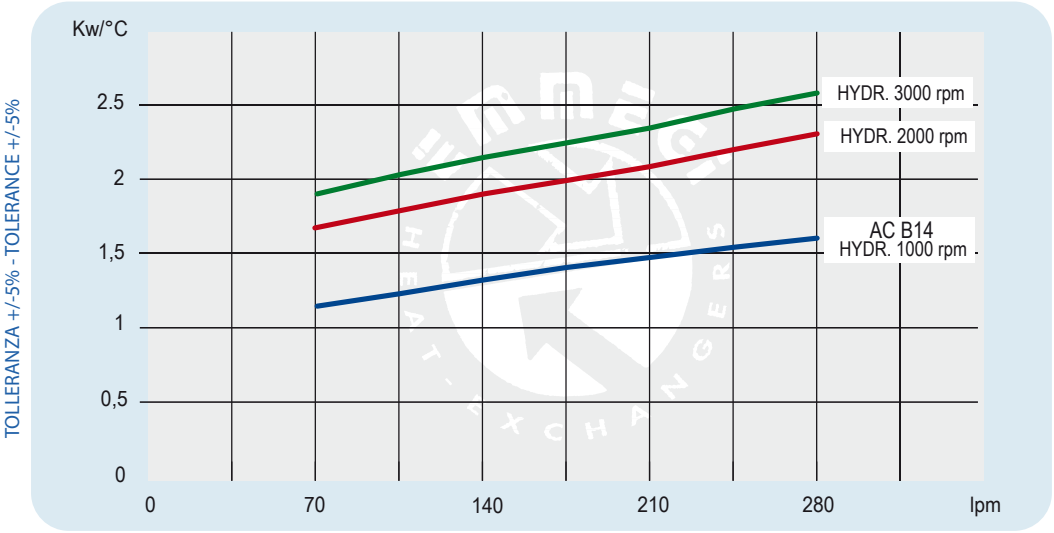
Dati tecnici Technical Data

P/N	V	Hz	kW(±10%)	A (±10%)	rpm	ø Fan	dB(A)	(m³/ h)	IP	lt	Kg
245203 # # #	230-400 B14 AC 265-460 B14 AC	50 60	1,1 1,3	5-2,9 5-2,9	936 1123	630	80	7050	55	17,7	95
245256 # # #	Prepared for Gr.2 hydraulic motor					630			/		89
245258 # # #	Prepared for Gr.3 hydraulic motor					630			/		89

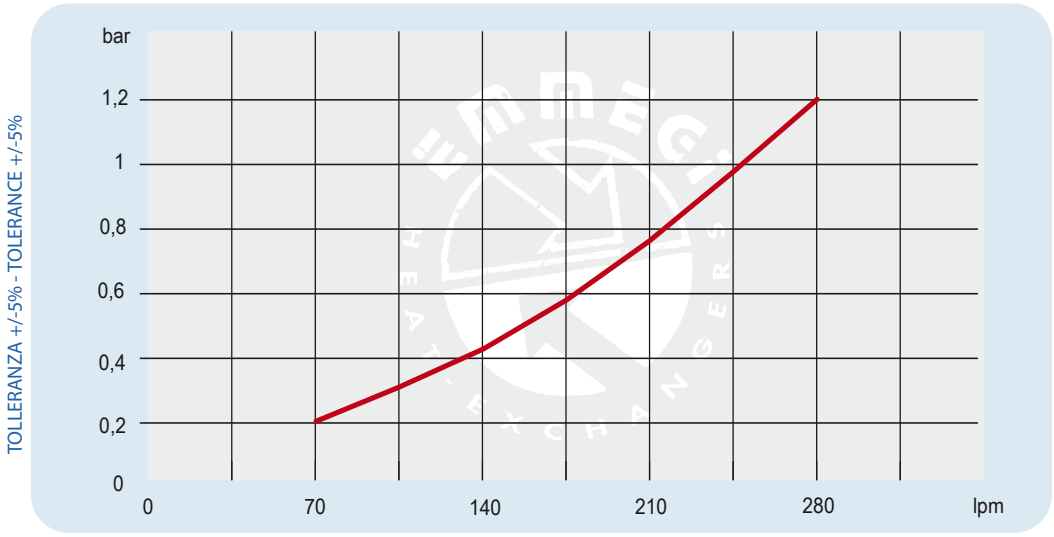
Contattare EMMEGI Contact EMMEGI

HPA 52

Diagramma rendimento Performance diagram



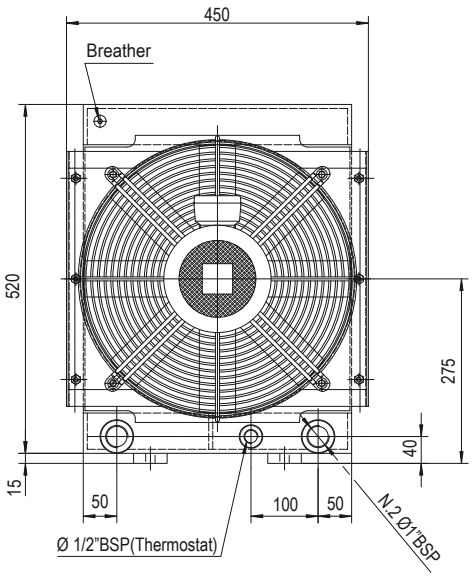
Perdite di carico Pressure drop (ISO VG 32)

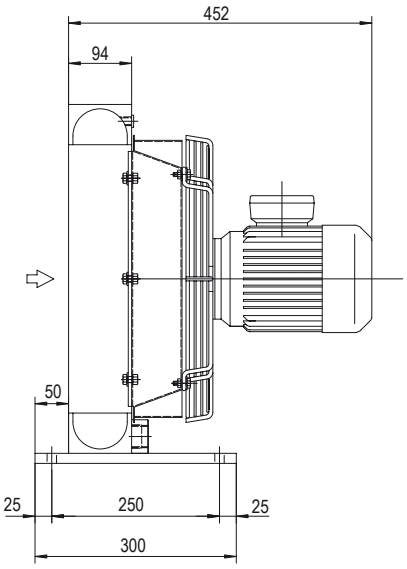


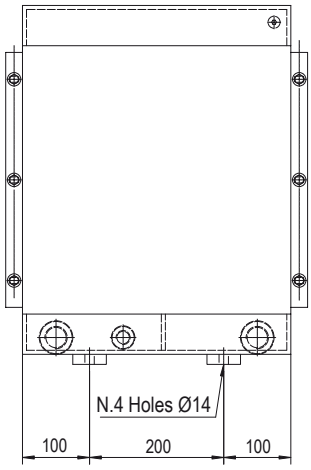
Fattore di correzione - F - (perdite di carico) Correction factor - F - (Pressure drop)

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

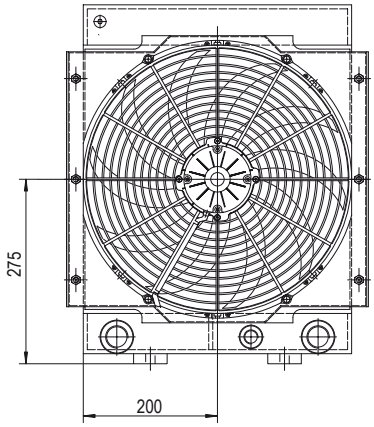
Dimensioni Dimensions

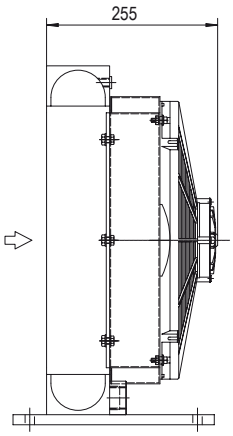


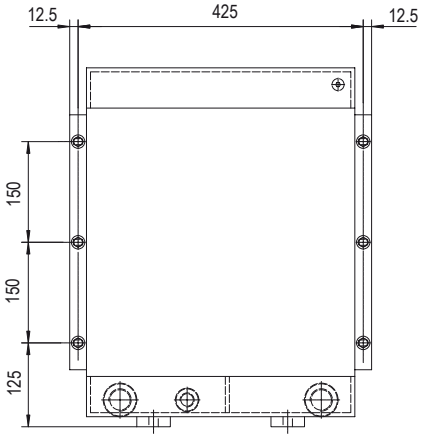




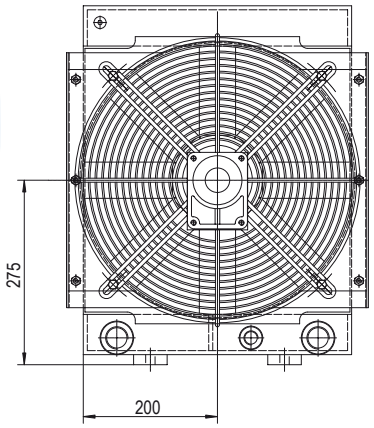
P/N 242703###

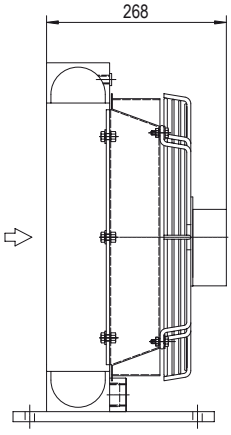


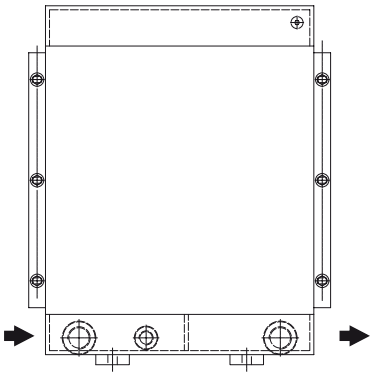




P/N 242712###
P/N 242724###







P/N 242756###

Le dimensioni di ingombro e le caratteristiche tecniche non sono impegnative
Over-all dimensions and technical characteristic are not binding

HPA 24 2 PASS

Dati tecnici Technical Data

P/N	V	Hz	kW(±10%)	A (±10%)	rpm	ø Fan	dB(A)	(m³/ h)	IP	lt	Kg
242703 # # #	230-400 B14 AC 265-460 B14 AC	50 60	0,55 0,63	2,9-1,7 2,9-1,7	1380 1690	400	79 ☎	2800 ☎	55	2,9	28 28
242712 # # #	12 DC	/	0,187	15,6	2350	385	77	2100	65		22
242724 # # #	24 DC	/	0,170	7,1	2580	305	80	2250	65		22
242756 # # #	Prepared for Gr.2 hydraulic motor				☎	400	☎	☎	/		23

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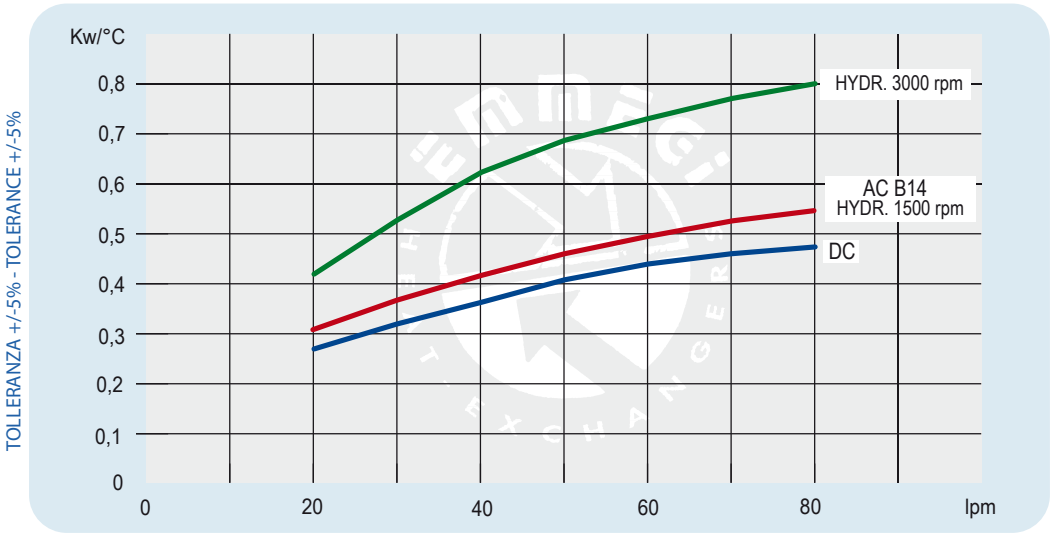
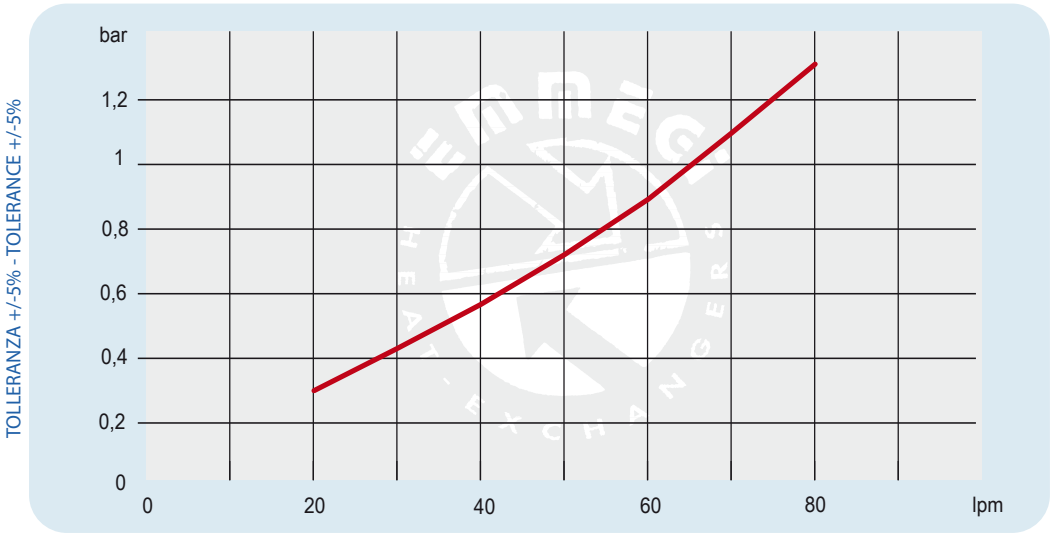
Diagramma rendimento Performance diagram



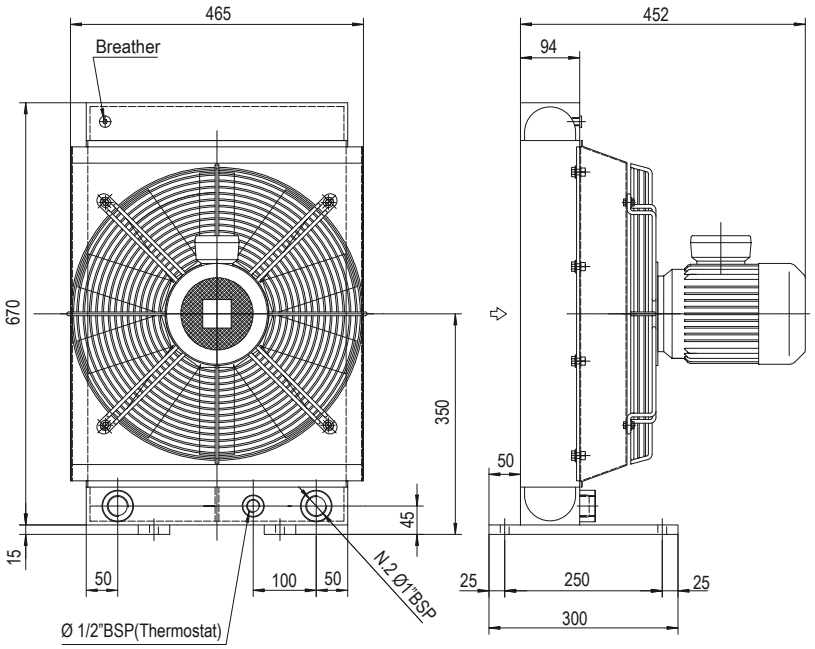
Perdite di carico Pressure drop (ISO VG 32)

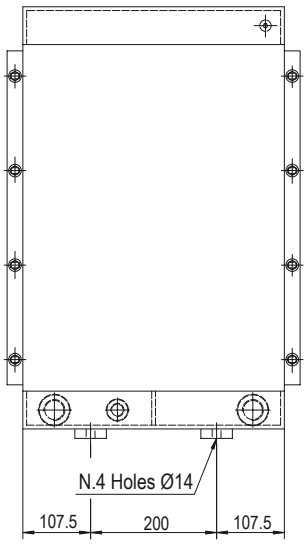


Fattore di correzione - F - (perdite di carico) Correction factor - F - (Pressure drop)

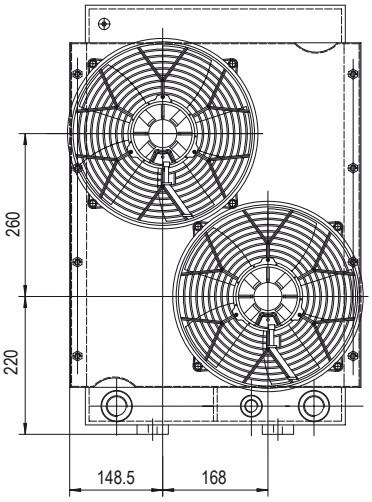
cst	10	15	20	30	40	50	60	80	100	200	300
F	0,5	0,65	0,77	1	1,2	1,4	1,6	1,9	2,1	3,3	4,3

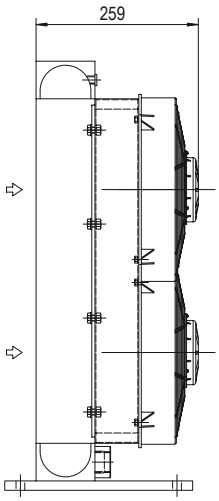
Dimensioni Dimensions

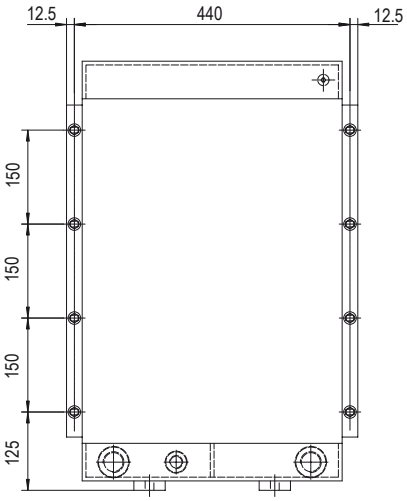




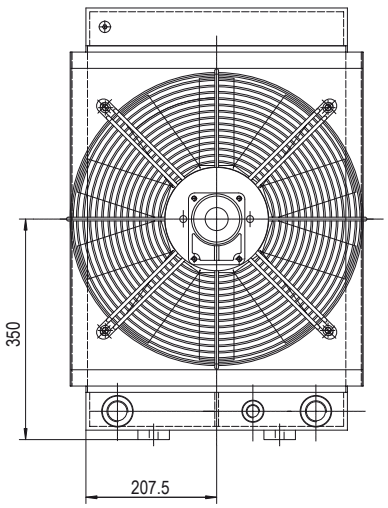
P/N 243303###

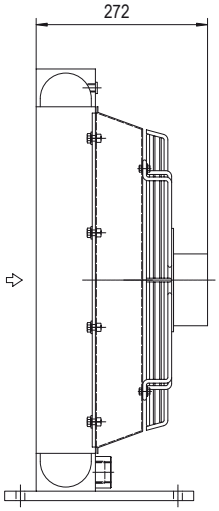


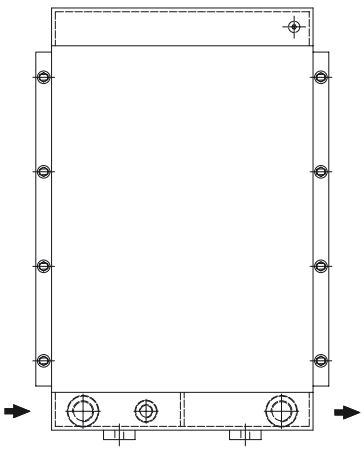




P/N 243312###
P/N 243324###







P/N 243356###

Le dimensioni di ingombro e le caratteristiche tecniche non sono impegnative
Over-all dimensions and technical characteristic are not binding

HPA 30 2 PASS

Dati tecnici Technical Data

P/N	V	Hz	kW(±10%)	A (±10%)	rpm	ø Fan	dB(A)	(m³/ h)	IP	lt	Kg
243303 # # #	230-400 B14 AC 265-460 B14 AC	50 60	0,75 0,86	3 -1,7 3 -1,7	1440 1750	450	82	4000	55	6,8	37
243312 # # #	12 DC	/	0,115	9,58	2530	280	74	1550	65		32
243324 # # #	24 DC	/	0,125	5,20	2900	280	78	1700	65		32
243356 # # #	Prepared for Gr.2 hydraulic motor					450			/		35

Per il 12-24V i dati sono riferiti al singolo ventilatore *For 12-24V the data refers to each ventilator*

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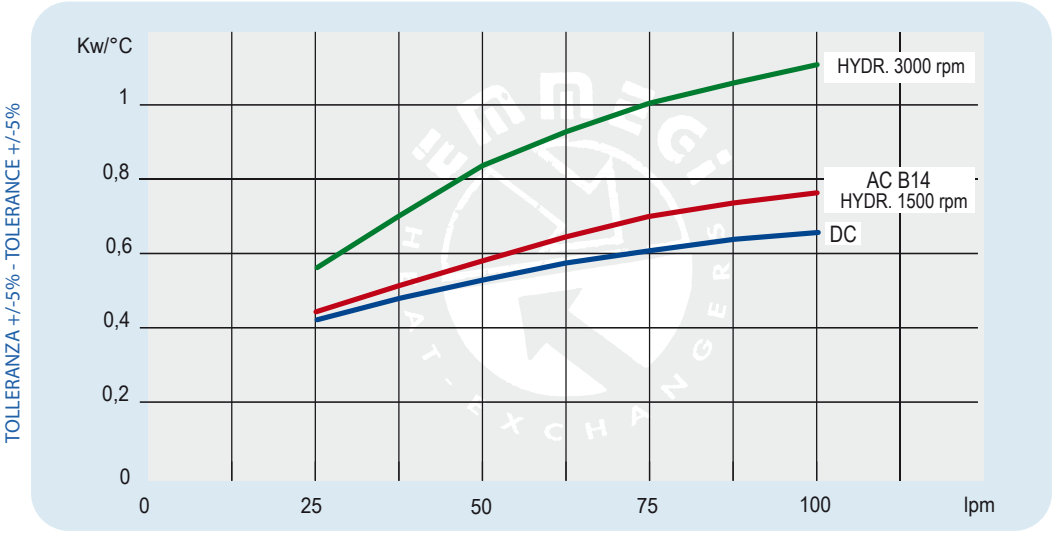
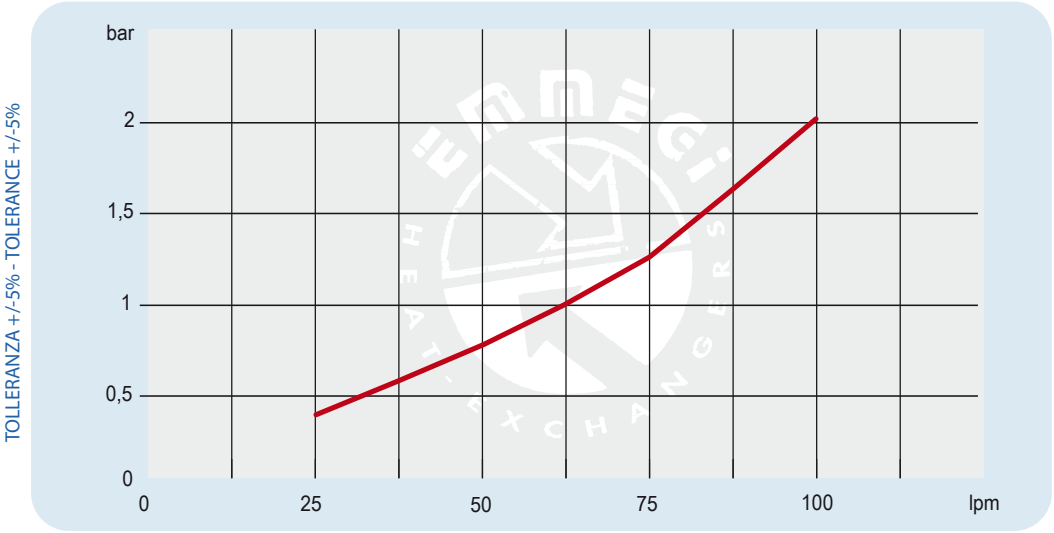
Diagramma rendimento Performance diagram



Perdite di carico Pressure drop (ISO VG 32)

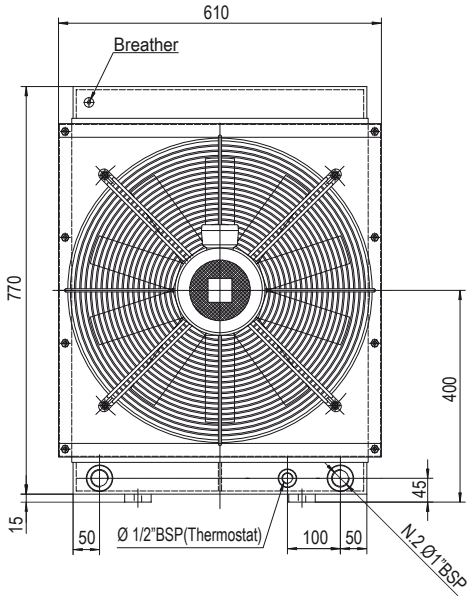


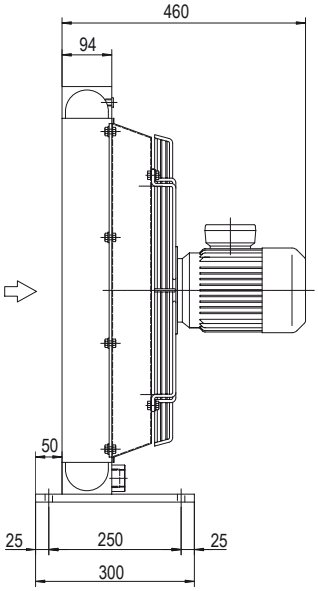
Fattore di correzione - F - (perdite di carico) Correction factor - F - (Pressure drop)

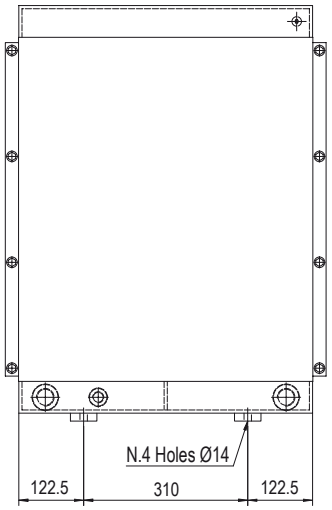
cst	10	15	20	30	40	50	60	80	100	200	300
F	0,5	0,65	0,77	1	1,2	1,4	1,6	1,9	2,1	3,3	4,3

HPA 30 2 PASS

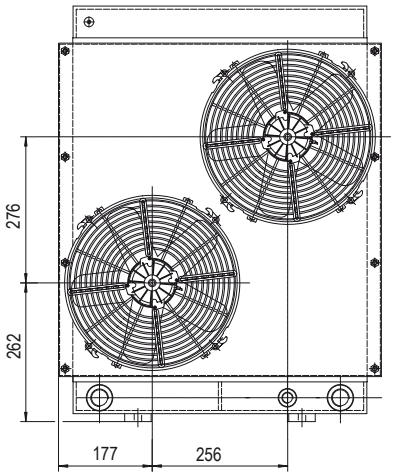
Dimensioni Dimensions

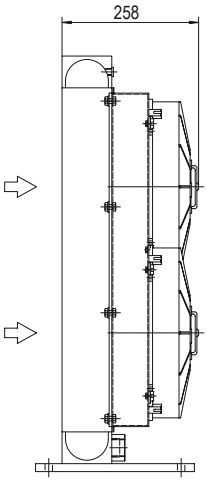


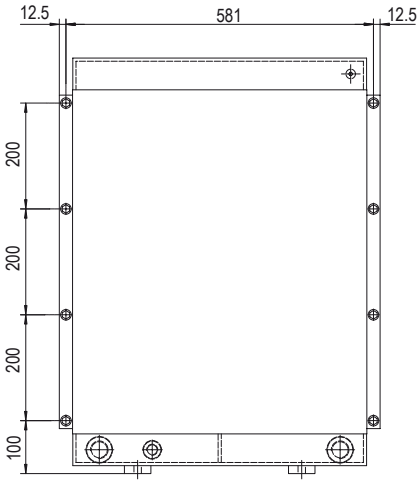




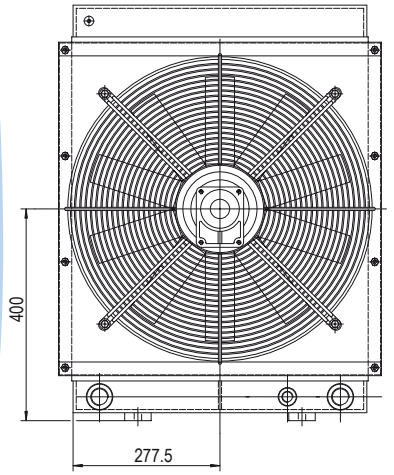
P/N 243803###

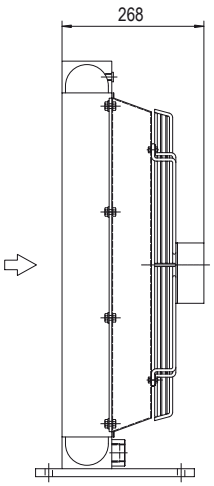


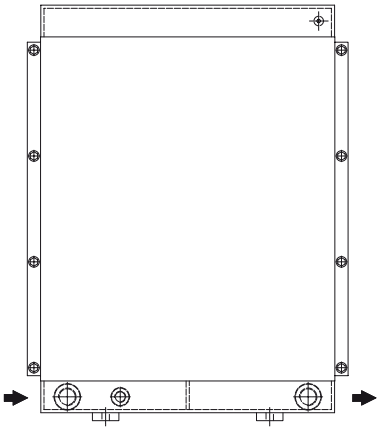




P/N 243812###
P/N 243824###







P/N 243856###

Le dimensioni di ingombro e le caratteristiche tecniche non sono impegnative
Over-all dimensions and technical characteristic are not binding

HPA 36 2 PASS

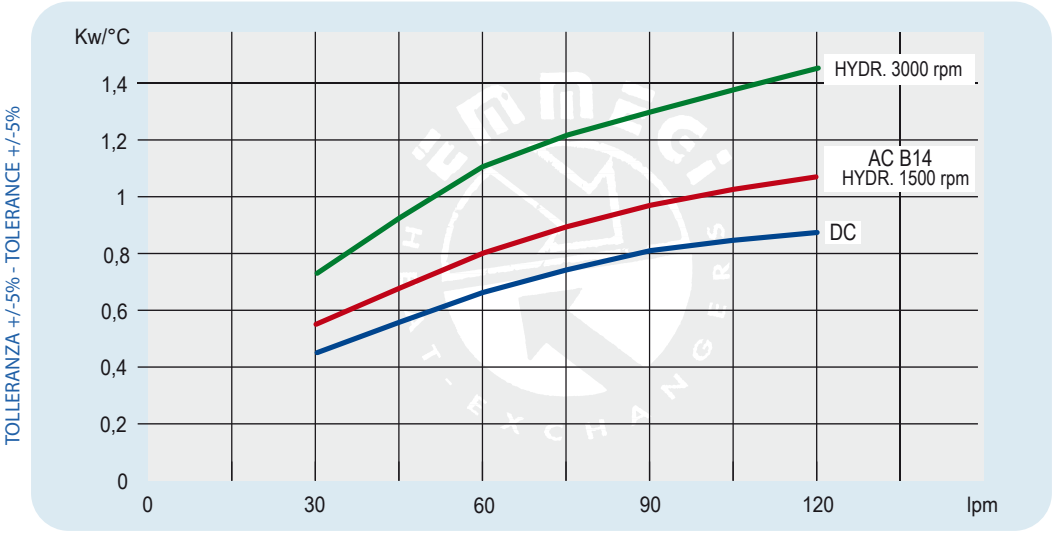
Dati tecnici Technical Data

P/N	V	Hz	kW(±10%)	A (±10%)	rpm	ø Fan	dB(A)	(m³/ h)	IP	lt	Kg
243803 # # #	230-400 B14 AC 265-460 B14 AC	50 60	1,1 1,3	4,5-2,6 4,5-2,6	1440 1730	450	82	5650	55	9,4	60
243812 # # #	12 DC	/	0,160	13,30	2560	305	83	2100	64		50
243824 # # #	24 DC	/	0,177	7,35	3000	305	84	2400	64		50
243856 # # #	Prepared for Gr.2 hydraulic motor					450			/		52

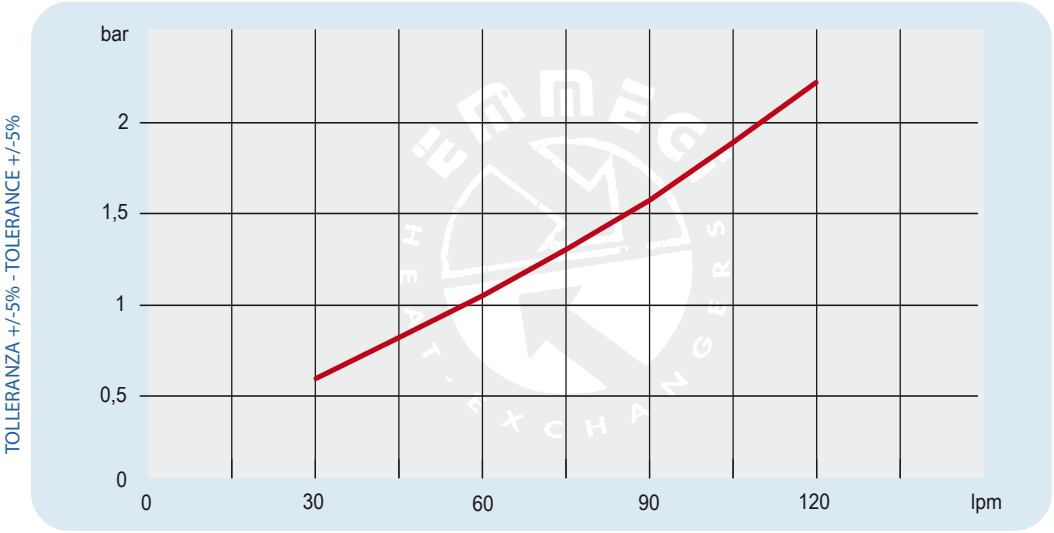
Per il 12-24V i dati sono riferiti al singolo ventilatore *For 12-24V the data refers to each ventilator*

Contattare EMMEGI Contact EMMEGI

Diagramma rendimento Performance diagram



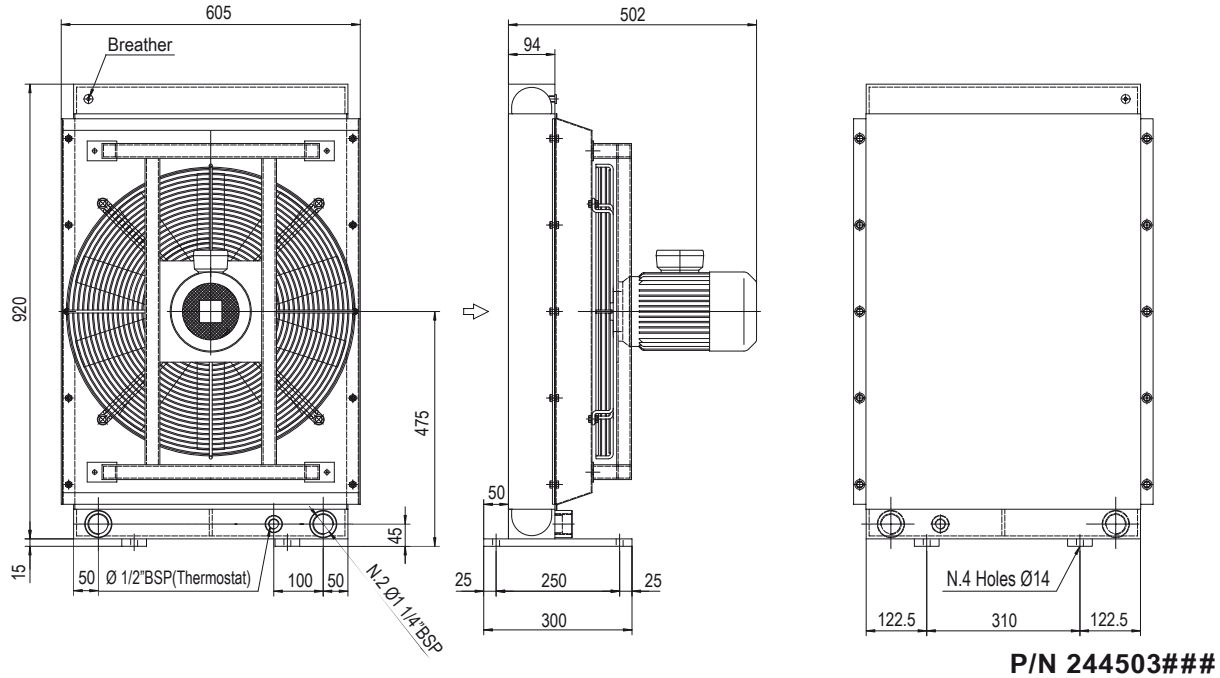
Perdite di carico Pressure drop (ISO VG 32)



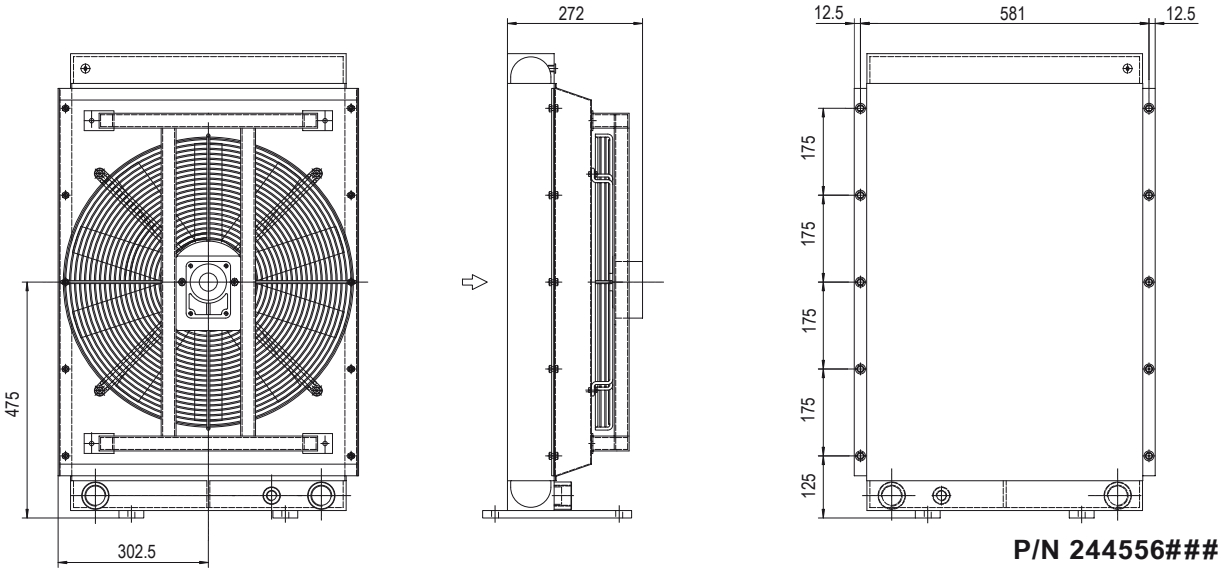
Fattore di correzione - F - (perdite di carico) Correction factor - F - (Pressure drop)

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

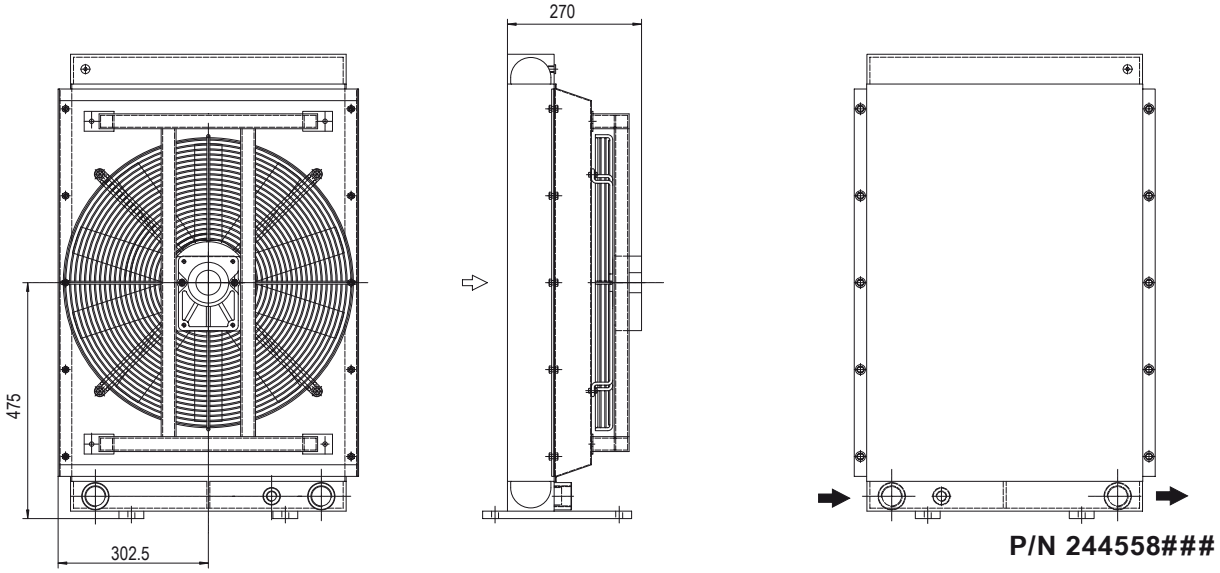
Dimensioni Dimensions



P/N 244503###



P/N 244556###



P/N 244558###

Le dimensioni di ingombro e le caratteristiche tecniche non sono impegnative
Over-all dimensions and technical characteristic are not binding

HPA 42 2 PASS

Dati tecnici Technical Data

P/N	V	Hz	kW(±10%)	A (±10%)	rpm	ø Fan	dB(A)	(m³/ h)	IP	lt	Kg
244503 # # #	230-400 B14 AC 265-460 B14 AC	50 60	1,1 1,3	4,5-2,6 4,5-2,6	1440 1730	560	84	7550	55	10,6	65
244556 # # #	Prepared for Gr.2 hydraulic motor					560			/		58
244558 # # #	Prepared for Gr.3 hydraulic motor					560			/		58

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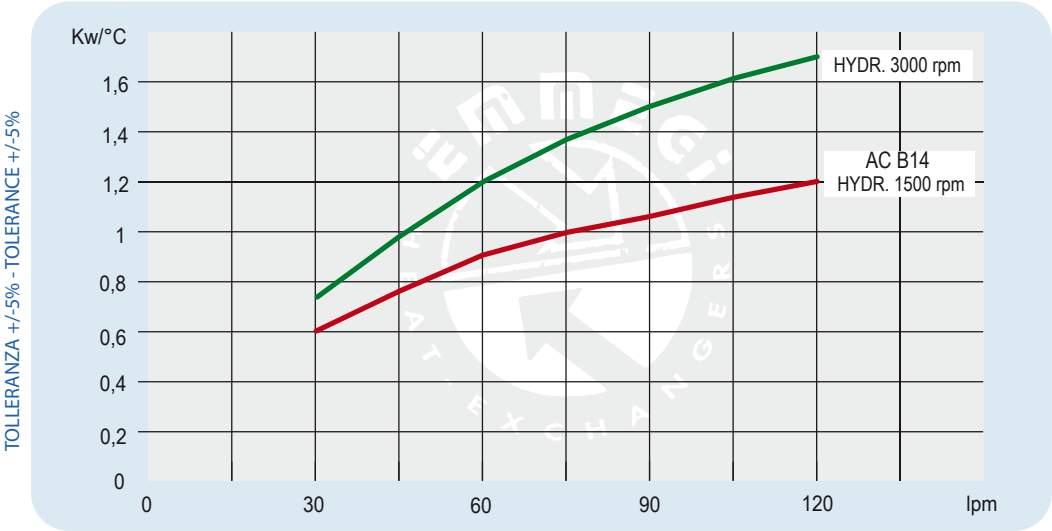
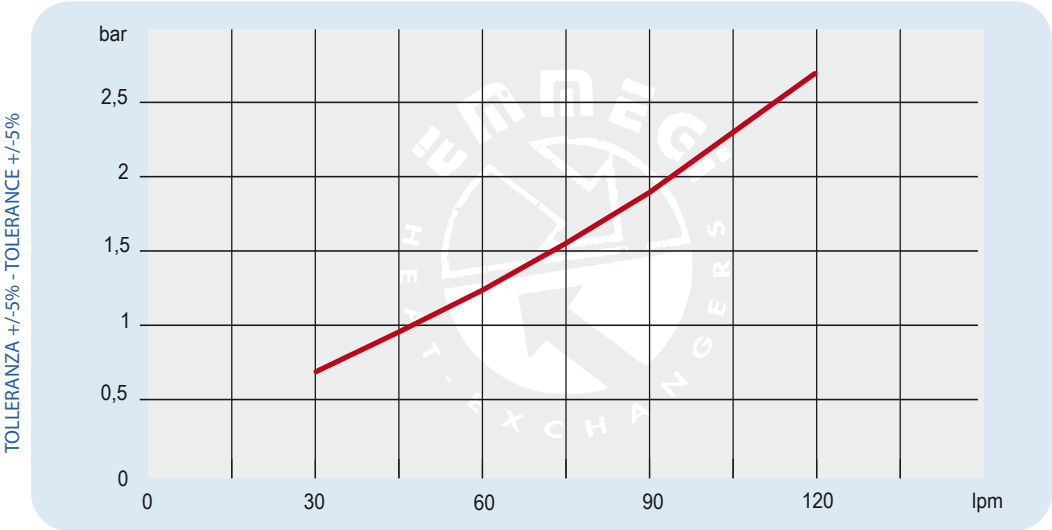
HPA 42 2 PASS

Diagramma rendimento Performance diagram



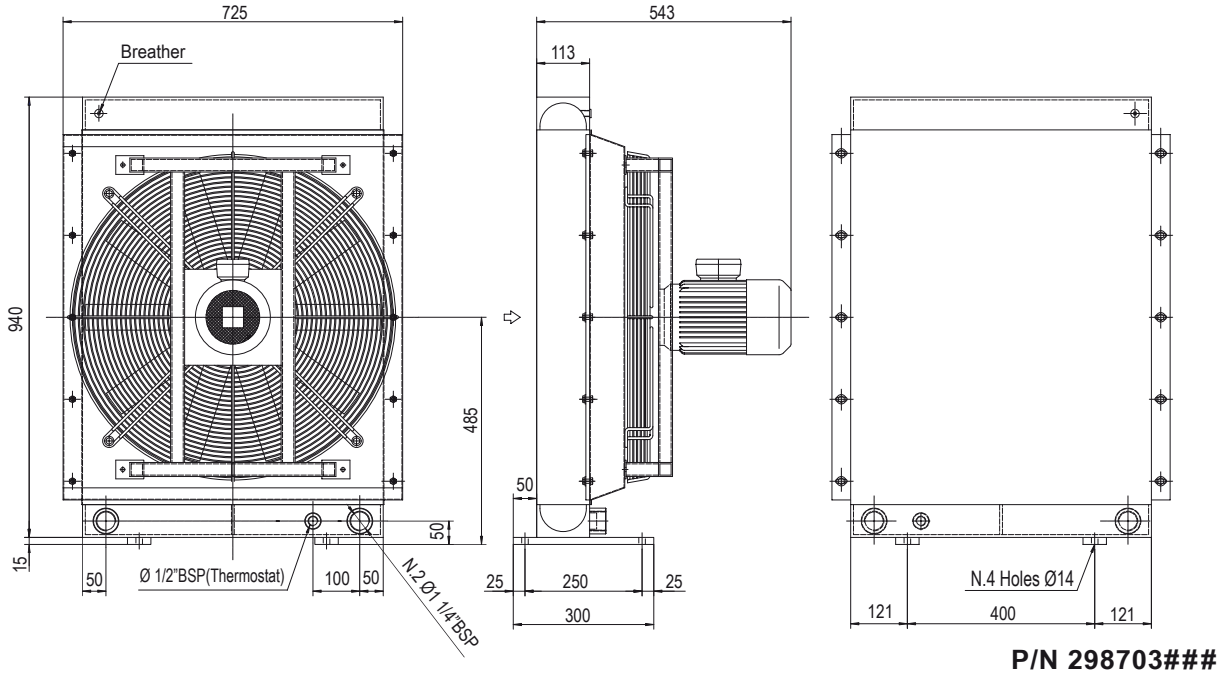
Perdite di carico Pressure drop (ISO VG 32)



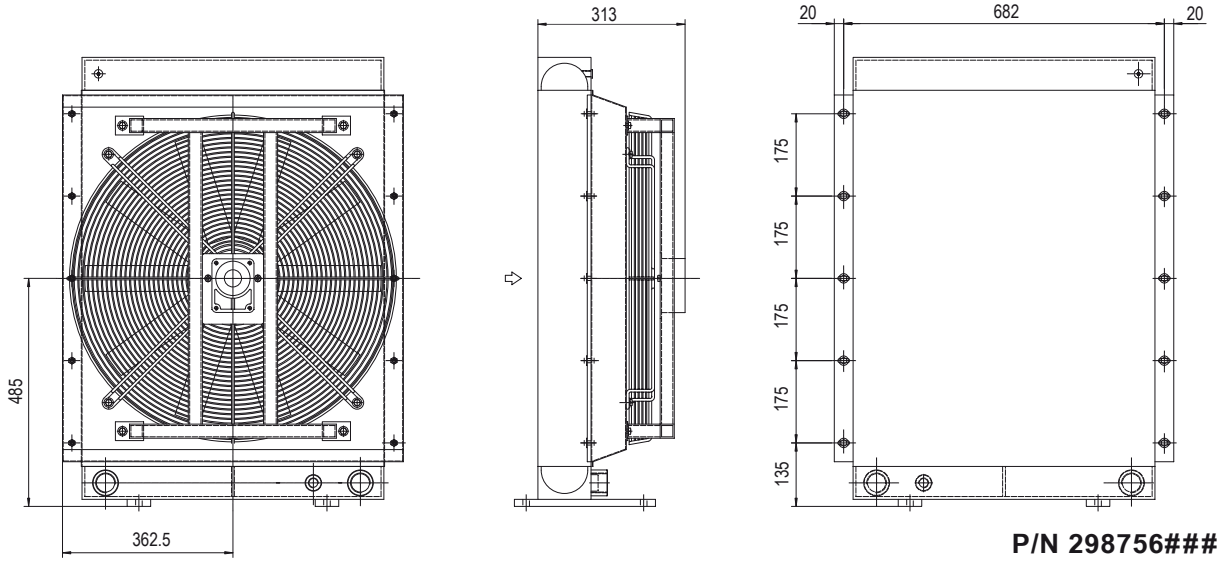
Fattore di correzione - F - (perdite di carico) Correction factor - F - (Pressure drop)

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

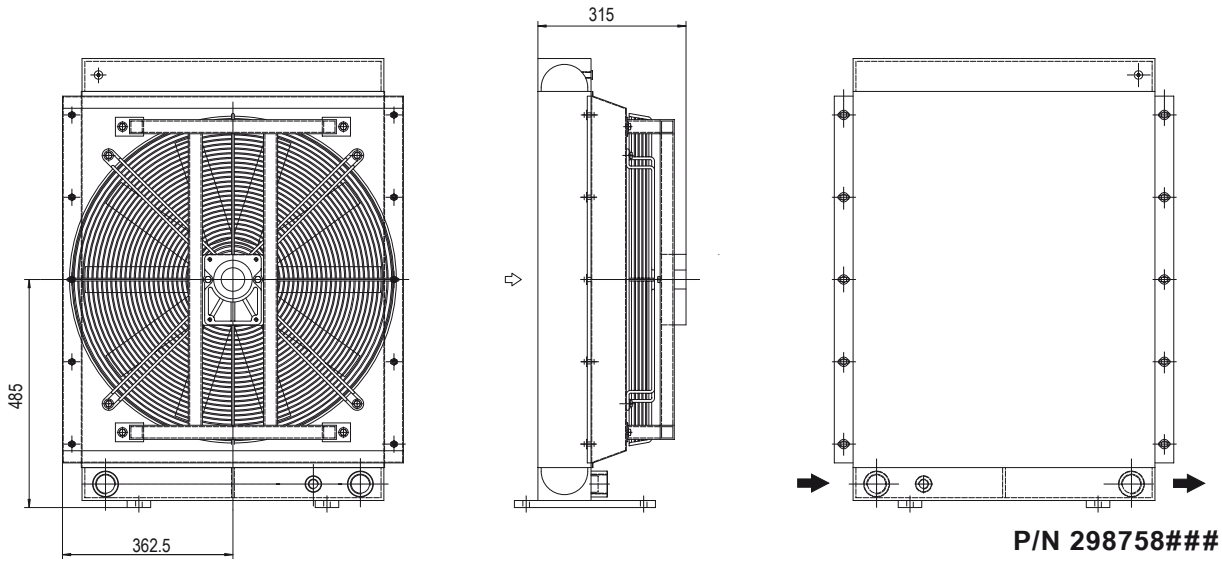
Dimensioni Dimensions



P/N 298703###



P/N 298756###



P/N 298758###

Le dimensioni di ingombro e le caratteristiche tecniche non sono impegnative
Over-all dimensions and technical characteristic are not binding

HPA 50 2 PASS

Dati tecnici Technical Data

P/N	V	Hz	kW(±10%)	A (±10%)	rpm	ø Fan	dB(A)	(m³/ h)	IP	lt	Kg
298703 ###	230-400 B14 AC 265-460 B14 AC	50 60	1,1 1,3	5-2,9 5-2,9	936 1123	630	80	7550	55	14,2	90
298756 ###	Prepared for Gr.2 hydraulic motor					630			/		83
298758 ###	Prepared for Gr.3 hydraulic motor					630			/		83

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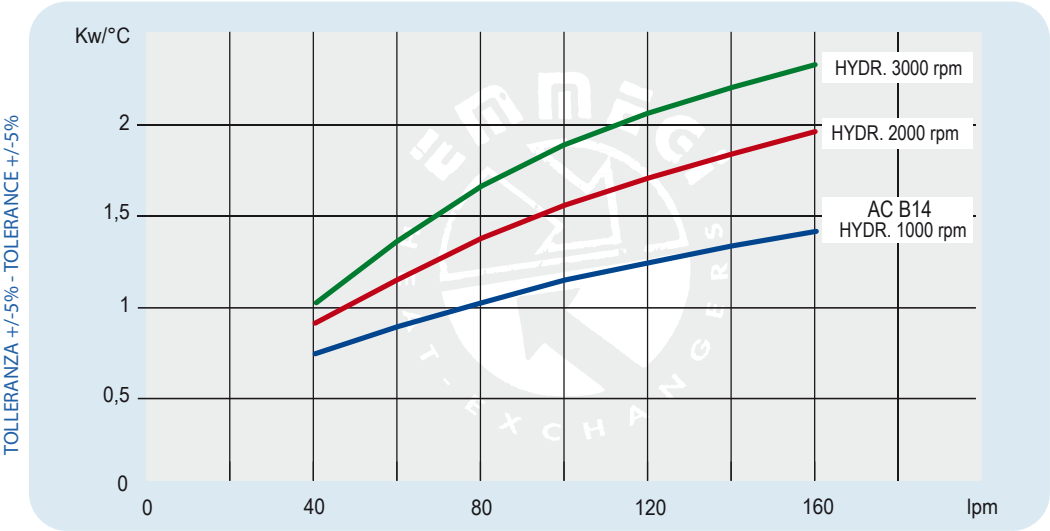
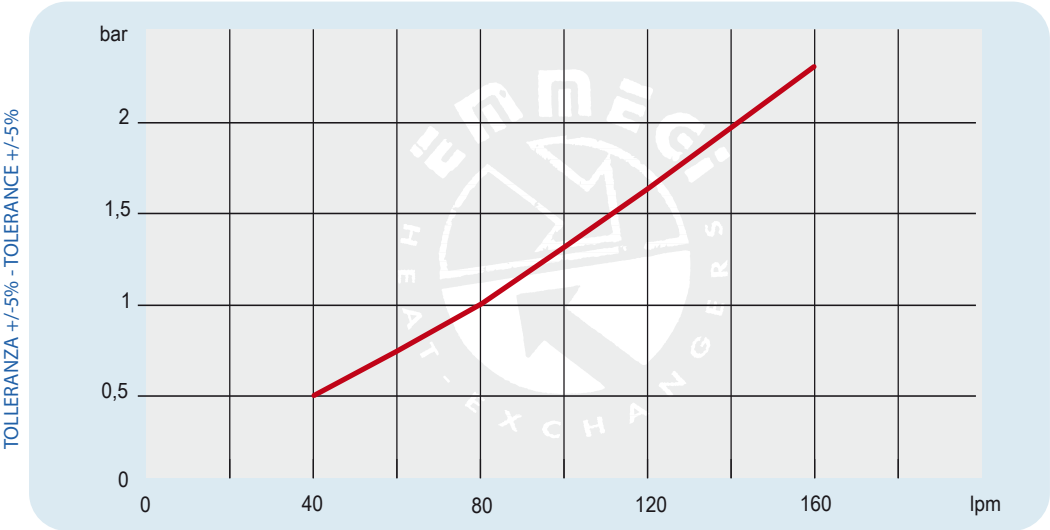
Diagramma rendimento Performance diagram



Perdite di carico Pressure drop (ISO VG 32)

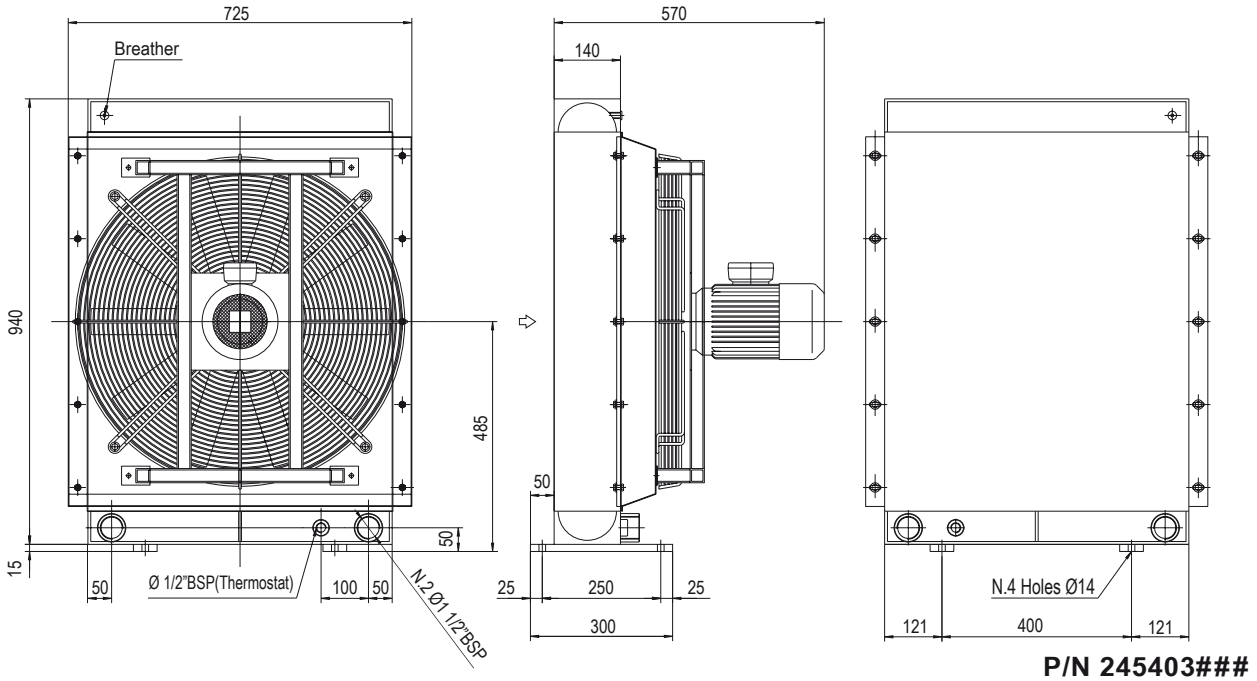


Fattore di correzione - F - (perdite di carico) Correction factor - F - (Pressure drop)

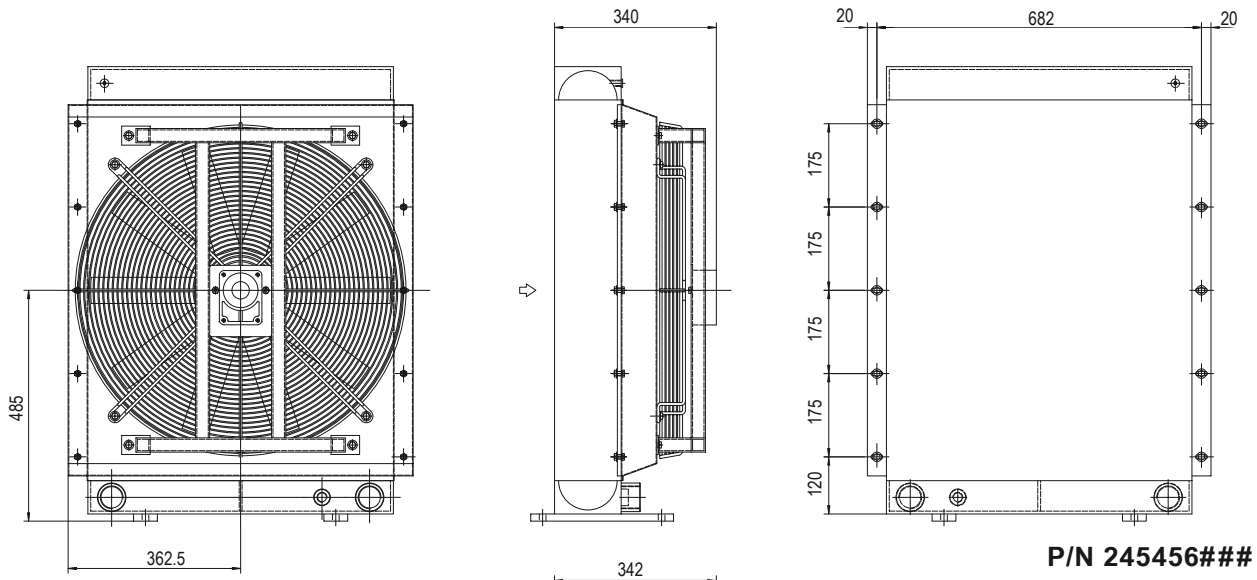
cst	10	15	20	30	40	50	60	80	100	200	300
F	0,5	0,65	0,77	1	1,2	1,4	1,6	1,9	2,1	3,3	4,3

HPA 50 2 PASS

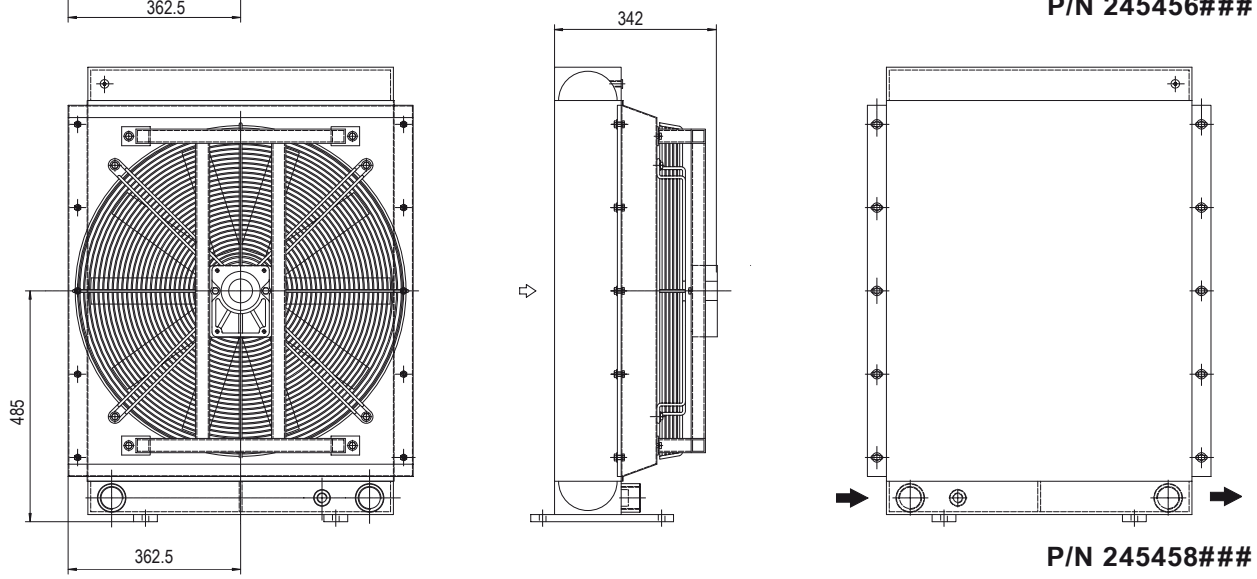
Dimensioni Dimensions



P/N 245403###



P/N 245456###



P/N 245458###

Le dimensioni di ingombro e le caratteristiche tecniche non sono impegnative
Over-all dimensions and technical characteristic are not binding

HPA 52 2 PASS

Dati tecnici Technical Data

P/N	V	Hz	kW(±10%)	A (±10%)	rpm	ø Fan	dB(A)	(m³/ h)	IP	lt	Kg
245403 # # #	230-400 B14 AC 265-460 B14 AC	50 60	1,1 1,3	5-2,9 5-2,9	936 1123	630	80	7050	55	17,7	95
245456 # # #	Prepared for Gr.2 hydraulic motor					630			/		89
245458 # # #	Prepared for Gr.3 hydraulic motor					630			/		89

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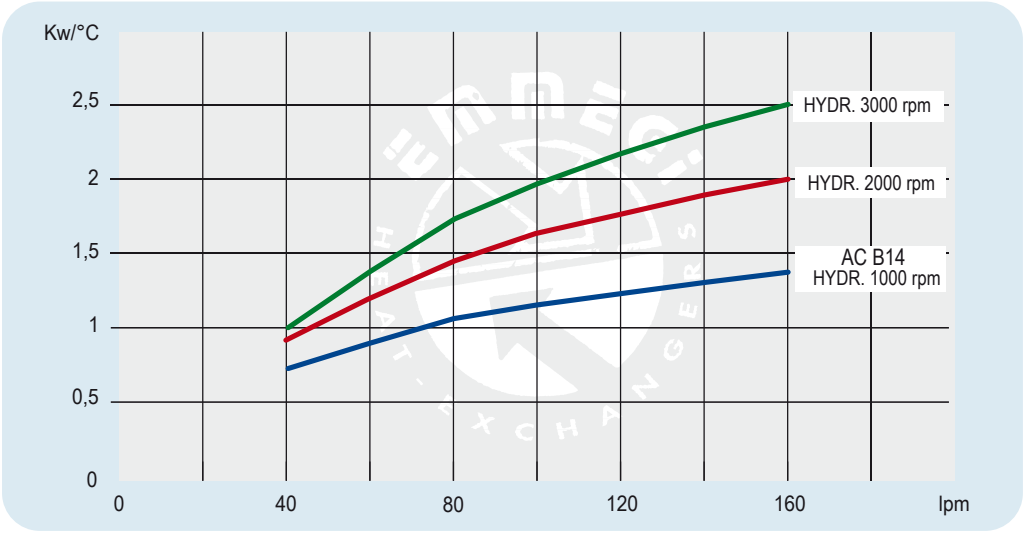
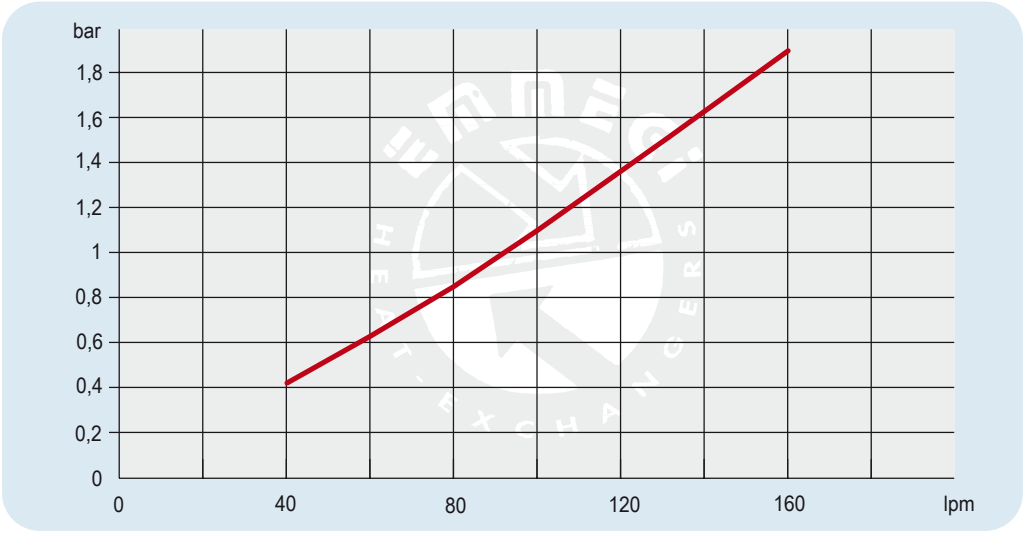
Diagramma rendimento Performance diagram



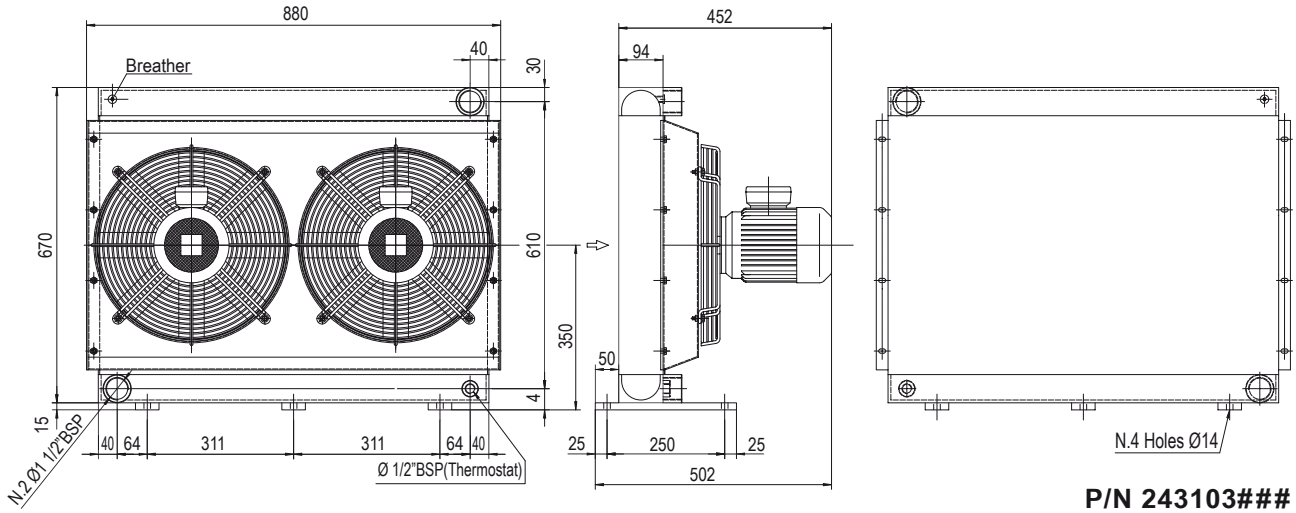
Perdite di carico Pressure drop (ISO VG 32)



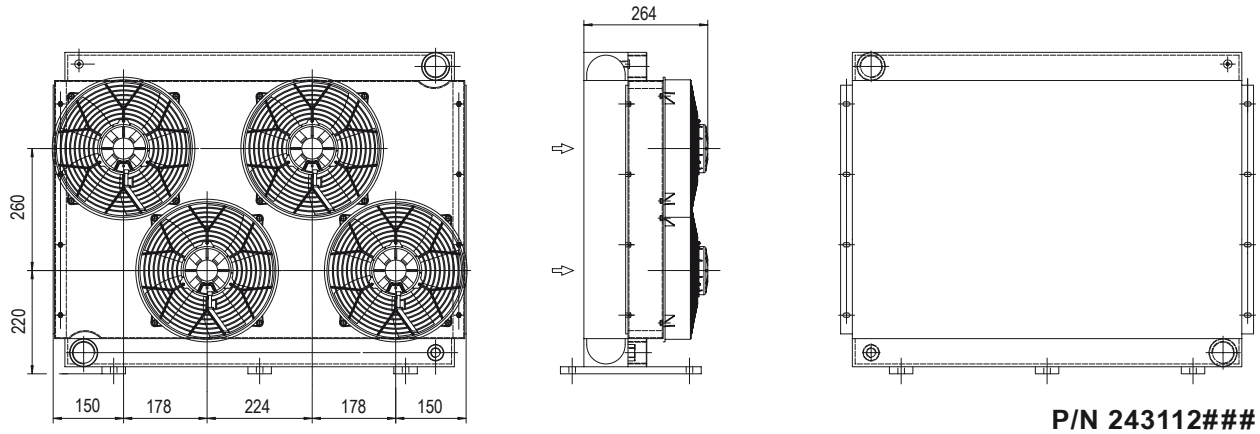
Fattore di correzione - F - (perdite di carico) Correction factor - F - (Pressure drop)

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

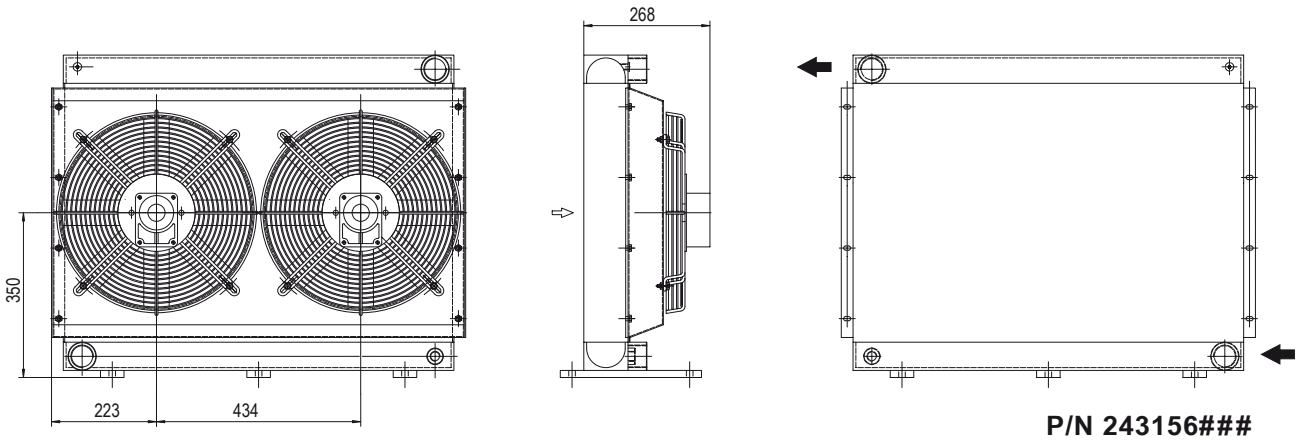
Dimensioni Dimensions



P/N 243103###



P/N 243112###
P/N 243124###



P/N 243156###

Le dimensioni di ingombro e le caratteristiche tecniche non sono impegnative
Over-all dimensions and technical characteristic are not binding

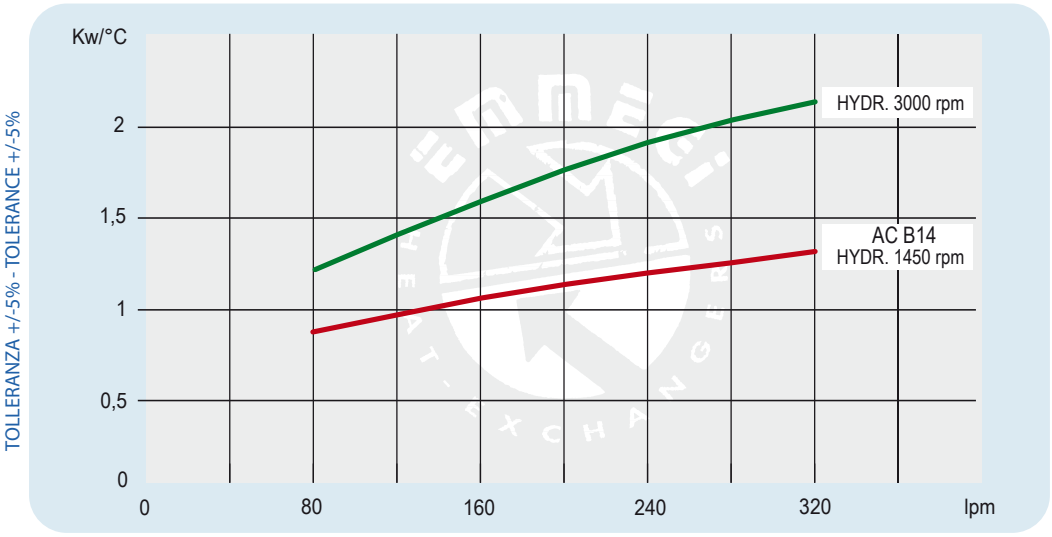
Dati tecnici Technical Data

P/N	V	Hz	kW(±10%)	A (±10%)	rpm	ø Fan	dB(A)	(m³/ h)	IP	lt	Kg
243103 # # #	230-400 B14 AC 265-460 B14 AC	50 60	0,55 0,63	2,9 - 1,7 2,9 - 1,7	1380 1690	400	79	3300	55	13,6	74
243112 # # #	12 DC	/	0,115	9,58	2530	280	77	1550	65		64
243124 # # #	24 DC	/	0,125	5,20	2900	280	81	1700	65		64
243156 # # #	Prepared for Gr.2 hydraulic motor					400			/		70

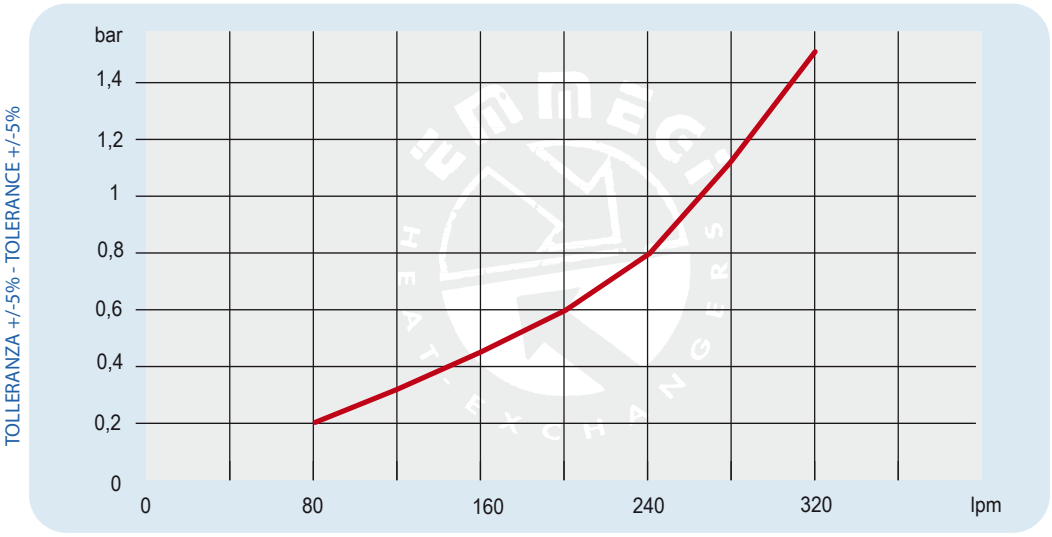
I dati soprariportati sono riferiti al singolo ventilatore *The data refers to each ventilator*

Contattare EMMEGI Contact EMMEGI

Diagramma rendimento Performance diagram



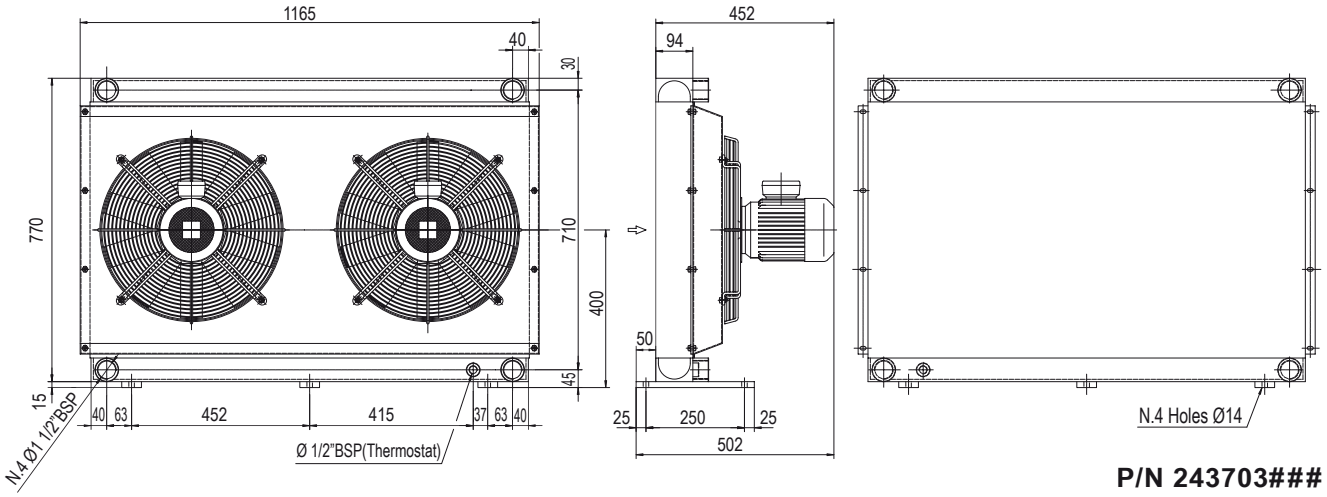
Perdite di carico Pressure drop (ISO VG 32)



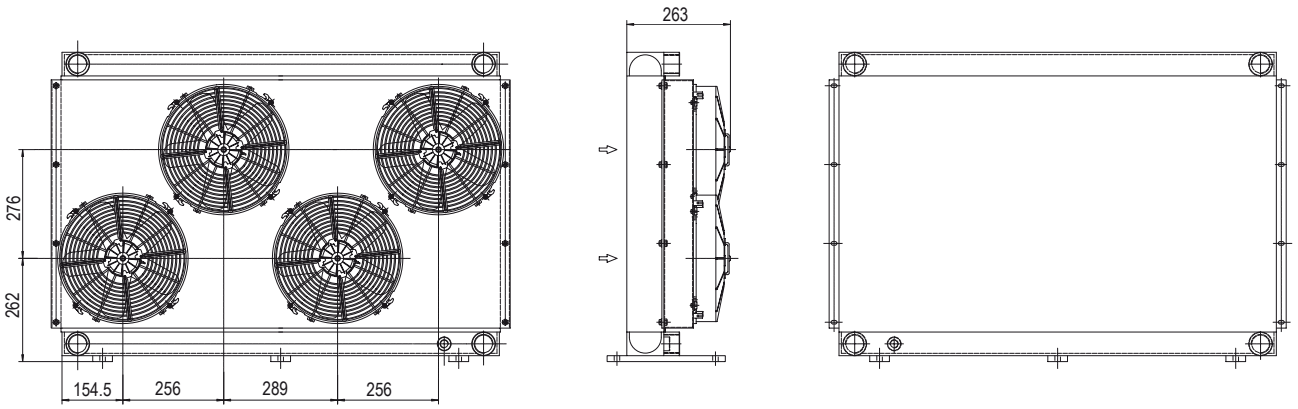
Fattore di correzione - F - (perdite di carico) Correction factor - F - (Pressure drop)

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

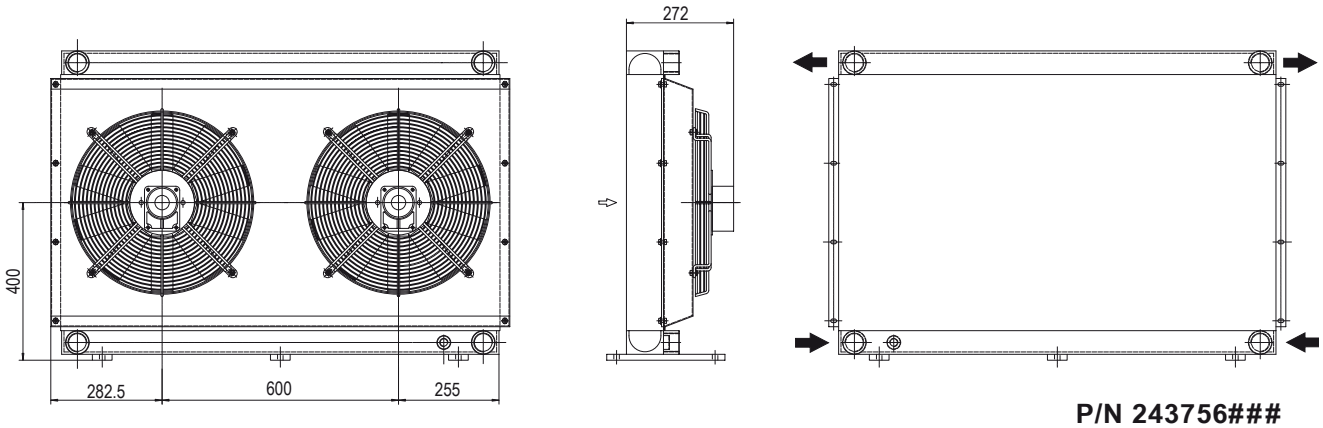
Dimensioni Dimensions



P/N 243703###



P/N 243712###
P/N 243724###



P/N 243756###

Le dimensioni di ingombro e le caratteristiche tecniche non sono impegnative
Over-all dimensions and technical characteristic are not binding

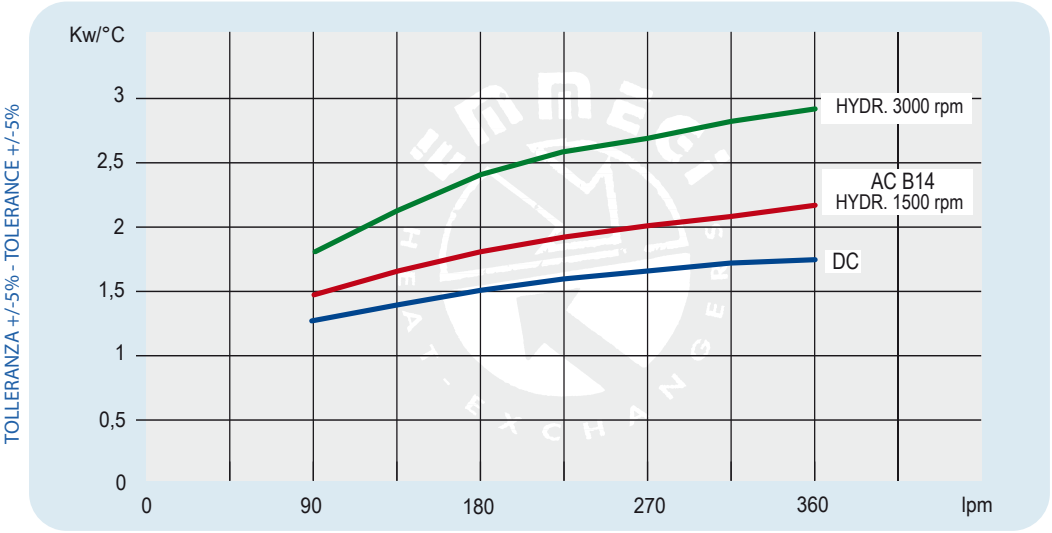
Dati tecnici Technical Data

P/N	V	Hz	kW(±10%)	A (±10%)	rpm	ø Fan	dB(A)	(m³/ h)	IP	lt	Kg
243703 # # #	230-400 B14 AC 265-460 B14 AC	50 60	0,75 0,86	3,2 - 1,9 3,2 - 1,9	1440 1750	450	85	4000	55	18,8	120
243712 # # #	12 DC	/	0,160	13,30	2560	305	86	2100	64		100
243724 # # #	24 DC	/	0,177	7,35	3000	305	87	2400	64		100
243756 # # #	Prepared for Gr.2 hydraulic motor					450			/		102

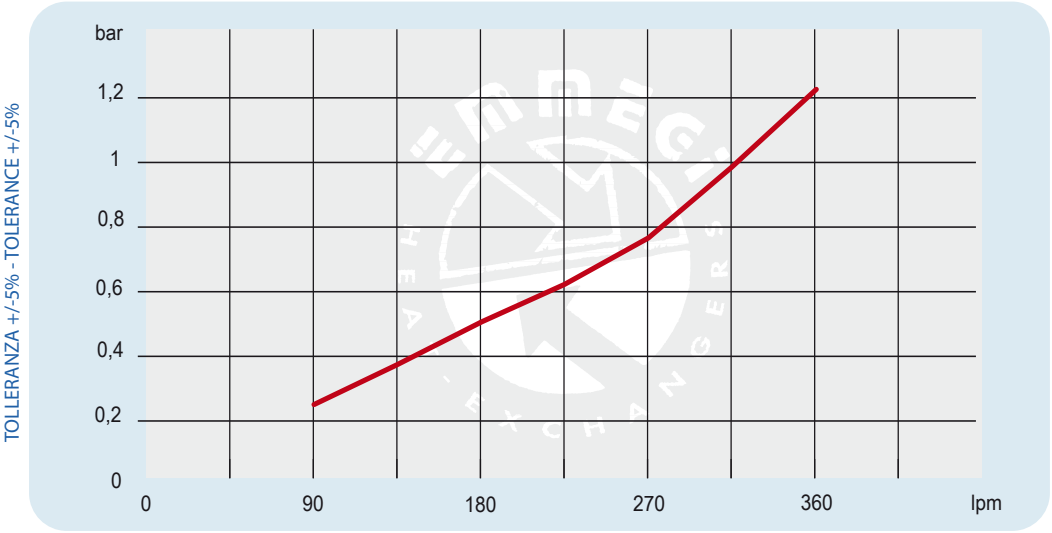
I dati sopraripportati sono riferiti al singolo ventilatore *The data refers to each ventilator*

Contattare EMMEGI Contact EMMEGI

Diagramma rendimento Performance diagram



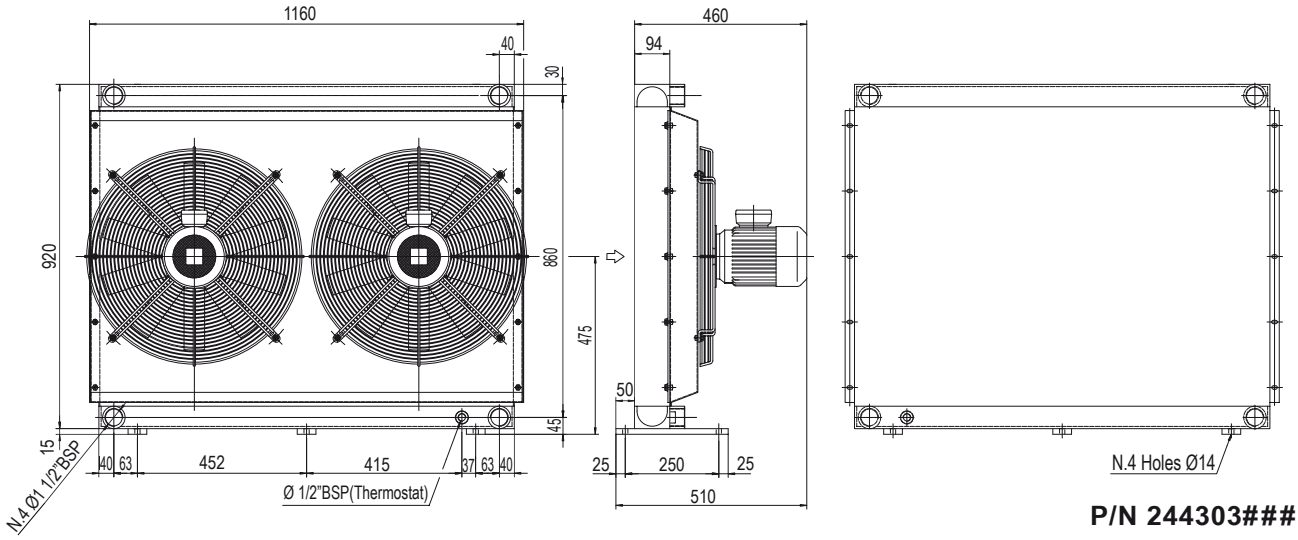
Perdite di carico Pressure drop (ISO VG 32)



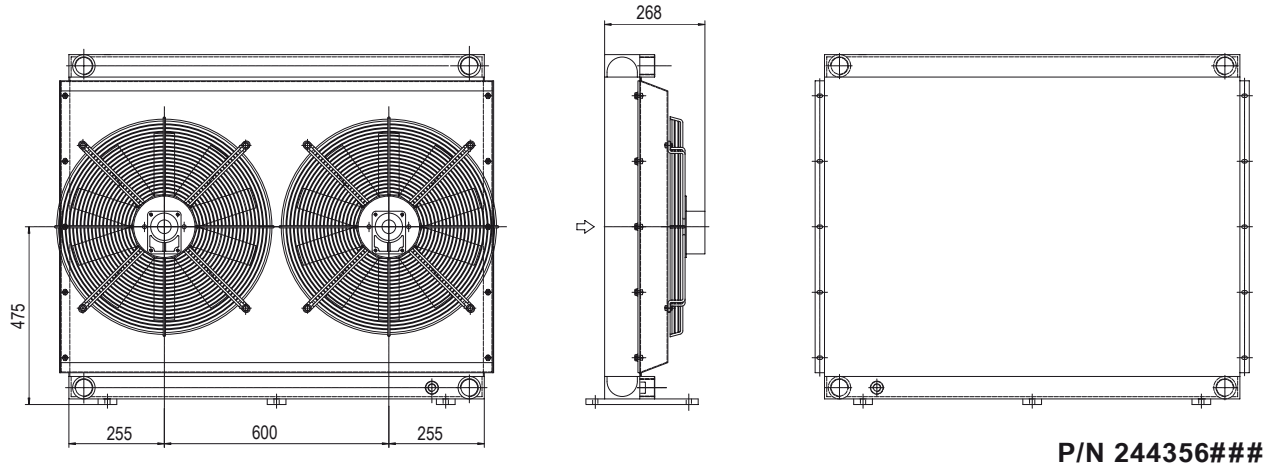
Fattore di correzione - F - (perdite di carico) Correction factor - F - (Pressure drop)

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

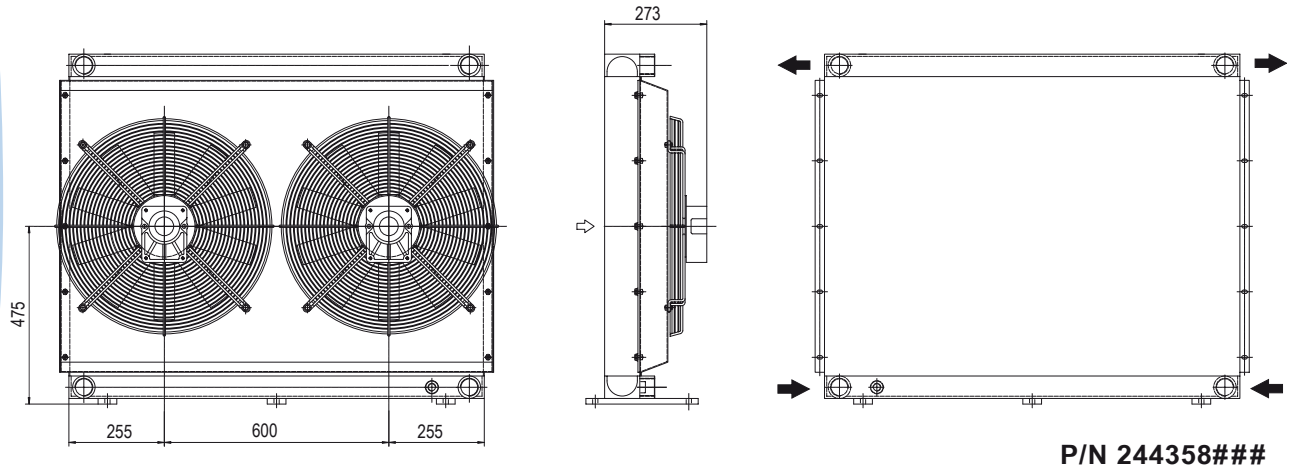
Dimensioni Dimensions



P/N 244303###



P/N 244356###



P/N 244358###

Le dimensioni di ingombro e le caratteristiche tecniche non sono impegnative
Over-all dimensions and technical characteristic are not binding

HPA 42 / 2

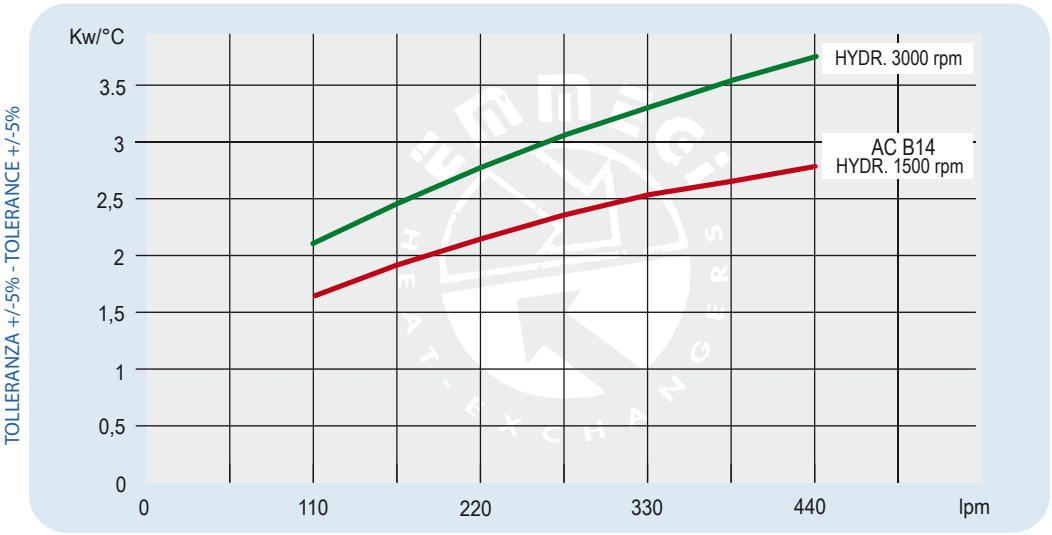
Dati tecnici Technical Data

P/N	V	Hz	kW(±10%)	A (±10%)	rpm	ø Fan	dB(A)	(m³/ h)	IP	lt	Kg
244303 # # #	230-400 B14 AC 265-460 B14 AC	50 60	1,1 1,3	4,5-2,6 4,5-2,6	1440 1730	500	87	7550	55	21,2	135
244356 # # #	Prepared for Gr.2 hydraulic motor					500			/		122
244358 # # #	Prepared for Gr.3 hydraulic motor					500			/		122

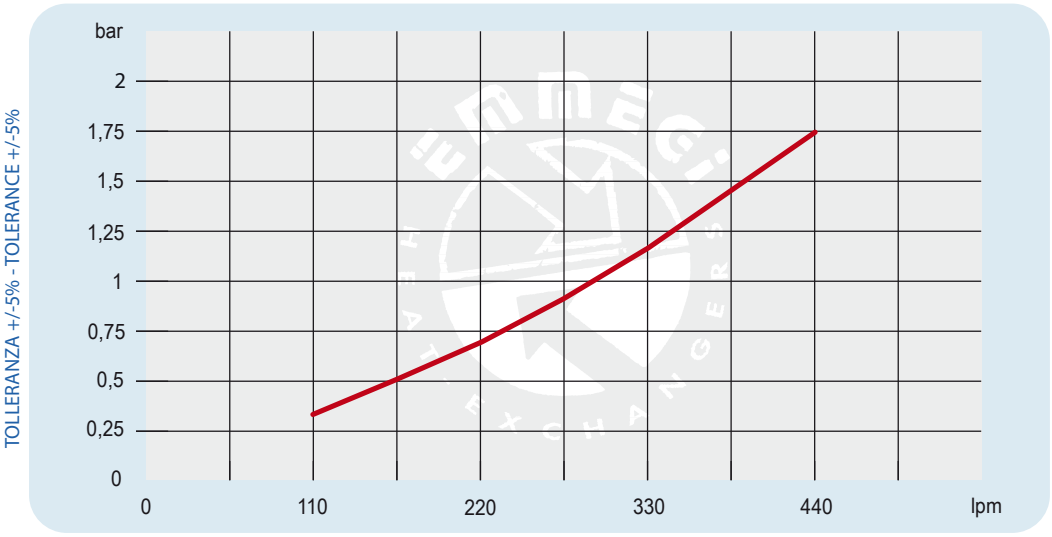
I dati soprariportati sono riferiti al singolo ventilatore *The data refers to each ventilator*

Contattare EMMEGI Contact EMMEGI

Diagramma rendimento Performance diagram



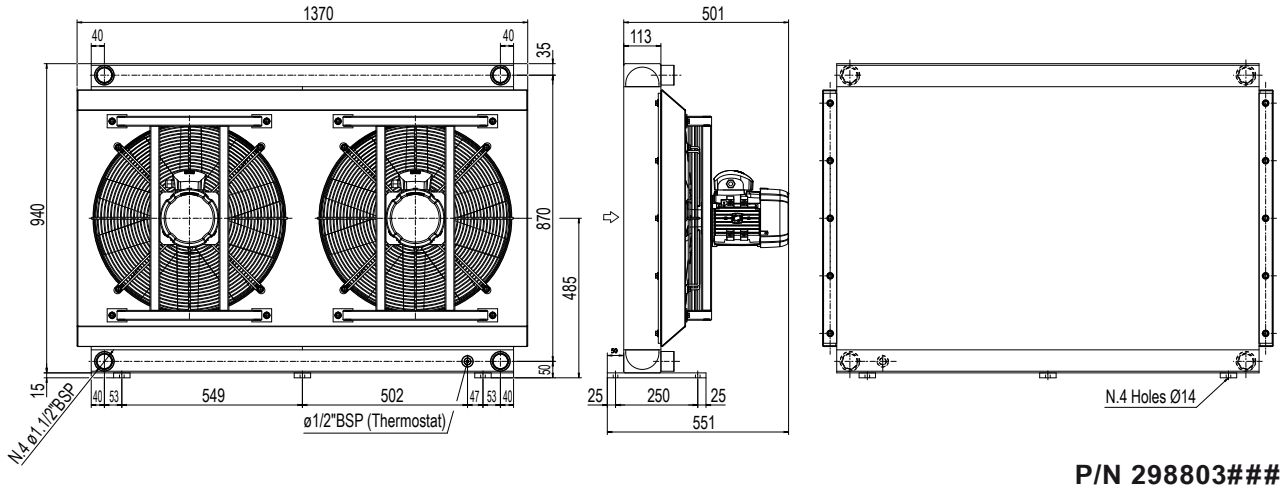
Perdite di carico Pressure drop (ISO VG 32)



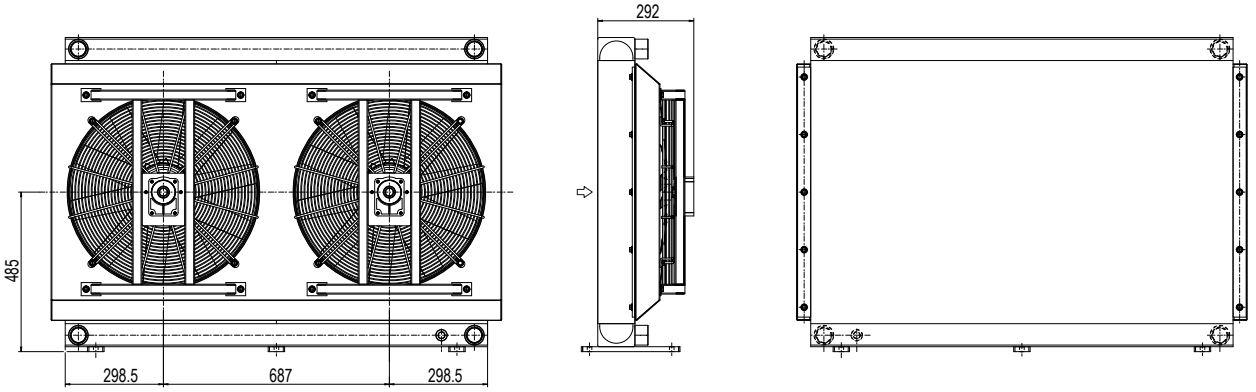
Fattore di correzione - F - (perdite di carico) Correction factor - F - (Pressure drop)

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

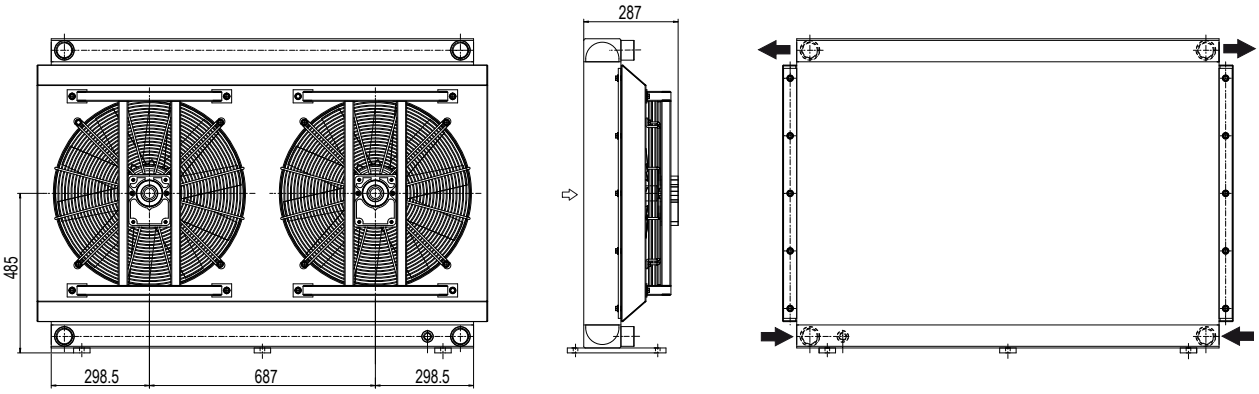
Dimensioni Dimensions



P/N 298803###



P/N 298856###



P/N 298858###

Le dimensioni di ingombro e le caratteristiche tecniche non sono impegnative
Over-all dimensions and technical characteristic are not binding

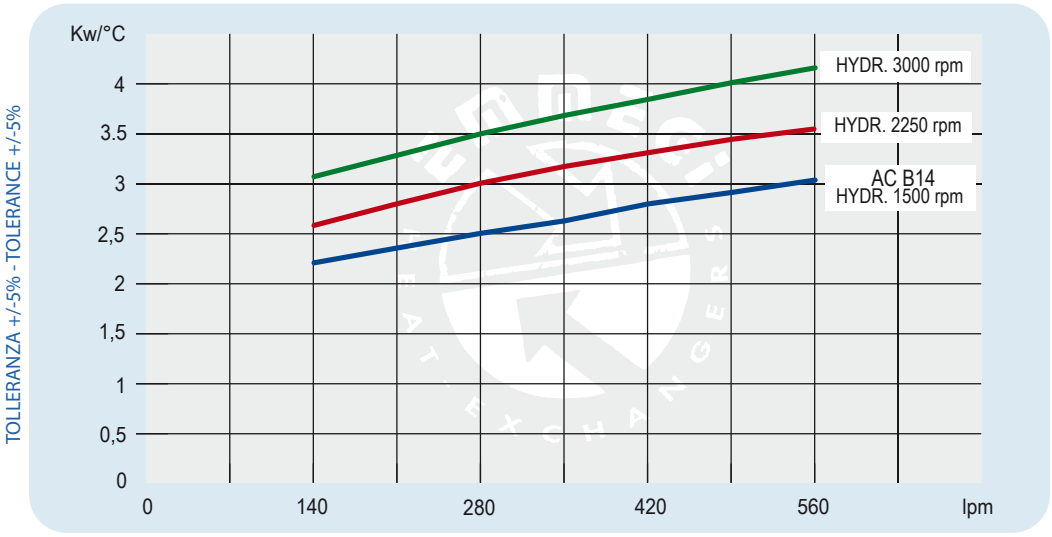
Dati tecnici Technical Data

P/N	V	Hz	kW(±10%)	A (±10%)	rpm	ø Fan	dB(A)	(m³/ h)	IP	lt	Kg
298803 # # #	230-400 B14 AC	50	1,1	4,5 - 2,6	1440	560	87	8500	55	28,4	192
	265-460 B14 AC	60	1,3	4,5 - 2,6	1730						
298856 # # #	Prepared for Gr.2 hydraulic motor					560			/		180
298858 # # #	Prepared for Gr.3 hydraulic motor					560			/		180

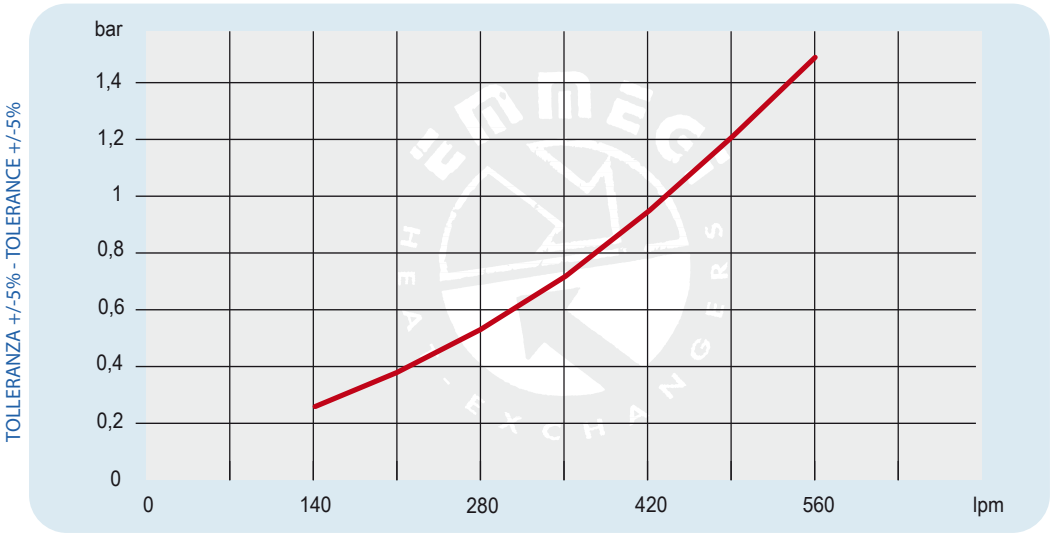
I dati soprariportati sono riferiti al singolo ventilatore *The data refers to each ventilator*

Contattare EMMEGI Contact EMMEGI

Diagramma rendimento Performance diagram



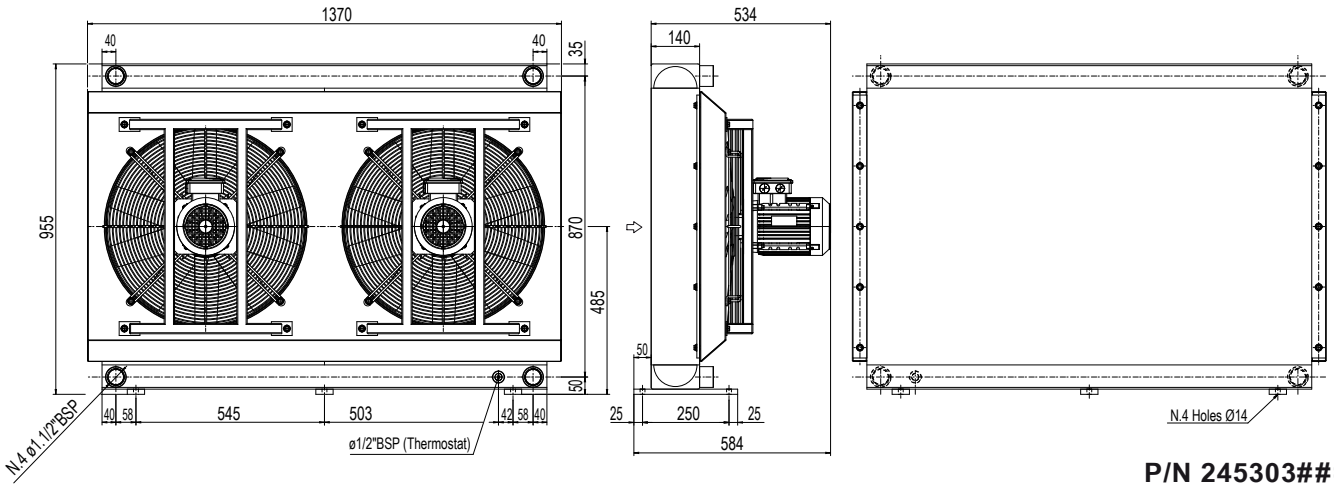
Perdite di carico Pressure drop (ISO VG 32)



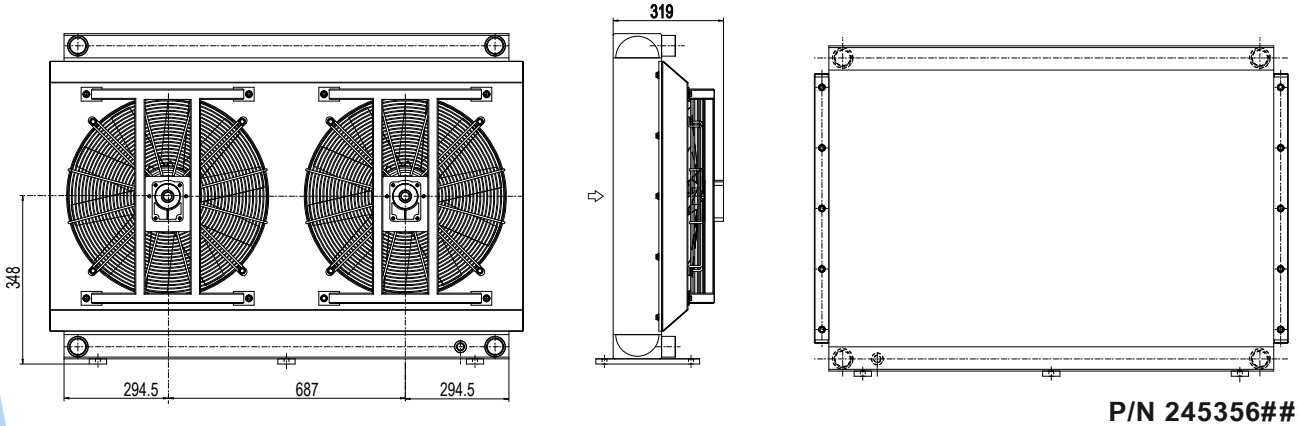
Fattore di correzione - F - (perdite di carico) Correction factor - F - (Pressure drop)

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

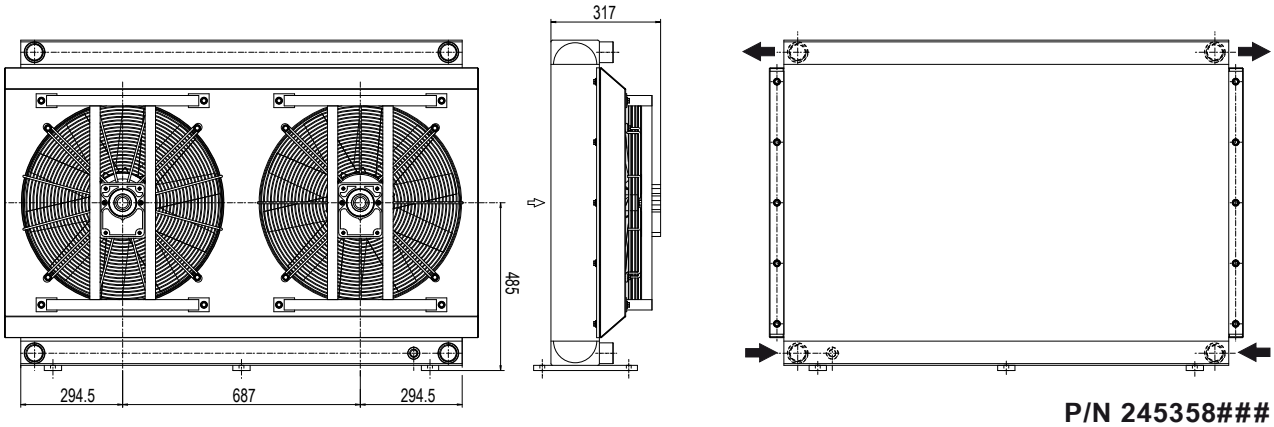
Dimensioni Dimensions



P/N 245303###



P/N 245356###



P/N 245358###

Le dimensioni di ingombro e le caratteristiche tecniche non sono impegnative
Over-all dimensions and technical characteristic are not binding

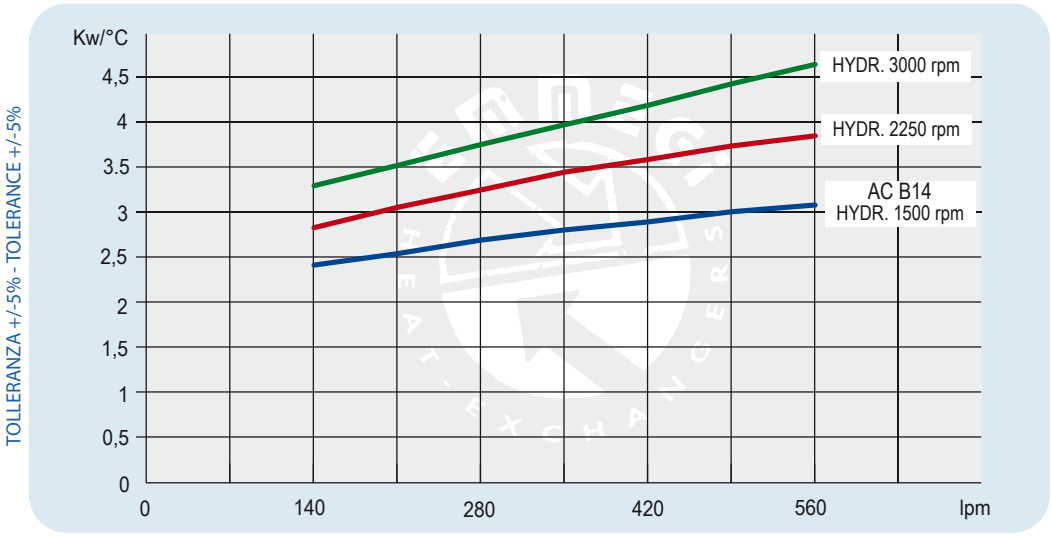
Dati tecnici Technical Data

P/N	V	Hz	kW(±10%)	A (±10%)	rpm	ø Fan	dB(A)	(m³/ h)	IP	lt	Kg
245303 # # #	230-400 B14 AC	50	1,1	4,5 - 2,6	1440	560	87	7750	55	28,4	195
	265-460 B14 AC	60	1,3	4,5 - 2,6	1730						
245356 # # #	Prepared for Gr.2 hydraulic motor					560			/		180
245358 # # #	Prepared for Gr.3 hydraulic motor					560			/		180

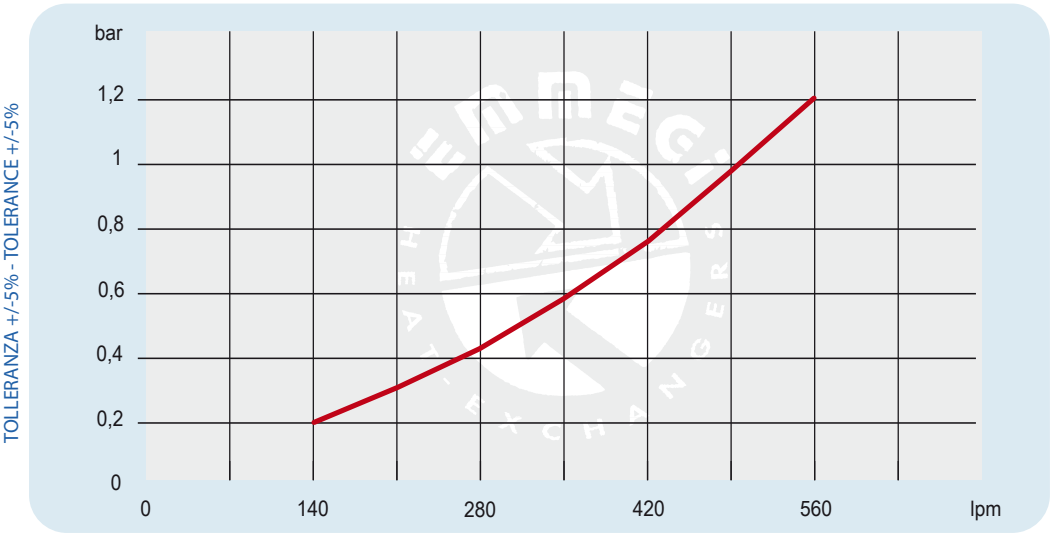
I dati soprariportati sono riferiti al singolo ventilatore *The data refers to each ventilator*

Contattare EMMEGI Contact EMMEGI

Diagramma rendimento Performance diagram



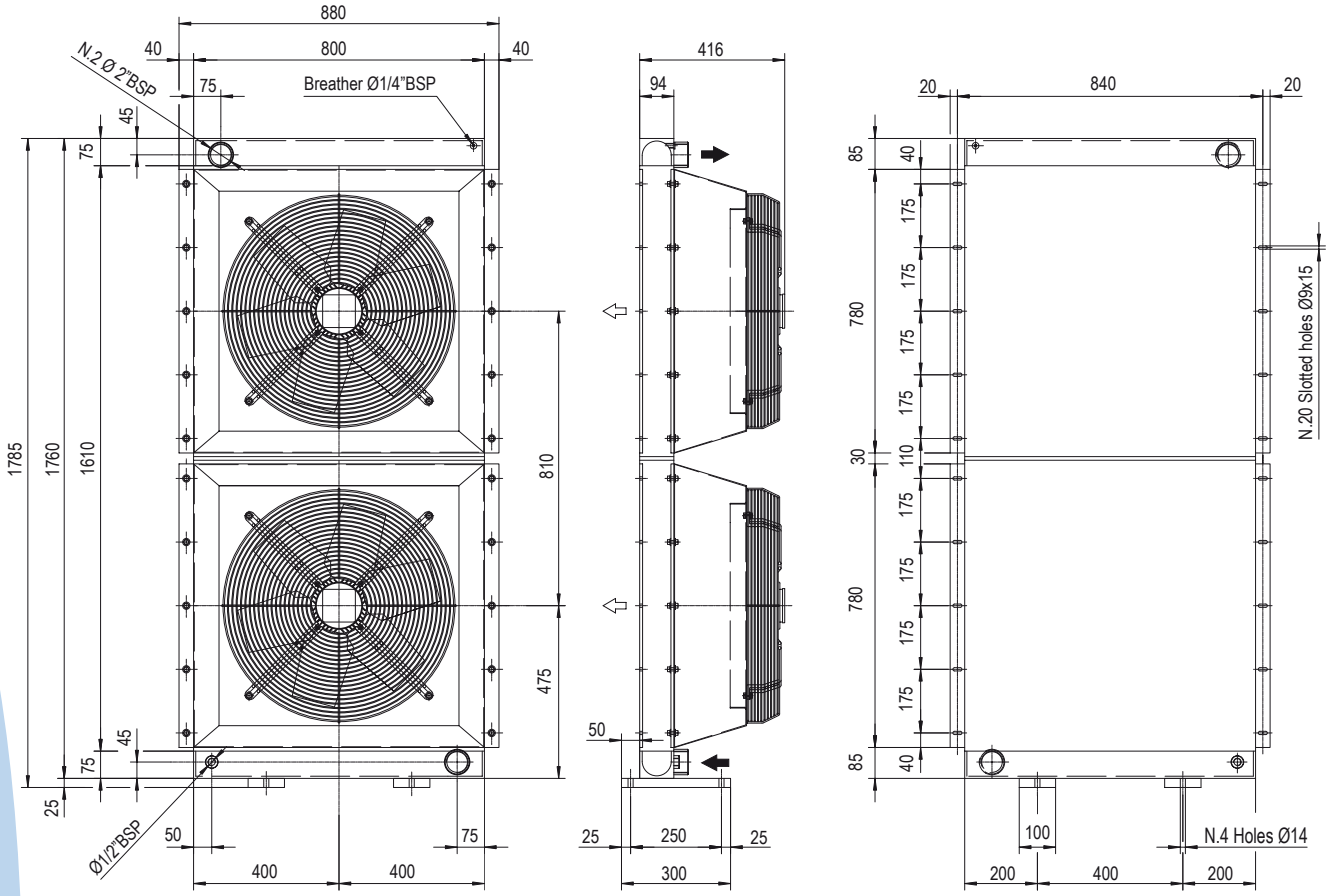
Perdite di carico Pressure drop (ISO VG 32)



Fattore di correzione - F - (perdite di carico) 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

Dimensioni Dimensions



Le dimensioni di ingombro e le caratteristiche tecniche non sono impegnative
Over-all dimensions and technical characteristic are not binding

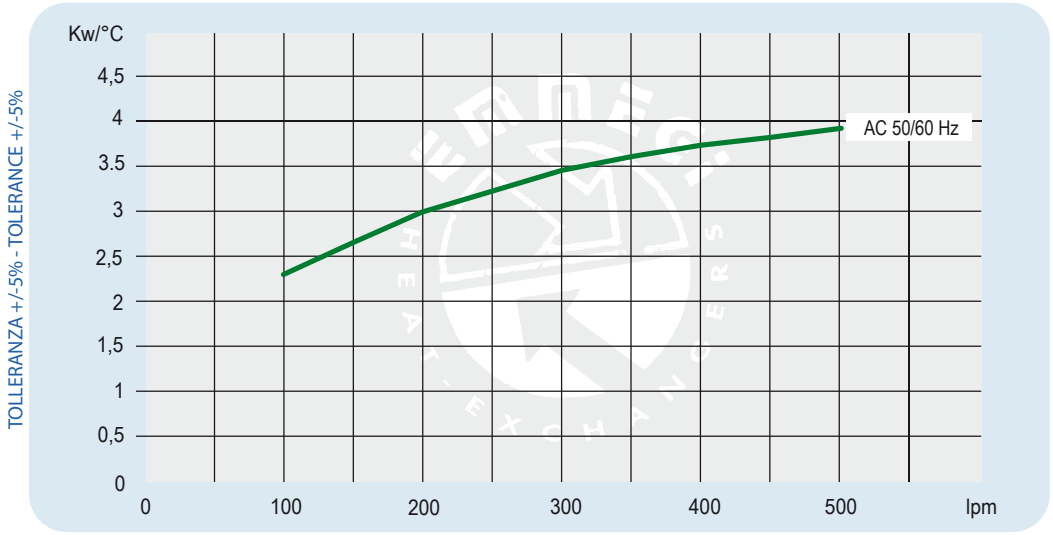
HPA 44 / 2

Dati tecnici Technical Data

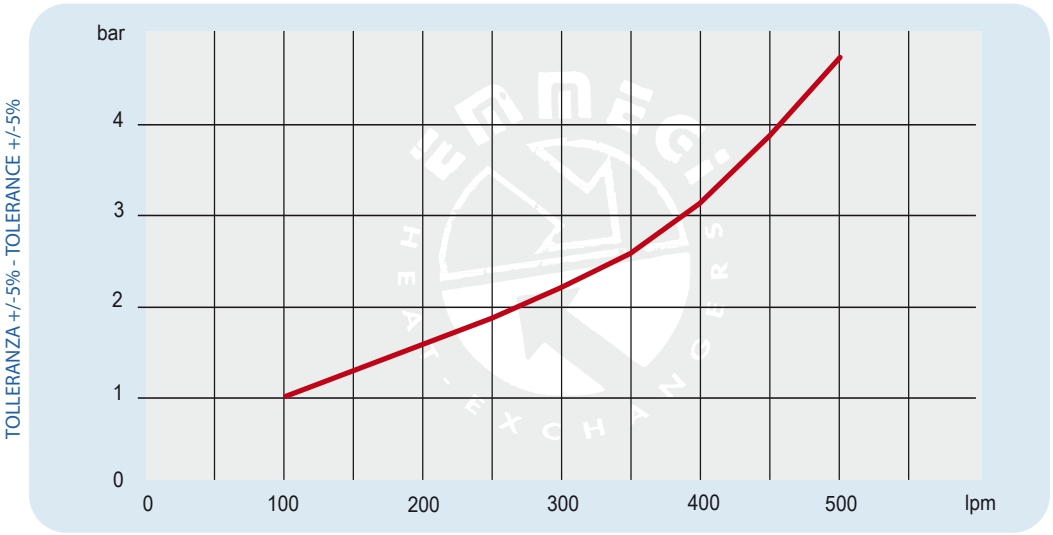
P/N	V	Hz	kW(±10%)	A (±10%)	rpm	ø Fan	dB(A)	(m³/ h)	IP	lt	Kg
041650C40050#	400 AC	50	1,3	2,4	1378	560	78	9500	54	25	140
041650C40060#	400-460 AC	60	1,5	2,5	1600	560	78	9500	54		140

I dati soprariportati sono riferiti al singolo ventilatore *The data refers to each ventilator*

Diagramma rendimento Performance diagram



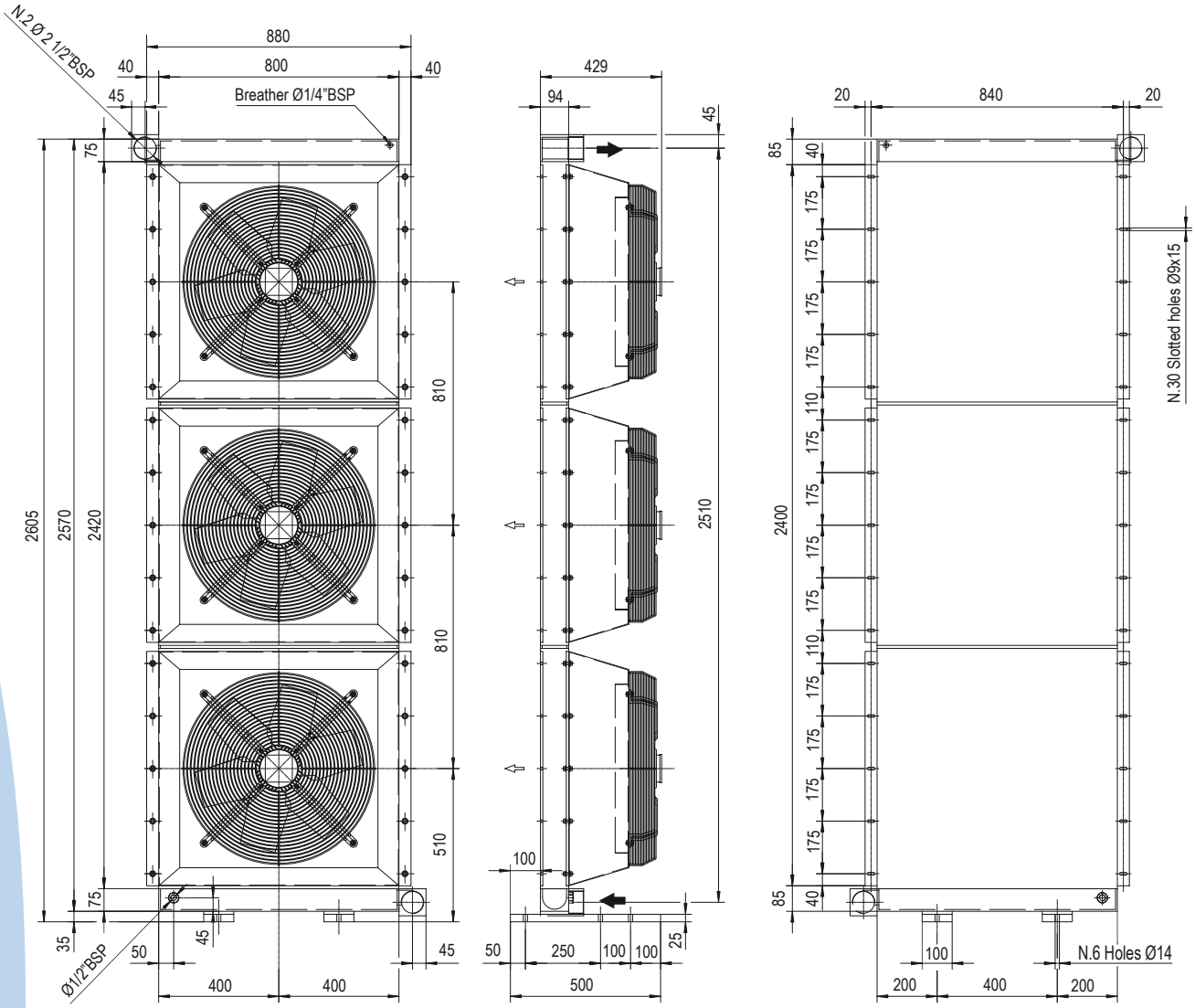
Perdite di carico Pressure drop (ISO VG 32)



Fattore di correzione - F - (perdite di carico) 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

Dimensioni Dimensions



Le dimensioni di ingombro e le caratteristiche tecniche non sono impegnative
Over-all dimensions and technical characteristic are not binding

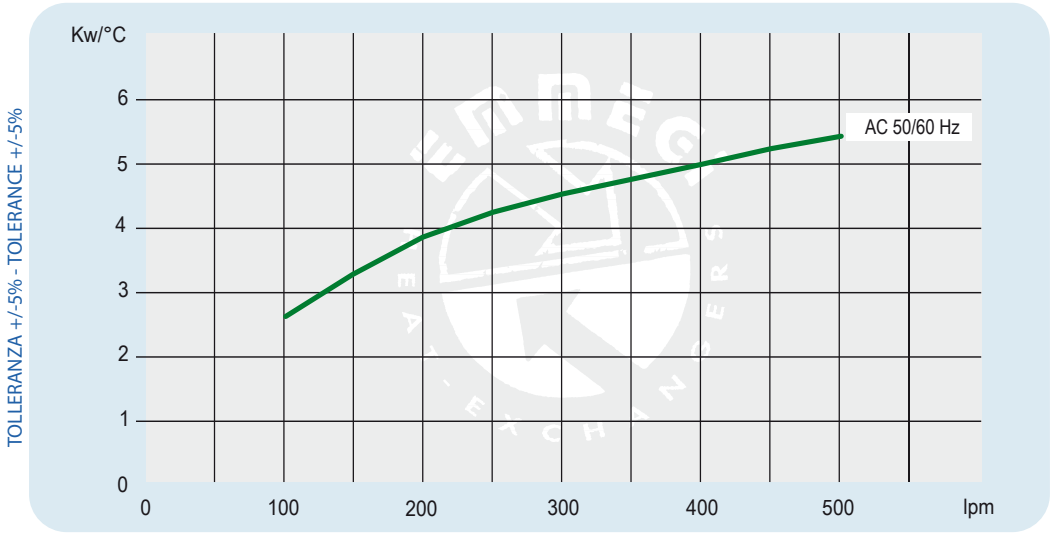
HPA 44 / 3

Dati tecnici Technical Data

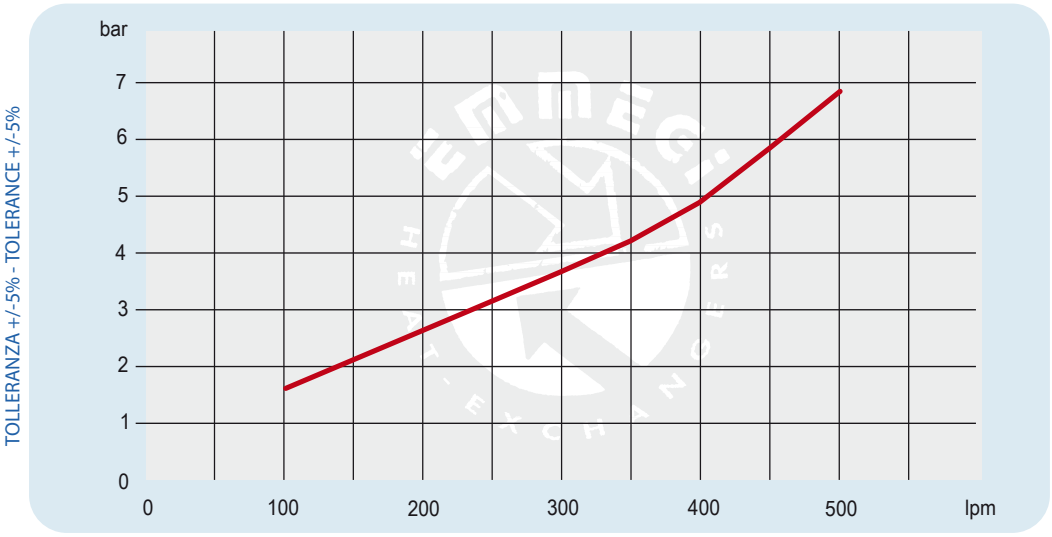
P/N	V	Hz	kW(±10%)	A (±10%)	rpm	ø Fan	dB(A)	(m³/ h)	IP	lt	Kg
041240C40050#	400 AC	50	1,3	2,4	1378	560	81	9500	54	35	210
041240C40060#	400-460 AC	60	1,5	2,5	1600	560	81	9500	54		210

I dati soprariportati sono riferiti al singolo ventilatore *The data refers to each ventilator*

Diagramma rendimento Performance diagram



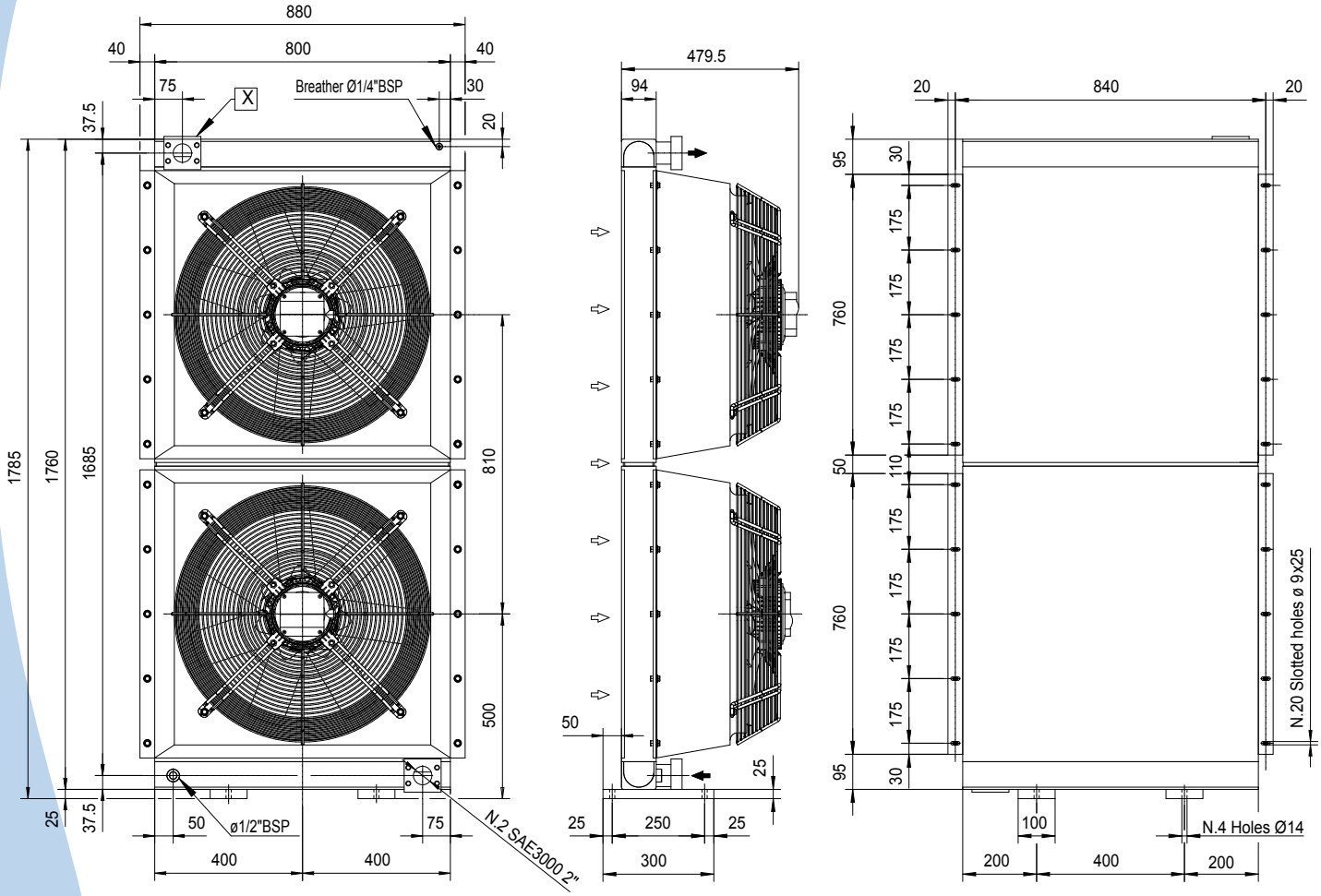
Perdite di carico Pressure drop (ISO VG 32)

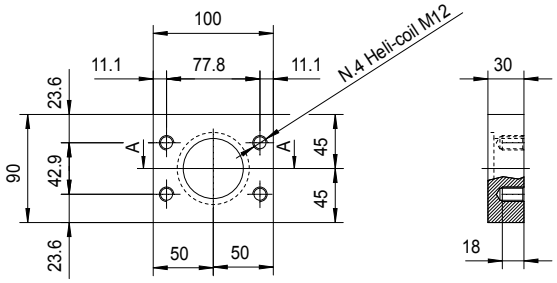


Fattore di correzione - F - (perdite di carico) Correction factor - F - (Pressure drop)

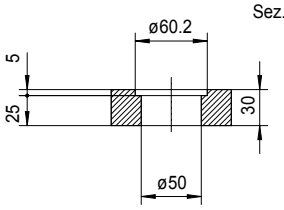
cst	10	15	20	30	40	50	60	80	100	200	300
F	0,5	0,65	0,77	1	1,2	1,4	1,6	1,9	2,1	3,3	4,3

Dimensioni Dimensions





Sez. A-A



Part. X

Le dimensioni di ingombro e le caratteristiche tecniche non sono impegnative
Over-all dimensions and technical characteristic are not binding

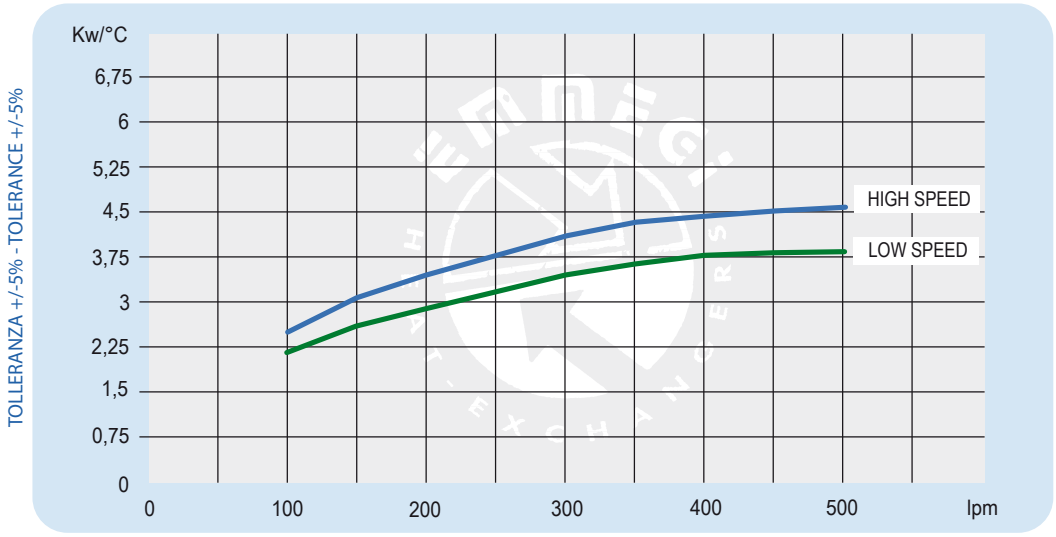
HPA 46 / 2

Dati tecnici Technical Data

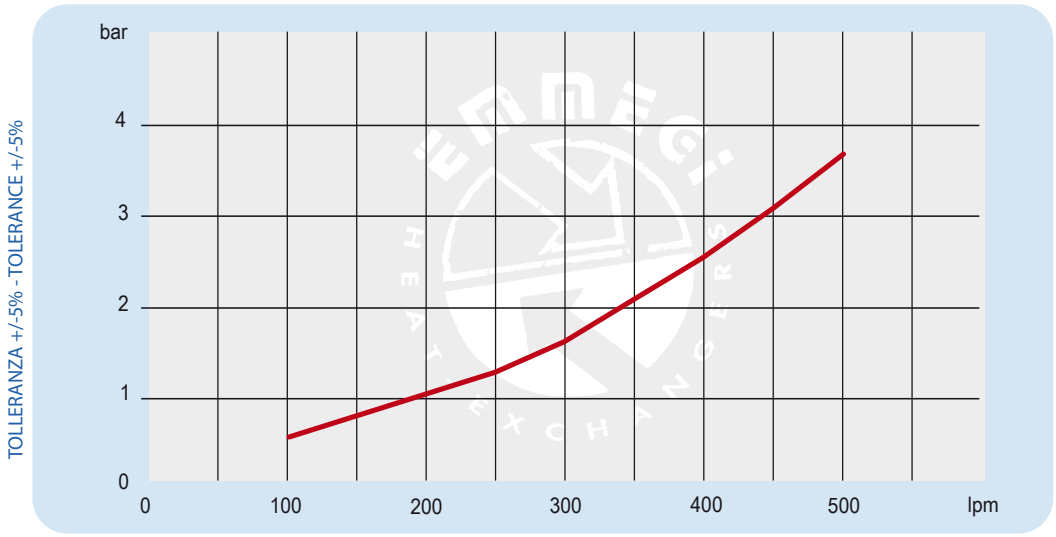
P/N	V	Hz	kW(±10%)	A (±10%)	rpm	ø Fan	dB(A)	(m³/ h)	IP	lt	Kg
A0351004005#1	400 AC (LS) ⅄	50	1,37	2,3	950	630	80	/	54	25	185
A0351004005#1	400 AC (HS) Δ	50	2,1	3,6	1300	630	86	/	54		185

I dati soprariportati sono riferiti al singolo ventilatore *The data refers to each ventilator*

Diagramma rendimento Performance diagram



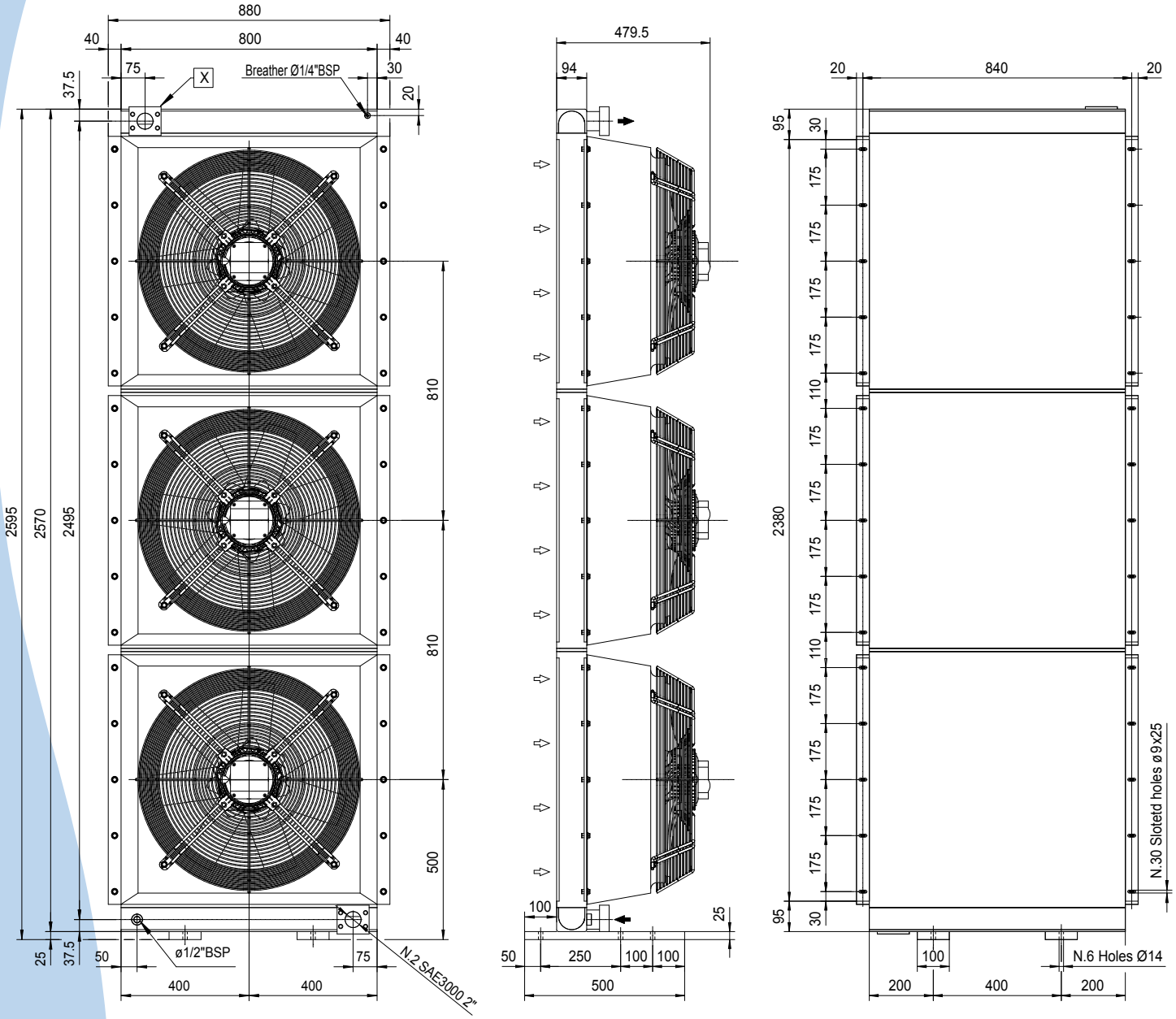
Perdite di carico Pressure drop (ISO VG 32)

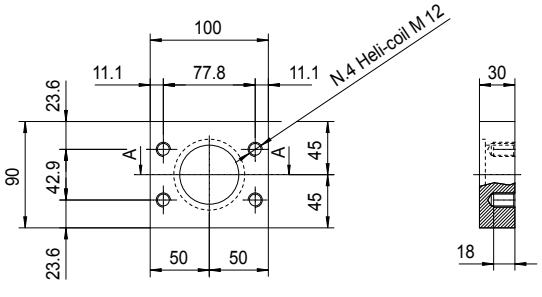


Fattore di correzione - F - (perdite di carico) Correction factor - F - (Pressure drop)

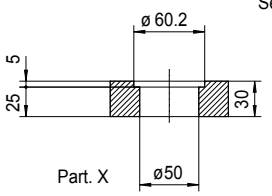
cst	10	15	20	30	40	50	60	80	100	200	300
F	0,5	0,65	0,77	1	1,2	1,4	1,6	1,9	2,1	3,3	4,3

Dimensioni Dimensions





Sez. A-A



Le dimensioni di ingombro e le caratteristiche tecniche non sono impegnative
Over-all dimensions and technical characteristic are not binding

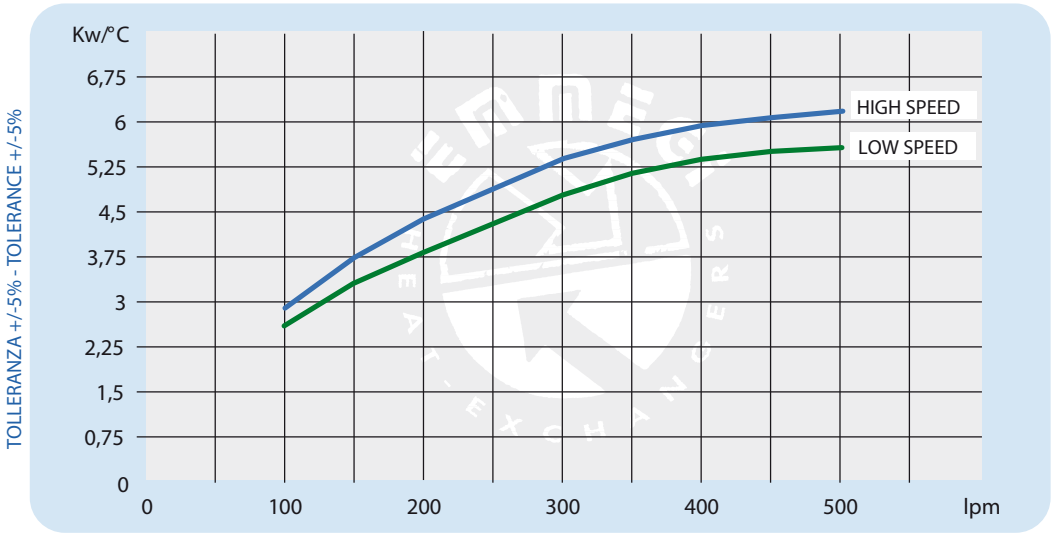
HPA 46 / 3

Dati tecnici *Technical Data*

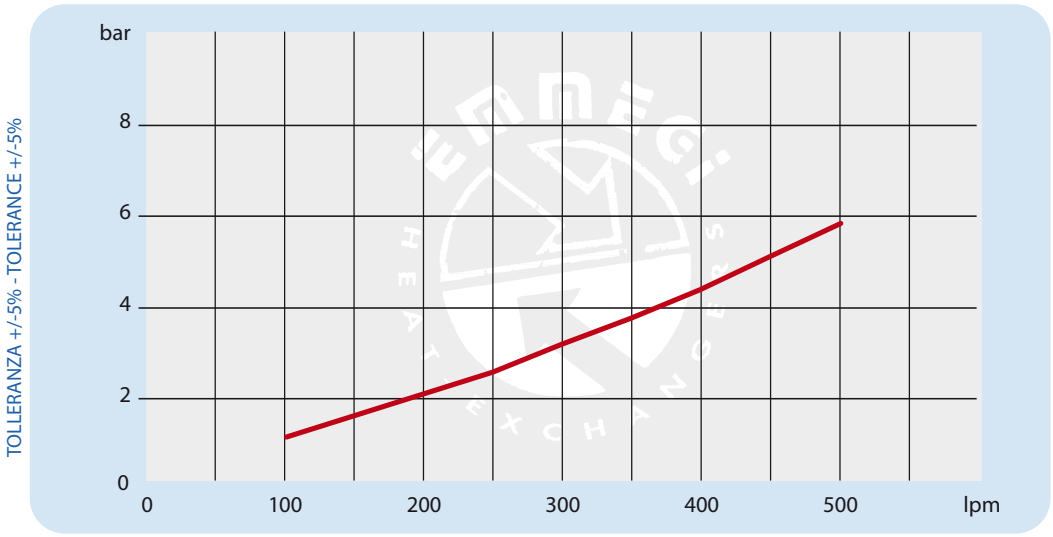
P/N	V	Hz	kW(±10%)	A (±10%)	rpm	ø Fan	dB(A)	(m³/ h)	IP	lt	Kg
A0352004005#1	400 AC (LS) ⅄	50	1,37	2,3	950	630	80	/	54	35	255
A0352004005#1	400 AC (HS) Δ	50	2,1	3,6	1300	630	86	/	54		185

I dati soprariportati sono riferiti al singolo ventilatore. The data refers to each ventilator.

Diagramma rendimento *Performance diagram*



Perdite di carico *Pressure drop* (ISO VG 32)



Fattore di correzione - F - (perdite di carico) *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

Note Notes

Note Notes

Note Notes

- *Alla ricerca di un continuo miglioramento del prodotto, EMMEGI S.p.A. si riserva il diritto di approntare modifiche ai dati e alle caratteristiche illustrate nel catalogo.*
- *La riproduzione, anche parziale, del presente catalogo è vietata ai termini di legge.*
- *Questo catalogo sostituisce tutti i precedenti.*

- *As EMMEGI S.p.A. are always investigating methods of improving products and introducing new technology, we reserve the right to modyfy without notice the data features shown in this catalogue.*
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- *This catalogue replace all the previous one.*

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Scambiatori Aria - olio
Serie HPA Compact

Air - olio heat - exchangers
HPA Compact Series

EMMEGI

EMMEGI HEAT-EXCHANGERS

Scambiatori Aria - olio Serie HPA Compact

Air - olio heat - exchangers HPA Compact Series

Talmente silenziosi che non vi sembreranno in movimento

Nuova gamma COMPACT: compatti e silenziosi
Grazie a queste caratteristiche si adeguano maggiormente
alle esigenze applicative del mercato

Whispers while it works

New COMPACTrange: minimum dimensions, minimum noise
Another EMMEGIinnovation
Exceeding customer expectation

Introduzione

Gli scambiatori di calore aria-olio EMMEGI, sono impiegati per il raffreddamento di circuiti oleodinamici usando, come fluido raffreddante, l'aria ambiente convogliata sulla radiante da una ventola azionata da un motore elettrico o idraulico.
La massa radiante, in lega d'alluminio ad alta resistenza, è ottenuta mediante un processo costruttivo di saldobrasatura sottovuoto.
La particolare configurazione dei condotti aumenta la turbolenza del fluido e di conseguenza la capacità di scanbio; inoltre la presenza di speciali turbolatori sull' alettatura del pacco radiante, migliora ulteriormente il coefficiente di trasmissione totale.
Il risultato è un prodotto tecnologicamente avanzato di dimensioni contenute, leggero e robusto.

Fluidi compatibili

. OIL MINERALI, HL, HLP.
. EMULSIONI ACQUA-OLIO
. ACQUA-GLICOLE
. Per altri fluidi consultare EMMEGI.

Specifiche tecniche Masse Radianti

. Materiale: alluminio "long life".
. Pressione d'esercizio: 20 bar.
. Pressione di collaudo: 35 bar.
. Temperatura max d'esercizio: 120°c
. Per particolari atmosfere aggressive consultare l'EMMEGI.

Installazione

Lo scambiatore può essere montato in posizione orrizontale o verticale, rispettando la distanza minima dalla parete (vedi fig. 1), in modo da assicurare un naturale afflusso e deflusso dell' aria di raffreddamento.
Lo scambiatore è installato di norma, sulle tubazioni di ritorno dell' olio del serbatoio; deve inoltre essere protetto da urti e vibrazioni meccaniche mediante supporti e collegato all' impianto con tubazioni flessibili. É necessario evitare che sia sottoposto a brusche variazioni di portata, colpi d' ariete e pulsazioni continue che danneggiano in modo irreversibile la radiante.
Per preservare lo scambiatore dalla sovrapressione che si genera all' avviamento dell' impianto per elevata viscosità dell' olio, si suggerisce l' inserimento di una valvola di by-pass (vedi fig.2).

Introduction

EMMEGI 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 EMMEGI 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 EMMEGI.

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.

Manutenzione

É buona norma prestare particolare attenzione alla pulizia della massa radiante per garantire un naturale ricambio d' aria, ed evitare una diminuzione dell' efficenza termica.

Pulizia lato olio

Per eseguire la pulizia lato olio, lo scambiatore dovrà essere smontato. Lo sporco può essere rimosso flussando in controcorrente un prodotto sgrassante, compatibile con alluminio. Effettuate un lavaggio con olio idraulico prima di ricollegare il prodotto all' impianto.

Pulizia lato aria

La pulizia lato aria può essere effettuata con aria compressa o acqua, con direzione del getto parallelo alle alette per non danneggiare. Lo sporco oleoso o grasso può essere rimosso con getto di vapore o acqua calda. Durante questa operazione, il motore elettrico non deve essere collegato alla tensione, e drovà essere adeguatamente protetto.

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.

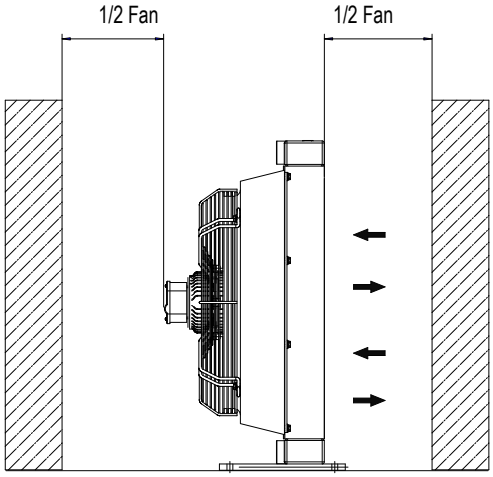


Fig.1

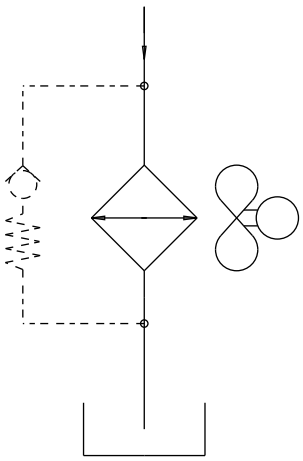
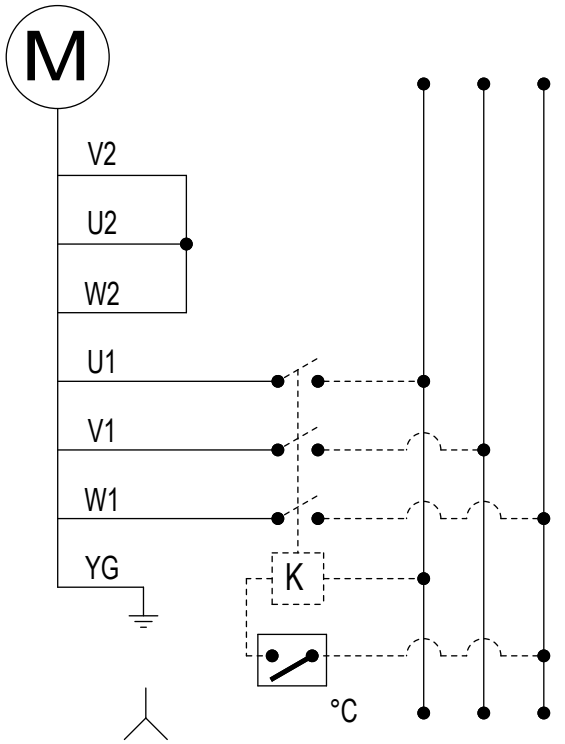


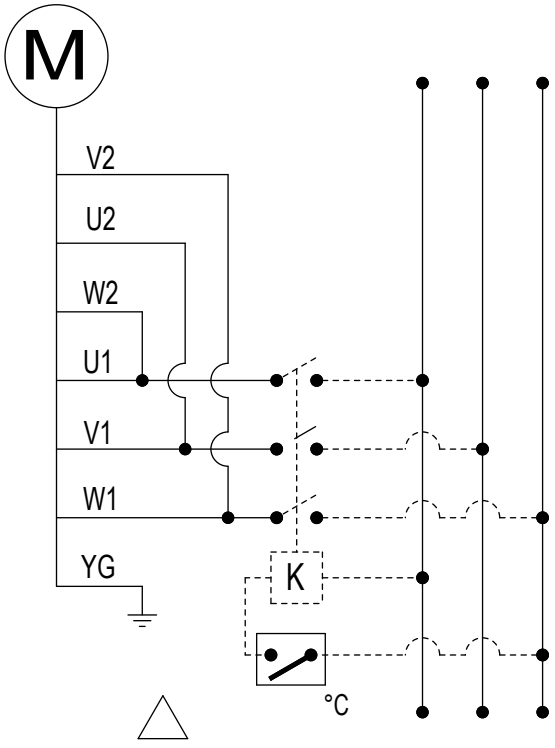
Fig.2

Collegamenti elettrici

Electric Wiring



400V AC 3 PHASE 50 Hz
480V AC 3 PHASE 60 Hz



230V AC 3 PHASE 50 Hz
277V AC 3 PHASE 60 Hz

°C = Termostato NA./Thermostat NO.
K = Relé/Relay

Modulo richiesta dati

Sheet for cooler selection

CLIENTE COMPANY	
RICHIEDENTE NAME	

ARIA-OLIO AIR-OIL

PORTATA OLIO OIL FLOW RATE	lpm	
POTENZA INSTALLATA TOTAL POWER	kW	
POTENZA DA DISSIPARE POWER TO BE DISSIPATED	kW	
TEMPERATURA INGRESSO OLIO OIL TEMPERATURE INLET	°C	
TEMPERATURA ARIA MAX MAX AMBIENT TEMPERATURE	°C	
VISCOSITÀ OLIO OIL VISCOSITY	cst	
PRESSIONE DI LAVORO WORKING PRESSURE	bar	

Denominazione codice prodotto
Ordering code

2	K24	03	2	01

TIPO DI SISTEMA COOLER SERIES

K24 (HPA 24 Compact)

TIPO DI MOTORIZZAZIONE FAN MOTOR TYPE

03 AC 230-400V/277-480V 50/60 Hz

TERMOSTATI THERMOSTATS

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

TIPO DI VENTILAZIONE VENTILATING TYPE

01	Aspirante	Suction air flow
02	Soffiante	Blowing air flow

Index *Index*

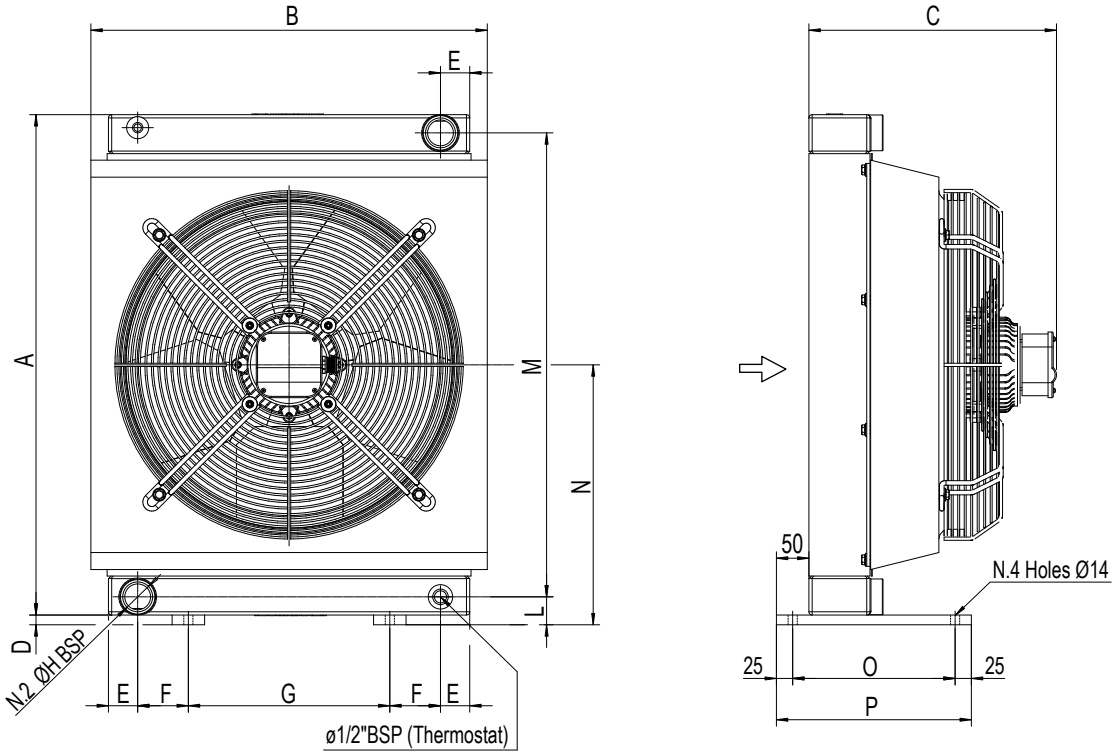
Serie HPA Compact
HPA Compact Series

Serie HPA 2pass Compact
HPA 2pass Compact Series

Serie HPA/2 Compact
HPA/2 Compact Series

INDEX

Dimensioni Dimensions



PRINCIPALI CARATTERISTICHE: SCAMBIATORE COMPATTO A BASSO LIVELLO SONORO
MOTORIZZAZIONE ELETTRICA CLASSE DI ISOLAMENTO H

MAIN CHARACTERISTICS: COMPACT HEAT EXCHANGERS WITH LOW NOISE LEVEL
ELECTRIC MOTOR INSULATION CLASS H

HPA 12 COMPACT P/N 2K1203###
HPA 18 COMPACT P/N 2K1803###
HPA 24 COMPACT P/N 2K2403###
HPA 30 COMPACT P/N 2K3003###
HPA 36 COMPACT P/N 2K3603###
HPA 42 COMPACT P/N 2K4203###
HPA 50 COMPACT P/N 2K5003###
HPA 52 COMPACT P/N 2K5203###

Dimensioni Dimensions

Model	A	B	C	D	E	F	G	H	L	M	N	O	P
HPA 12 COMPACT	390	357	278	10	40	38,5	150	1 “	35	340	205	200	250
HPA 18 COMPACT	500	450	308	10	40	60	200	1”	35	450	260	200	250
HPA 24 COMPACT	520	450	339	15	45	55	200	1 1/4“	43	464	275	250	300
HPA 30 COMPACT	670	465	365	15	45	62,5	200	1 1/4”	43	614	350	250	300
HPA 36 COMPACT	770	610	380	15	45	78	310	1 1/4”	43	714	400	250	300
HPA 42 COMPACT	920	606	415	15	45	78	310	1 1/4”	43	864	475	250	300
HPA 50 COMPACT	940	725	443	15	45	76	400	1 1/2”	50	870	485	250	300
HPA 52 COMPACT	940	725	470	15	45	76	400	1 1/2”	50	870	485	250	300

Dati tecnici Technical data

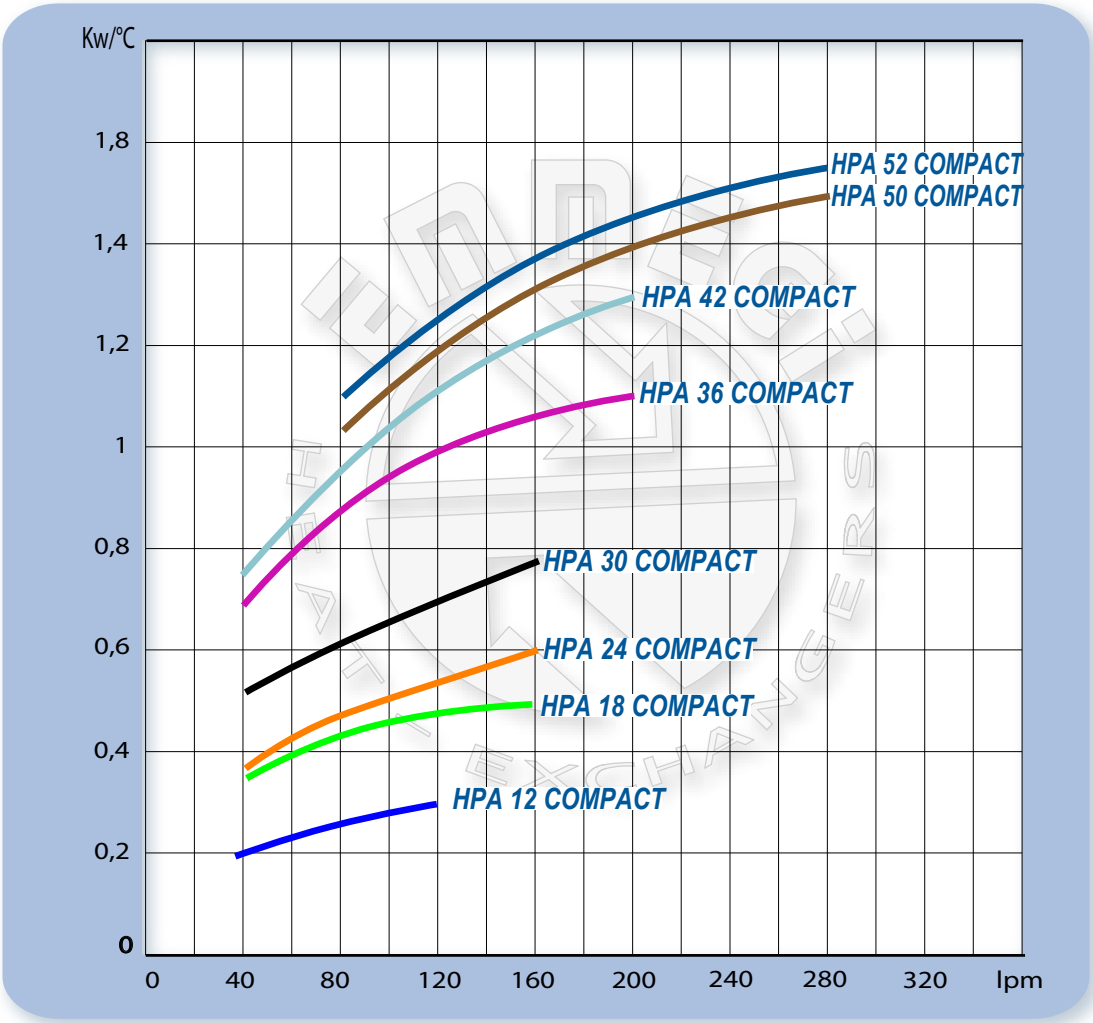
P/N	V	Hz	kW	A	rpm	ø Fan	dB(A)***	(m³/h)	IP	It	Kg
2K1203###	230-400/277-480	50/60	0,17	0,33	2240	250	69	1630	55	1,9	12
2K1803###	230-400/277-480	50/60	0,42	0,85	2580	315	72	3350	55	2,9	20
2K2403###	230-400/277-480	50/60	0,42	0,85	2540	315	75	2800	55	6,2	28
2K3003###	230-400/277-480	50/60	0,40	1	1430	400	70	4000	55	6,8	35
2K3603###	230-400/277-480	50/60	0,53	1,1	1350	500	73	5650	55	9,4	50
2K4203###	230-400/277-480	50/60	0,79	1,49	1420	500	75	8400	55	10,6	59
2K5003###	230-400/277-480	50/60	0,58	1,51	900	630	71	7450	55	14,2	82
2K5203###	230-400/277-480	50/60	0,58	1,51	900	630	71	6970	55	17,7	87

I dati sopraripportati si riferiscono @400V/50Hz – The data refer @400V/50Hz
*** In accordo alle norme ISO 3744-1981 (E) – In accordance to ISO 3744-1981 (E)

Le dimensioni di ingombro e le caratteristiche tecniche non sono impegnative
Over-all dimensions and technical characteristic are not binding

HPA COMPACT

Diagramma rendimento Performance diagram



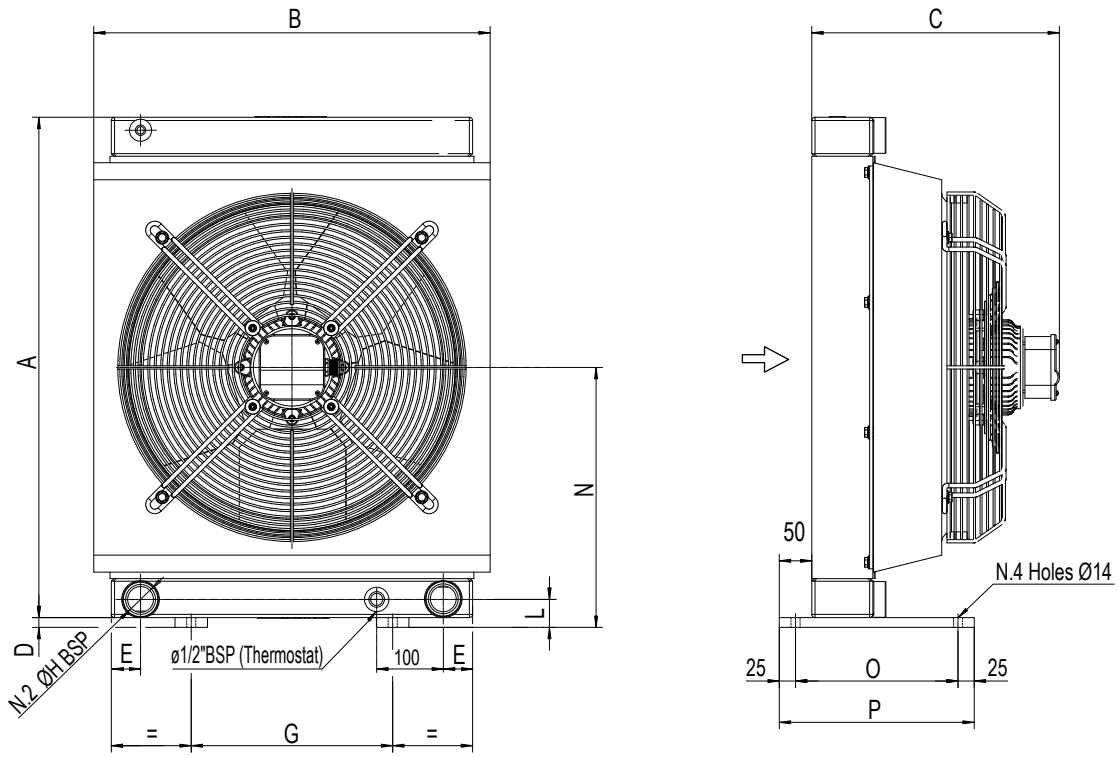
Perdite di carico Pressure drop (ISO VG 32)

Model	40 lpm	80 lpm	120 lpm	160 lpm	200 lpm	240 lpm	280 lpm
HPA 12 COMPACT	0,17	0,5	0,9				
HPA 18 COMPACT	0,25	0,6	1,15	1,6			
HPA 24 COMPACT	0,2	0,4	0,9	1,3			
HPA 30 COMPACT	0,2	0,4	0,8	1,15			
HPA 36 COMPACT	0,2	0,4	0,7	1	1,35		
HPA 42 COMPACT	0,3	0,5	0,75	1,1	1,4	2	
HPA 50 COMPACT		0,3	0,4	0,65	0,9	1,2	1,5
HPA 52 COMPACT		0,25	0,35	0,55	0,75	0,95	1,2

Fattore di correzione - F - (perdite di carico) 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

Dimensioni Dimensions



PRINCIPALI CARATTERISTICHE: SCAMBIATORE COMPATTO A BASSO LIVELLO SONORO MOTORIZZAZIONE ELETTRICA CLASSE DI ISOLAMENTO H

MAIN CHARACTERISTICS: COMPACT HEAT EXCHANGERS WITH LOW NOISE LEVEL ELECTRIC MOTOR INSULATION CLASS H

HPA 24 2P COMPACT P/N 2K2703###
HPA 30 2P COMPACT P/N 2K3303###
HPA 36 2P COMPACT P/N 2K3803###
HPA 42 2P COMPACT P/N 2K4503###
HPA 50 2P COMPACT P/N 2K8703###
HPA 52 2P COMPACT P/N 2K5403###

Dimensioni Dimensions

Model	A	B	C	D	E	G	H	L	N	O	P
HPA 24 2P COMPACT	520	450	339	15	50	200	1”	40	275	250	300
HPA 30 2P COMPACT	670	465	365	15	50	200	1”	45	350	250	300
HPA 36 2P COMPACT	770	610	380	15	50	310	1 “	45	400	250	300
HPA 42 2P COMPACT	920	605	415	15	50	310	1 1/4”	45	475	250	300
HPA 50 2P COMPACT	940	725	443	15	50	400	1 1/4 “	50	485	250	300
HPA 52 2P COMPACT	940	725	470	15	50	400	1 1/2 “	50	485	250	300

Dati tecnici Technical data

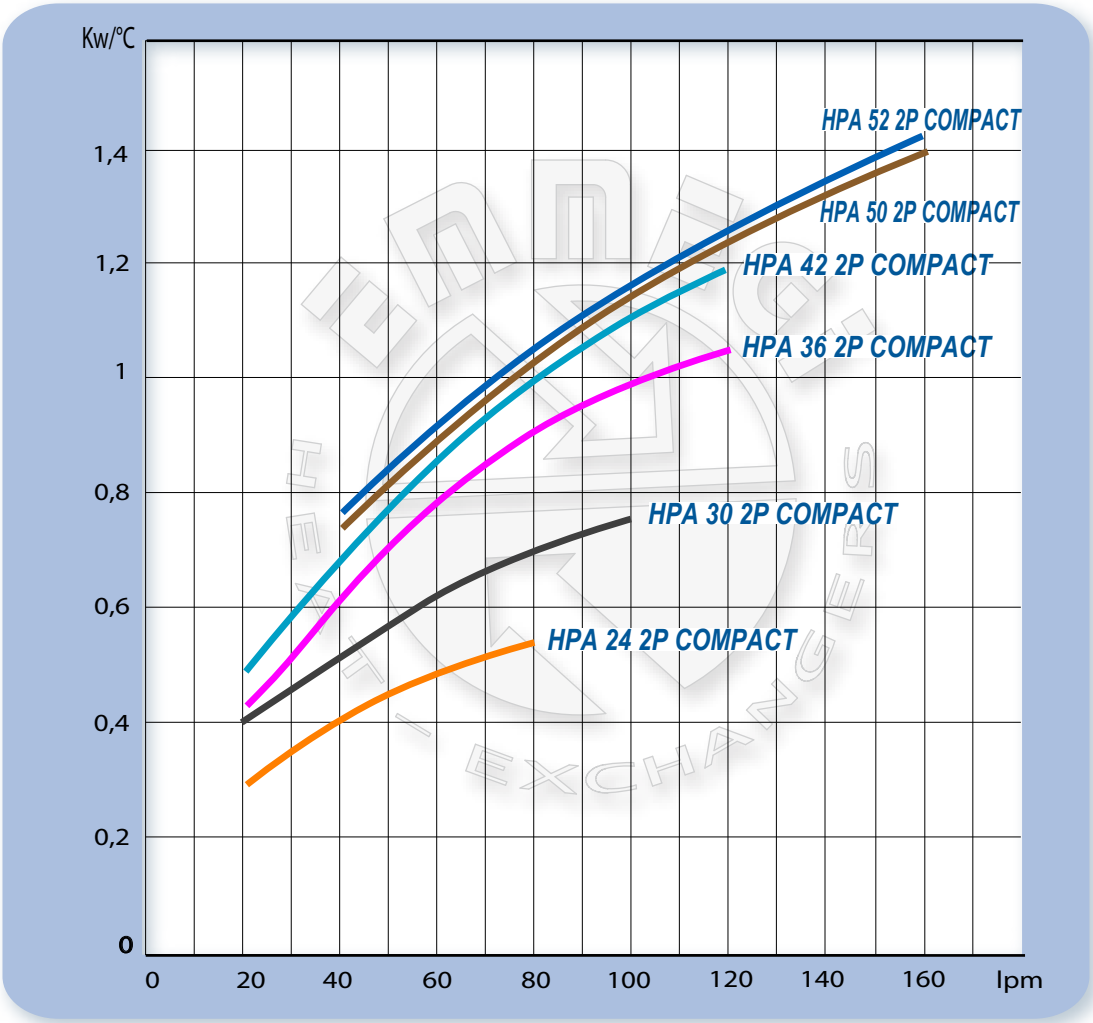
P/N	V	Hz	kW	A	rpm	ø Fan	dB(A) ***	(m ³/h)	IP	It	Kg
2K2703###	230-400/277- 480	50/60	0,42	0,85	2540	315	75	2800	55	6,2	28
2K3303###	230-400/277- 480	50/60	0,40	1	1430	400	70	4000	55	6,8	35
2K3803###	230-400/277- 480	50/60	0,53	1,1	1350	500	73	5650	55	9,4	50
2K4503###	230-400/277- 480	50/60	0,79	1,49	1420	500	75	8400	55	10,6	59
2K8703###	230-400/277- 480	50/60	0,58	1,5	900	630	71	7450	55	14,2	82
2K5403###	230-400/277- 480	50/60	0,58	1,5	900	630	71	6970	55	17,7	87

I dati sopraripportati si riferiscono @400V/50Hz – The data refer @400V/50Hz
*** In accordo alle norme ISO 3744-1981 (E) – In accordance to ISO 3744-1981 (E)

Le dimensioni di ingombro e le caratteristiche tecniche non sono impegnative
Over-all dimensions and technical characteristic are not binding

HPA 2PASS COMPACT

Diagramma rendimento Performance diagram



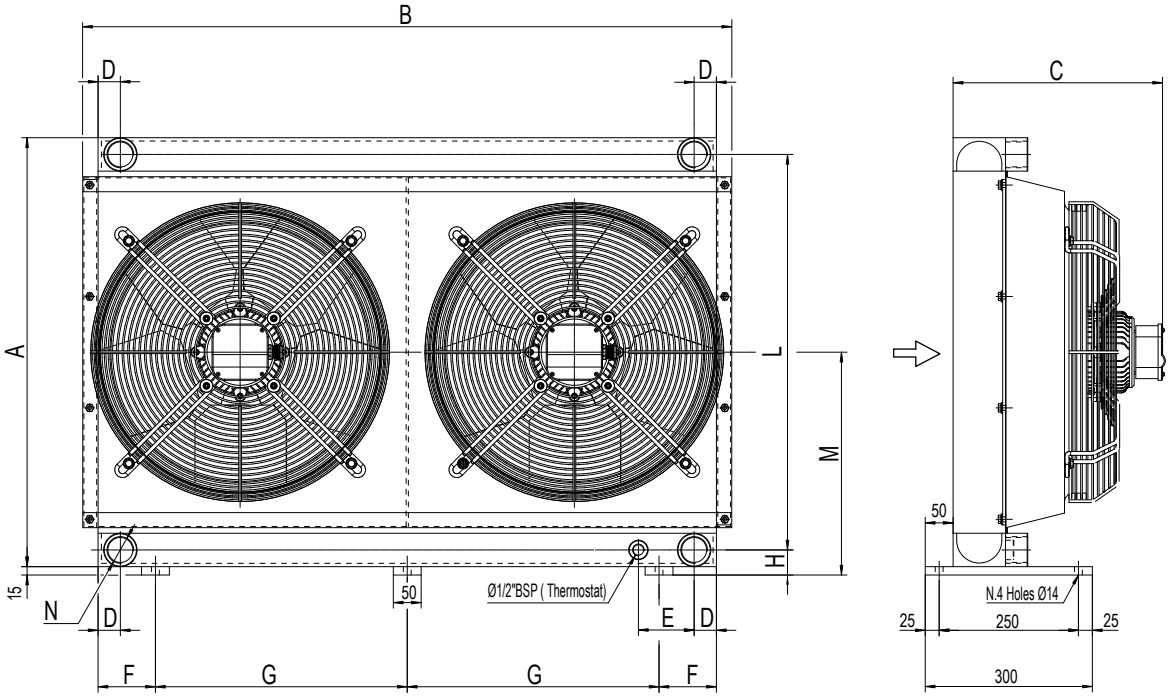
Perdite di carico Pressure drop (ISO VG 32)

Model	20 lpm	40 lpm	60 lpm	80 lpm	100 lpm	120 lpm	140 lpm
HPA 24 2P COMPACT	0,3	0,55	0,9	1,3			
HPA 30 2P COMPACT	0,3	0,6	0,95	1,35	2		
HPA 36 2P COMPACT	0,5	0,75	1,05	1,5	1,75	2,2	
HPA 42 2P COMPACT	0,6	0,8	1,25	1,6	2,15	2,65	
HPA 50 2P COMPACT		0,5	0,7	1	1,3	1,65	2
HPA 52 2P COMPACT		0,4	0,6	0,85	1,1	1,35	1,6

Fattore di correzione - F - (perdite di carico) 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

Dimensioni Dimensions



Nella serie HPA 30/2 sono previsti solo 2 manicotti da Ø1½" BSP.
For HPA 30/2 series n° 2 oil ports Ø1½" BSP only.

PRINCIPALI CARATTERISTICHE: SCAMBIATORE COMPATTO A BASSO LIVELLO SONORO MOTORIZZAZIONE ELETTRICA CLASSE DI ISOLAMENTO H

MAIN CHARACTERISTICS: COMPACT HEAT EXCHANGERS WITH LOW NOISE LEVEL ELECTRIC MOTOR INSULATION CLASS H

HPA 30/2 COMPACT P/N 2K3103###
HPA 36/2 COMPACT P/N 2K3703###
HPA 42/2 COMPACT P/N 2K4303###
HPA 50/2 COMPACT P/N 2K8803###
HPA 52/2 COMPACT P/N 2K5303###

Dimensioni Dimensions

Model	A	B	C	D	E	F	G	H	L	M	N
HPA 30/2 COMPACT	670	880	365	40	----	104	311	45	610	350	Ø1½"
HPA 36/2 COMPACT	770	1165	380	40	100	103	452	45	710	400	Ø1½"
HPA 42/2 COMPACT	920	1165	415	40	100	103	452	45	860	475	Ø1½"
HPA 50/2 COMPACT	940	1430	440	40	100	93	549	50	870	485	Ø1½"
HPA 52/2 COMPACT	940	1430	465	40	100	98	545	50	870	485	Ø1½"

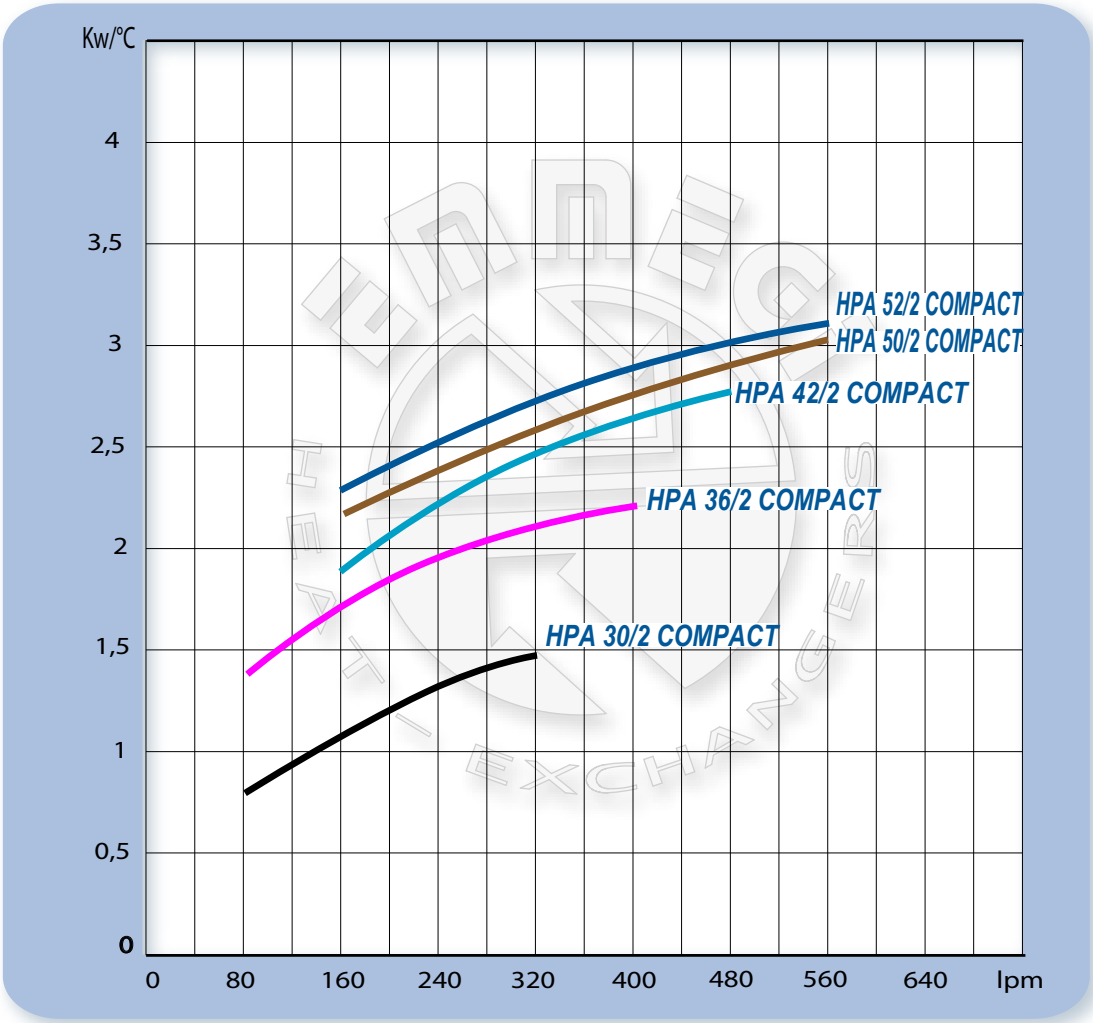
Dati tecnici Technical data

P/N	V	Hz	KW	A	rpm	Ø Fan	dB(A) ***	(m³/h	IP	It	Kg
2K3703###	230-400/277- 480	50/60	0,53	1,1	1350	500	76	5650	55	18,8	100
2K4303###	230-400/277- 480	50/60	0,79	1,49	1420	500	78	8400	55	21,2	123
2K8803###	230-400/277- 480	50/60	0,58	1,51	900	630	74	7450	55	28,4	176
2K5303###	230-400/277- 480	50/60	0,58	1,51	900	630	74	6970	55	35,4	187

I dati soprariportati sono riferiti al singolo ventilatore @400V/50Hz – The data refers to each ventilator @400V/50Hz
*** In accordo alle norme ISO 3744-1981 (E) – In accordance to ISO 3744-1981 (E)

Le dimensioni di ingombro e le caratteristiche tecniche non sono impegnative
Over-all dimensions and technical characteristic are not binding

Diagramma rendimento Performance diagram



Perdite di carico Pressure drop (ISO VG 32)

Model	80 lpm	160 lpm	240 lpm	320 lpm	400 lpm	480 lpm	560 lpm
HPA 30/2 COMPACT	0,2	0,45	0,8	1,55			
HPA 36/2 COMPACT	0,2	0,43	0,7	1	1,35		
HPA 42/2 COMPACT		0,5	0,75	1,1	1,6	2	
HPA 50/2 COMPACT		0,3	0,4	0,65	0,9	1,2	1,5
HPA 52/2 COMPACT		0,25	0,36	0,56	0,75	0,95	1,2

Fattore di correzione - F - (perdite di carico) 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

Note *Note*

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CERTIFICAZIONE DI SISTEMA QUALITÀ
DNV
ISO 9001

HPA LARGER SERIES

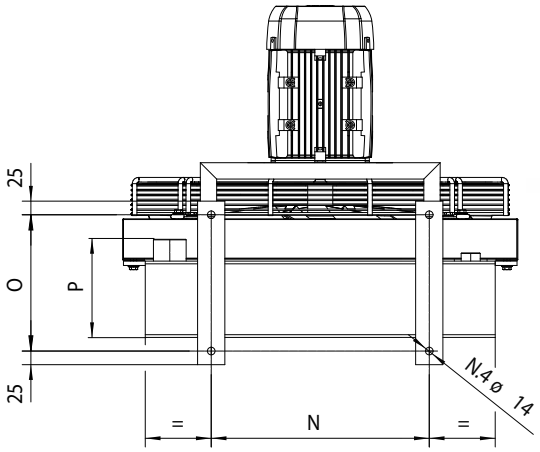
AC ELECTRIC MOTOR

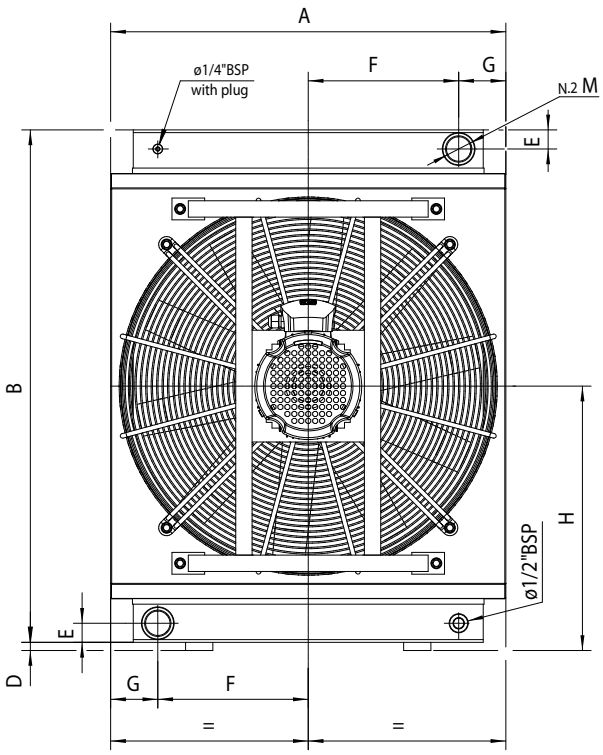
EMMEGI

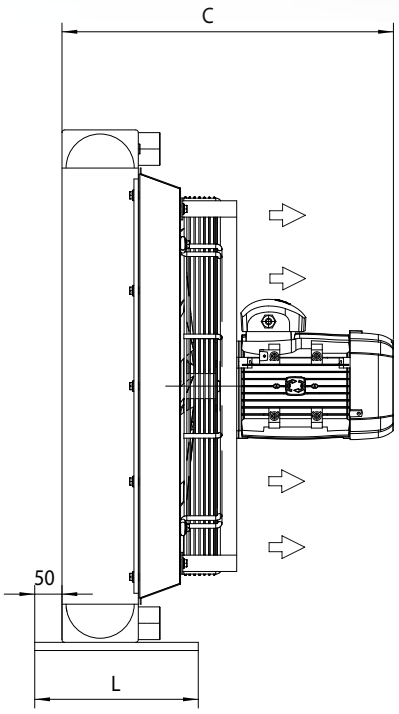
EMMEGI HEAT-EXCHANGERS

HPA LARGER SERIES

AC ELECTRIC MOTOR







Le dimensioni di ingombro e le caratteristiche tecniche non sono impegnative
Over-all dimensions and technical characteristic are not binding

Dimensions

Model	A	B	C	D	E	F	G	H	L	M	N	O	P
HPA 72 A035700400B#1	725	940	603	15	35	276	86,5	485	300	1 1/2" BSP	400	250	180

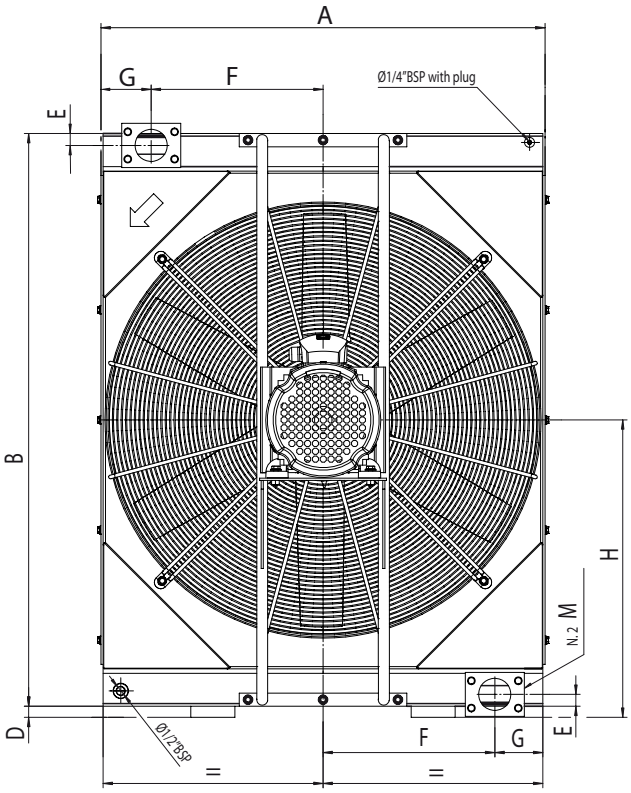
Technical data

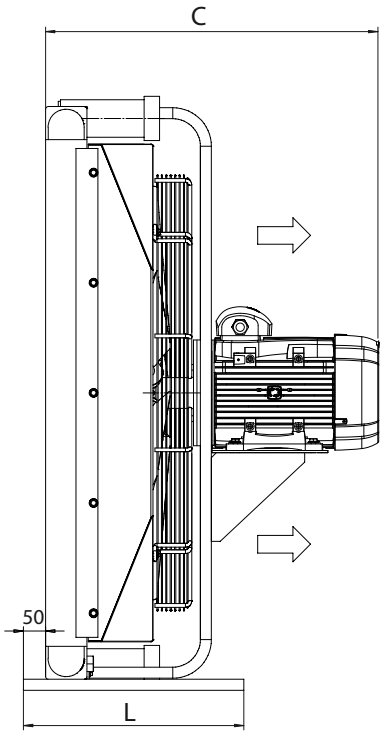
Model	V	kW	A	Rpm	IP	dB(A)	lt	kg
HPA 72 A035700400B#1	230-400V 50Hz / 265-460V 60Hz	2,2 / 2,5	8,3 -4,8 / 8,3-4,8	1435 /1722	55	79 / 82	19	105

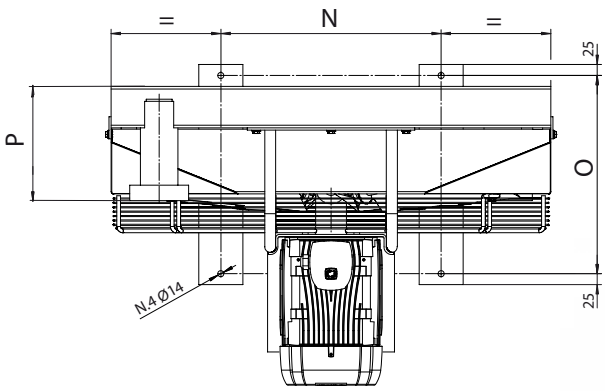
The noise levels are referred to the fan sound pressure @ 1mt only

HPA LARGER SERIES

AC ELECTRIC MOTOR







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Over-all dimensions and technical characteristic are not binding

Dimensions

Model	A	B	C	D	E	F	G	H	L	M	N	O	P
HPA 135 A03750A400B#1	1008	1300	706	25	27	390	109	675	500	SAE 2.1/2"*	500	450	162
HPA 180 A03280A400B#1	1008	1290	776	25	27	390	109	670	500	SAE 2.1/2"*	500	450	181
HPA 255 A03790B400B#1	1182	1310	957	25	27	477	109	680	700	SAE 2.1/2"*	650	450	228

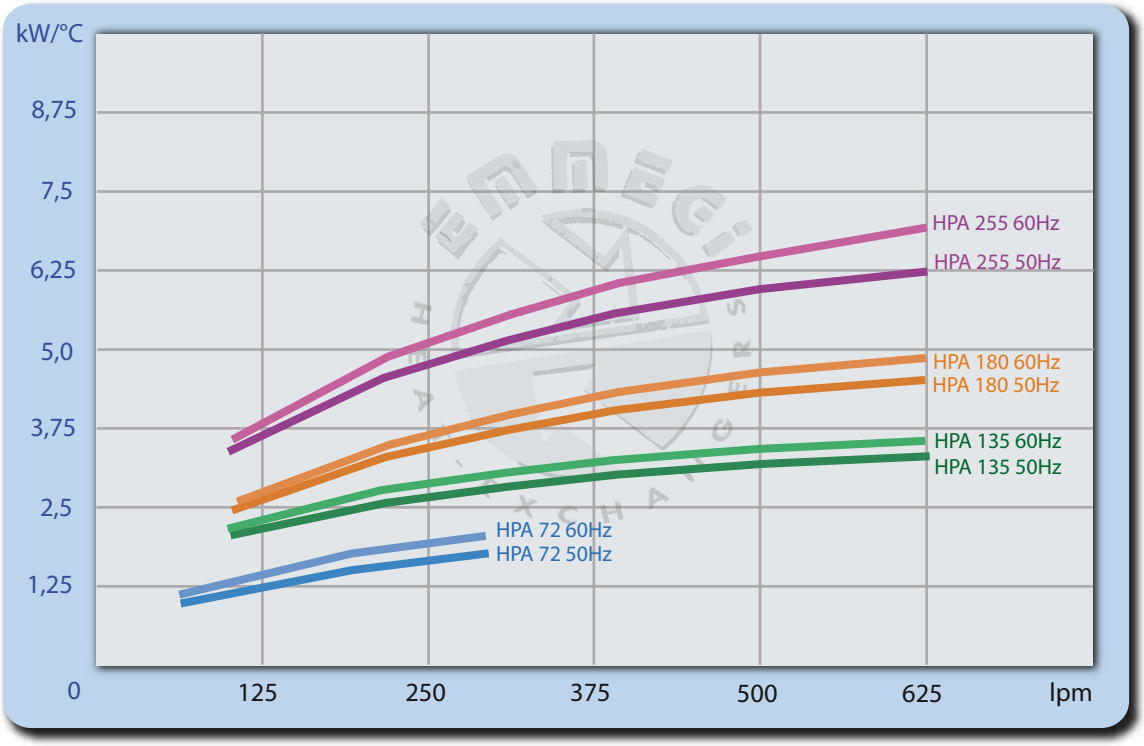
* Flange : SAE 3000

Technical data

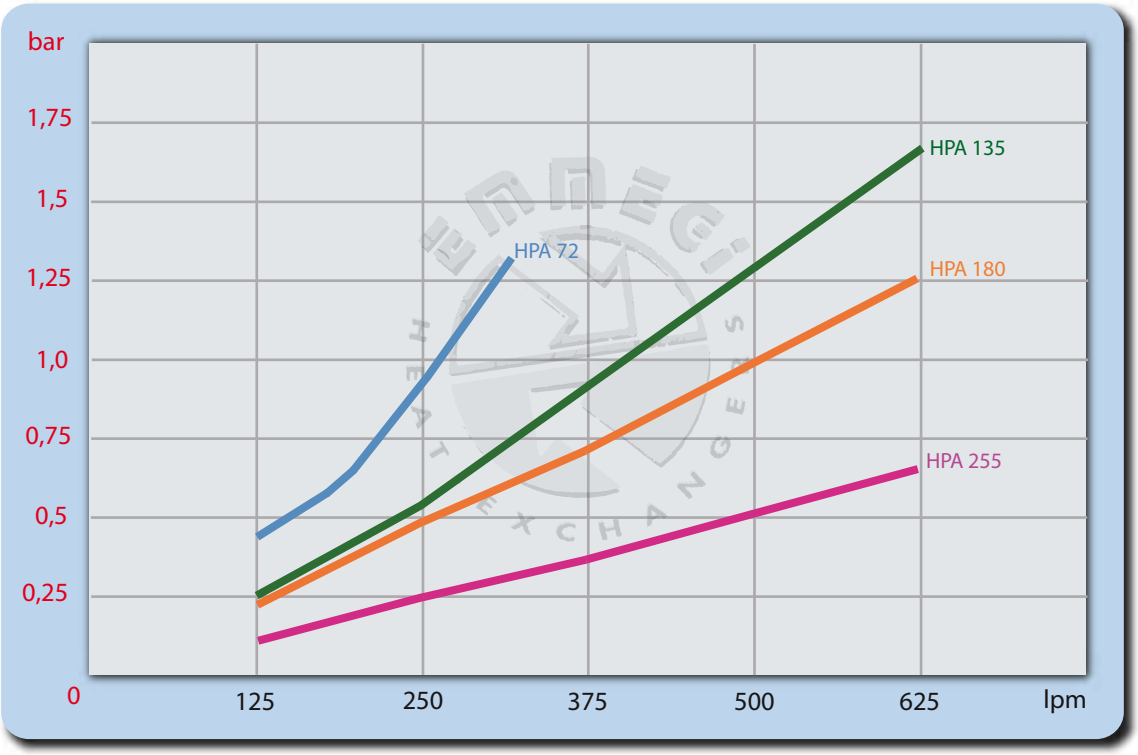
Model	V	KW	A	Rpm	IP	dB(A)	lt	Kg
HPA 135 A037500400B#1	230-400V 50Hz / 265-460V 60Hz	3,0 / 3,5	12,1- 7,0 / 12,1- 7,0	969 /1163	55	76 / 80	26	126
HPA 180 A032800400B#1	400-690V 50Hz / 460-795V 60Hz	7,5 / 8,6	14,4 - 8,3 / 14,4 - 8,3	1450 /1740	55	85 / 89	31	200
HPA 255 A037900400B#1	400-690V 50Hz / 460-795V 60Hz	15 / 17,3	28,1-16,3 / 28,1-16,3	1456 /1747	55	90 / 94	56	358

The noise levels are referred to the fan sound pressure @ 1mt only

Performance diagram with oil ISO VG 32 @ 50°C



Pressure drop with oil ISO VG 32 @ 50°C



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