



STANDARD Range

HY

Serie / Series

**Scambiatori di calore aria-olio
/ Air-Oil Heat Exchangers**



HY 005-235

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GENETICALLY COOL

Dal 1996, Oesse progetta e produce soluzioni integrate per lo scambio termico. L'innovazione tecnologica e di prodotto, la flessibilità e la professionalità di uno staff tecnico specializzato permettono di realizzare scambiatori di elevato standard qualitativo, ritagliati ad-hoc sulle singole applicazioni ed esigenze dei clienti. La compattezza e l'ottima resa di scambio termico, unite a una resistenza meccanica superiore alle altre tipologie costruttive, rendono gli scambiatori Oesse la miglior scelta per il raffreddamento delle macchine.

Since 1996, Oesse has been designing and manufacturing integrated solutions for heat exchange, providing technological product innovations. Flexibility and skills of a specialized technical staff enabled us to create high quality standard coolers, optimised for most applications and customer needs. The compactness and the excellent heat exchange performance, combined with a mechanical strength superior to other construction types, make Oesse heat exchangers the best choice for machine cooling.



TRASFORMIAMO LE IDEE IN PROGETTI VINCENTI CONVERTING IDEAS INTO SUCCESSFUL PROJECTS

Dedichiamo le nostre energie alla continua ricerca di nuove soluzioni e all'innovazione dei processi produttivi.

In modo da poter proporre scambiatori di calore che siano punti di riferimento per il mercato, riconosciuti per le loro qualità superiori. Il nostro Ufficio Tecnico trasforma il know-how che nasce dall'incontro tra risorse interne specializzate e partner esterni altamente qualificati, in prodotti con requisiti tecnici eccellenti, con l'obiettivo di ridurre o minimizzare (materiali riciclabili) l'impatto ambientale.

We are constantly implementing new solutions and innovation in the production process, so we can offer heat exchangers reputable in the market being acknowledged for their performance and robust qualities. Our Technical Department translates the know-how that comes from our specialized in-house staff and highly qualified external partners, into products with excellent technical specifications, with the goal to reduce or minimise (recyclable materials) the environmental impact.

Serie HY / HY Series

La linea HY è composta da scambiatori di calore aria-olio compatti, a flusso incrociato, utilizzati per il raffreddamento dei circuiti oleodinamici installati su impianti industriali e macchine mobili. Le particolarità costruttive dei prodotti permettono di superare le criticità delle differenti applicazioni, utilizzando le motorizzazioni disponibili: AC (monofase, trifase e con motore elettrico B14), DC (12V e 24V) e con predisposizione per motore idraulico (GR2 e GR3). Sono disponibili 71 modelli in 15 taglie.

Le masse radianti, in lega di alluminio, sono prodotte con la tecnologia della saldobrasatura sottovuoto. Il connubio tra l'alta resistenza del materiale selezionato e l'affidabilità del processo produttivo garantisce la miglior tenuta alle pressioni dei differenti circuiti idraulici. L'alta efficienza di scambio invece è favorita dalla combinazione di turbolatori interni ed esterni, utilizzati per ovviare al problema dell'intasamento, riducendo i possibili cali di performance e i costi indiretti della pulizia.

Massa radiante e convogliatore sono verniciati con polveri epossidiche per proteggere dalla corrosione e aumentare la durabilità. È possibile aggiungere staffe complete di antivibranti e viteria di fissaggio; termostati disponibili con varie tarature, filettature e gradi di protezione; connettori; semigiunti scanalati per interfaccia con motori idraulici e tappi idonei per la chiusura dei connettori non utilizzati. Ogni prodotto è identificato da un numero di serie univoco e dal lotto produttivo, garantendo una completa rintracciabilità.

The HY line consists of compact cross-flow air-oil heat exchangers, used for cooling hydraulic circuits installed on industrial plants and mobile machinery. The construction features of the products allow to overcome the criticalities of the different applications, using the available fan unit type: AC (single phase, three phase, with B14 electric motor), DC (12V and 24V) and designed for hydraulic motor (GR2 and GR3). There are 71 models available in 15 sizes.

The cooling cores, made of aluminum alloy, are produced using vacuum braze welding technology. The suitability of the selected materials together with the repeatability of the production process guarantees the best resistance to the pressures of the different hydraulic circuits. The high heat exchange efficiency, on the other hand, is favoured by the combination of internal and external fins to overcome typical clogging issues which would cause a reduction in performance, with an additional benefit of needing less time and cost which occurs when pressure cleaning.

Cooling core and housing are painted with an epoxy powder coating process to protect them against corrosion and increase their durability. It's possible to add: brackets with shock absorbers and fixing screws; thermostats available with various settings, thread, and IP ratings; connectors; splined couplings for hydraulic motors and plugs suitable for closing the unused connectors. Each product is identified by a unique serial number and by the production batch, ensuring full traceability.



Caratteristiche / Features

- **Materiale scambiatore:** Alluminio
- **Temperatura max ingresso fluido (Ts):** 120°C
- **Temperatura max ambiente:** 45°C
- **Fluido di processo/tipo*:** Oli minerali / Oli sintetici (richiedere compatibilità al fabbricante) / Acqua-Glicole / Emulsioni Acqua-Olio / Fluidi Gruppo 2 secondo 2014/68/UE
- **Pressione max d'esercizio (Ps):** 16 bar
- **Pressione di test (Pt):** 24 bar

*Oesse consiglia l'uso di oli minerali senza contaminanti o elementi dannosi per l'ambiente

- **Heat exchanger material:** Aluminium
- **Max inlet fluid temperature (Ts):** 120°C
- **Max ambient temperature:** 45°C
- **Process fluid*:** Mineral oils / Synthetic oils (ask the manufacturer for compatibility) / Water-Glycol / Water-oil emulsions / Fluids Group 2 according to 2014/68/EU
- **Max working pressure (Ps):** 16 bar
- **Test pressure (Pt):** 24 bar

*Oesse recommends the use of mineral oils without contaminants or environmentally damaging element

Normative / Regulations

- **Norme e direttive applicabili:**
UNI EN ISO 12100 Sicurezza del macchinario
UNI EN ISO 1216 Test prestazioni
UNI EN ISO 9227 Test resistenza nebbia salina
UNI EN ISO 3744 Test rumorosità
UNI EN ISO 13857 Distanze di sicurezza
2014/68/UE Direttiva PED
2006/42/CE Direttiva macchine
2014/35/CE Direttiva bassa tensione

- **Applicable standards and directives:**
UNI EN ISO 12100 Safety of machinery
UNI EN ISO 1216 Performance test
UNI EN ISO 9227 Salt spray test
UNI EN ISO 3744 Acoustic test
UNI EN ISO 13857 Safety distances
2014/68/UE PED Directive
2006/42/CE Machinery Directive
2014/35/CE Low Voltage Directive

Vantaggi / Benefits

- **Alto rendimento di scambio**
- **Massa radiante anti intasamento**
- **Ampia gamma di prodotto**
- **Pronto magazzino**

- **High heat exchange performance**
- **Anti-clogging cooling core**
- **Wide product range**
- **Available stock**



Scambio termico - concetti base

/ Heat exchange - basic concepts

Qualsiasi trasformazione di energia da un sistema all'altro porta a una perdita di potenza che genera calore. Nei sistemi oleodinamici il trasferimento di energia è affidato ai fluidi di processo, che acquisiscono il calore prodotto dai vari componenti presenti nell'impianto o nel circuito. Per preservare le caratteristiche fisiche del fluido e il buon funzionamento di ciascun componente, si raccomanda l'utilizzo di un sistema di raffreddamento. Gli scambiatori di calore aria-olio a flusso incrociato della serie HY di Oesse sono sicuramente tra gli strumenti più efficienti.

L'eccessivo aumento di temperatura del fluido può alterarne le principali caratteristiche fisiche, compromettendo le funzionalità di trasmissione di potenza e di lubrificazione, causando così danni agli apparati degli impianti. A risentire maggiormente della variazione di temperatura, sono la densità e la viscosità. Una delle proprietà fondamentali dei fluidi che intervengono nello scambio termico è il calore specifico, una grandezza essenziale per determinare il calore da dissipare richiesto alle unità di raffreddamento. Relazionando alle grandezze sopracitate la portata massica del fluido è possibile calcolare la potenza da dissipare:

Any transformation of energy from one system to another leads to a power loss that generates heat. In hydraulic systems, the transfer of energy is assigned to process fluids, which acquire the heat produced by the various components of the equipment or circuit.

To preserve the physical characteristics of the fluid and the proper functioning of each component, the use of a cooling system is recommended. Oesse's HY series cross flow air-oil heat exchangers are certainly among the most efficient tools.

Excessive heat affects the oil viscosity and lubricity, causing deterioration and longterm damage to the plant equipment. Density and viscosity are the most affected by temperature variation. One of the main properties of fluids involved in the heat exchange is the specific heat, an essential element to determine how much heat the cooling units should dissipate. Considering also the fluid mass flow rate it is possible to calculate the power to be dissipated:

Dati Tecnici / Technical Information

$$m \times c_p \times (t_2 - t_1) = P$$

$$[\text{kg/s}] \times [\text{J/kgK}] \times [\text{K}] = [\text{J/s}]$$

Per il calcolo, si raccomanda di applicare le corrette unità di misura, come da tabella:
For a correct calculation, its recommended to apply the units of measurement as per table:

Portata olio / Oil flow	Q [l/min] - m [kg/sec] m = Q x 0,861 [kg/dm³]
Calore specifico olio / Specific Oil heat	Cp [J/kg K]
Temperatura / Temperature	t ₁ , t ₂ , t _a [°C] Δt = t ₁ - t ₂ [K]
Calore scambiato / Heat exchanged	P [J/s, W] 1 W = 1 J/sec = 0,2390585 (=1/4,186) cal/sec

*valori validi per olio ISO VG 46, densità 861 kg/m³

*values related to oil ISO VG 46, density 861 kg/m³

Per le tabelle di conversione,
fare riferimento a:
<https://convert.it.softonic.com/>

Di seguito viene proposto un rapido
approccio utile per calcolare la
potenza da smaltire (P):

For the conversion tables, refer to:
<https://convert.it.softonic.com/>

A quick and useful approach is
proposed below to calculate the
power to be dissipated (P):

Dati conosciuti Known Data	Simbolo Symbol	Formula Equation
La potenza elettrica principale installata nel sistema d'applicazione (kW) (es. motore della pompa olio) The main electrical power installed in the application system [kW] (e.g. pump)	P_m	$P = P_m \times 0,35$
Temperatura d'ingresso (°C) Inlet temperature [°C]	t_1	$P = \frac{V \times (t_1 - t_2) \times 0,89 \times 2,09}{T \times 60}$
Temperatura d'uscita (°C) Outlet temperature [°C]	t_2	
Quanto tempo T impiega l'olio per raggiungere t_2 (minuti) Time T needed by the oil to reach t_2 [minutes]	T	
Volume d'olio del serbatoio (l) Oil Volume in the Tank [l]	V	
Flusso d'olio (l/min) Oil Flow [l/min]	Q	$P = \frac{Q \times p \times 0,3}{612}$
Pressione d'esercizio (bar) Working pressure [bar]	p	
Temperatura d'ingresso (°C) Inlet temperature [°C]	t_1	$P = \frac{(t_1 - t_2) \times Q \times 0,89 \times 2,09}{60}$
Temperatura richiesta (°C) ($t_2 < t_1$) Requested temperature [°C] ($t_2 < t_1$)	t_2	
Flusso d'olio (l/min) Oil Flow [l/min]	Q	

La temperatura d'ingresso dell'olio nello scambiatore e quella del flusso di raffreddamento aria ambiente sono le condizioni di lavoro che determinano la potenza specifica di scambio.

Oil inlet temperature and cooling flow temperature are the working conditions that determine the specific cooling power.

P Calore scambiato (kW) / Heat exchanged (kW)

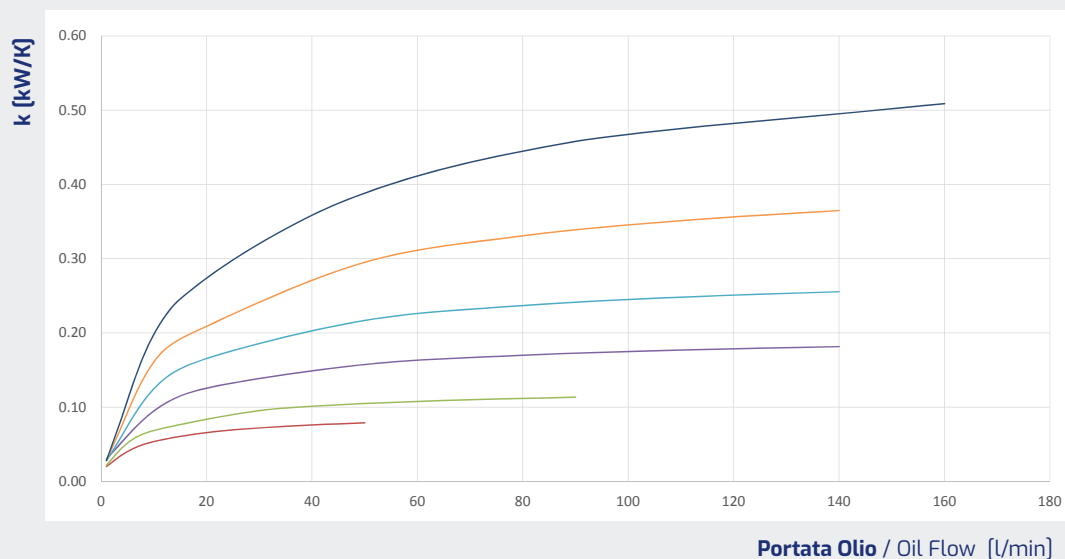
$$\frac{16}{80 - 30} = 0,32 \quad \text{Potenza specifica di scambio} \quad \left(\frac{\text{kW}}{\text{K}} \right)$$

Specific cooling power

t_i **Temperatura ingresso olio (°C)**
Inlet oil temperature (°C)

t_a **Temperatura ambiente (°C)**
Ambient temperature (°C)

Rendimento / Performance 12/24V DC



■ HY010
■ HY024

■ HY016
■ HY038

■ HY018
■ HY057

Individuare la curva di scambio in corrispondenza della portata dell'olio che incrocia la potenza specifica di scambio calcolata.

Select the performance curve according to the intersection between the oil flow and the calculated specific power of exchange.

Codice prodotto HY / HY product code

La versione standard della serie HY prevede un circuito a un passaggio e ventilazione aspirante; sono disponibili altre versioni a richiesta.

The standard version of HY series includes a single-passage circuit and a sucking/pulling fan; other versions are available on request.

HY 024 1 -04 A -1615 -0KH

Serie / Series

Scambiatore di calore aria-olio
Air-oil heat exchanger

Taglia / Size

005, 010, 016, 018, 024, 038, 057, 090,
210, 215, 220, 225, 230, 232, 235

Passaggi / Passages

1 - Un passaggio

2 - Due passaggi
(disponibile su richiesta)

3 - Tre passaggi
(disponibile su richiesta)

L - Doppia massa
(disponibile su richiesta)

Verificare con l'ufficio
tecnico le taglie disponibili

1 - One single passage

2 - Two passages
(available on request)

3 - Three passages
(available on request)

L - Double core
(available on request)

Please check with the
Engineering Department
for available sizes

Ventilazione / Fan Unit

01 - AC monofase 230V

02 - DC 12V

03 - AC trifase 230/400V

04 - DC 24V

05 - Predisposto per motore idraulico GR2

06 - Predisposto per motore idraulico GR3

07 - Con motore elettrico B14

08 - Predisposto per motore elettrico B14

01 - AC single phase 230V

02 - DC 12V

03 - AC three phase 230/400V

04 - DC 24V

05 - Designed for hydraulic motor GR2

06 - Designed for hydraulic motor GR3

07 - With B14 electric motor

08 - Designed for electric motor B14

Flusso ventola / Fan Flow

A - Aspirante

P - Premente (disponibile su richiesta)

Verificare con l'ufficio tecnico le taglie disponibili

A - Sucking/pulling fan

P - Blowing/pushing fan (available on request)

Please check with the Engineering Department for available sizes

Termostato / Thermostat

0 - Senza termostato

1 - Fisso

2 - Softstart

3 - Regolabile

4 - Con regolazione di velocità
e inversione della rotazione

0 - Without thermostat

1 - Fixed

2 - Softstart

3 - Adjustable

4 - With speed regulation and reverse rotation

Orientamento di installazione - montaggio del prodotto / Product installation - assembly orientation

H - Orizzontale

V - Verticale

H - Horizontal

V - Vertical

Sistemi di fissaggio / Mounting Systems

Accessori / Accessories

Versione DC / DC Version

0 - Senza WPC KT013.00

1 - Con WPC KT013.00

0 - Without WPC KT013.00

1 - With WPC KT013.00

Versione predisposta per motore idraulico

/ Designed for hydraulic motor version

0 - Senza semigiunto scanalato

1 - Con semigiunto scanalato Gr.2 - Ch.4,0mm (SU001.00)

2 - Con semigiunto scanalato Gr.3 - Ch.4,0mm (SU003.00)

3 - Con semigiunto scanalato Gr.2 - Ch.3,2mm (SU018.00)

0 - Without splined coupling

1 - With splined coupling Gr.2 - Ch.4,0mm (SU001.00)

2 - With splined coupling Gr.3 - Ch.4,0mm (SU003.00)

3 - With splined coupling Gr.2 - Ch.3,2mm (SU018.00)

IP termostato / Thermostat IP

4 - IP40

5 - IP65

7 - IP67

Filettatura termostato / Thermostat thread

1 - 1/2"G

3 - 3/8"G

Gradi termostato

/ Thermostat degrees

1 - Da 40°C a 50°C

2 - Da 40°C a 60°C

3 - Da 30°C a 50°C

4 - 40°C

5 - 50°C

6 - 60°C

7 - 70°C

9 - Da 0°C a 90°C

1 - From 40°C to 50°C

2 - From 40°C to 60°C

3 - From 30°C to 50°C

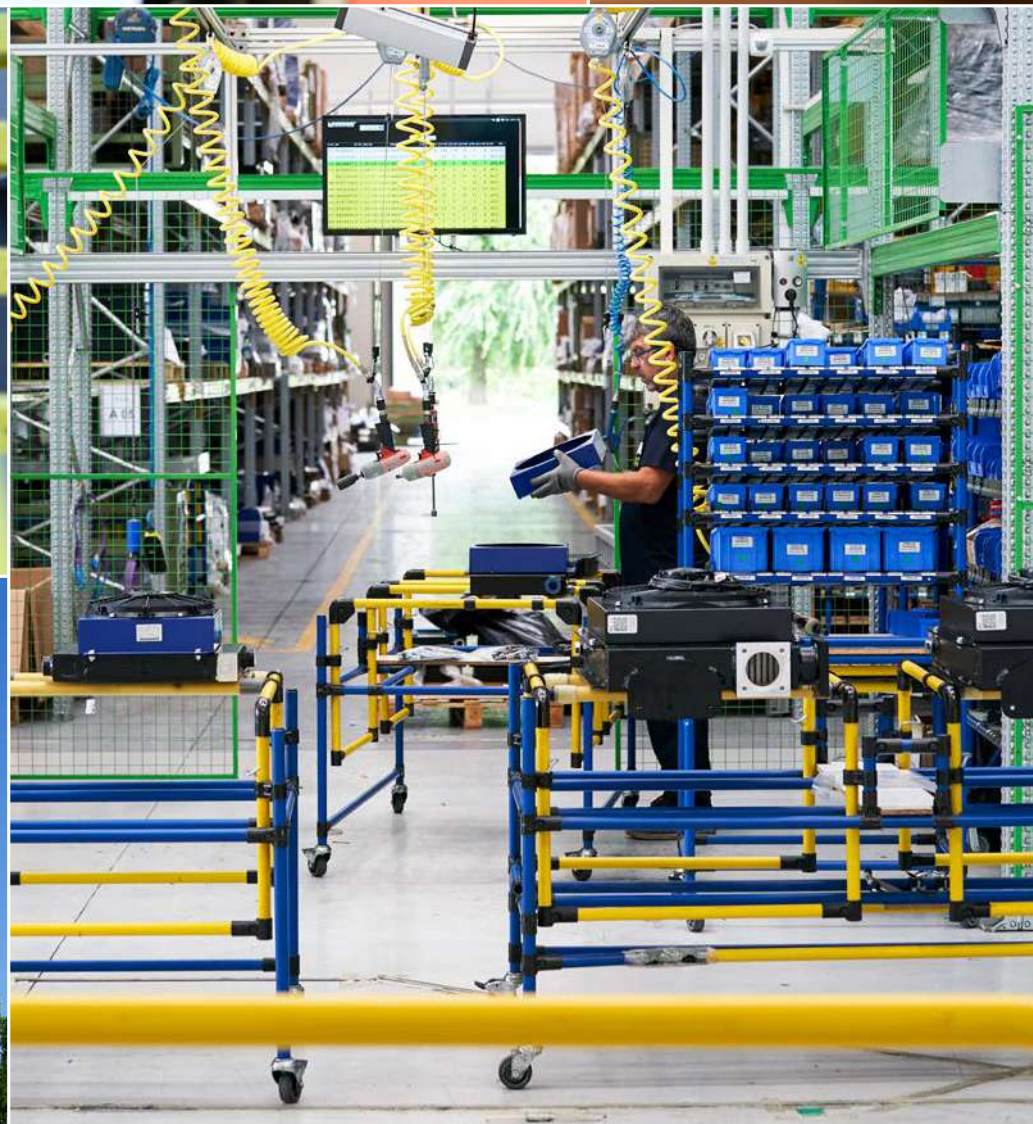
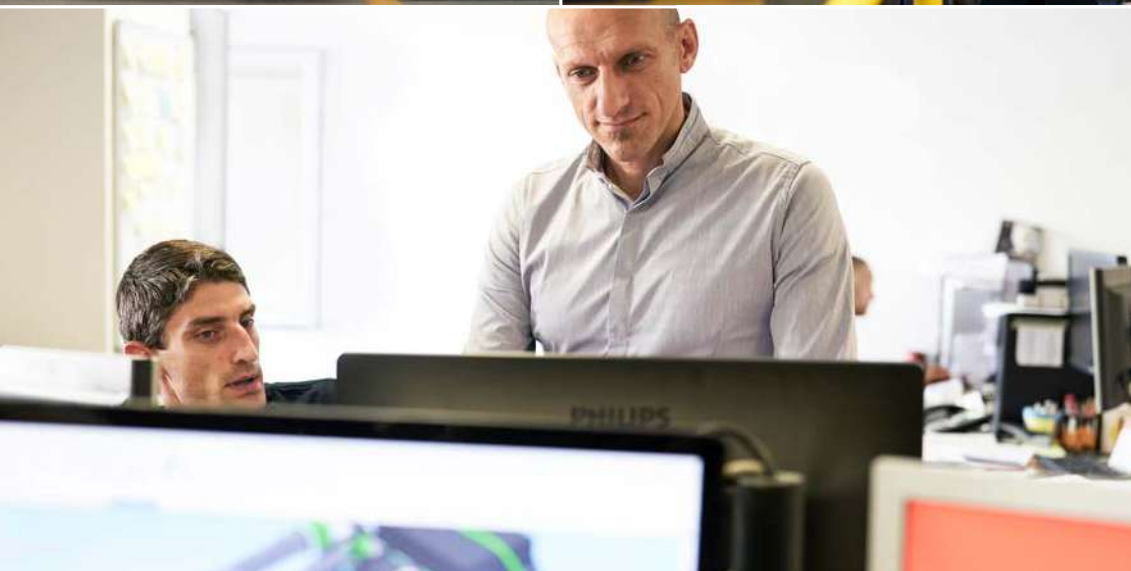
4 - 40°C

5 - 50°C

6 - 60°C

7 - 70°C

9 - From 0°C to 90°C



TIPO DI MOTORIZZAZIONE:
FAN UNIT TYPE:

AC

MONOFASE
SINGLE PHASE

230V

HY series

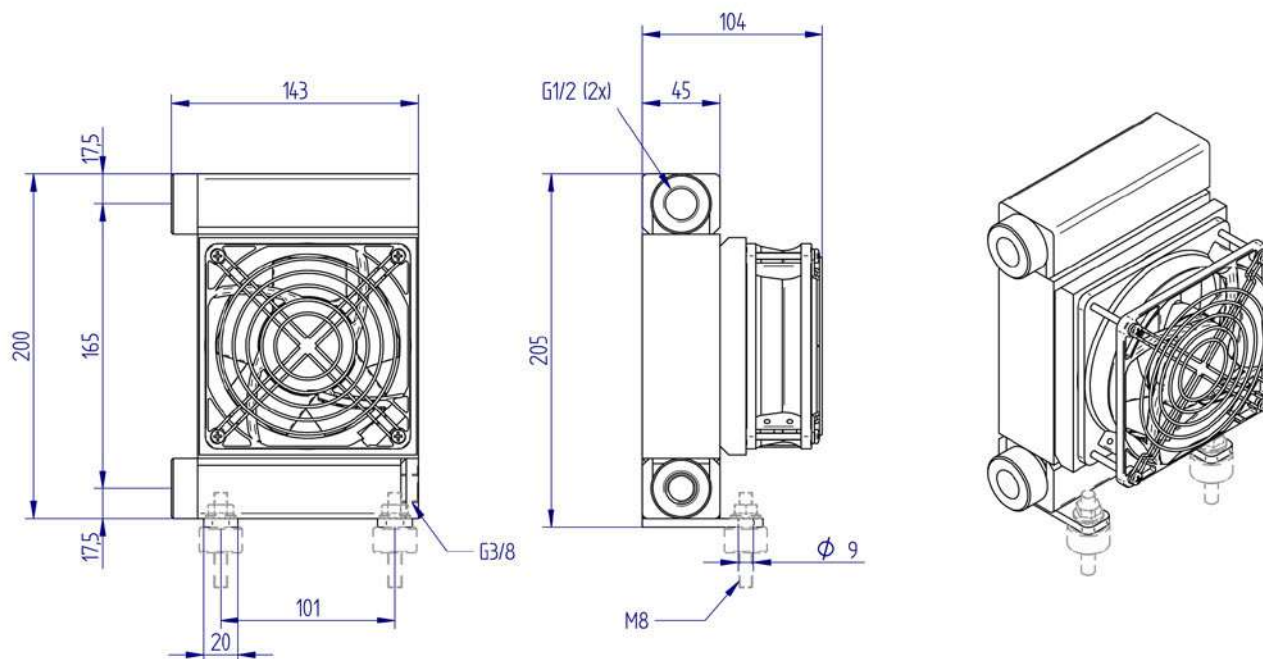
HY005.1-01A

AIR-OIL HEAT
EXCHANGERS

IP20

230

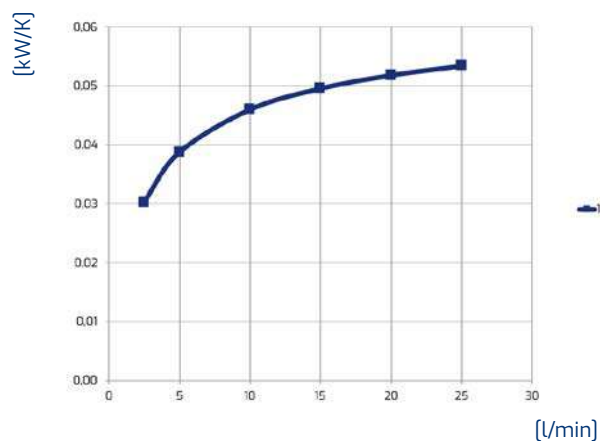
Volt



Technical data

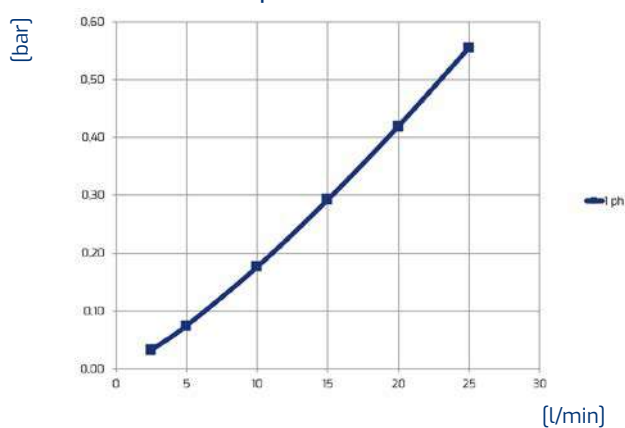
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	[l/min]	[l]	[kg]	[V]	[Hz]	[A]	[W]	[mm]	[m³/h]	[dB(A)]	
HY005.1-01A	2,5-25	0,6	3	230	50/60	0,15	30	115	240	47	

Performance



Oil T 80°C
T Amb. 40°C
1 kW = 860 Kcal/h - 1 HP = 0,75 kW

Pressure drop



ISO VG 32 at 40°C

Viscosity - ISO VG 32 Oil

Oil	22	32	46	68	150
Correction factor	0,8	1	1,2	1,6	3

HY series

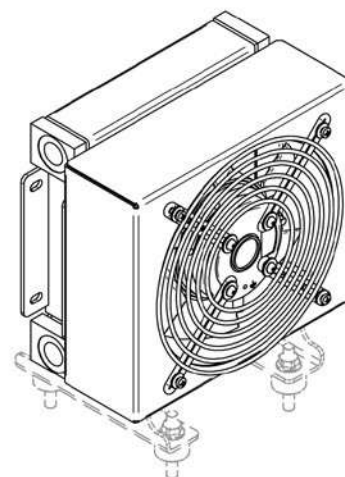
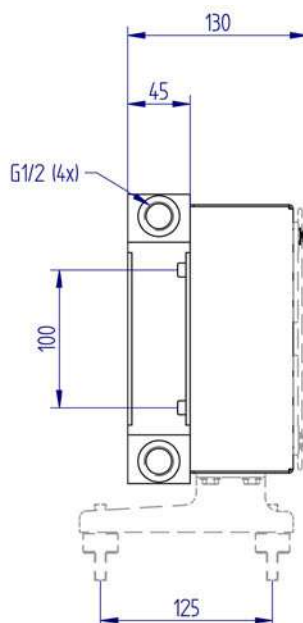
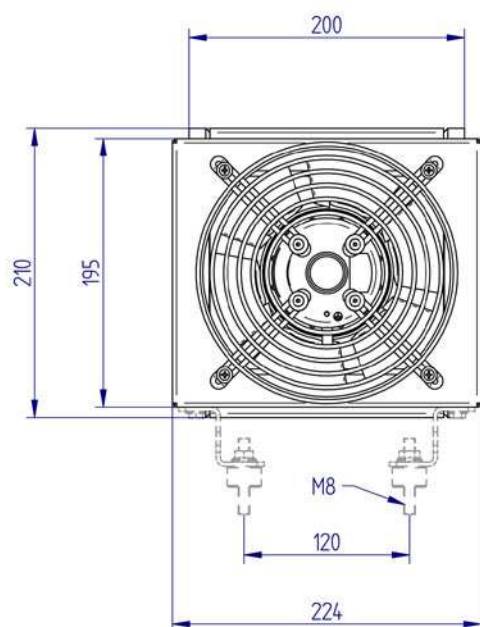
HY010.1-01A

AIR-OIL HEAT EXCHANGERS

IP44

230

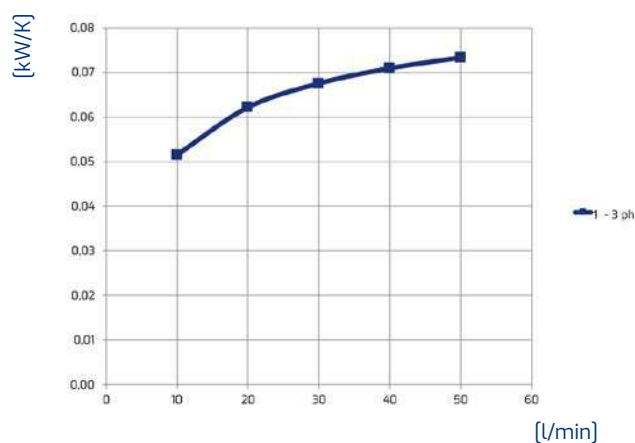
Volt



Technical data

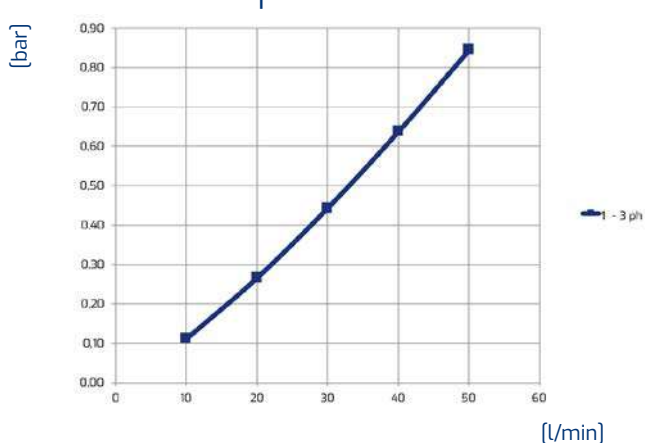
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	[l/min]	[l]	[kg]	[V]	[Hz]	[A]	[W]	[mm]	[m³/h]	[db(A)]	
HY010.1-01A	10-50	0,7	5	230	50/60	0,23	47	170	330	62	

Performance



Oil T 80°C
T Amb. 40°C
1 kW = 860 Kcal/h - 1 HP = 0,75 kW

Pressure drop



ISO VG 32 at 40°C

Viscosity - ISO VG 32 Oil

Oil	22	32	46	68	150
Correction factor	0,8	1	1,2	1,6	3

HY series

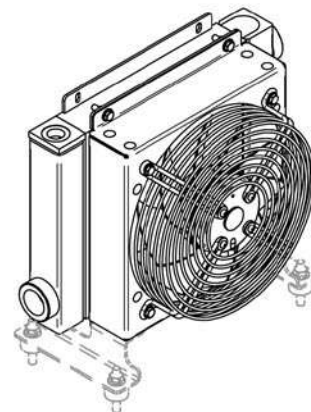
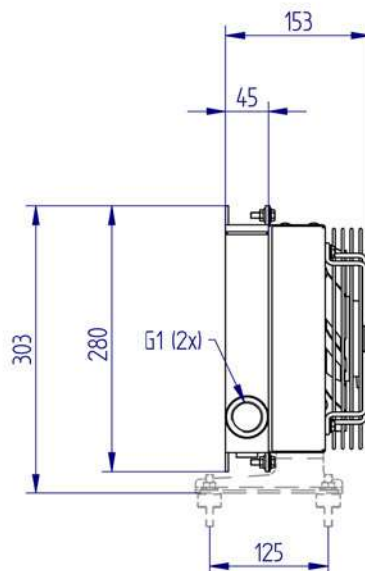
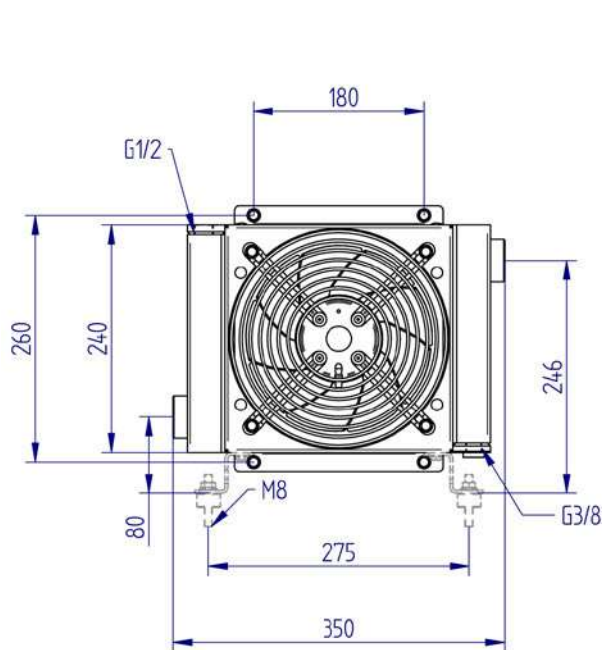
HY016.1-01A

AIR-OIL HEAT
EXCHANGERS

IP44

230

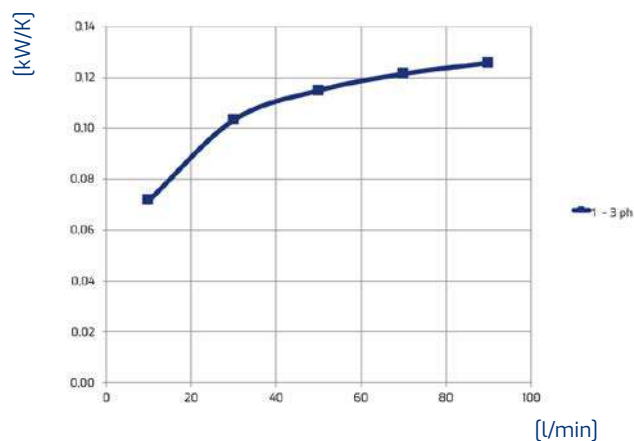
Volt



Technical data

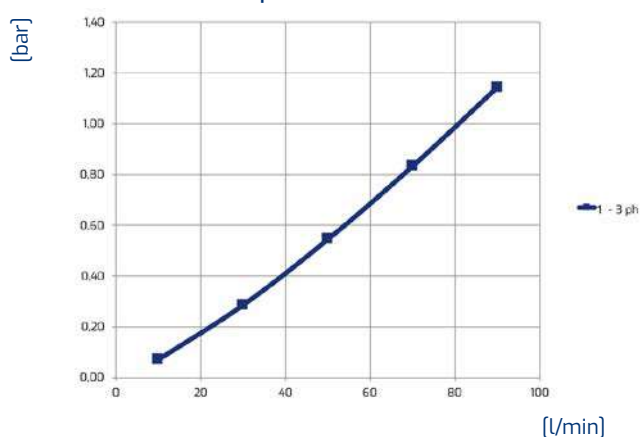
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	[l/min]	[l]	[kg]	[V]	[Hz]	[A]	[W]	[mm]	[m³/h]	[db(A)]	
HY016.1-01A	10-90	0,7	7	230	50/60	0,34	64	200	735	65	

Performance



Oil T 80°C
T Amb. 40°C
1 kW = 860 Kcal/h - 1 HP = 0,75 kW

Pressure drop



ISO VG 32 at 40°C

Viscosity - ISO VG 32 Oil

Oil	22	32	46	68	150
Correction factor	0,8	1	1,2	1,6	3

HY series

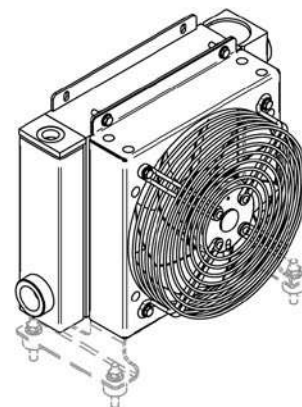
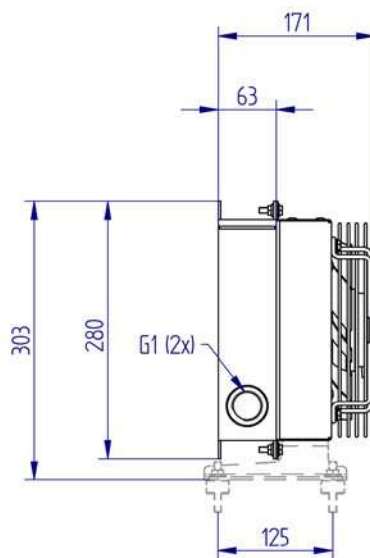
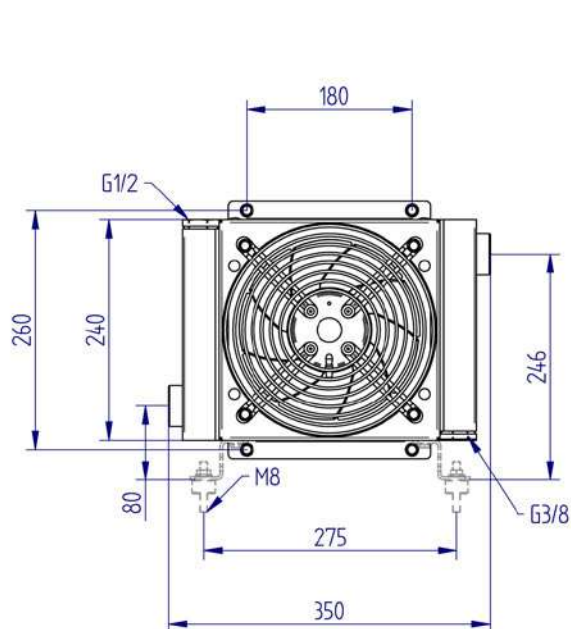
HY018.1-01A

AIR-OIL HEAT
EXCHANGERS

IP44

230

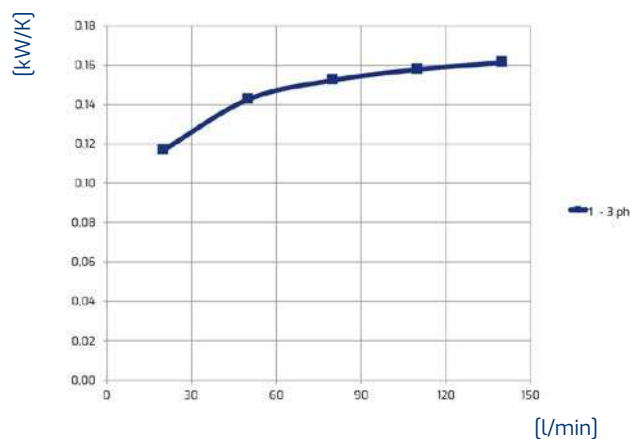
Volt



Technical data

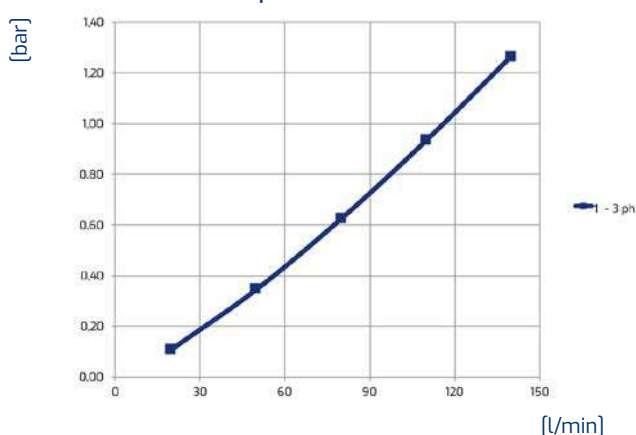
Item	Oil flow	Capacity	Weight	Voltage	Frequency	Current absorption	Power	Ø Fan	Air flow	Noise level	Rpm
	[l/min]	[l]	[kg]	[V]	[Hz]	[A]	[W]	[mm]	[m³/h]	[db(A)]	
HY018.1-01A	20-140	1,5	8,5	230	50/60	0,30	69	200	680	65	

Performance



Oil T 80°C
T Amb. 40°C
1 kW = 860 Kcal/h - 1 HP = 0,75 kW

Pressure drop



ISO VG 32 at 40°C

Viscosity - ISO VG 32 Oil

Oil	22	32	46	68	150
Correction factor	0,8	1	1,2	1,6	3

HY series

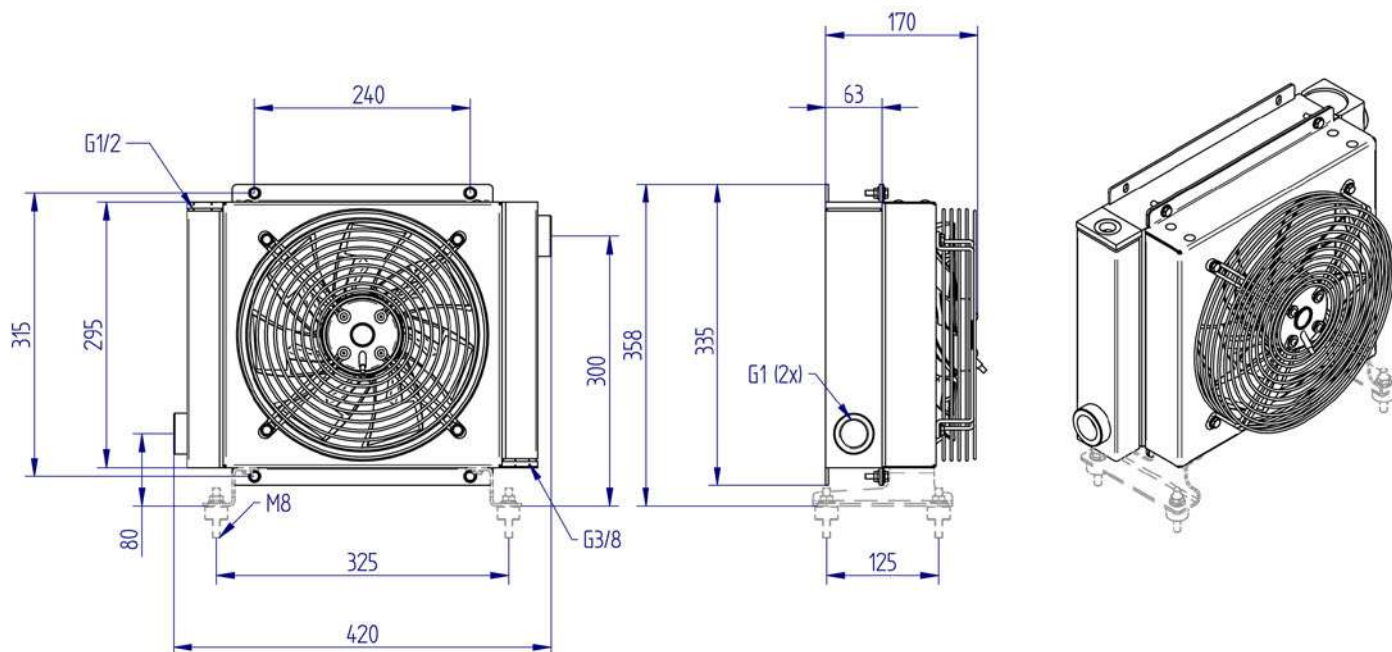
HY024.1-01A

AIR-OIL HEAT
EXCHANGERS

IP44

230

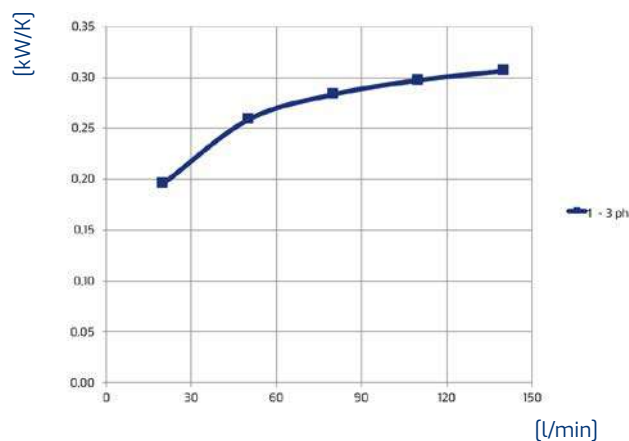
Volt



Technical data

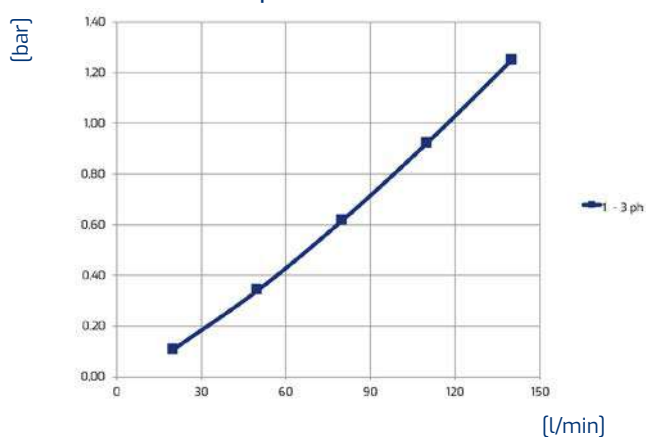
Item	Oil flow	Capacity	Weight	Voltage	Frequency	Current absorption	Power	Ø Fan	Air flow	Noise level	Rpm
	[l/min]	[l]	[kg]	[V]	[Hz]	[A]	[W]	[mm]	[m³/h]	[db(A)]	
HY024.1-01A	20-140	2	12	230	50/60	0,57	125	250	1280	68	

Performance



Oil T 80°C
T Amb. 40°C
1 kW = 860 Kcal/h - 1 HP = 0,75 kW

Pressure drop



ISO VG 32 at 40°C

Viscosity - ISO VG 32 Oil

Oil	22	32	46	68	150
Correction factor	0,8	1	1,2	1,6	3

HY series

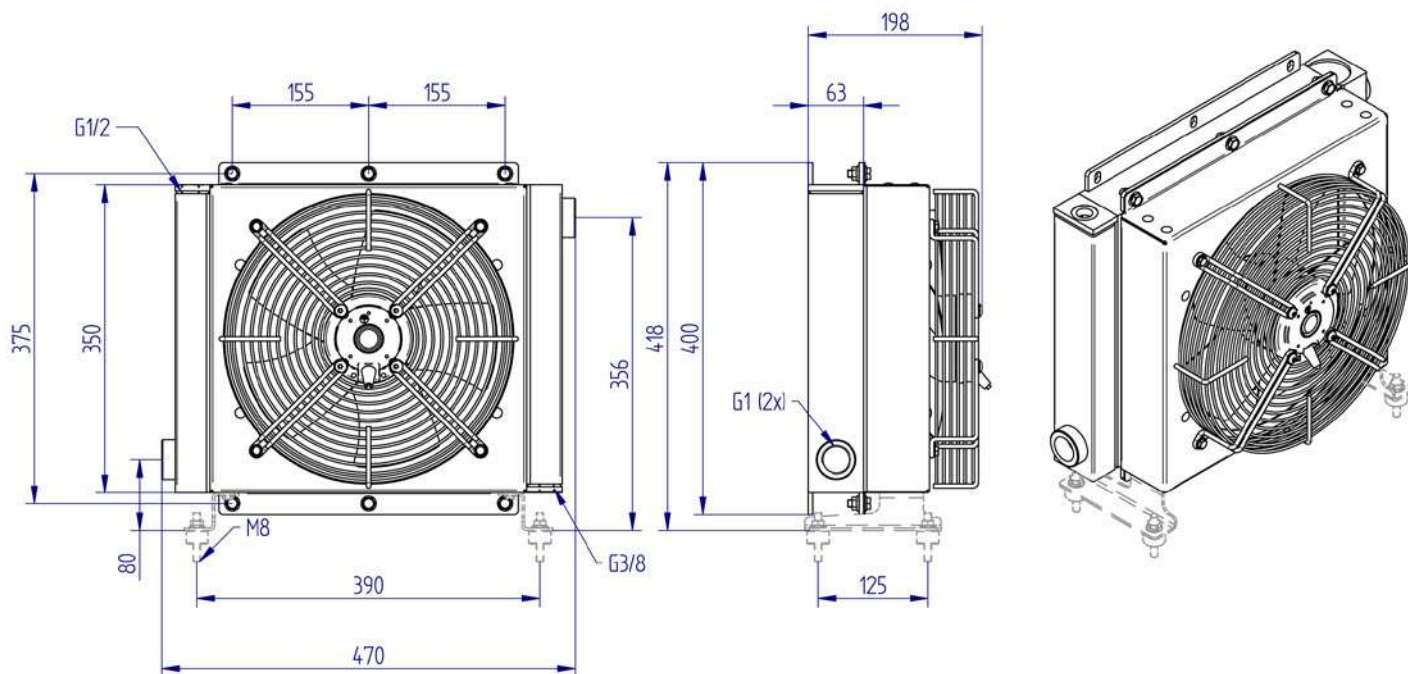
HY038.1-01A

AIR-OIL HEAT
EXCHANGERS

IP44

230

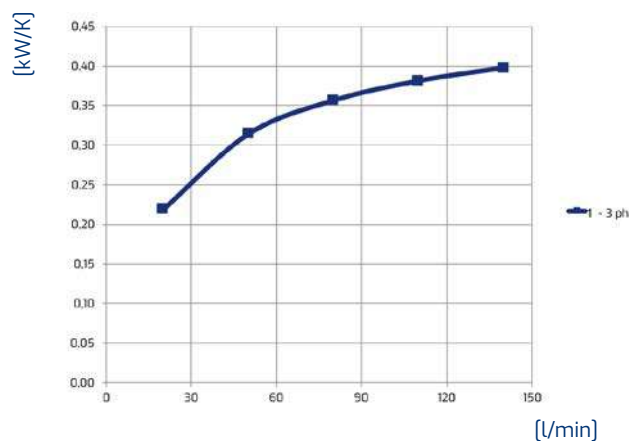
Volt



Technical data

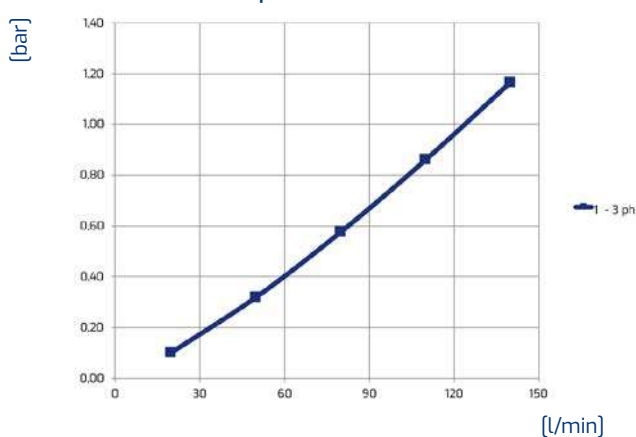
Item	Oil flow	Capacity	Weight	Voltage	Frequency	Current absorption	Power	Ø Fan	Air flow	Noise level	Rpm
	[l/min]	[l]	[kg]	[V]	[Hz]	[A]	[W]	[mm]	[m³/h]	[db(A)]	
HY038.1-01A	20-140	2,5	14,5	230	50/60	1,20	280	300	2160	73	

Performance



Oil T 80°C
T Amb. 40°C
1 kW = 860 Kcal/h - 1 HP = 0,75 kW

Pressure drop



ISO VG 32 at 40°C

Viscosity - ISO VG 32 Oil

Oil	22	32	46	68	150
Correction factor	0,8	1	1,2	1,6	3

HY series

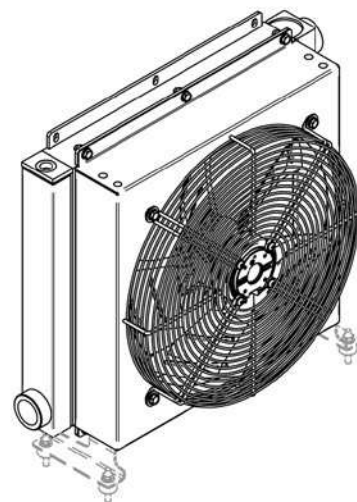
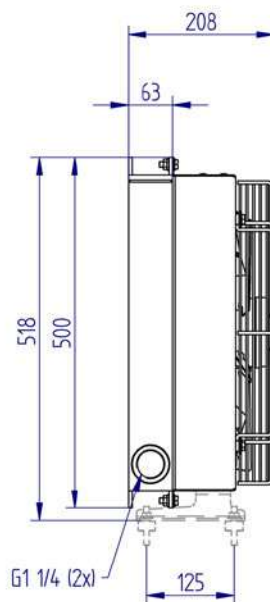
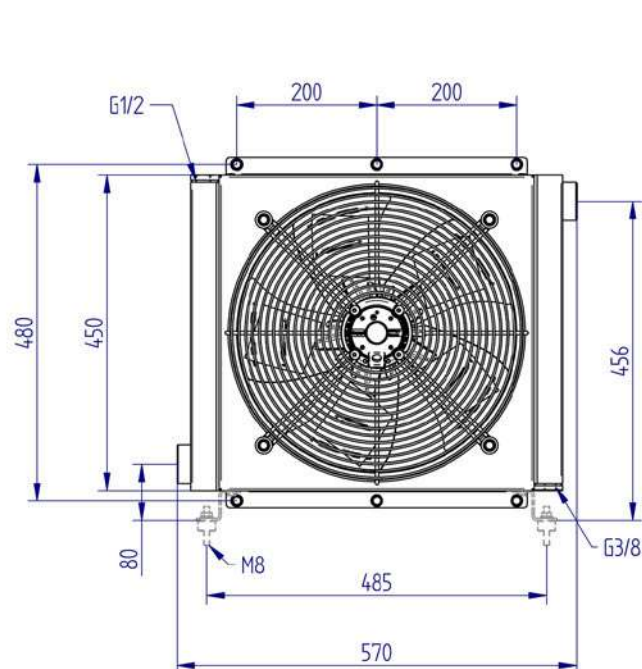
HY057.1-01A

AIR-OIL HEAT EXCHANGERS

IP44

230

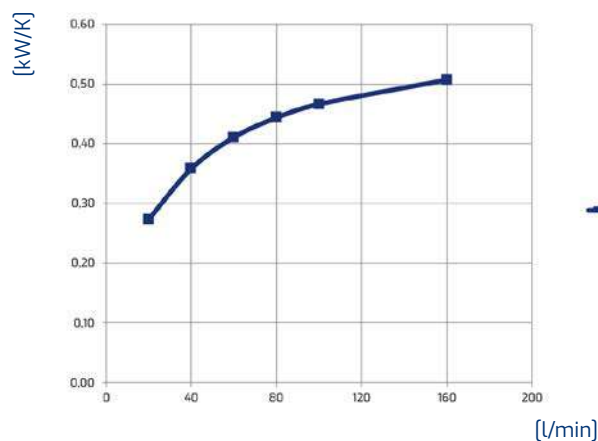
Volt



Technical data

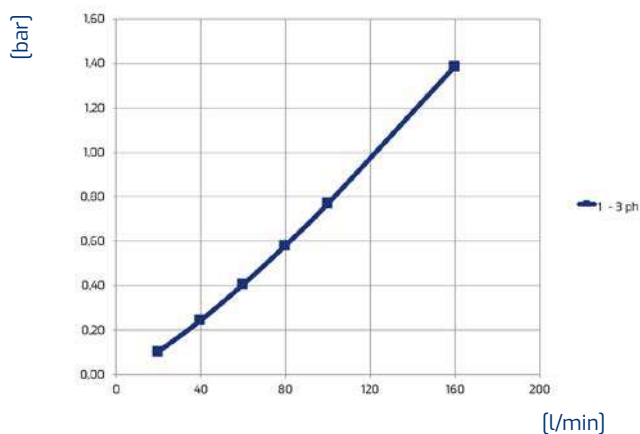
Item	Oil flow	Capacity	Weight	Voltage	Frequency	Current absorption	Power	Ø Fan	Air flow	Noise level	Rpm
	[l/min]	[l]	[kg]	[V]	[Hz]	[A]	[W]	[mm]	[m³/h]	[db(A)]	
HY057.1-01A	20-160	3,7	19,5	230	50/60	0,30	127	400	1830	69	

Performance



Oil T 80°C
T Amb. 40°C
1 kW = 860 Kcal/h - 1 HP = 0,75 kW

Pressure drop



ISO VG 32 at 40°C

Viscosity - ISO VG 32 Oil

Oil	22	32	46	68	150
Correction factor	0,8	1	1,2	1,6	3

HY series

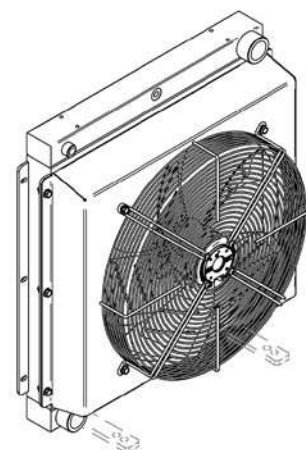
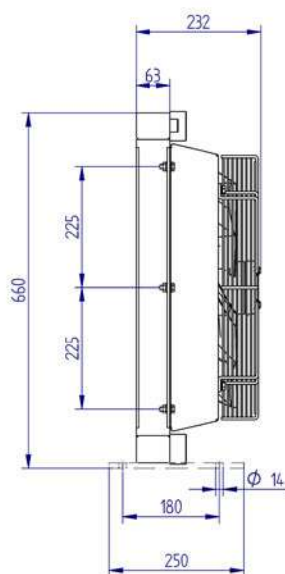
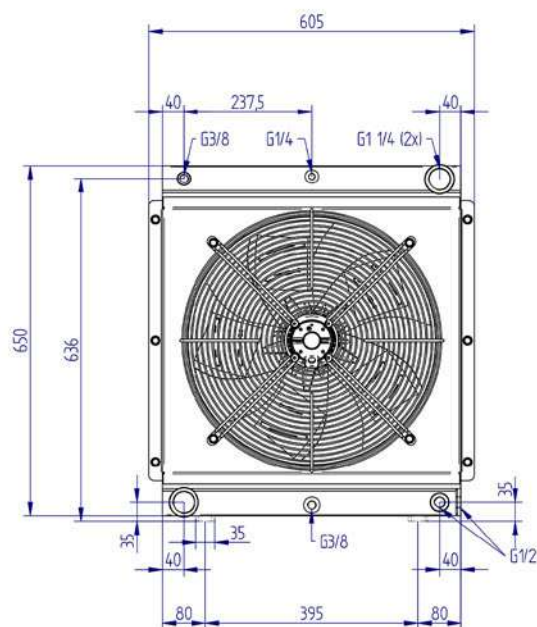
HY090.1-01A

AIR-OIL HEAT
EXCHANGERS

IP44

230

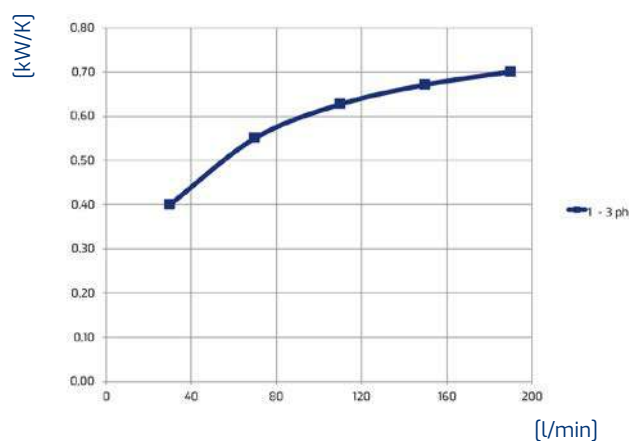
Volt



Technical data

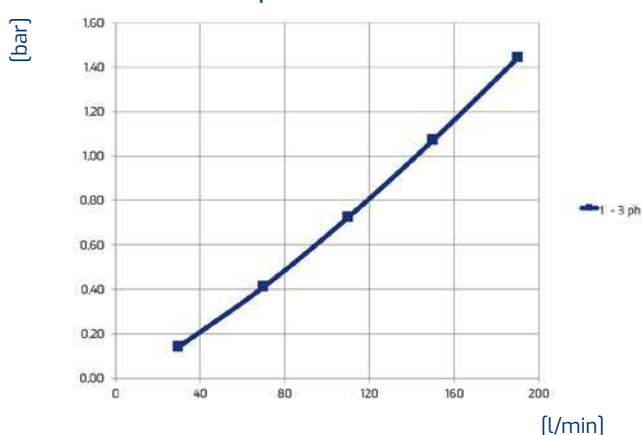
Item	Oil flow	Capacity	Weight	Voltage	Frequency	Current absorption	Power	Ø Fan	Air flow	Noise level	Rpm
	[l/min]	[l]	[kg]	[V]	[Hz]	[A]	[W]	[mm]	[m³/h]	[db(A)]	
HY090.1-01A	30-190	5,3	31	230	50/60	1,55	245	450	1830	73	

Performance



Oil T 80°C
T Amb. 40°C
1 kW = 860 Kcal/h - 1 HP = 0,75 kW

Pressure drop



ISO VG 32 at 40°C

Viscosity - ISO VG 32 Oil

Oil	22	32	46	68	150
Correction factor	0,8	1	1,2	1,6	3

TRIFASE
THREE PHASE

230/400V

HY series

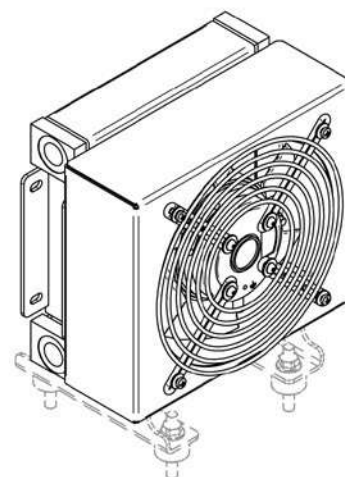
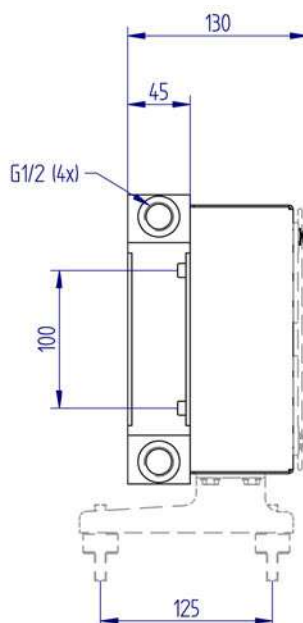
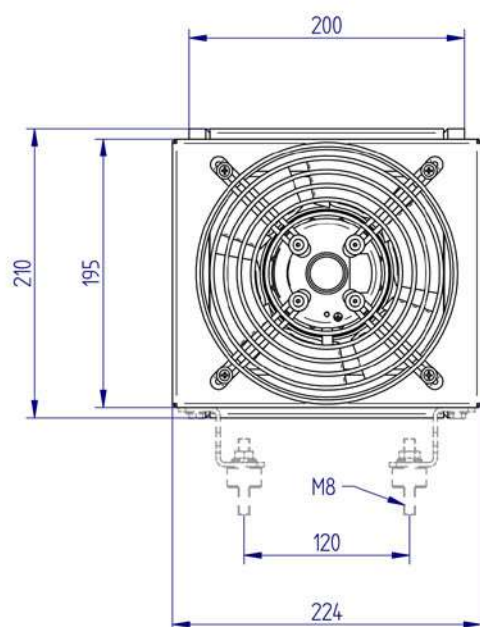
HY010.1-03A

AIR-OIL HEAT EXCHANGERS

IP44

230/400

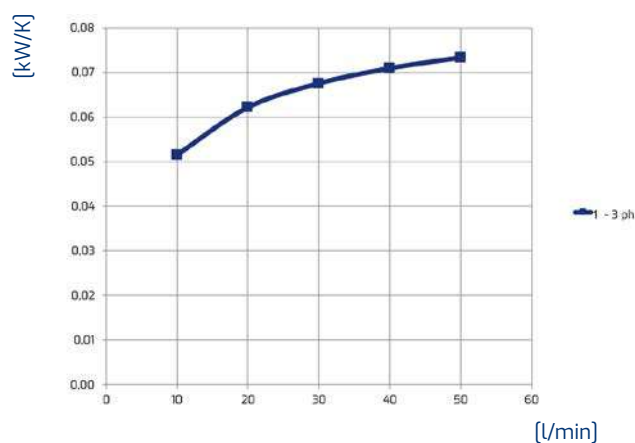
Volt



Technical data

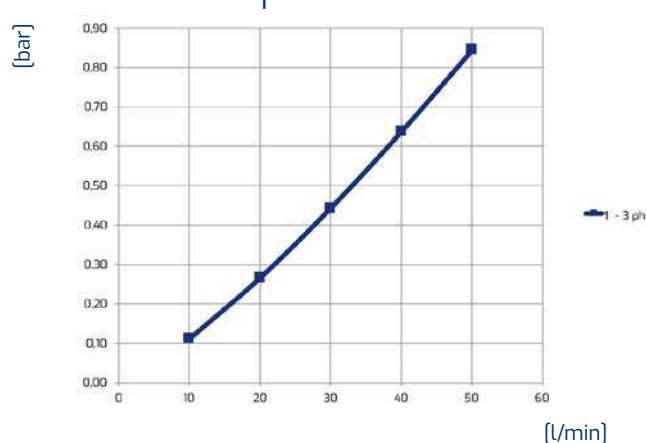
Item	Oil flow	Capacity	Weight	Voltage	Frequency	Current absorption	Power	Ø Fan	Air flow	Noise level	Rpm
	[l/min]	[l]	[kg]	[V]	[Hz]	[A]	[W]	[mm]	[m³/h]	[db(A)]	
HY010.1-03A	10-50	0,7	5	230/400	50/60	0,12	44	170	340	59	

Performance



Oil T 80°C
T Amb. 40°C
1 kW = 860 Kcal/h - 1 HP = 0,75 kW

Pressure drop



ISO VG 32 at 40°C

Viscosity - ISO VG 32 Oil

Oil	22	32	46	68	150
Correction factor	0,8	1	1,2	1,6	3

HY series

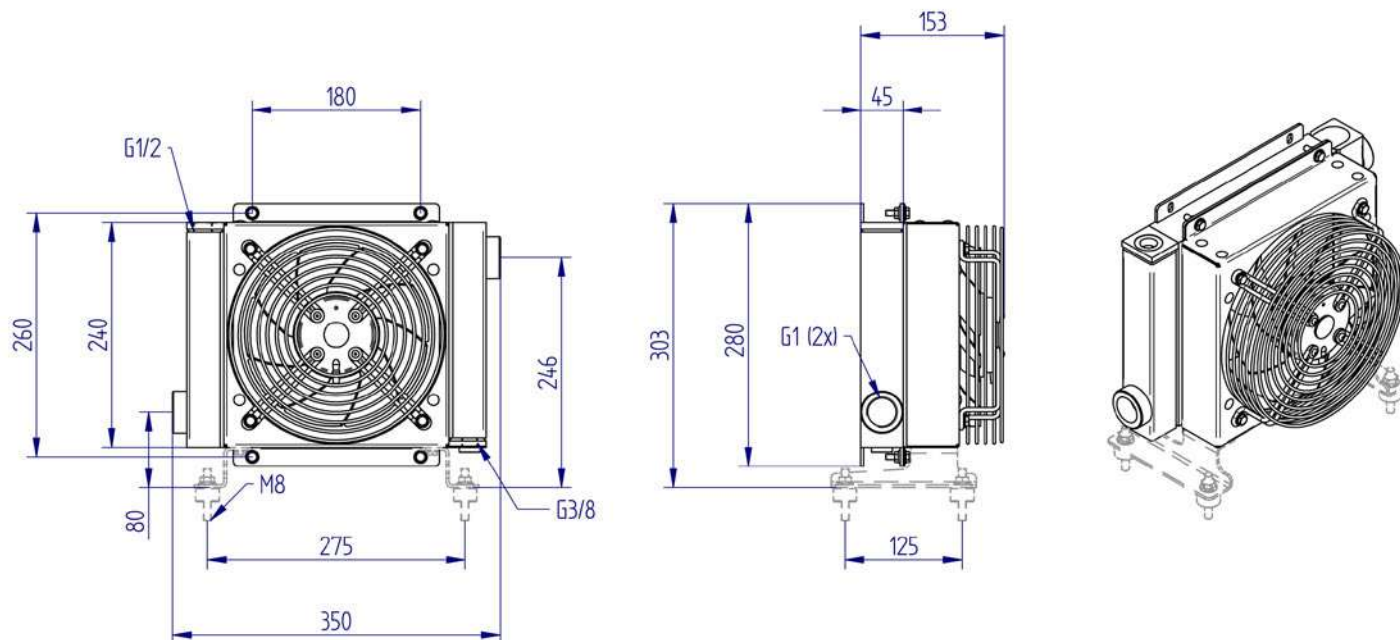
HY016.1-03A

AIR-OIL HEAT
EXCHANGERS

IP44

230/400

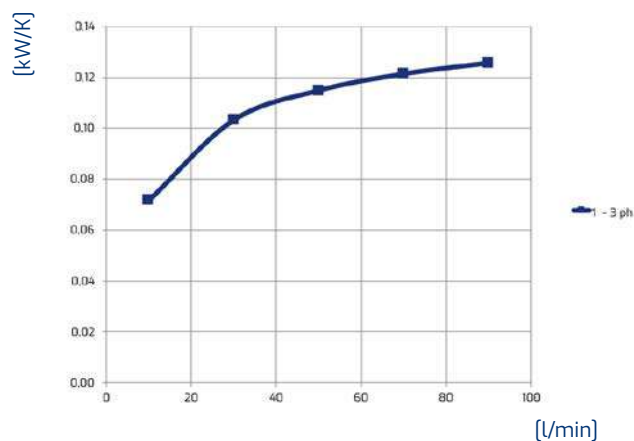
Volt



Technical data

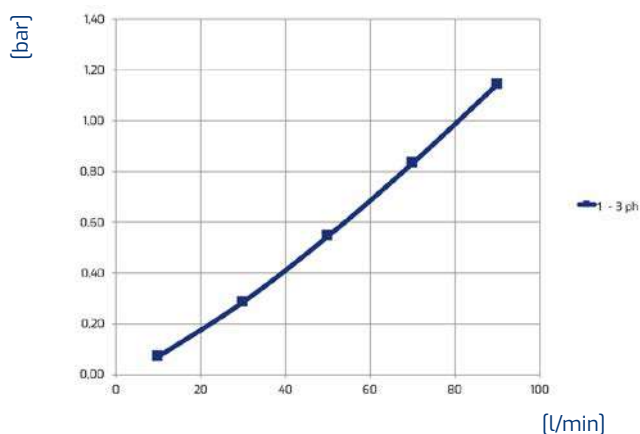
Item	Oil flow	Capacity	Weight	Voltage	Frequency	Current absorption	Power	Ø Fan	Air flow	Noise level	Rpm
	[l/min]	[l]	[kg]	[V]	[Hz]	[A]	[W]	[mm]	[m³/h]	[dB(A)]	
HY016.1-03A	10-90	0,7	7	230/400	50/60	0,17	68	200	745	65	

Performance



Oil T 80°C
T Amb. 40°C
1 kW = 860 Kcal/h - 1 HP = 0,75 kW

Pressure drop



ISO VG 32 at 40°C

Viscosity - ISO VG 32 Oil

Oil	22	32	46	68	150
Correction factor	0,8	1	1,2	1,6	3

HY series

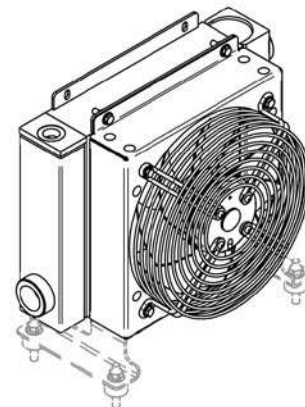
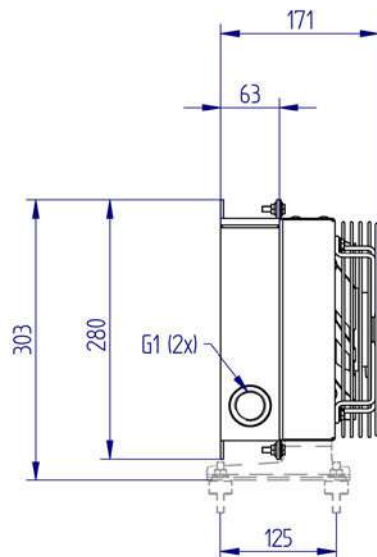
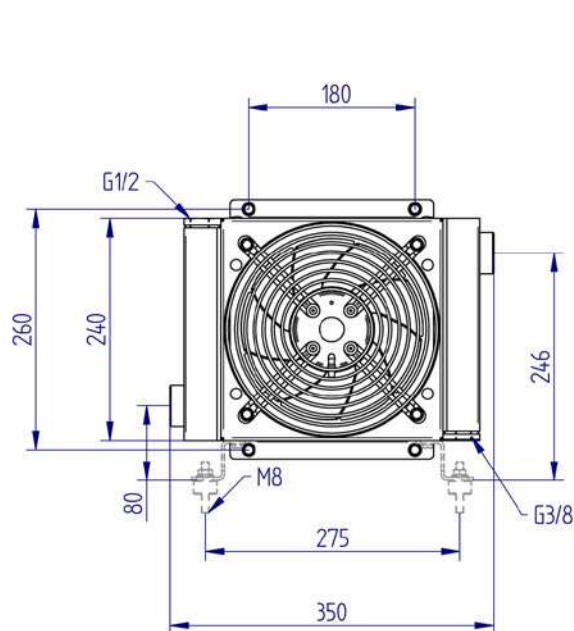
HY018.1-03A

AIR-OIL HEAT
EXCHANGERS

IP44

230/400

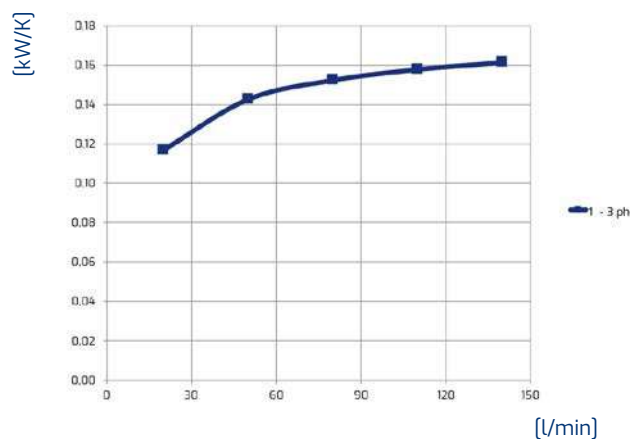
Volt



Technical data

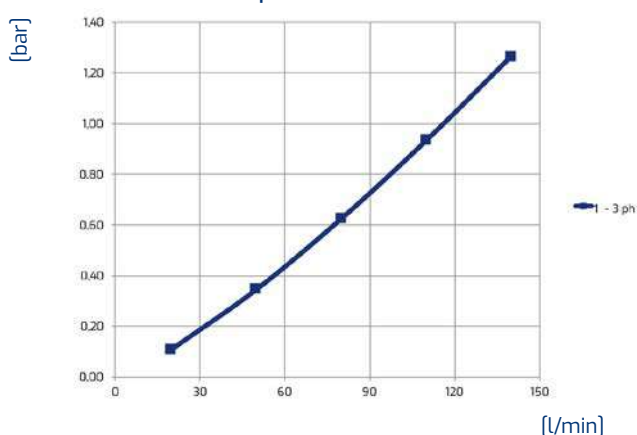
Item	Oil flow	Capacity	Weight	Voltage	Frequency	Current absorption	Power	Ø Fan	Air flow	Noise level	Rpm
	[l/min]	[l]	[kg]	[V]	[Hz]	[A]	[W]	[mm]	[m³/h]	[dB(A)]	
HY018.1-03A	20-140	1,5	8,5	230/400	50/60	0,17	68	200	680	65	

Performance



Oil T 80°C
T Amb. 40°C
1 kW = 860 Kcal/h - 1 HP = 0,75 kW

Pressure drop



ISO VG 32 at 40°C

Viscosity - ISO VG 32 Oil

Oil	22	32	46	68	150
Correction factor	0,8	1	1,2	1,6	3

HY series

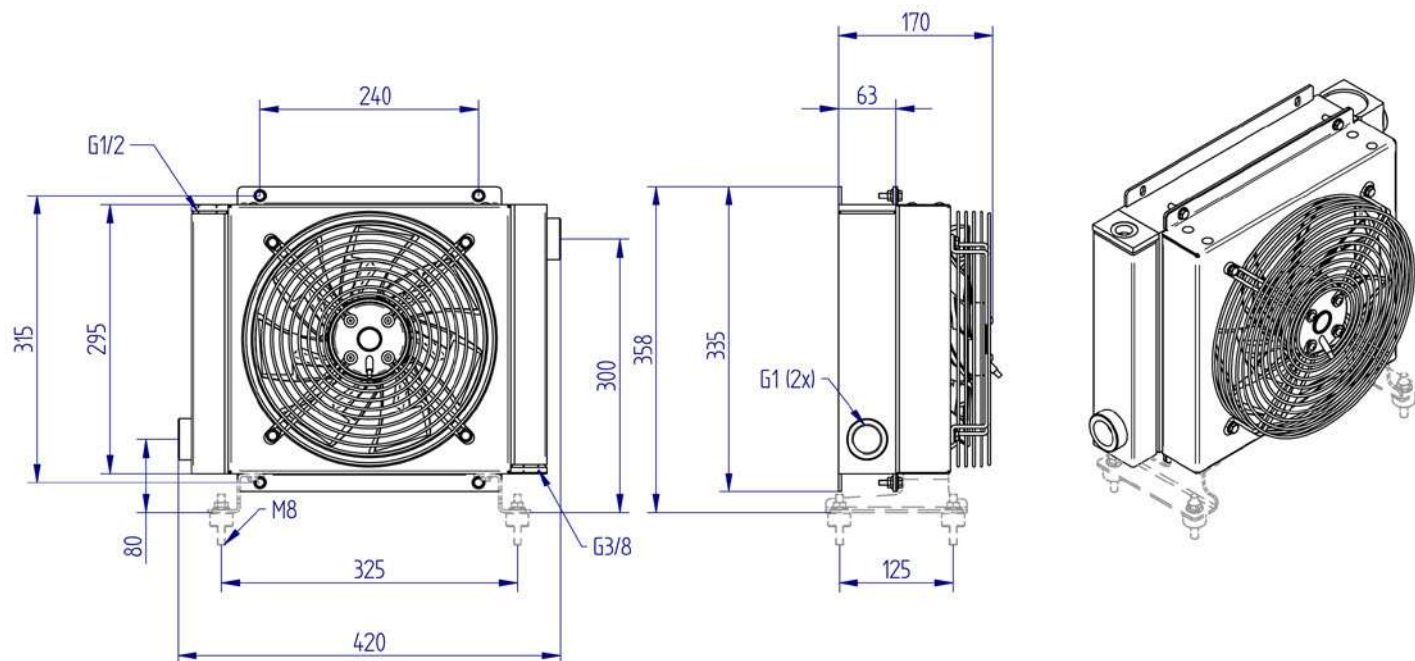
HY024.1-03A

AIR-OIL HEAT
EXCHANGERS

IP44

230/400

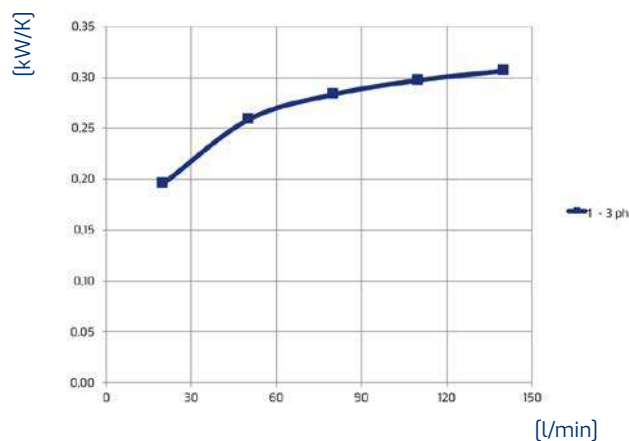
Volt



Technical data

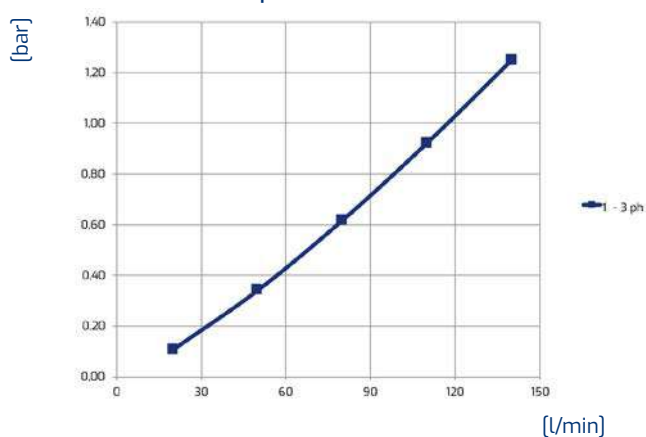
Item	Oil flow	Capacity	Weight	Voltage	Frequency	Current absorption	Power	Ø Fan	Air flow	Noise level	Rpm
	[l/min]	[l]	[kg]	[V]	[Hz]	[A]	[W]	[mm]	[m³/h]	[db(A)]	
HY024.1-03A	20-140	2	12	230/400	50/60	0,24	154	250	1300	69	

Performance



Oil T 80°C
T Amb. 40°C
1 kW = 860 Kcal/h - 1 HP = 0,75 kW

Pressure drop



ISO VG 32 at 40°C

Viscosity - ISO VG 32 Oil

Oil	22	32	46	68	150
Correction factor	0,8	1	1,2	1,6	3

HY series

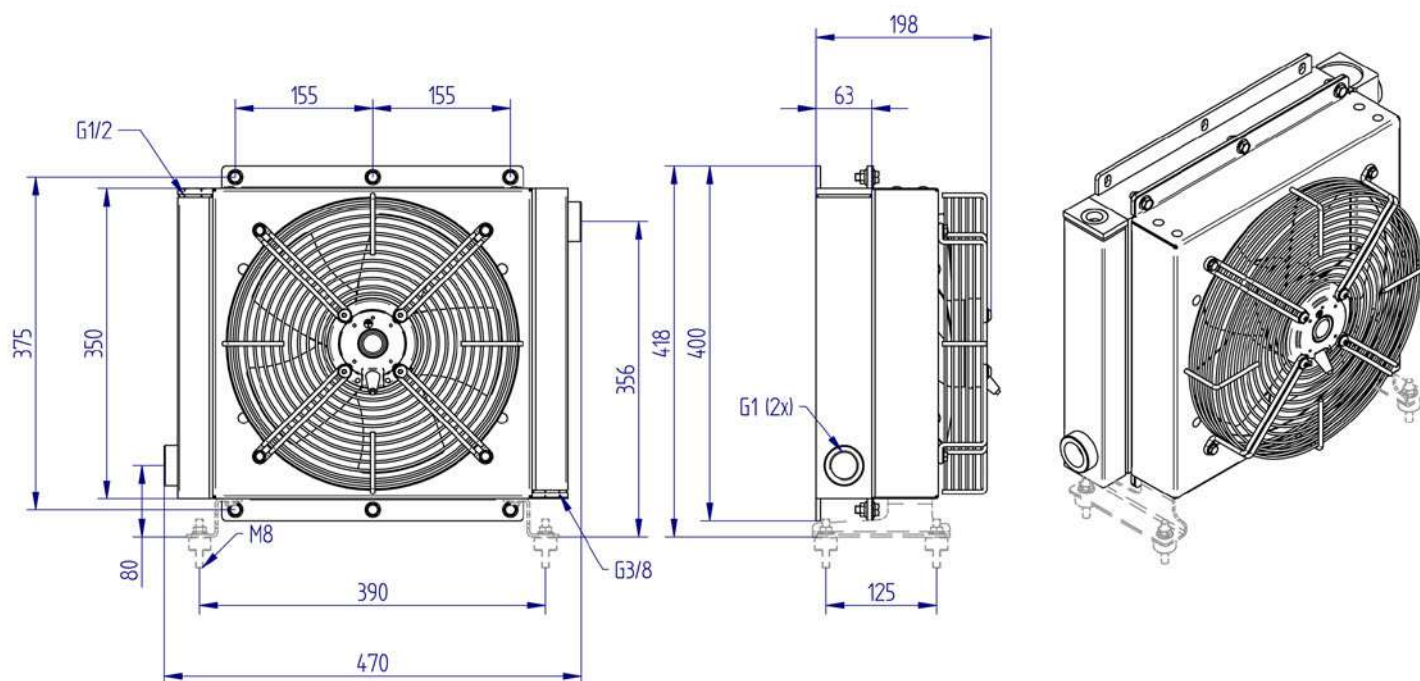
HY038.1-03A

AIR-OIL HEAT
EXCHANGERS

IP44

230/400

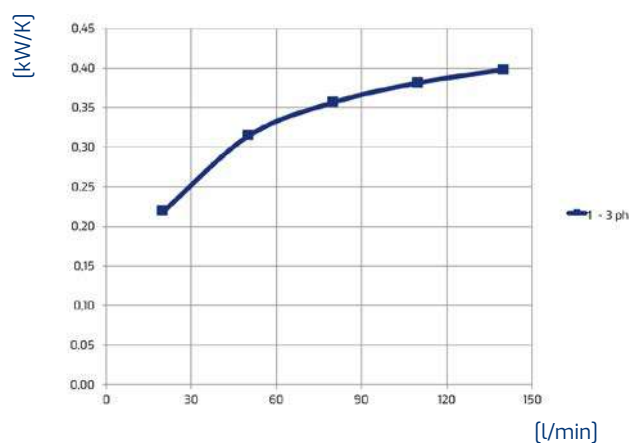
Volt



Technical data

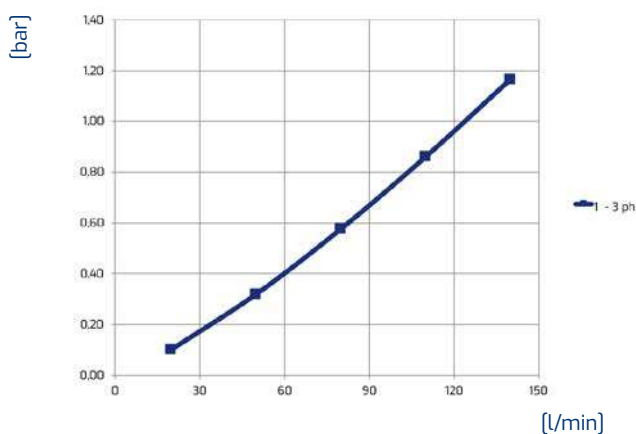
Item	Oil flow	Capacity	Weight	Voltage	Frequency	Current absorption	Power	Ø Fan	Air flow	Noise level	Rpm
	[l/min]	[l]	[kg]	[V]	[Hz]	[A]	[W]	[mm]	[m³/h]	[db(A)]	
HY038.1-03A	20-140	2,5	14,5	230/400	50/60	0,36	210	300	2150	72	

Performance



Oil T 80°C
T Amb. 40°C
1 kW = 860 Kcal/h - 1 HP = 0,75 kW

Pressure drop



ISO VG 32 at 40°C

Viscosity - ISO VG 32 Oil

Oil	22	32	46	68	150
Correction factor	0,8	1	1,2	1,6	3

HY series

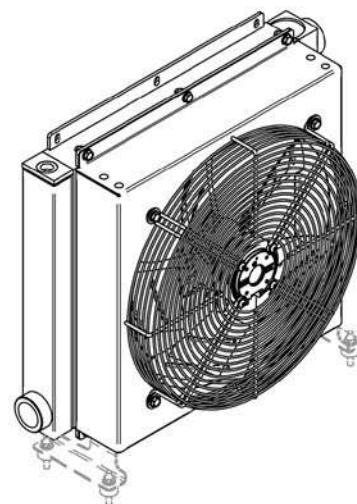
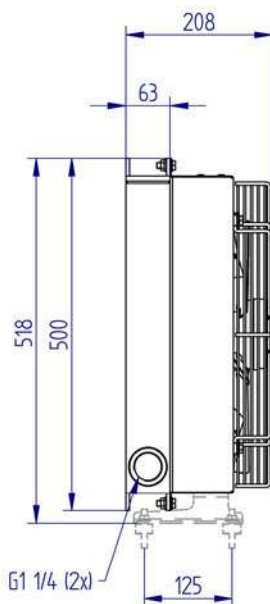
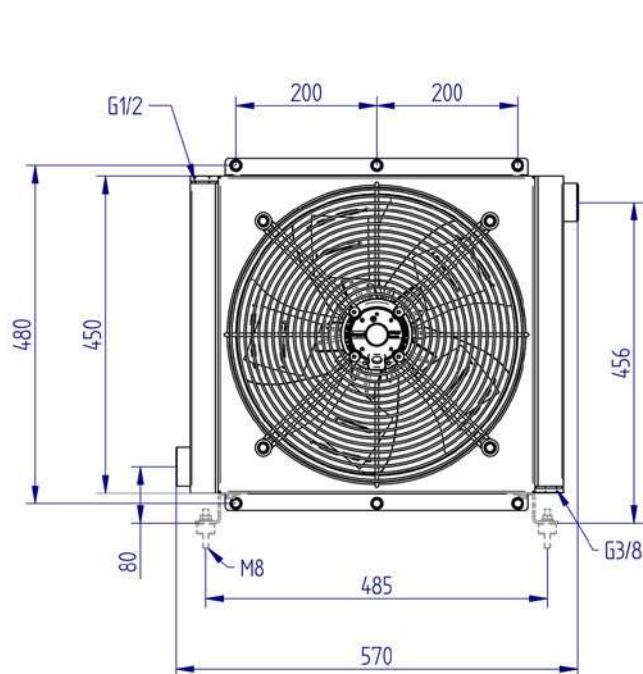
HY057.1-03A

AIR-OIL HEAT EXCHANGERS

IP44

230/400

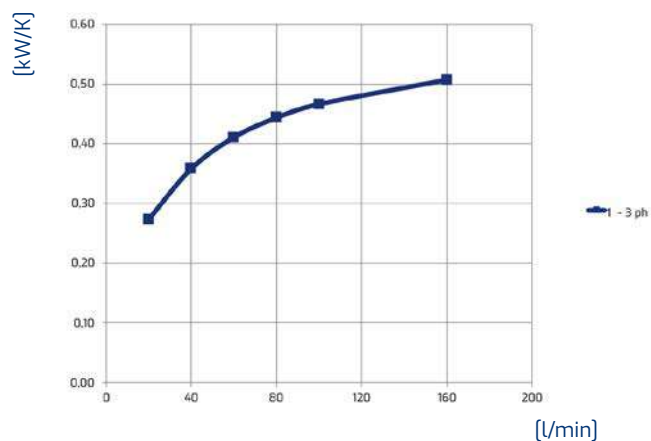
Volt



Technical data

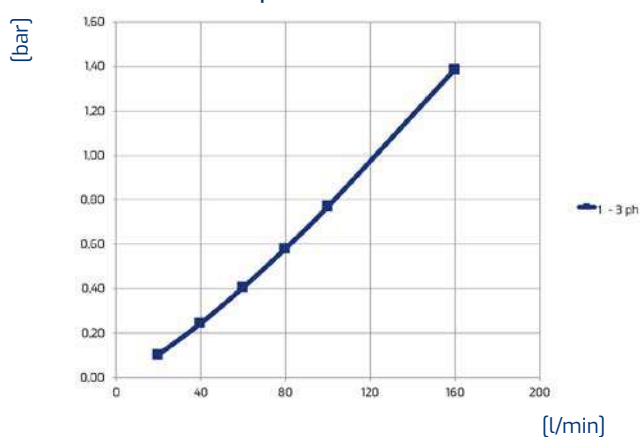
Item	Oil flow	Capacity	Weight	Voltage	Frequency	Current absorption	Power	Ø Fan	Air flow	Noise level	Rpm
	[l/min]	[l]	[kg]	[V]	[Hz]	[A]	[W]	[mm]	[m³/h]	[dB(A)]	
HY057.1-03A	20-160	3,7	19,5	230/400	50/60	0,58	134	400	1820	68	

Performance



Oil T 80°C
T Amb. 40°C
1 kW = 860 Kcal/h - 1 HP = 0,75 kW

Pressure drop



ISO VG 32 at 40°C

Viscosity - ISO VG 32 Oil

Oil	22	32	46	68	150
Correction factor	0,8	1	1,2	1,6	3

HY series

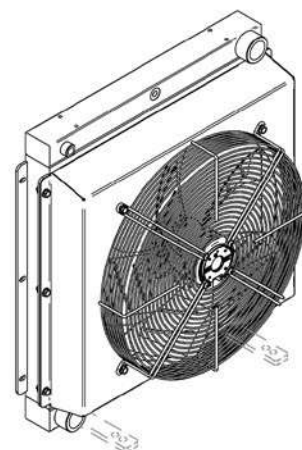
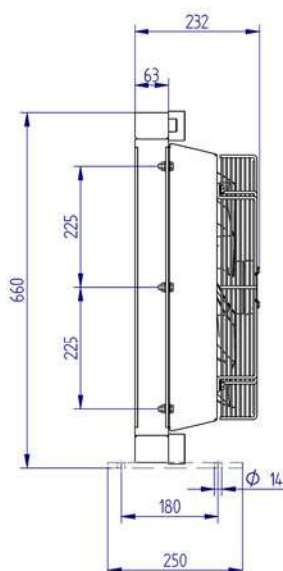
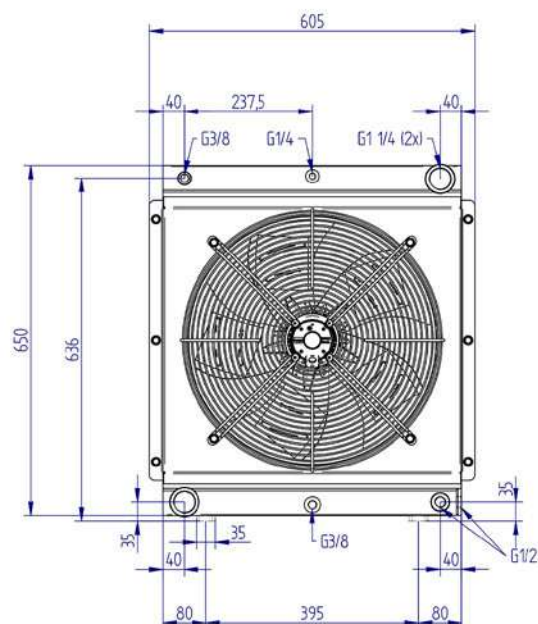
HY090.1-03A

AIR-OIL HEAT
EXCHANGERS

IP44

230/400

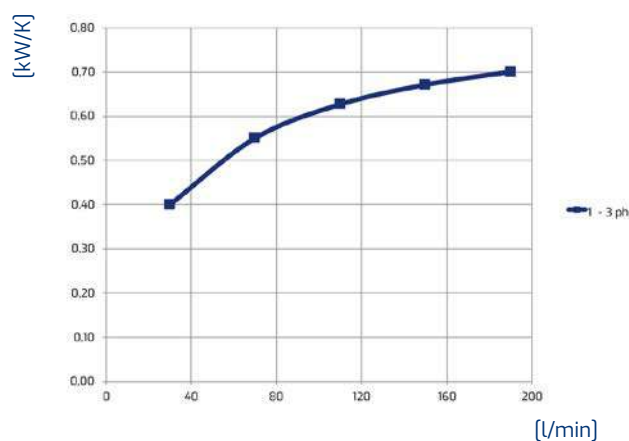
Volt



Technical data

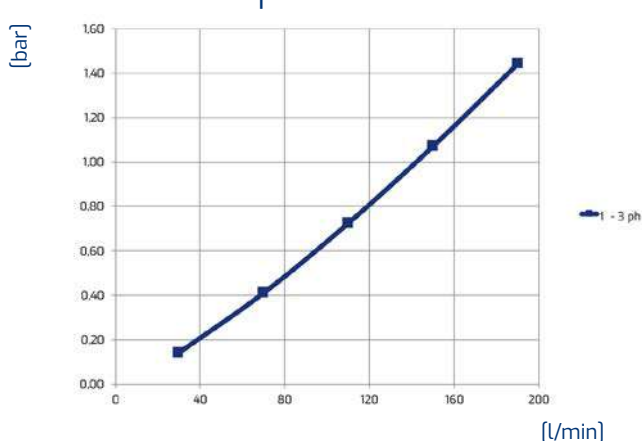
Item	Oil flow	Capacity	Weight	Voltage	Frequency	Current absorption	Power	Ø Fan	Air flow	Noise level	Rpm
	[l/min]	[l]	[kg]	[V]	[Hz]	[A]	[W]	[mm]	[m³/h]	[db(A)]	
HY090.1-03A	30-190	5,3	31	230/400	50/60	0,53	200	450	1820	72	

Performance



Oil T 80°C
T Amb. 40°C
1 kW = 860 Kcal/h - 1 HP = 0,75 kW

Pressure drop



ISO VG 32 at 40°C

Viscosity - ISO VG 32 Oil

Oil	22	32	46	68	150
Correction factor	0,8	1	1,2	1,6	3

HY series

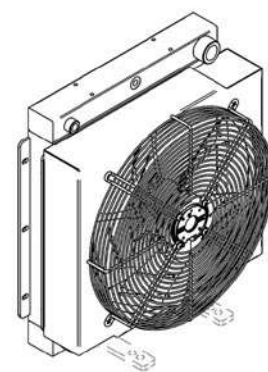
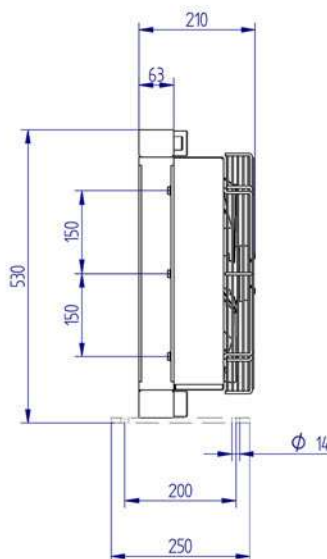
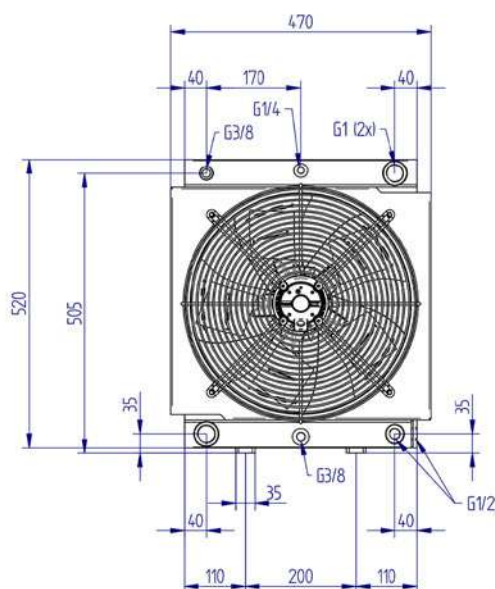
HY210.1-03A

AIR-OIL HEAT
EXCHANGERS

IP44

230/400

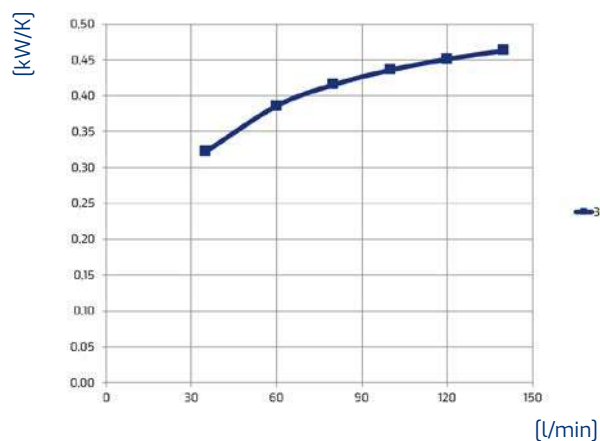
Volt



Technical data

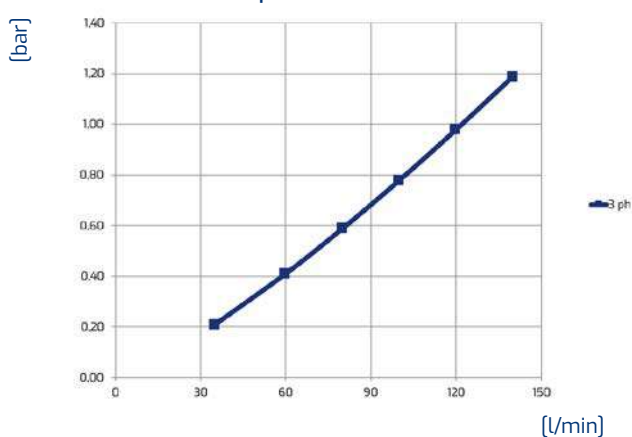
Item	Oil flow	Capacity	Weight	Voltage	Frequency	Current absorption	Power	Ø Fan	Air flow	Noise level	Rpm
	[l/min]	[l]	[kg]	[V]	[Hz]	[A]	[W]	[mm]	[m³/h]	[db(A)]	
HY210.1-03A	35-140	3,3	21,5	230/400	50/60	0,95	190	400	2456	68	

Performance



Oil T 80°C
T Amb. 40°C
1 kW = 860 Kcal/h - 1 HP = 0,75 kW

Pressure drop



ISO VG 32 at 40°C

Viscosity - ISO VG 32 Oil

Oil	22	32	46	68	150
Correction factor	0,8	1	1,2	1,6	3

HY series

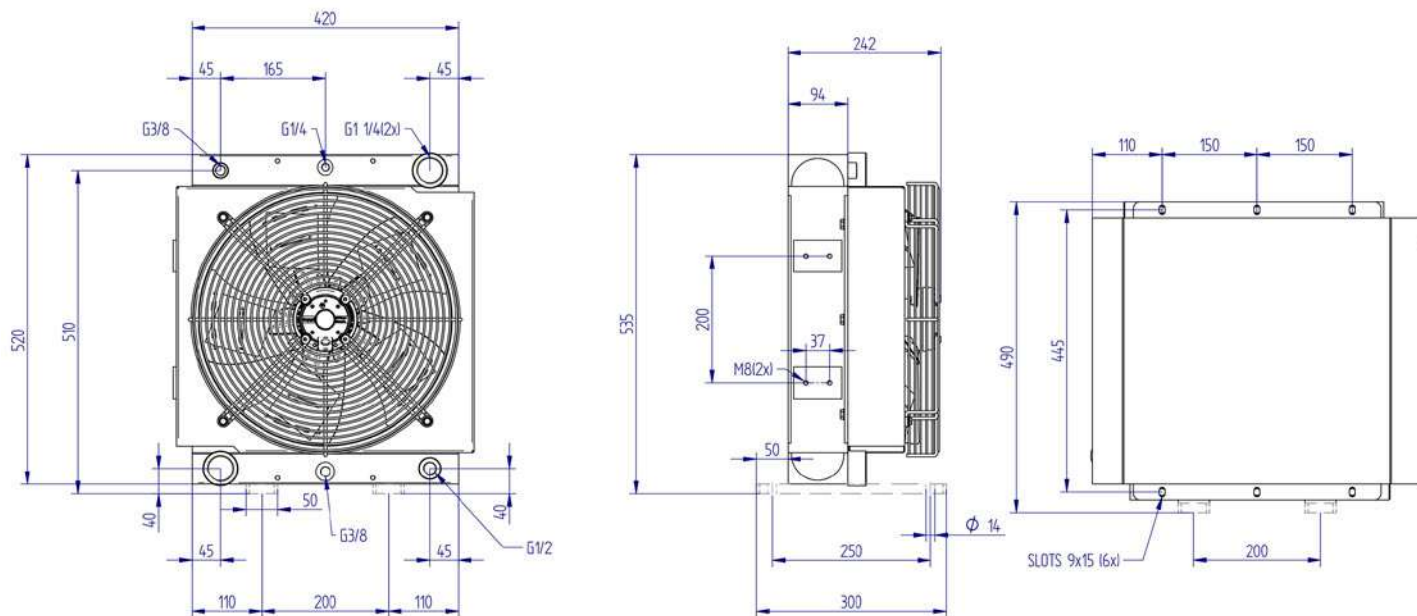
HY215.1-03A

AIR-OIL HEAT
EXCHANGERS

IP44

230/400

Volt

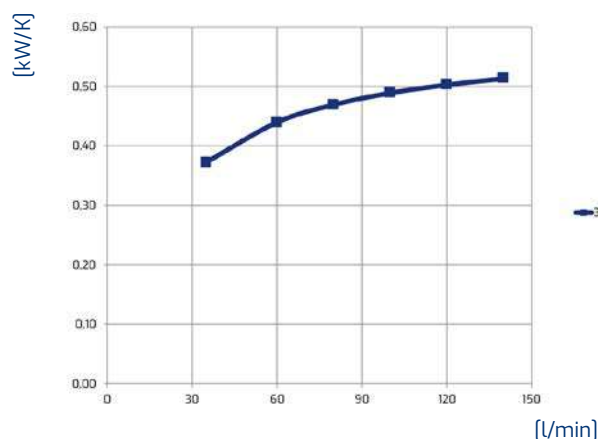


Vertical or horizontal mounting

Technical data

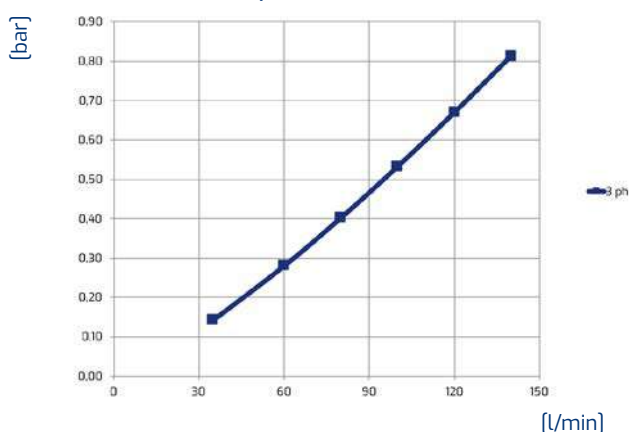
Item	Oil flow	Capacity	Weight	Voltage	Frequency	Current absorption	Power	Ø Fan	Air flow	Noise level	Rpm
	[l/min]	[l]	[kg]	[V]	[Hz]	[A]	[W]	[mm]	[m³/h]	[db(A)]	
HY215.1-03A	35-140	5,3	26,7	230/400	50/60	0,5	210	400	2190	68	

Performance



Oil T 80°C
T Amb. 40°C
1 kW = 860 Kcal/h - 1 HP = 0,75 kW

Pressure drop



ISO VG 32 at 40°C

Viscosity - ISO VG 32 Oil

Oil	22	32	46	68	150
Correction factor	0,8	1	1,2	1,6	3

HY series

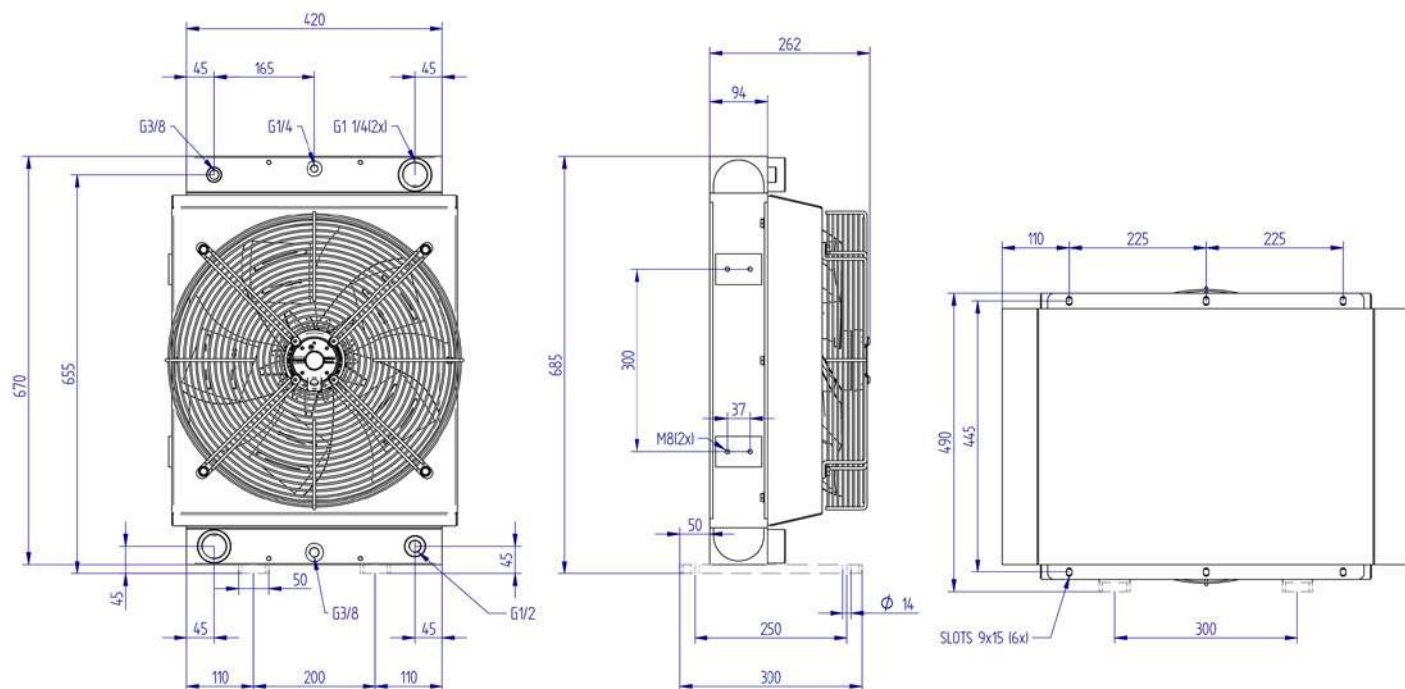
HY220.1-03A

AIR-OIL HEAT
EXCHANGERS

IP44

230/400

Volt

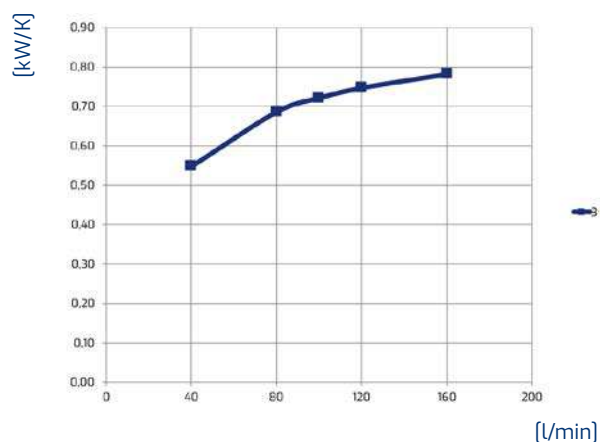


Vertical or horizontal mounting

Technical data

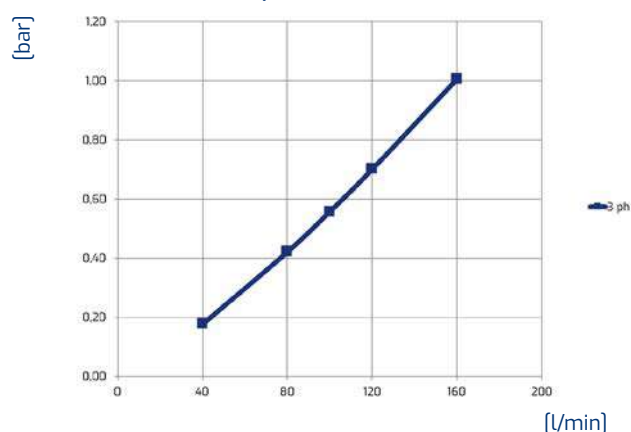
Item	Oil flow	Capacity	Weight	Voltage	Frequency	Current absorption	Power	Ø Fan	Air flow	Noise level	Rpm
	[l/min]	[l]	[kg]	[V]	[Hz]	[A]	[W]	[mm]	[m³/h]	[db(A)]	
HY220.1-03A	40-160	6,8	32,5	230/400	50/60	0,61	300	450	3045	72	

Performance



Oil T 80°C
T Amb. 40°C
1 kW = 860 Kcal/h - 1 HP = 0,75 kW

Pressure drop



ISO VG 32 at 40°C

Viscosity - ISO VG 32 Oil

Oil	22	32	46	68	150
Correction factor	0,8	1	1,2	1,6	3

HY series

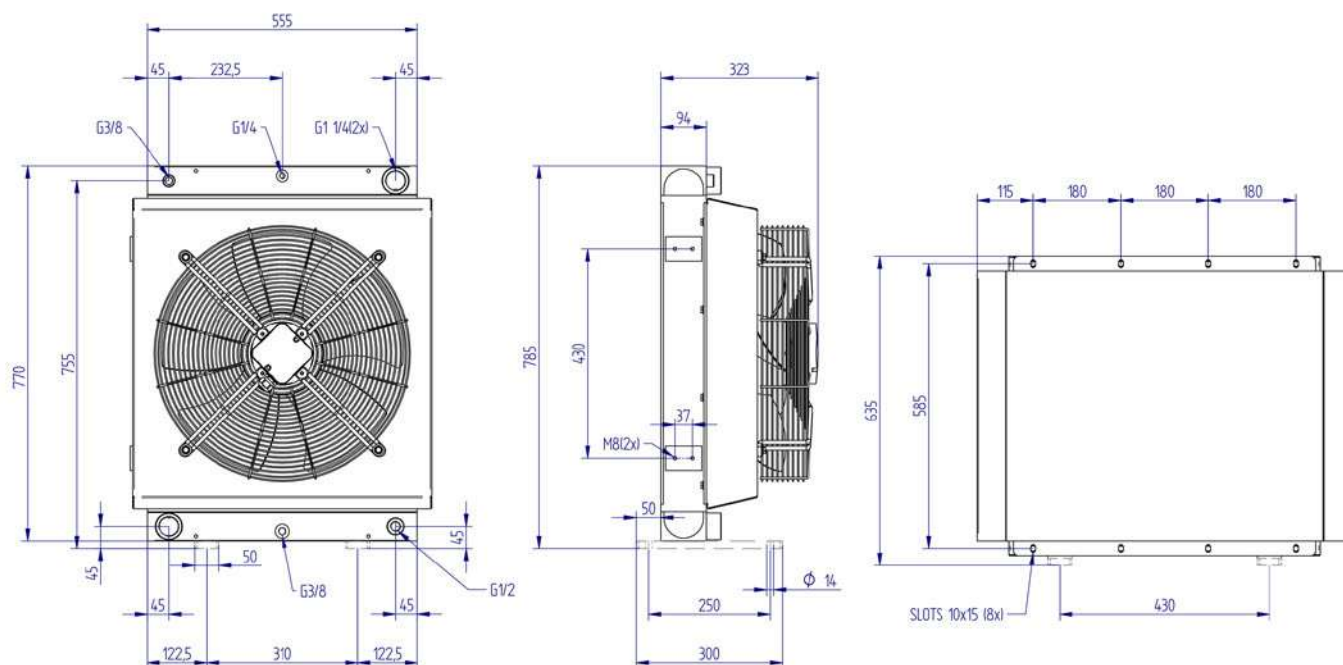
HY225.1-03A

AIR-OIL HEAT
EXCHANGERS

IP54

230/400

Volt

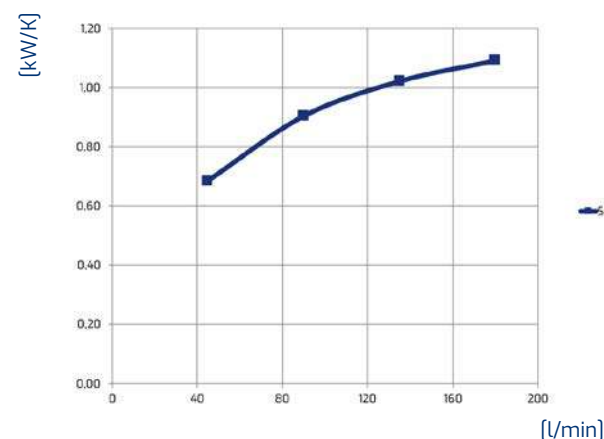


Vertical or horizontal mounting

Technical data

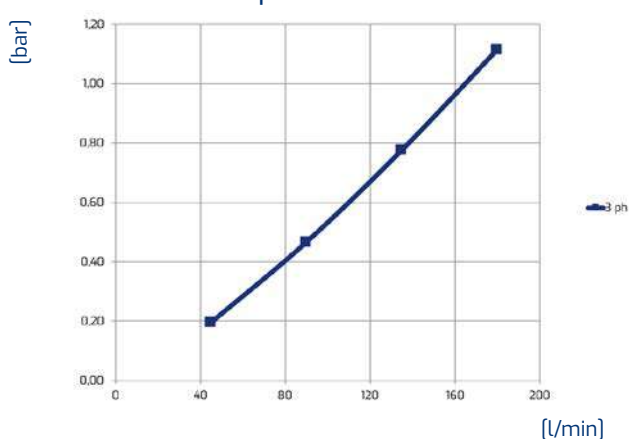
Item	Oil flow	Capacity	Weight	Voltage	Frequency	Current absorption	Power	Ø Fan	Air flow	Noise level	Rpm
	[l/min]	[l]	[kg]	[V]	[Hz]	[A]	[W]	[mm]	[m³/h]	[db(A)]	
HY225.1-03A	45-180	10	50	230/400	50/60	1,35	700	500	5563	72	

Performance



Oil T 80°C
T Amb. 40°C
1 kW = 860 Kcal/h - 1 HP = 0,75 kW

Pressure drop



ISO VG 32 at 40°C

Viscosity - ISO VG 32 Oil

Oil	22	32	46	68	150
Correction factor	0,8	1	1,2	1,6	3

HY series

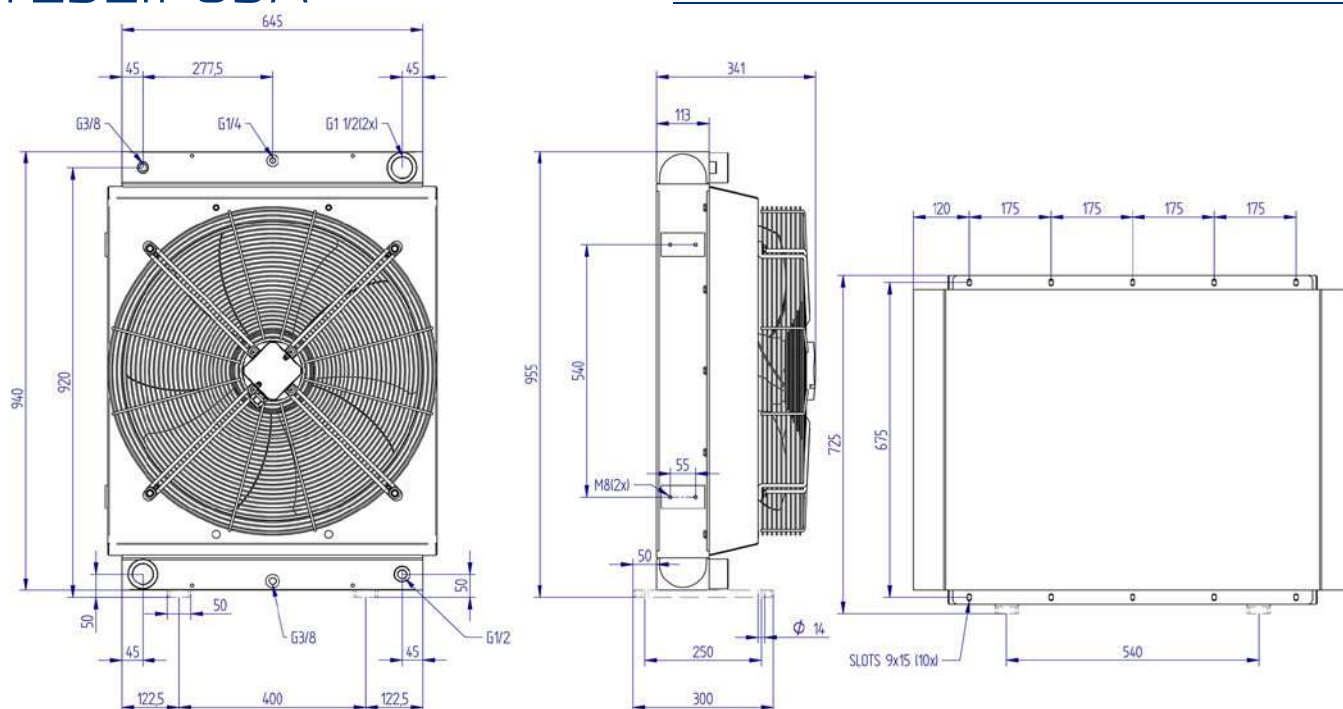
HY232.1-03A

AIR-OIL HEAT
EXCHANGERS

IP54

230/400

Volt

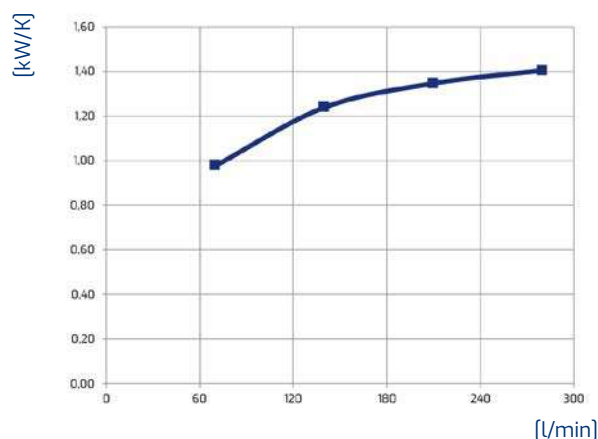


Vertical or horizontal mounting

Technical data

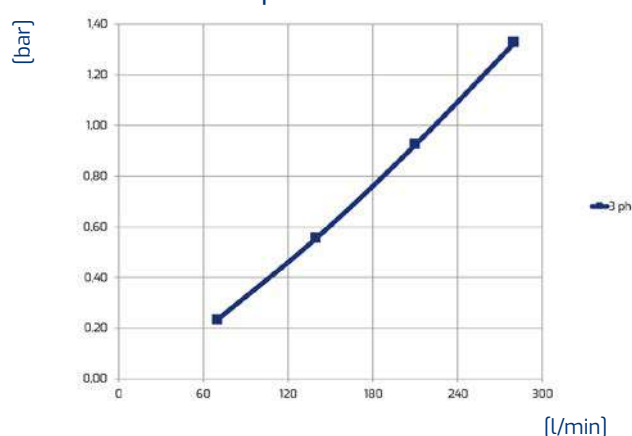
Item	Oil flow	Capacity	Weight	Voltage	Frequency	Current absorption	Power	Ø Fan	Air flow	Noise level	Rpm
	[l/min]	[l]	[kg]	[V]	[Hz]	[A]	[W]	[mm]	[m³/h]	[db(A)]	
HY232.1-03A	70-280	16,8	78	230/400	50/60	1,3	600	630	6133	79	

Performance



Oil T 80°C
T Amb. 40°C
1 kW = 860 Kcal/h - 1 HP = 0,75 kW

Pressure drop



ISO VG 32 at 40°C

Viscosity - ISO VG 32 Oil

Oil	22	32	46	68	150
Correction factor	0,8	1	1,2	1,6	3

MOTORE ELETTRICO B14
B14 ELECTRIC MOTOR

400V

HY series

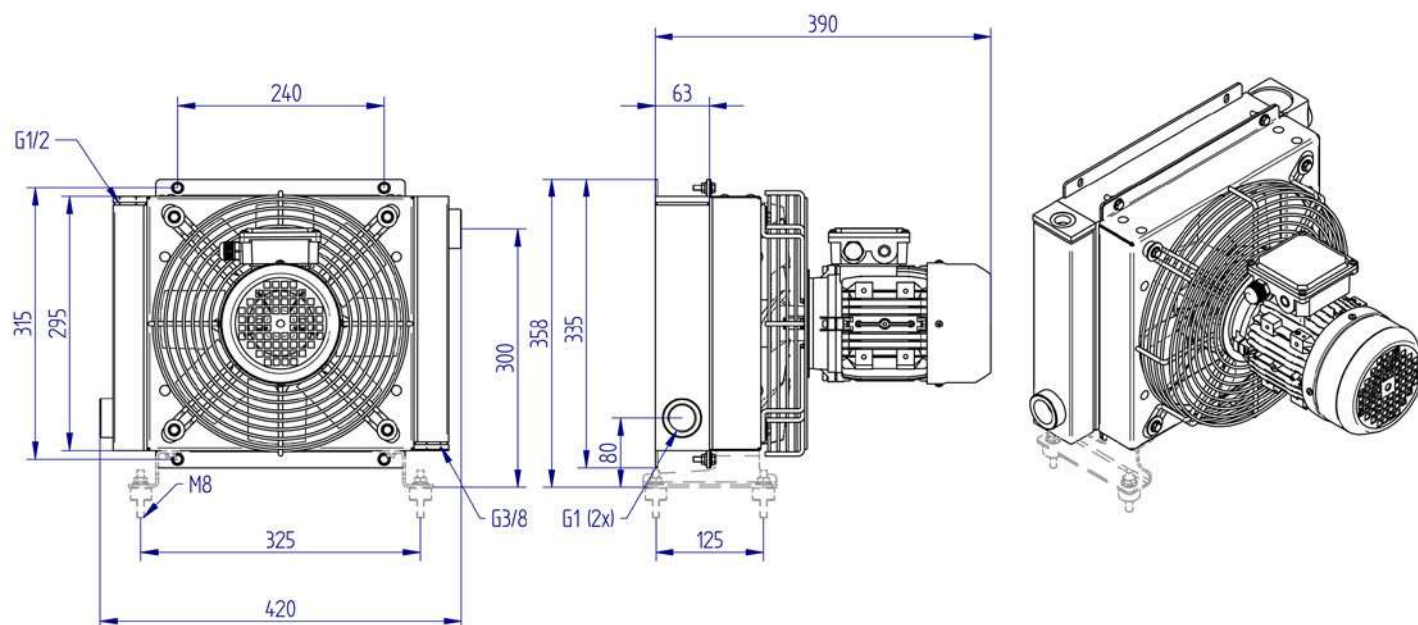
HY024.1-07A

AIR-OIL HEAT
EXCHANGERS

IP55

230/400
Volt

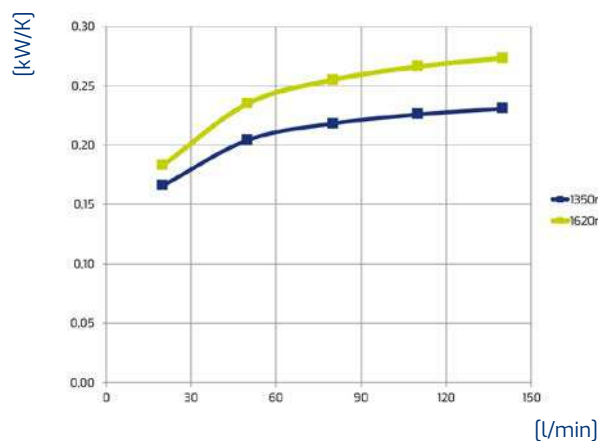
Elec.M.
B 14



Technical data

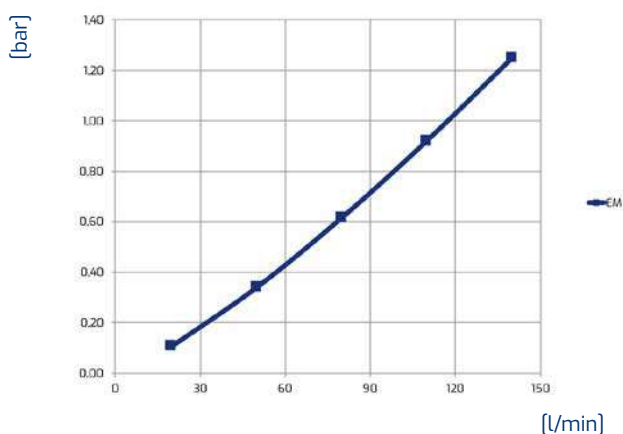
Item	Oil flow	Capacity	Weight	Voltage	Frequency	Current absorption	Power	Ø Fan	Air flow	Noise level	Rpm
	[l/min]	[l]	[kg]	[V]	[Hz]	[A]	[W]	[mm]	[m³/h]	[db(A)]	
HY024.1-07A	20-140	2	15	230/400	50/60	1,5	250	280	935/1100	77	1350

Performance



Oil T 80°C
T Amb. 40°C
1 kW = 860 Kcal/h - 1 HP = 0,75 kW

Pressure drop



ISO VG 32 at 40°C

Viscosity - ISO VG 32 Oil

Oil	22	32	46	68	150
Correction factor	0,8	1	1,2	1,6	3

HY series

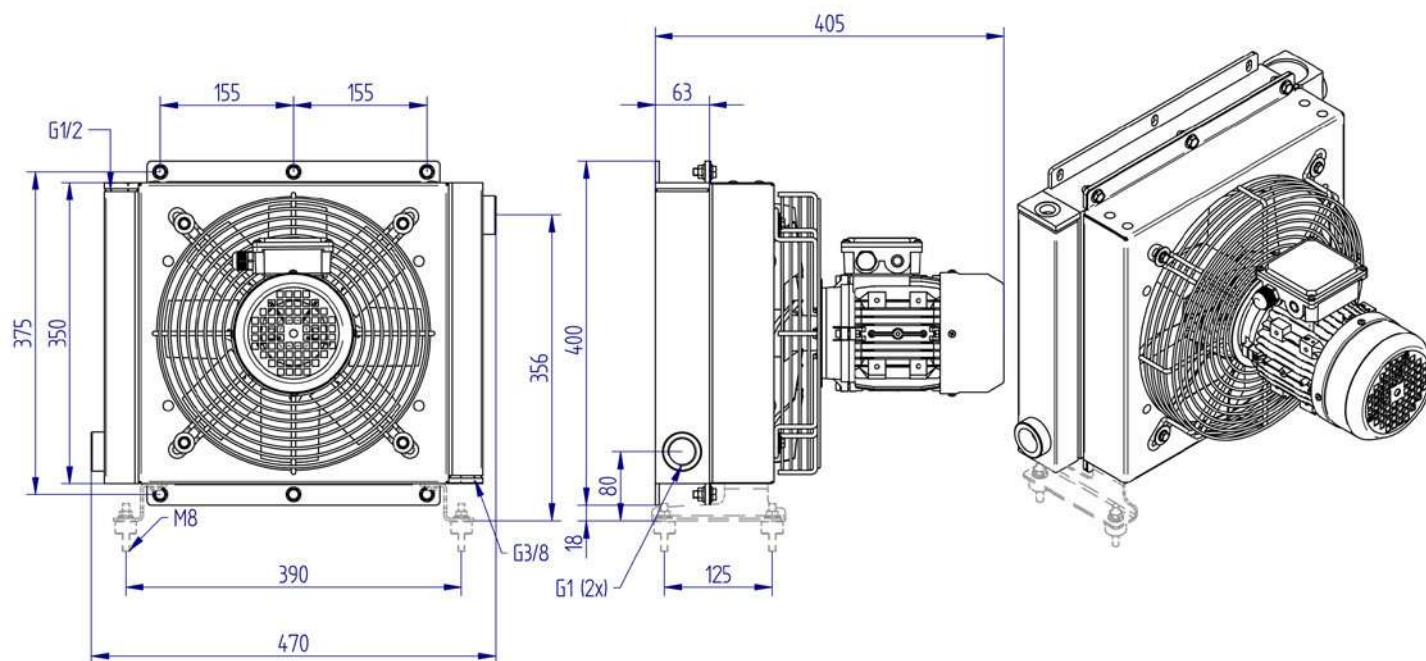
HY038.1-07A

AIR-OIL HEAT
EXCHANGERS

IP55

230/400
Volt

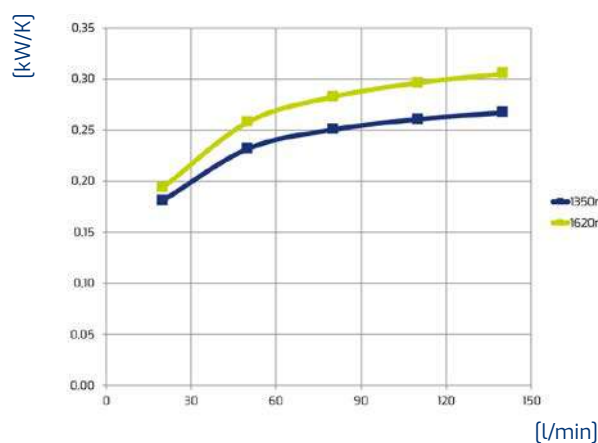
Elec.M.
B 14



Technical data

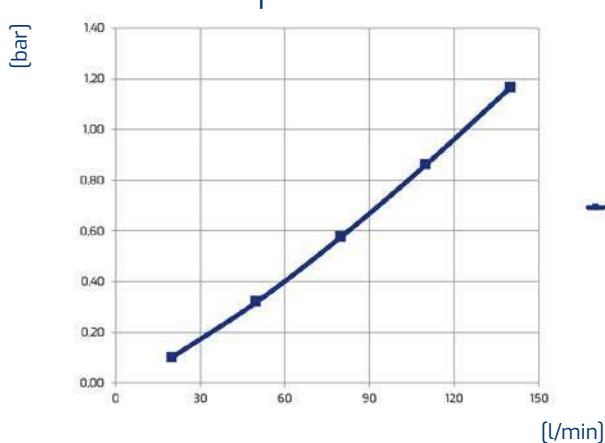
Item	Oil flow	Capacity	Weight	Voltage	Frequency	Current absorption	Power	Ø Fan	Air flow	Noise level	Rpm
	[l/min]	[l]	[kg]	[V]	[Hz]	[A]	[W]	[mm]	[m³/h]	[db(A)]	
HY038.1-07A	20-140	2,5	16,5	230/400	50/60	1,4	250	300	1208	75,5	1350

Performance



Oil T 80°C
T Amb. 40°C
1 kW = 860 Kcal/h - 1 HP = 0,75 kW

Pressure drop



ISO VG 32 at 40°C

Viscosity - ISO VG 32 Oil

Oil	22	32	46	68	150
Correction factor	0,8	1	1,2	1,6	3

HY series

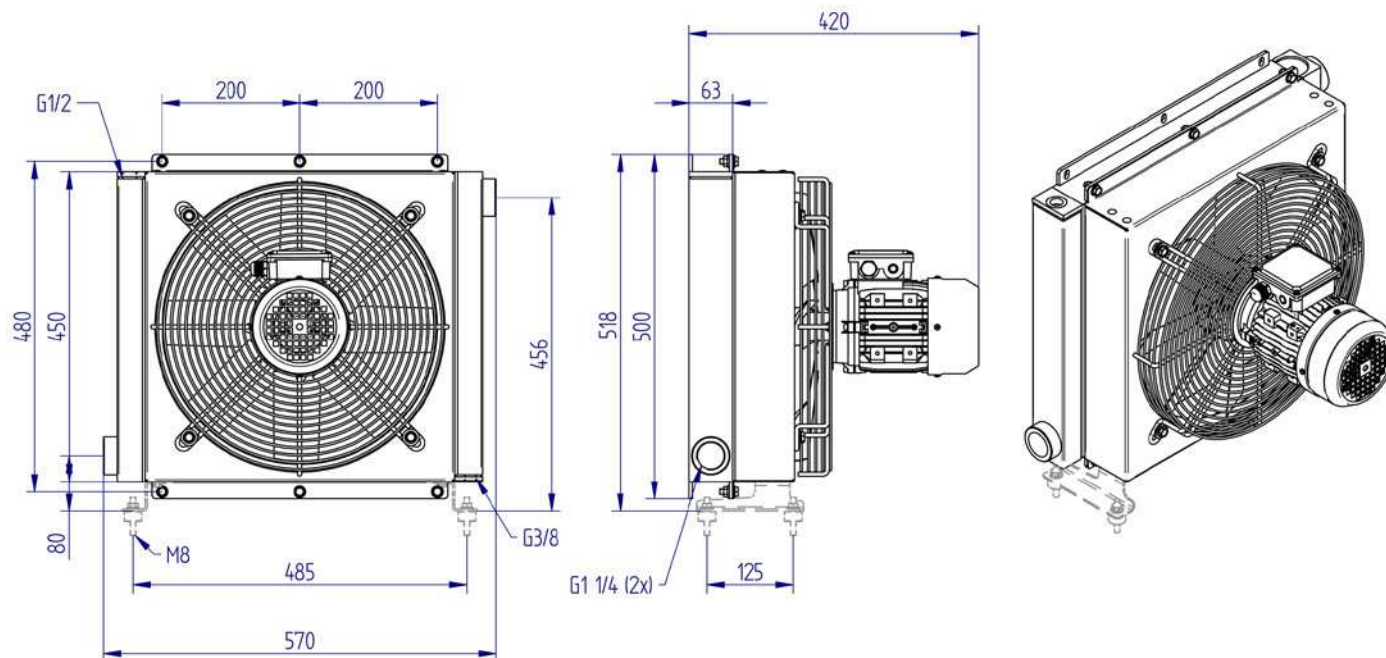
HY057.1-07A

AIR-OIL HEAT EXCHANGERS

IP55

230/400
Volt

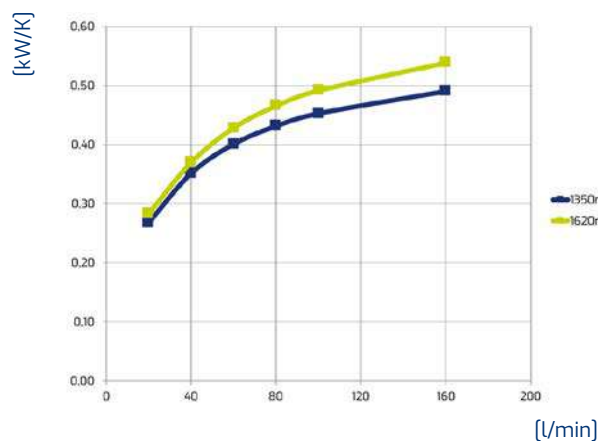
Elec.M.
B 14



Technical data

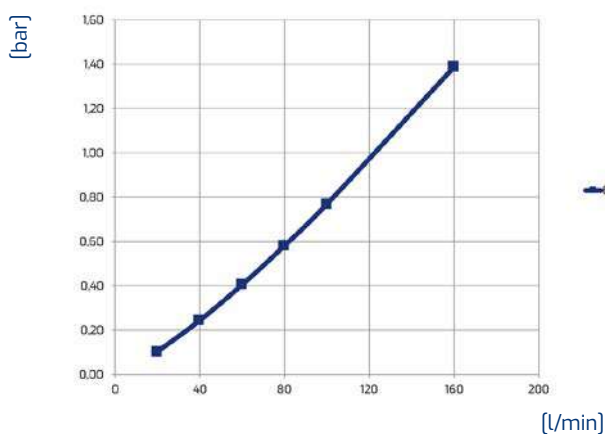
Item	Oil flow	Capacity	Weight	Voltage	Frequency	Current absorption	Power	Ø Fan	Air flow	Noise level	Rpm
	[l/min]	[l]	[kg]	[V]	[Hz]	[A]	[W]	[mm]	[m³/h]	[db(A)]	
HY057.1-07A	20-160	3,7	21	230/400	50/60	1,5	250	390	2620	77,2	1350

Performance



Oil T 80°C
T Amb. 40°C
1 kW = 860 Kcal/h - 1 HP = 0,75 kW

Pressure drop



ISO VG 32 at 40°C

Viscosity - ISO VG 32 Oil

Oil	22	32	46	68	150
Correction factor	0,8	1	1,2	1,6	3

HY series

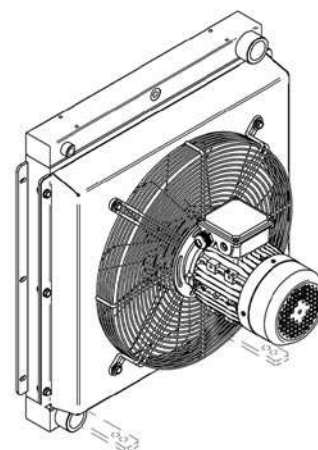
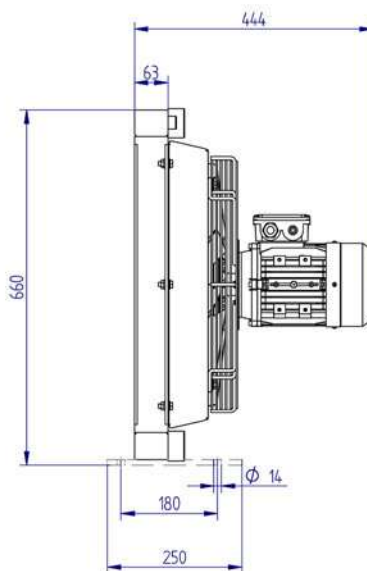
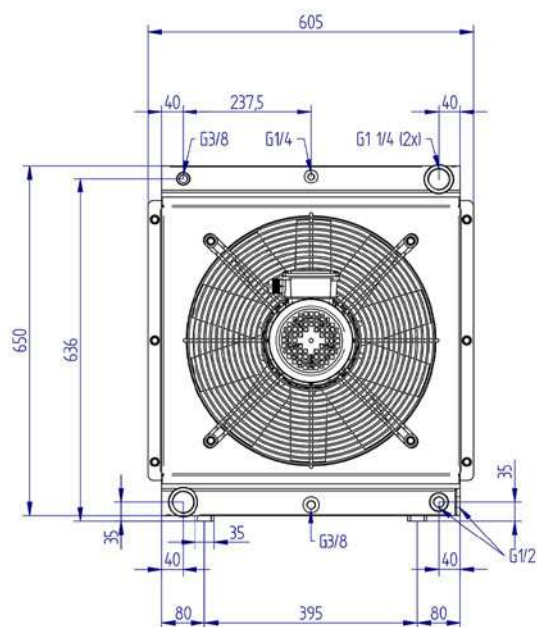
HY090.1-07A

AIR-OIL HEAT
EXCHANGERS

IP55

230/400
Volt

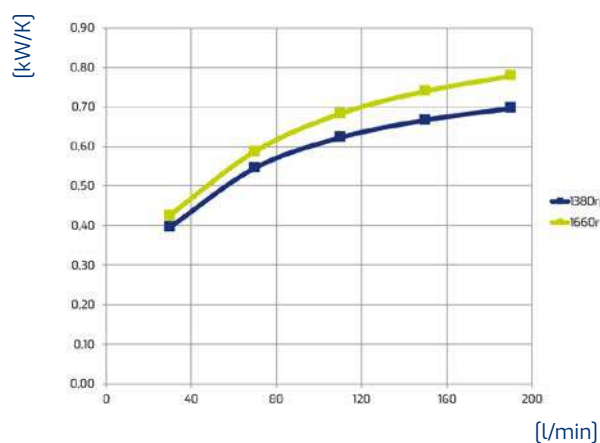
Elec.M.
B 14



Technical data

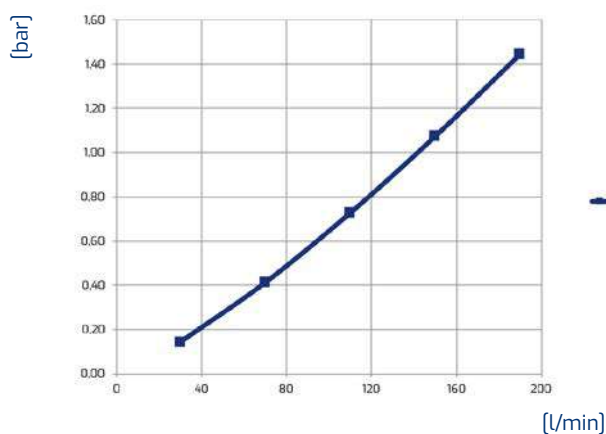
Item	Oil flow	Capacity	Weight	Voltage	Frequency	Current absorption	Power	Ø Fan	Air flow	Noise level	Rpm
	[l/min]	[l]	[kg]	[V]	[Hz]	[A]	[W]	[mm]	[m³/h]	[db(A)]	
HY090.1-07A	30-190	5,3	36	230/400	50/60	2,8	550	450	5030	80	1380

Performance



Oil T 80°C
T Amb. 40°C
1 kW = 860 Kcal/h - 1 HP = 0,75 kW

Pressure drop



ISO VG 32 at 40°C

Viscosity - ISO VG 32 Oil

Oil	22	32	46	68	150
Correction factor	0,8	1	1,2	1,6	3

HY series

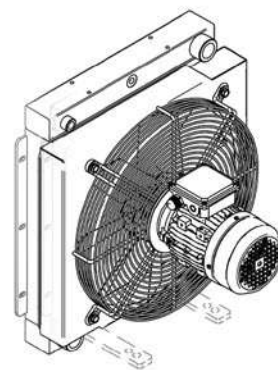
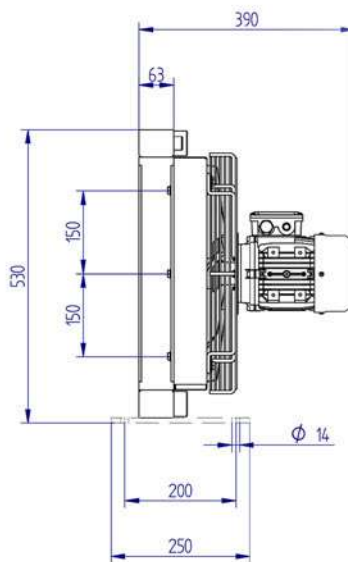
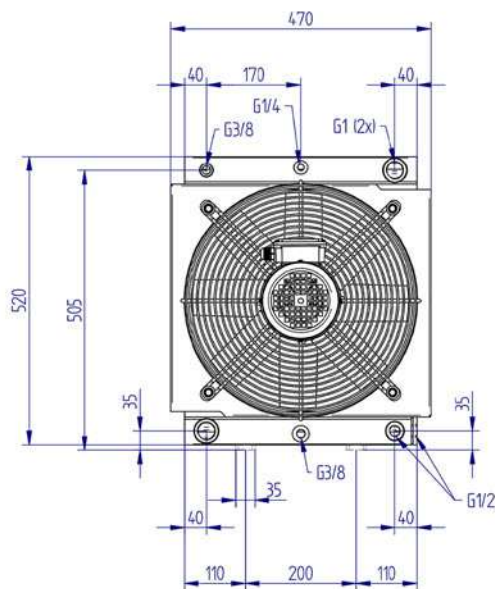
HY210.1-07A

AIR-OIL HEAT EXCHANGERS

IP55

230/400
Volt

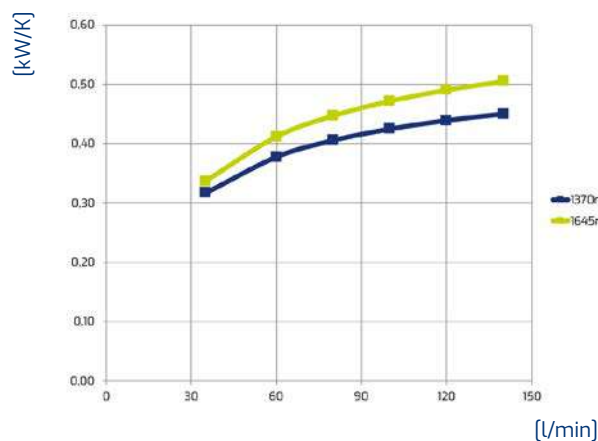
Elec.M.
B 14



Technical data

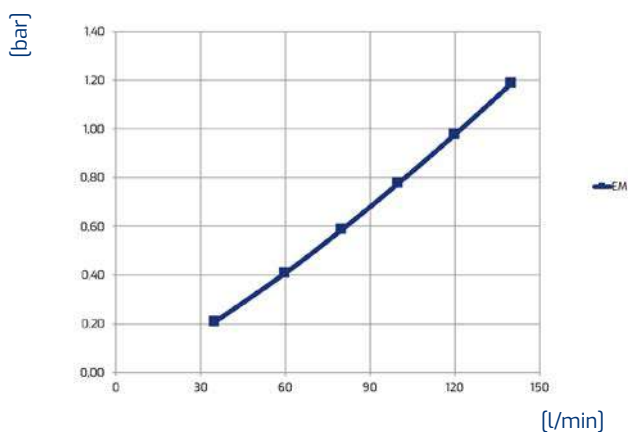
Item	Oil flow	Capacity	Weight	Voltage	Frequency	Current absorption	Power	Ø Fan	Air flow	Noise level	Rpm
	[l/min]	[l]	[kg]	[V]	[Hz]	[A]	[W]	[mm]	[m³/h]	[db(A)]	
HY210.1-07A	35-140	3,3	25,2	230/400	50/60	1,9	370	390	2394	79,3	1370

Performance



Oil T 80°C
T Amb. 40°C
1 kW = 860 Kcal/h - 1 HP = 0,75 kW

Pressure drop



ISO VG 32 at 40°C

Viscosity - ISO VG 32 Oil

Oil	22	32	46	68	150
Correction factor	0,8	1	1,2	1,6	3

HY series

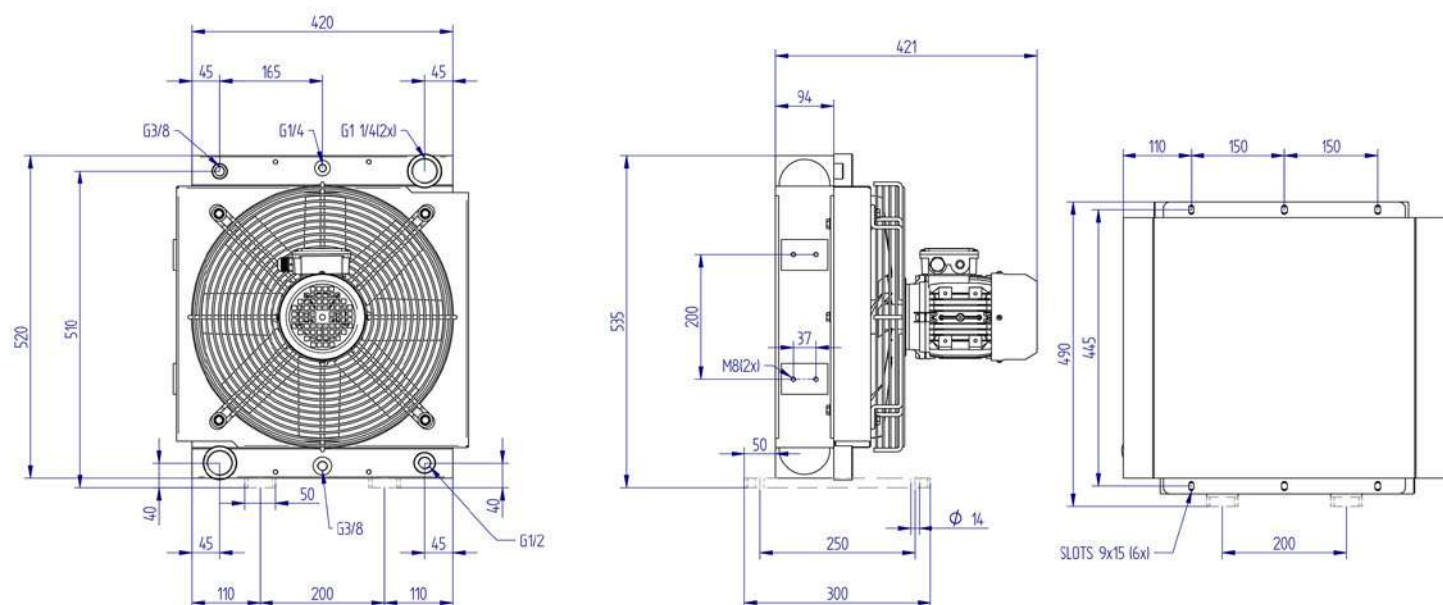
HY215.1-07A

AIR-OIL HEAT
EXCHANGERS

IP55

230/400
Volt

Elec.M.
B 14

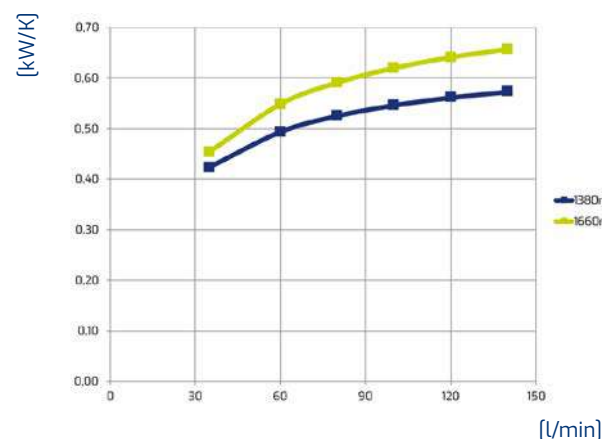


Vertical or horizontal mounting

Technical data

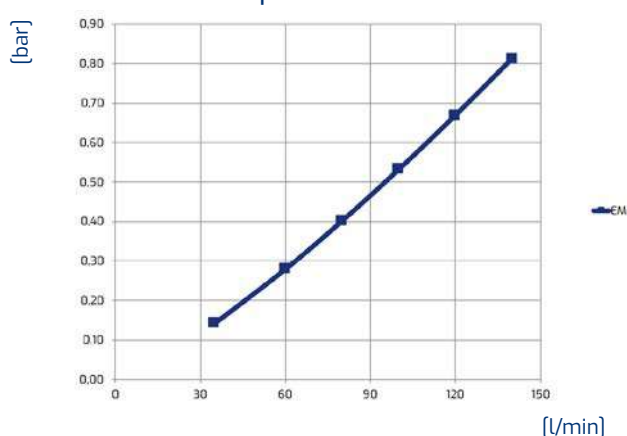
Item	Oil flow	Capacity	Weight	Voltage	Frequency	Current absorption	Power	Ø Fan	Air flow	Noise level	Rpm
	[l/min]	[l]	[kg]	[V]	[Hz]	[A]	[W]	[mm]	[m³/h]	[dB(A)]	
HY215.1-07A	35-140	5,3	30	230/400	50/60	2,79	550	390	2140	80	1380

Performance



Oil T 80°C
T Amb. 40°C
1 kW = 860 Kcal/h - 1 HP = 0,75 kW

Pressure drop



ISO VG 32 at 40°C

Viscosity - ISO VG 32 Oil

Oil	22	32	46	68	150
Correction factor	0,8	1	1,2	1,6	3

HY series

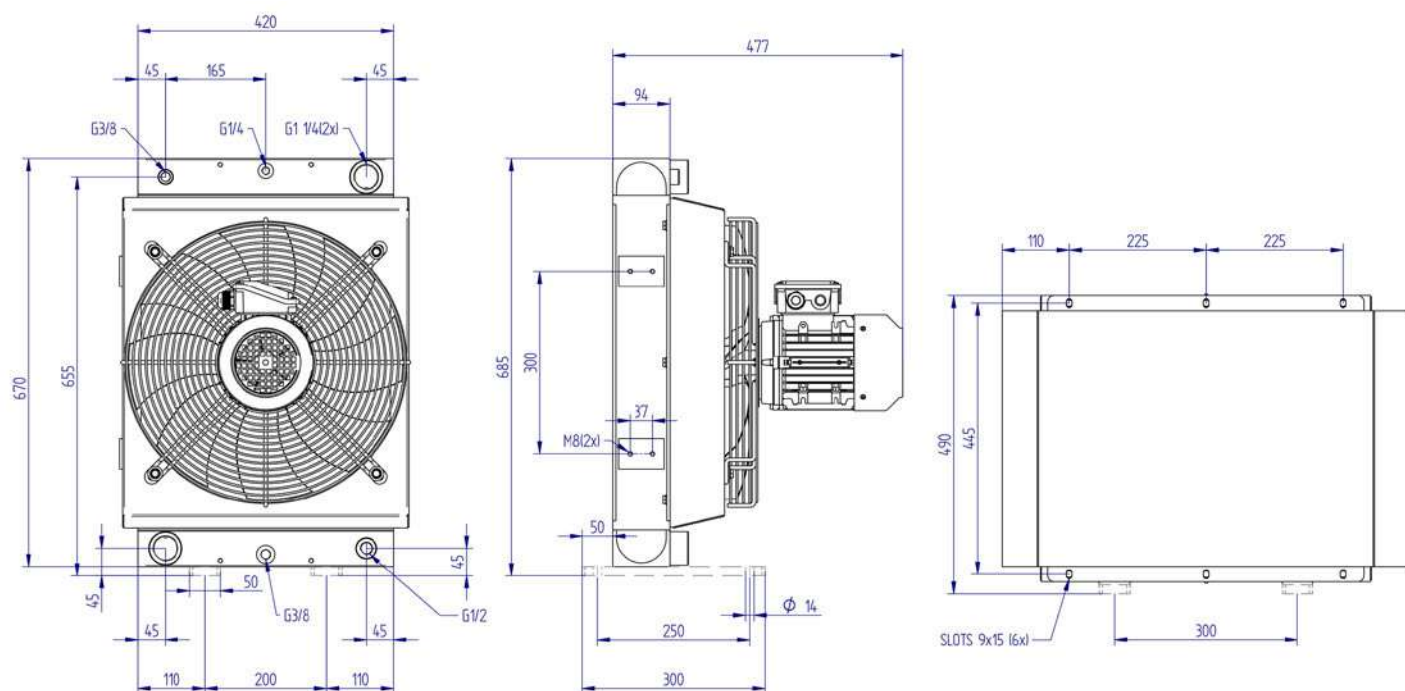
HY220.1-07A

AIR-OIL HEAT
EXCHANGERS

IP55

230/400
Volt

Elec.M.
B 14

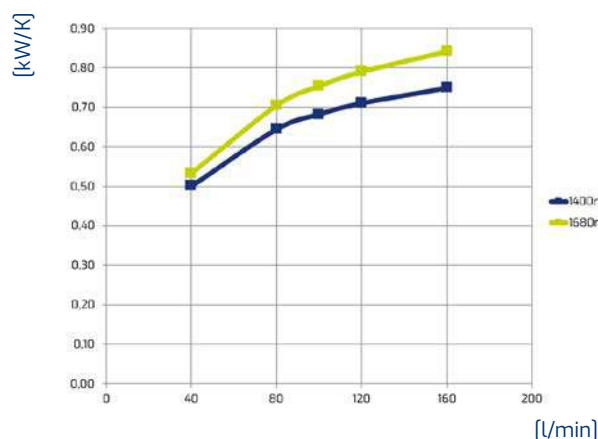


Vertical or horizontal mounting

Technical data

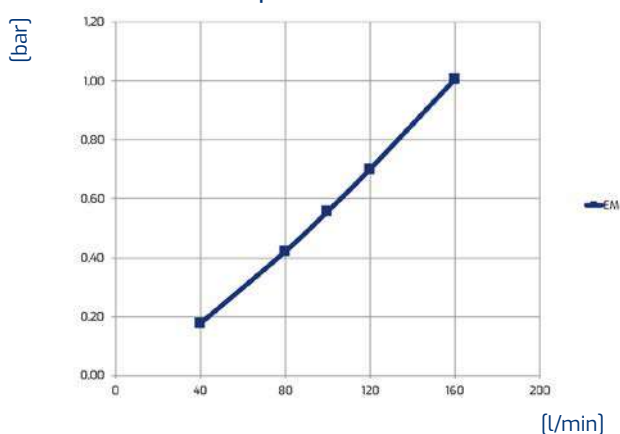
Item	Oil flow	Capacity	Weight	Voltage	Frequency	Current absorption	Power	Ø Fan	Air flow	Noise level	Rpm
	[l/min]	[l]	[kg]	[V]	[Hz]	[A]	[W]	[mm]	[m³/h]	[dB(A)]	
HY220.1-07A	40-160	6,8	40,5	230/400	50	1,64	750	450	3518	84	1400

Performance



Oil T 80°C
T Amb. 40°C
1 kW = 860 Kcal/h - 1 HP = 0,75 kW

Pressure drop



ISO VG 32 at 40°C

Viscosity - ISO VG 32 Oil

Oil	22	32	46	68	150
Correction factor	0,8	1	1,2	1,6	3

HY series

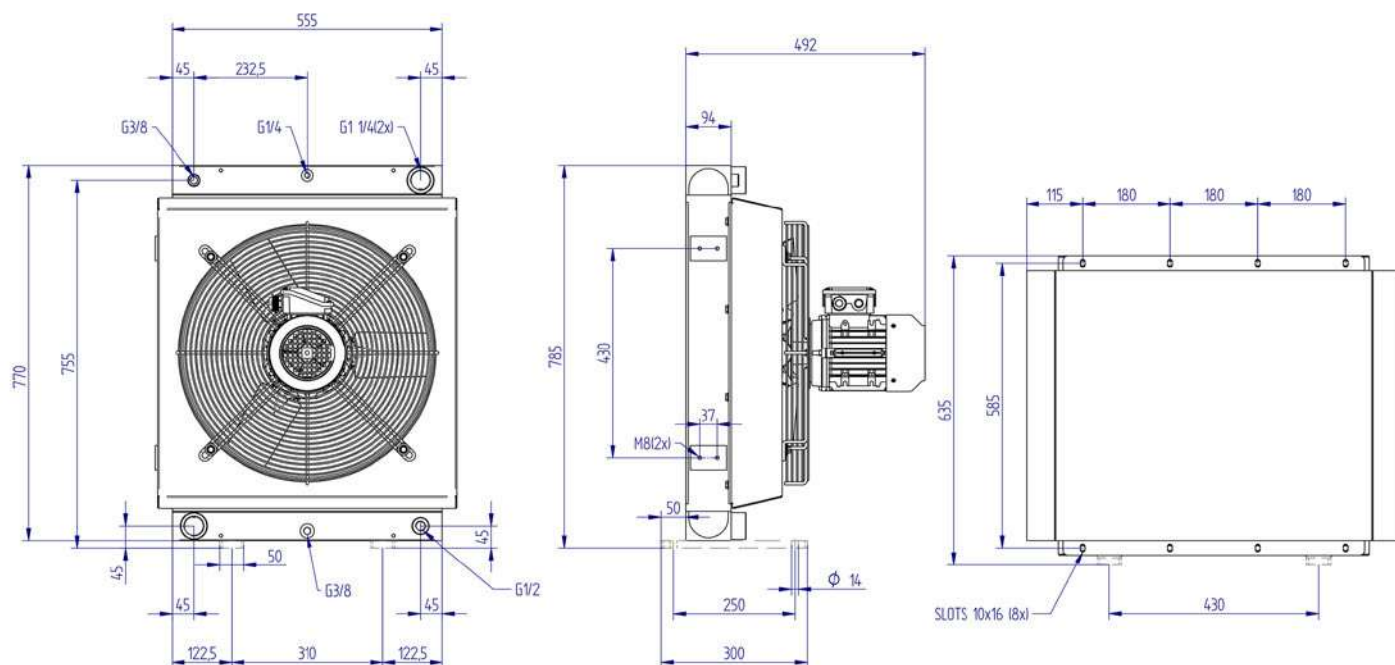
HY225.1-07A

AIR-OIL HEAT
EXCHANGERS

IP55

230/400
Volt

Elec.M.
B 14

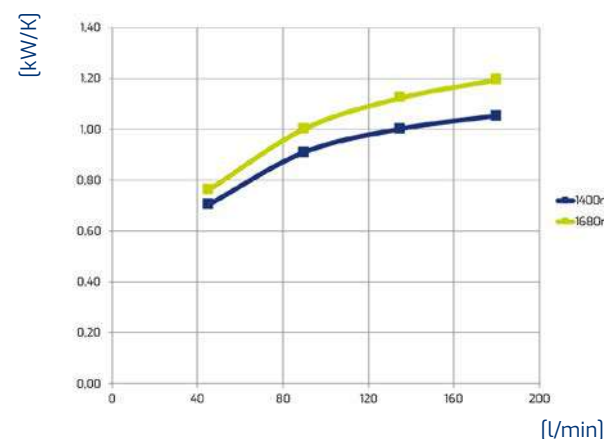


Vertical or horizontal mounting

Technical data

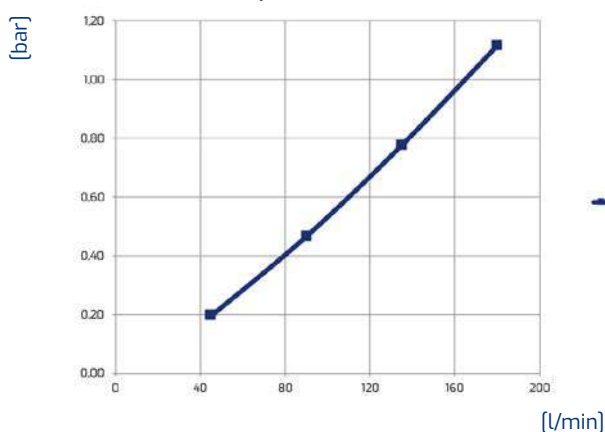
Item	Oil flow	Capacity	Weight	Voltage	Frequency	Current absorption	Power	Ø Fan	Air flow	Noise level	Rpm
	[l/min]	[l]	[kg]	[V]	[Hz]	[A]	[W]	[mm]	[m³/h]	[db(A)]	
HY225.1-07A	45-180	10	53	230/400	50/60	1,64	750	500	3518	80	1400

Performance



Oil T 80°C
T Amb. 40°C
1 kW = 860 Kcal/h - 1 HP = 0,75 kW

Pressure drop



ISO VG 32 at 40°C

Viscosity - ISO VG 32 Oil

Oil	22	32	46	68	150
Correction factor	0,8	1	1,2	1,6	3

HY series

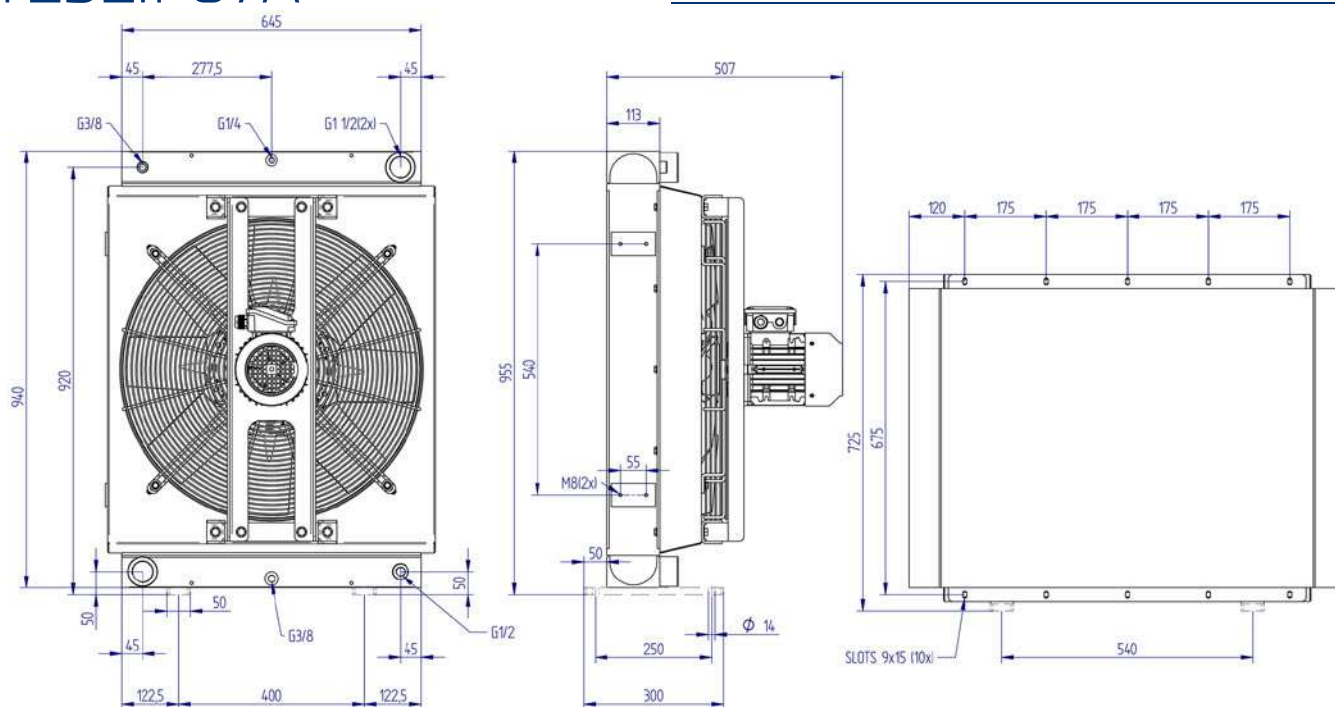
HY232.1-07A

AIR-OIL HEAT
EXCHANGERS

IP55

230/400
Volt

Elec.M.
B 14

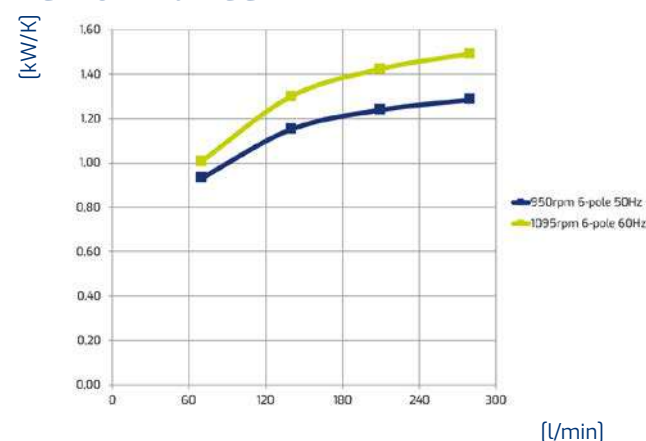


Vertical or horizontal mounting

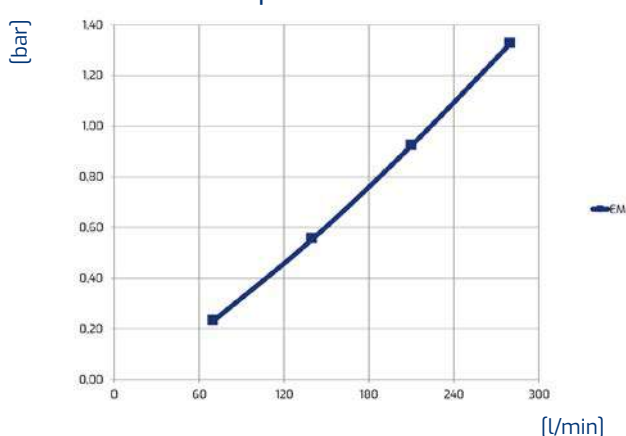
Technical data

Item	Oil flow	Capacity	Weight	Voltage	Frequency	Current absorption	Power	Ø Fan	Air flow	Noise level	Rpm
	[l/min]	[l]	[kg]	[V]	[Hz]	[A]	[W]	[mm]	[m³/h]	[db(A)]	
HY232.1-07A	70-280	16,8	87	230/400	50/60	3,9	750	630	5470	81	950

Performance



Pressure drop



ISO VG 32 at 40°C

Viscosity - ISO VG 32 Oil

Oil	22	32	46	68	150
Correction factor	0,8	1	1,2	1,6	3

HY series

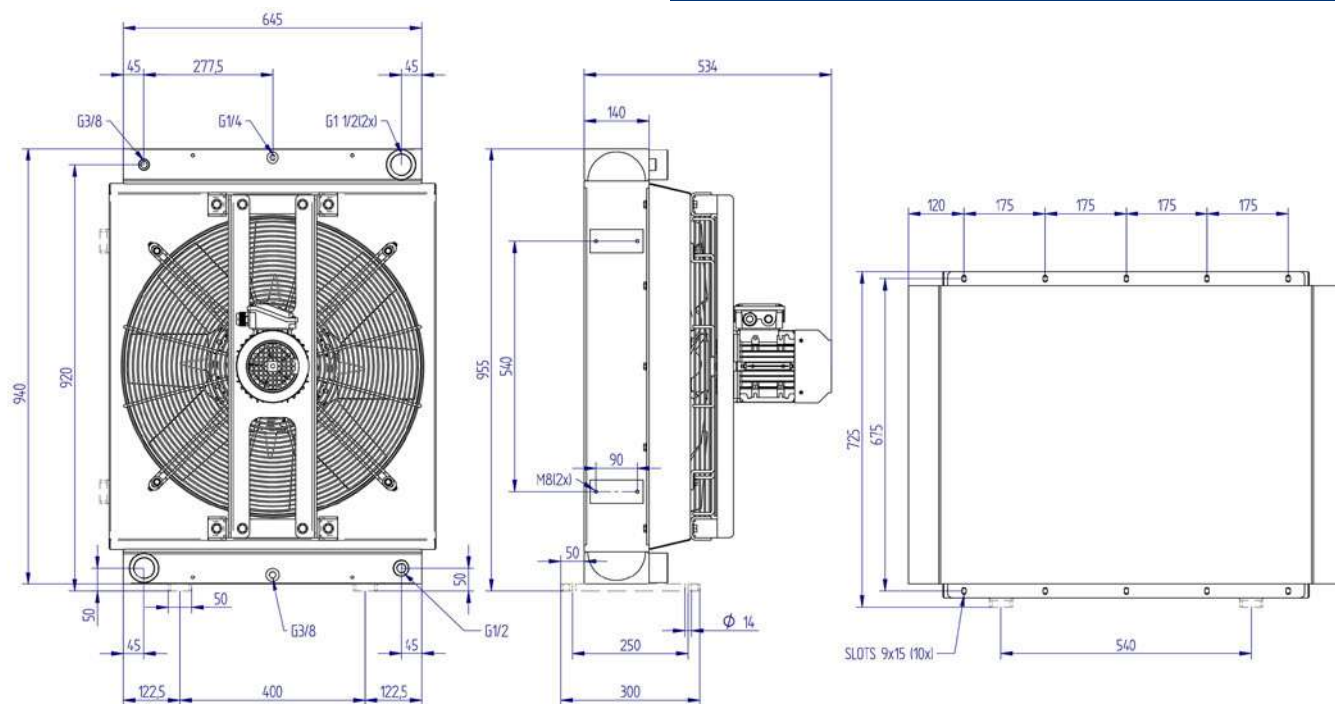
HY235.1-07A

AIR-OIL HEAT
EXCHANGERS

IP55

230/400
Volt

Elec.M.
B 14

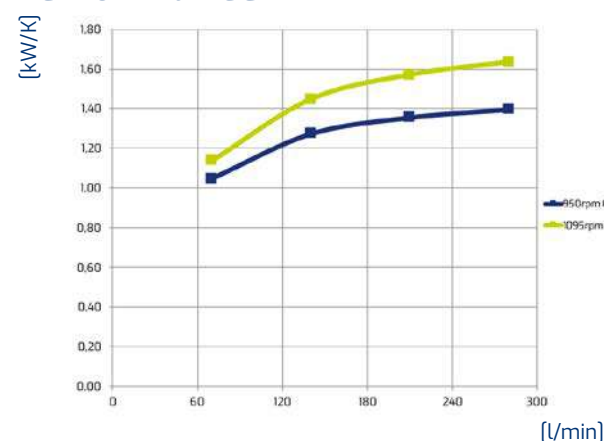


Vertical or horizontal mounting

Technical data

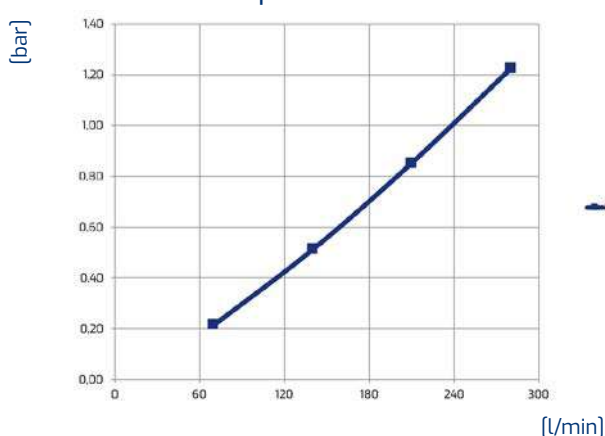
Item	Oil flow	Capacity	Weight	Voltage	Frequency	Current absorption	Power	Ø Fan	Air flow	Noise level	Rpm
	[l/min]	[l]	[kg]	[V]	[Hz]	[A]	[W]	[mm]	[m³/h]	[db(A)]	
HY235.1-07A	70-280	20,2	100	230/400	50/60	3,9	800	630	5255	81	920

Performance



Oil T 80°C
T Amb. 40°C
1 kW = 860 Kcal/h - 1 HP = 0,75 kW

Pressure drop



ISO VG 32 at 40°C

Viscosity - ISO VG 32 Oil

Oil	22	32	46	68	150
Correction factor	0,8	1	1,2	1,6	3

TIPO DI MOTORIZZAZIONE:
FAN UNIT TYPE:

DC

12V

HY series

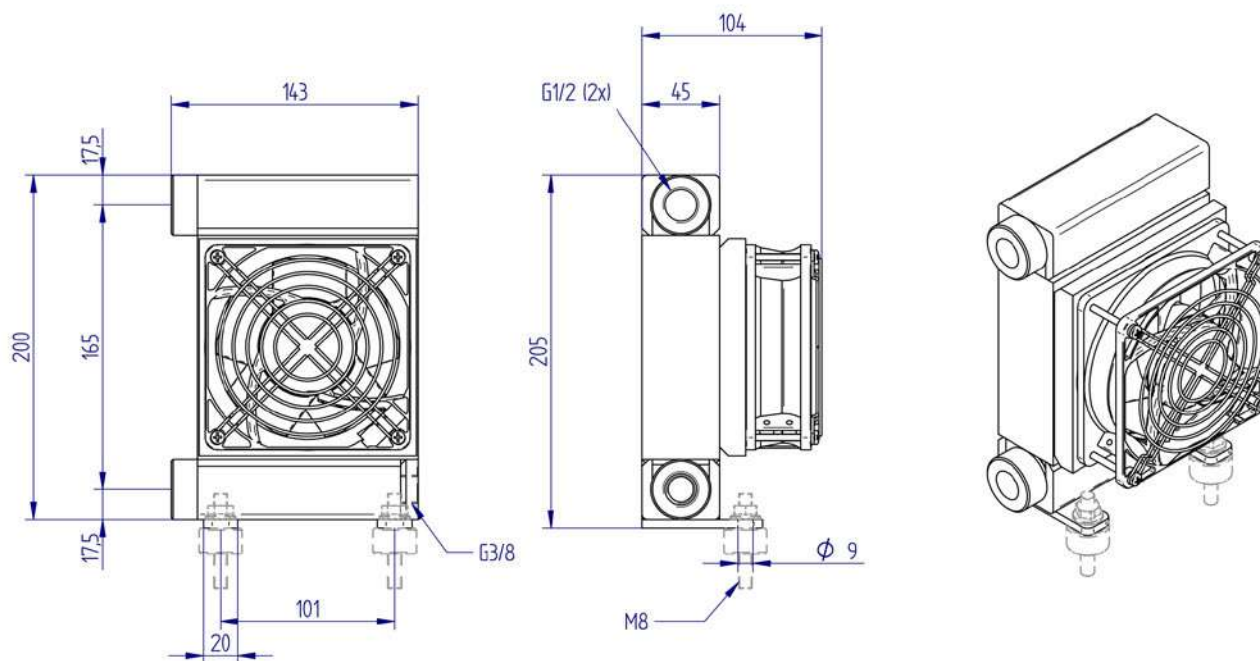
HY005.1-02A

AIR-OIL HEAT
EXCHANGERS

IP54

12

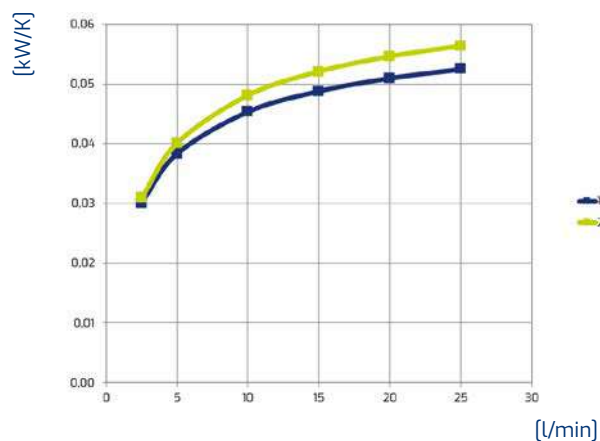
Volt



Technical data

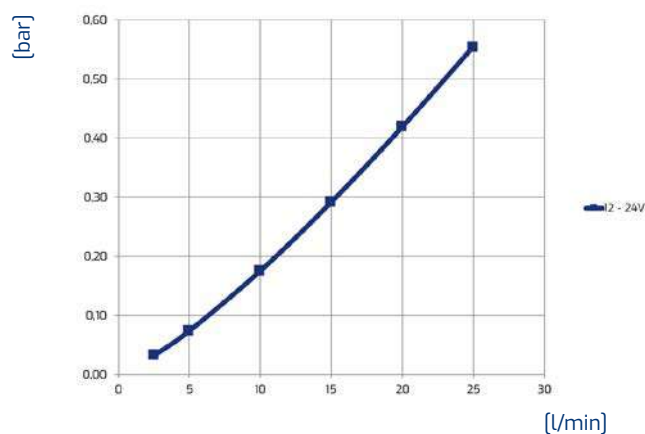
Item	Oil flow	Capacity	Weight	Voltage	Frequency	Current absorption	Power	Ø Fan	Air flow	Noise level	Rpm
	[l/min]	[l]	[kg]	[V]	[Hz]	[A]	[W]	[mm]	[m³/h]	[db(A)]	
HY005.1-02A	2,5-25	0,6	3	12		0,42	5	115	170	43	

Performance



Oil T 80°C
T Amb. 40°C
1 kW = 860 Kcal/h - 1 HP = 0,75 kW

Pressure drop



ISO VG 32 at 40°C

Viscosity - ISO VG 32 Oil

Oil	22	32	46	68	150
Correction factor	0,8	1	1,2	1,6	3

HY series

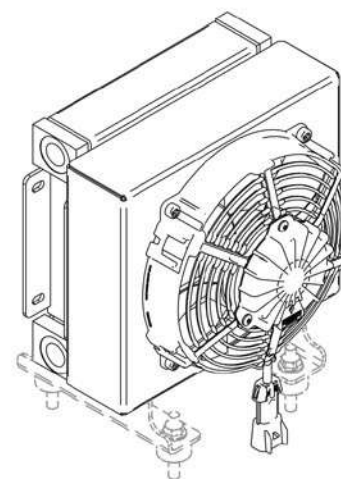
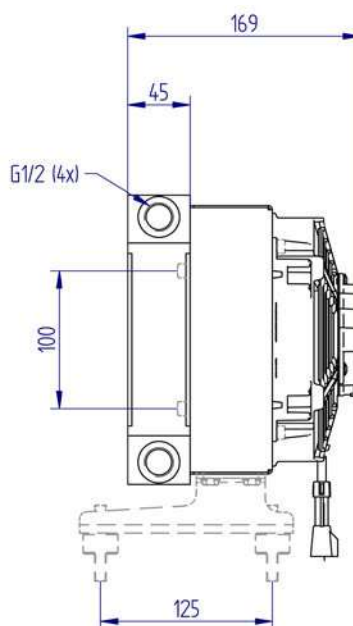
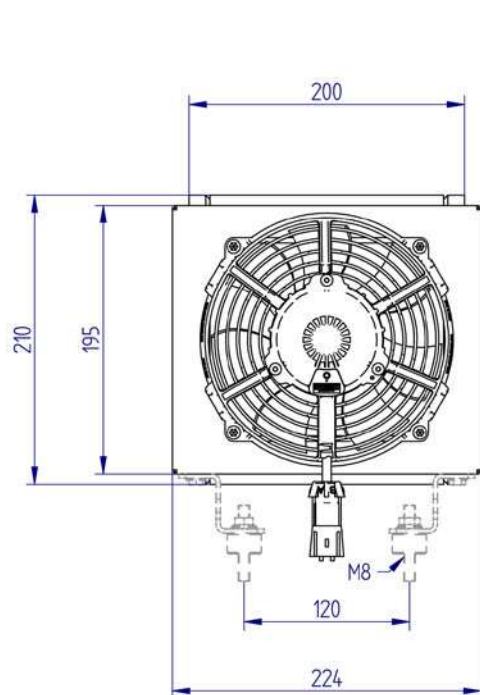
HY010.1-02A

AIR-OIL HEAT EXCHANGERS

IP68

12

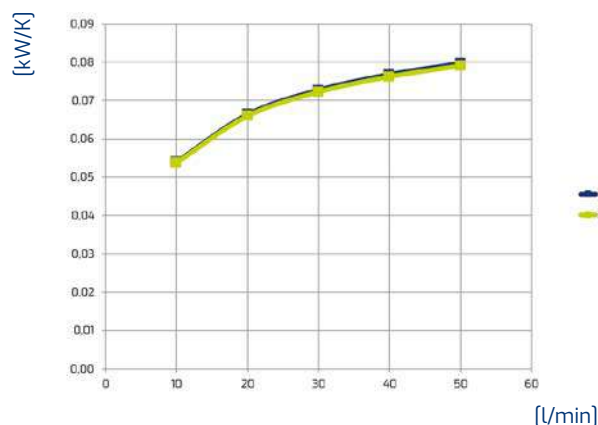
Volt



Technical data

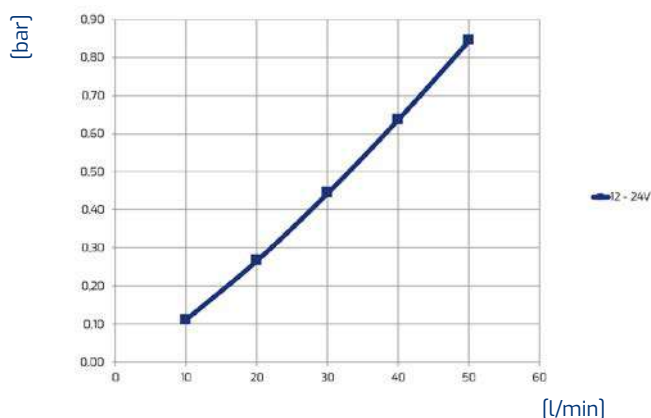
Item	Oil flow	Capacity	Weight	Voltage	Frequency	Current absorption	Power	Ø Fan	Air flow	Noise level	Rpm
	[l/min]	[l]	[kg]	[V]	[Hz]	[A]	[W]	[mm]	[m³/h]	[dB(A)]	
HY010.1-02A	10-50	0,7	5	12		5,40	70	167	362	71,3	

Performance



Oil T 80°C
T Amb. 40°C
1 kW = 860 Kcal/h - 1 HP = 0,75 kW

Pressure drop



ISO VG 32 at 40°C

Viscosity - ISO VG 32 Oil

Oil	22	32	46	68	150
Correction factor	0,8	1	1,2	1,6	3

HY series

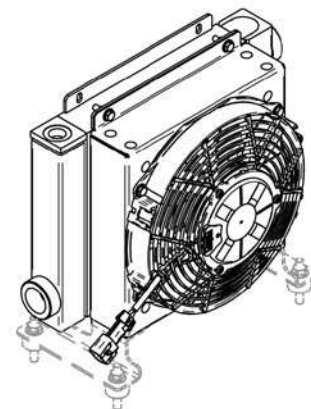
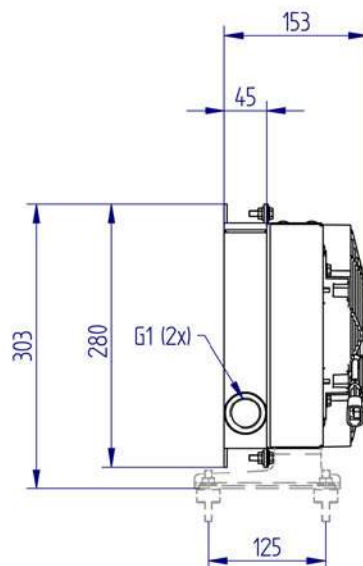
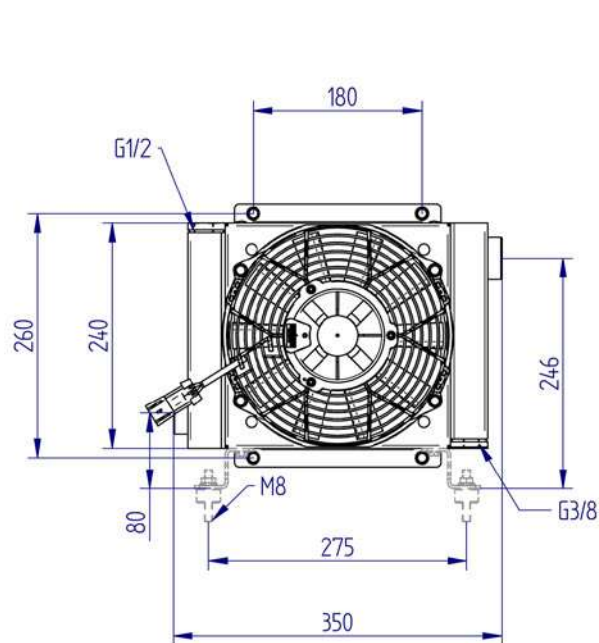
HY016.1-02A

AIR-OIL HEAT
EXCHANGERS

IP68

12

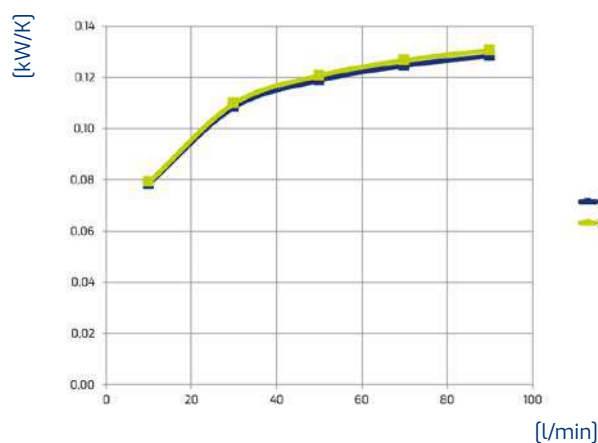
Volt



Technical data

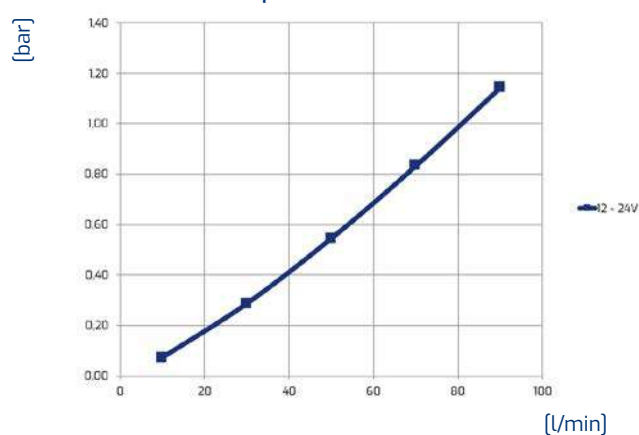
Item	Oil flow	Capacity	Weight	Voltage	Frequency	Current absorption	Power	Ø Fan	Air flow	Noise level	Rpm
	[l/min]	[l]	[kg]	[V]	[Hz]	[A]	[W]	[mm]	[m³/h]	[db(A)]	
HY016.1-02A	10-90	0,7	6,5	12		7,30	110	225	615	66,5	

Performance



Oil T 80°C
T Amb. 40°C
1 kW = 860 Kcal/h - 1 HP = 0,75 kW

Pressure drop



ISO VG 32 at 40°C

Viscosity - ISO VG 32 Oil

Oil	22	32	46	68	150
Correction factor	0,8	1	1,2	1,6	3

HY series

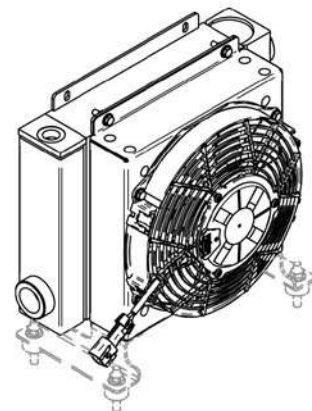
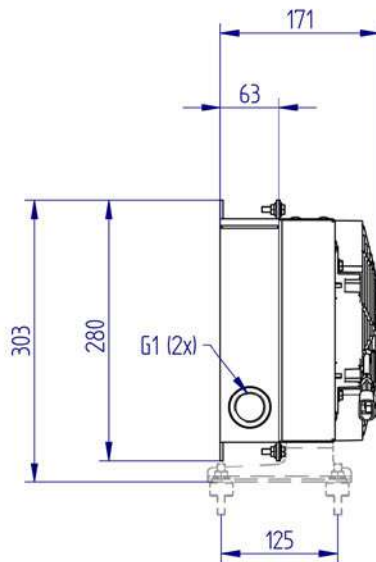
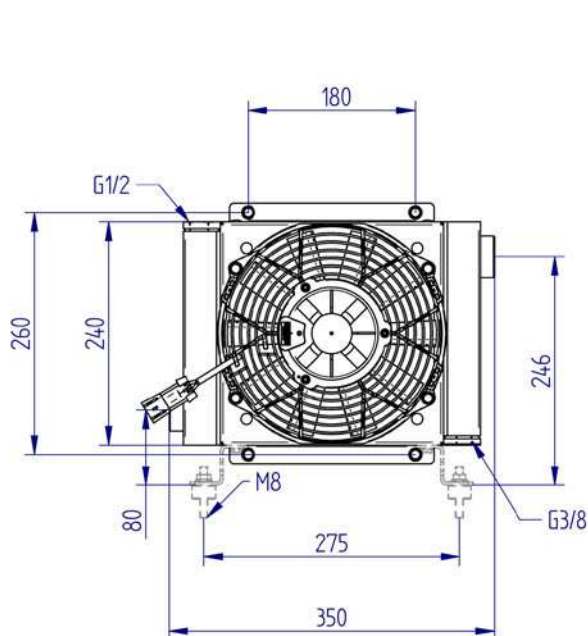
HY018.1-02A

AIR-OIL HEAT
EXCHANGERS

IP68

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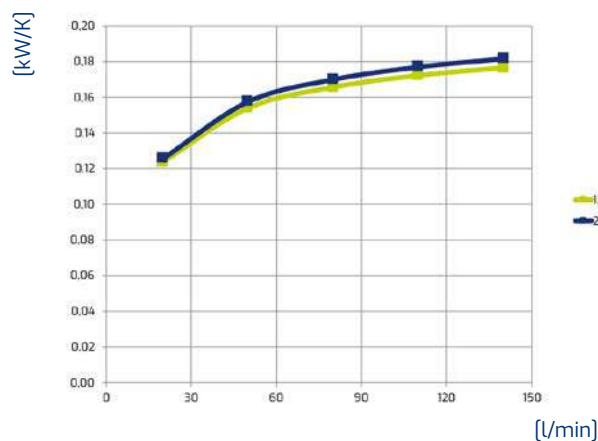
Volt



Technical data

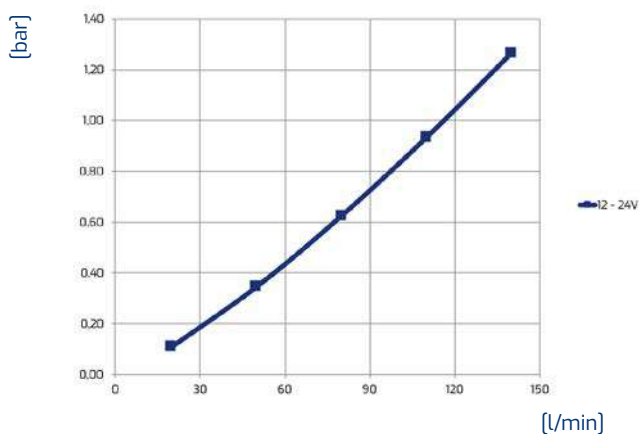
Item	Oil flow	Capacity	Weight	Voltage	Frequency	Current absorption	Power	Ø Fan	Air flow	Noise level	Rpm
	[l/min]	[l]	[kg]	[V]	[Hz]	[A]	[W]	[mm]	[m³/h]	[db(A)]	
HY018.1-02A	20-140	1,5	8	12		7,40	90	225	805	66,5	

Performance



Oil T 80°C
T Amb. 40°C
1 kW = 860 Kcal/h - 1 HP = 0,75 kW

Pressure drop



ISO VG 32 at 40°C

Viscosity - ISO VG 32 Oil

Oil	22	32	46	68	150
Correction factor	0,8	1	1,2	1,6	3

HY series

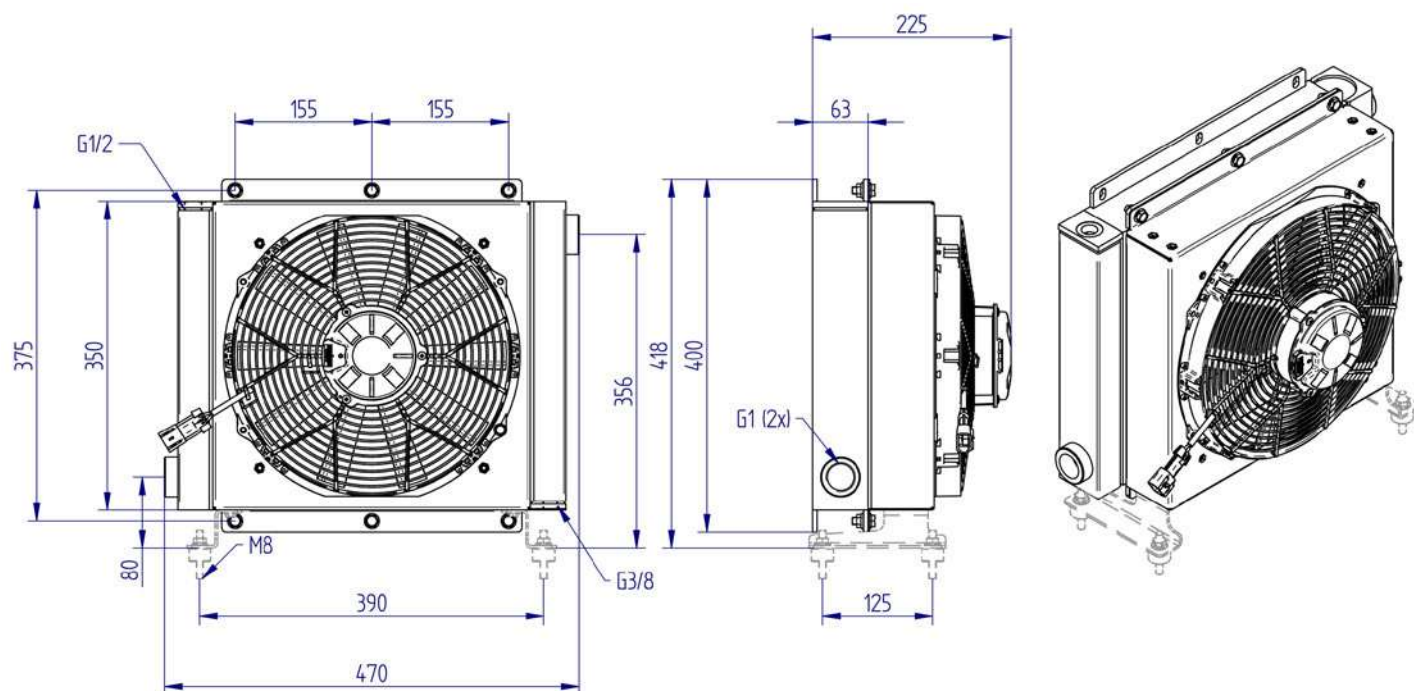
HY038.1-02A

AIR-OIL HEAT
EXCHANGERS

IP68

12

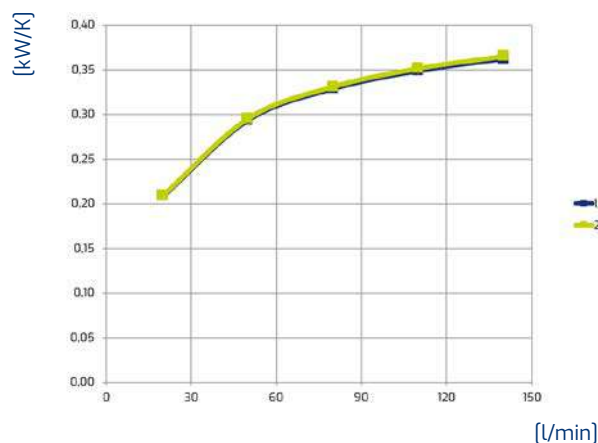
Volt



Technical data

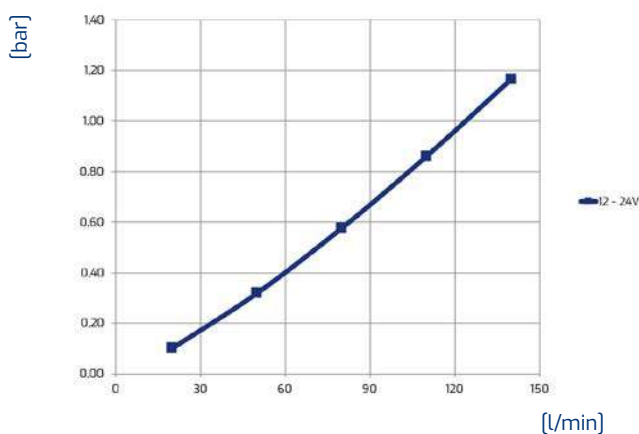
Item	Oil flow	Capacity	Weight	Voltage	Frequency	Current absorption	Power	Ø Fan	Air flow	Noise level	Rpm
	[l/min]	[l]	[kg]	[V]	[Hz]	[A]	[W]	[mm]	[m³/h]	[db(A)]	
HY038.1-02A	20-140	2,5	14,5	12		16,40	213	305	2055	73,4	

Performance



Oil T 80°C
T Amb. 40°C
1 kW = 860 Kcal/h – 1 HP = 0,75 kW

Pressure drop



ISO VG 32 at 40°C

Viscosity - ISO VG 32 Oil

Oil	22	32	46	68	150
Correction factor	0,8	1	1,2	1,6	3

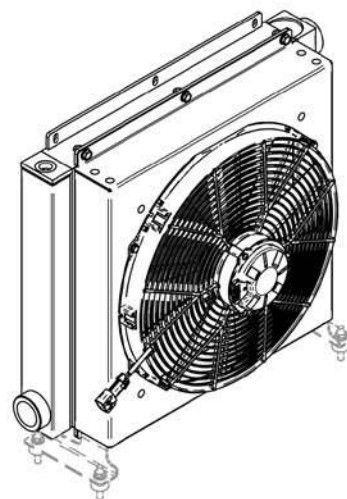
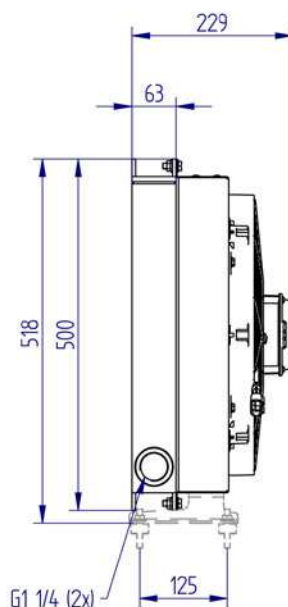
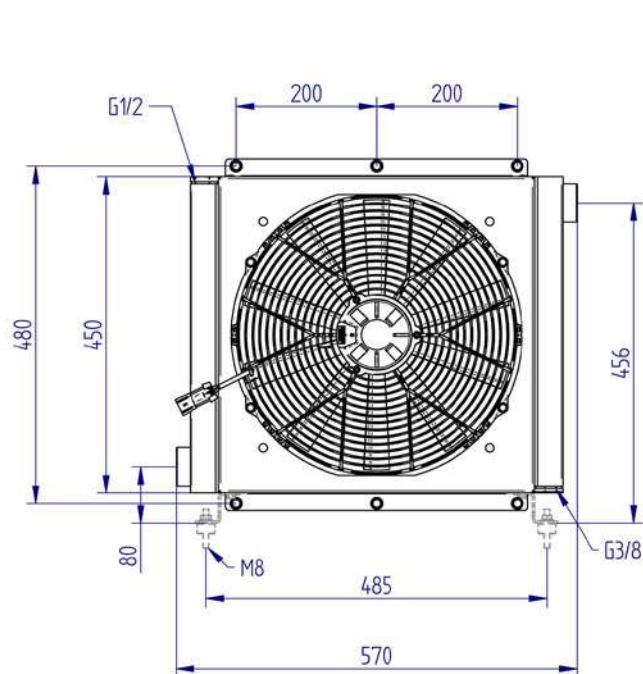
HY series

HY057.1-02A

AIR-OIL HEAT
EXCHANGERS

IP68

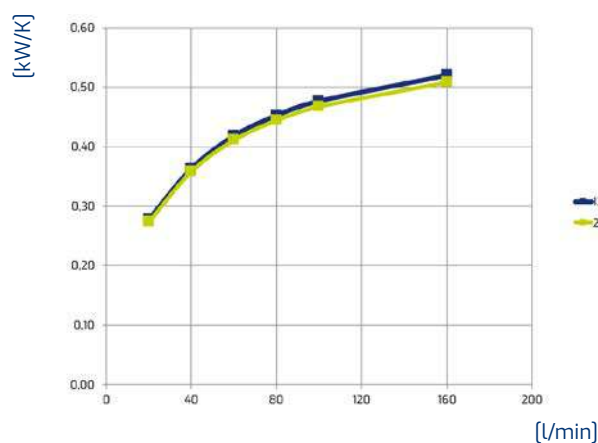
12
Volt



Technical data

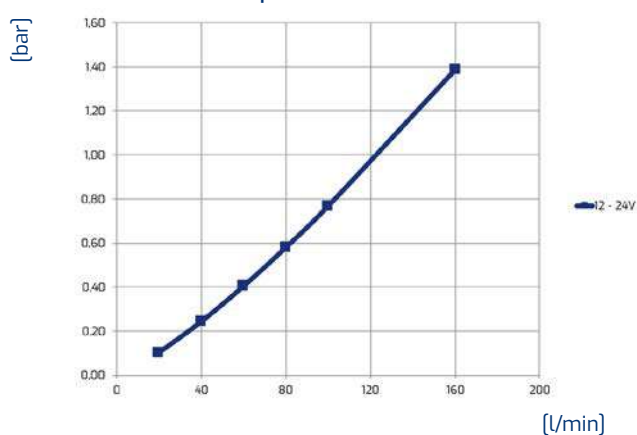
Item	Oil flow	Capacity	Weight	Voltage	Frequency	Current absorption	Power	Ø Fan	Air flow	Noise level	Rpm
	[l/min]	[l]	[kg]	[V]	[Hz]	[A]	[W]	[mm]	[m³/h]	[db(A)]	
HY057.1-02A	20-160	3,7	19	12		18,60	240	385	3260	72,4	

Performance



Oil T 80°C
T Amb. 40°C
1 kW = 860 Kcal/h - 1 HP = 0,75 kW

Pressure drop



ISO VG 32 at 40°C

Viscosity - ISO VG 32 Oil

Oil	22	32	46	68	150
Correction factor	0,8	1	1,2	1,6	3

HY series

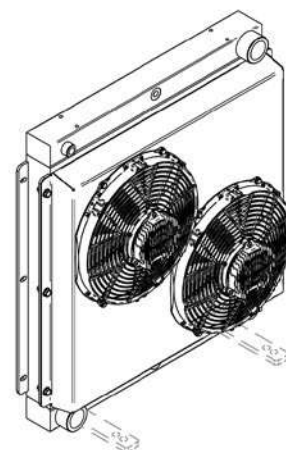
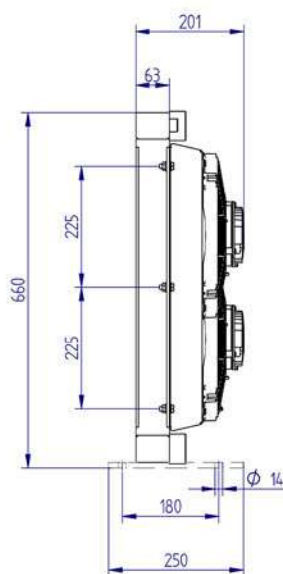
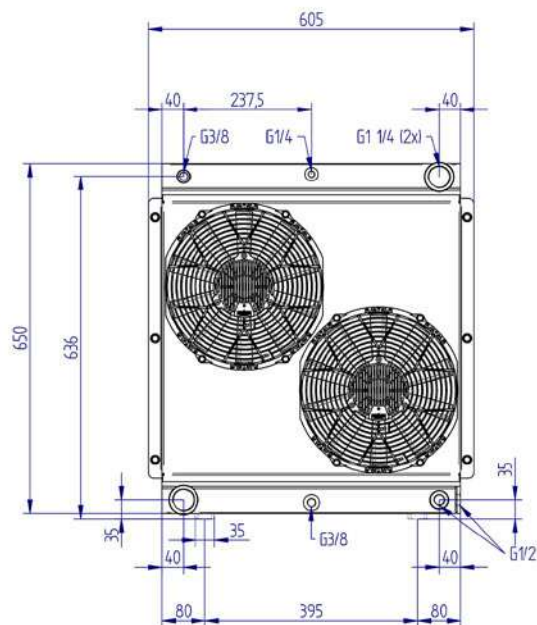
HY090.1-02A

AIR-OIL HEAT
EXCHANGERS

IP68

12

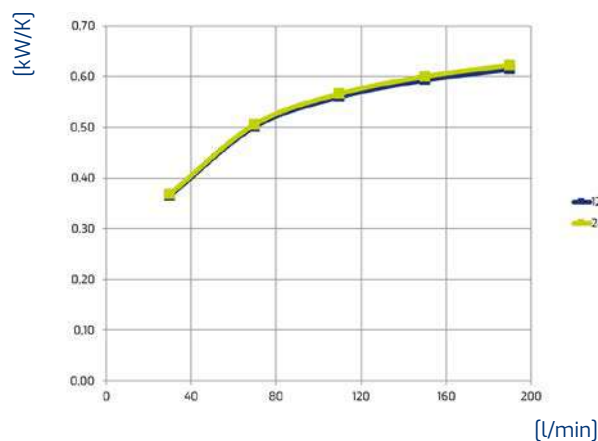
Volt



Technical data

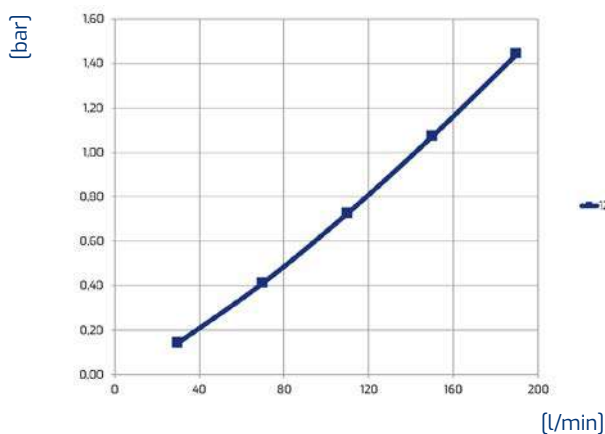
Item	Oil flow	Capacity	Weight	Voltage	Frequency	Current absorption	Power	Ø Fan	Air flow	Noise level	Rpm
	[l/min]	[l]	[kg]	[V]	[Hz]	[A]	[W]	[mm]	[m³/h]	[db(A)]	
HY090.1-02A	30-190	5,3	30,5	12		8,50 (x2)	110 (x2)	280	3380	76	

Performance



Oil T 80°C
T Amb. 40°C
1 kW = 860 Kcal/h - 1 HP = 0,75 kW

Pressure drop



ISO VG 32 at 40°C

Viscosity - ISO VG 32 Oil

Oil	22	32	46	68	150
Correction factor	0,8	1	1,2	1,6	3

HY series

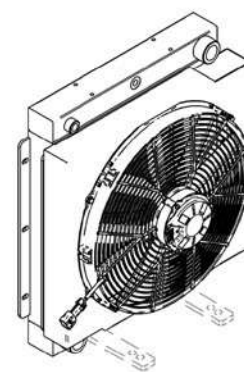
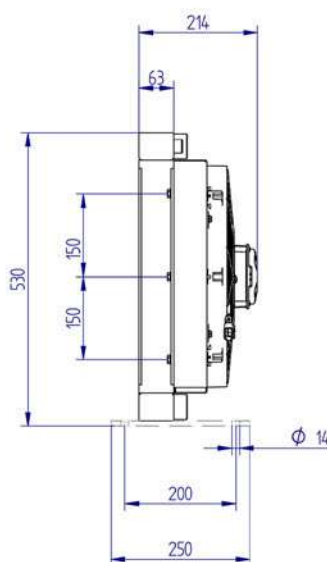
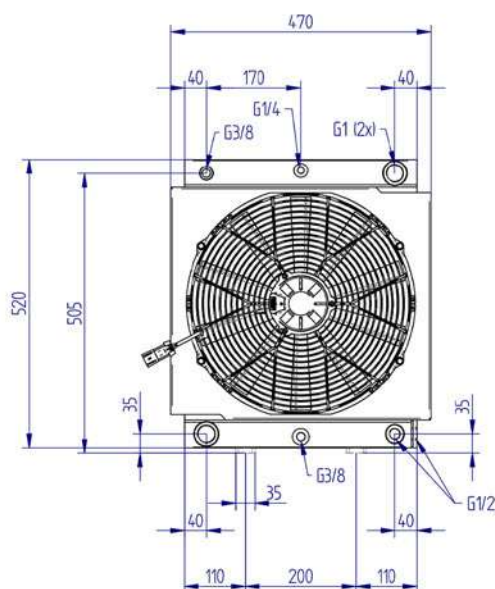
HY210.1-02A

AIR-OIL HEAT
EXCHANGERS

IP68

12

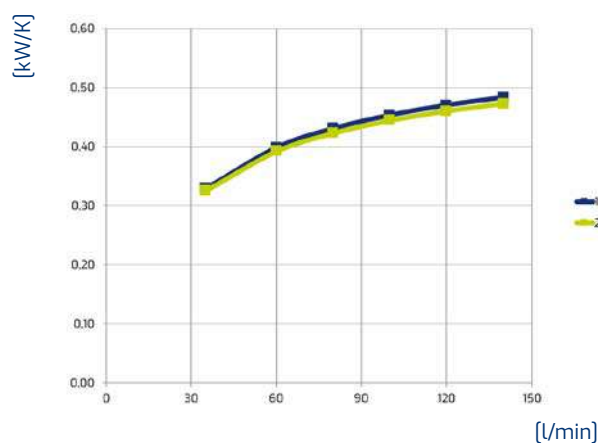
Volt



Technical data

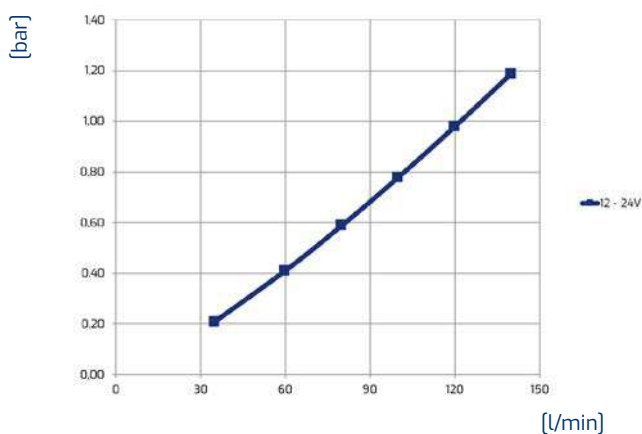
Item	Oil flow	Capacity	Weight	Voltage	Frequency	Current absorption	Power	Ø Fan	Air flow	Noise level	Rpm
	[l/min]	[l]	[kg]	[V]	[Hz]	[A]	[W]	[mm]	[m³/h]	[db(A)]	
HY210.1-02A	35-140	3,3	19	12		18,80	245	385	2460	72,4	

Performance



Oil T 80°C
T Amb. 40°C
1 kW = 860 Kcal/h - 1 HP = 0,75 kW

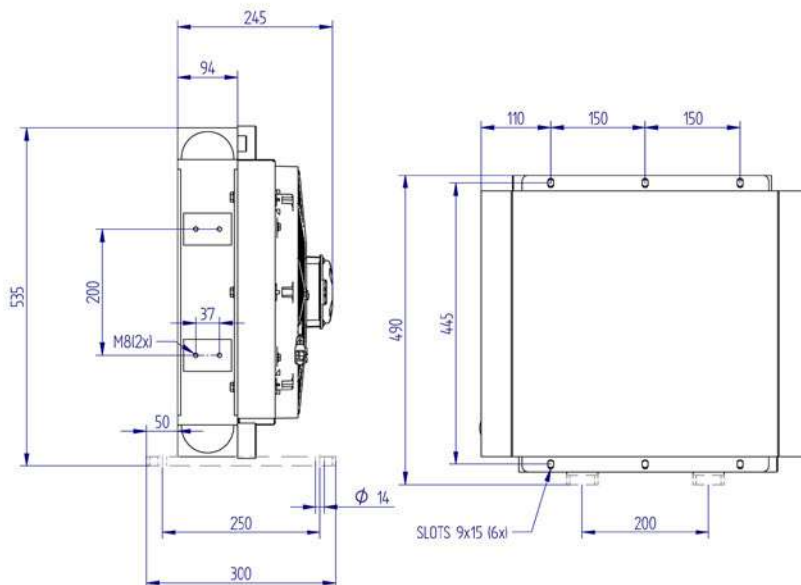
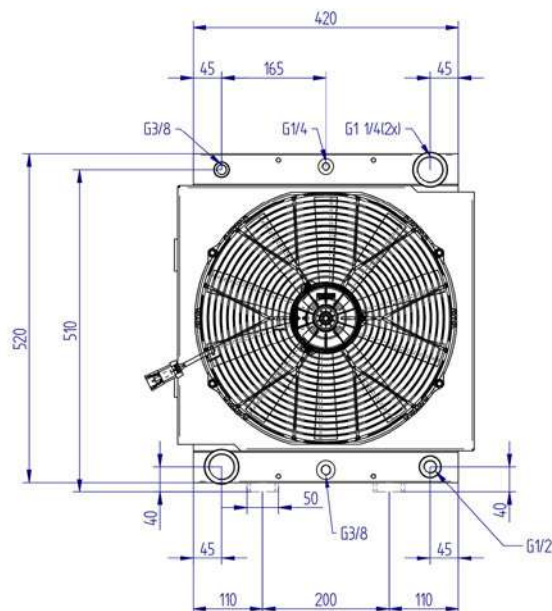
Pressure drop



ISO VG 32 at 40°C

Viscosity - ISO VG 32 Oil

Oil	22	32	46	68	150
Correction factor	0,8	1	1,2	1,6	3

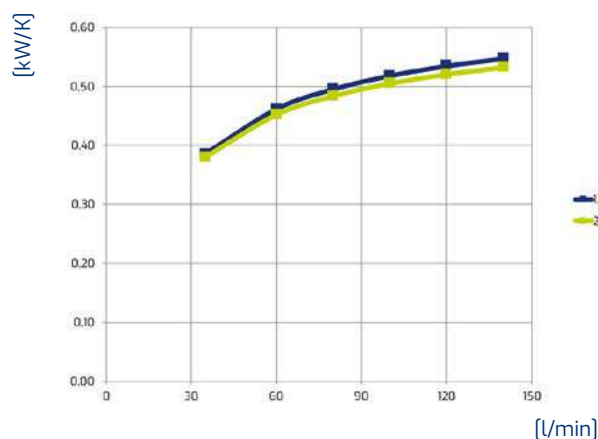


Vertical or horizontal mounting

Technical data

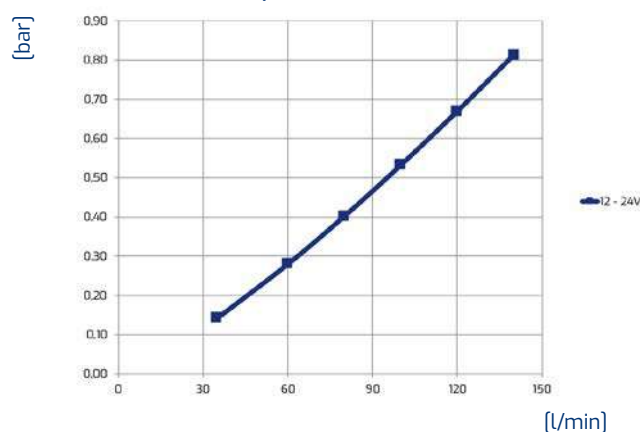
Item	Oil flow	Capacity	Weight	Voltage	Frequency	Current absorption	Power	Ø Fan	Air flow	Noise level	Rpm
	[l/min]	[l]	[kg]	[V]	[Hz]	[A]	[W]	[mm]	[m³/h]	[db(A)]	
HY215.1-02A	35-140	5,3	24,5	12		18,70	240	385	2420	72,4	

Performance



Oil T 80°C
T Amb. 40°C
1 kW = 860 Kcal/h – 1 HP = 0,75 kW

Pressure drop



ISO VG 32 at 40°C

Viscosity - ISO VG 32 Oil

Oil	22	32	46	68	150
Correction factor	0,8	1	1,2	1,6	3

HY series

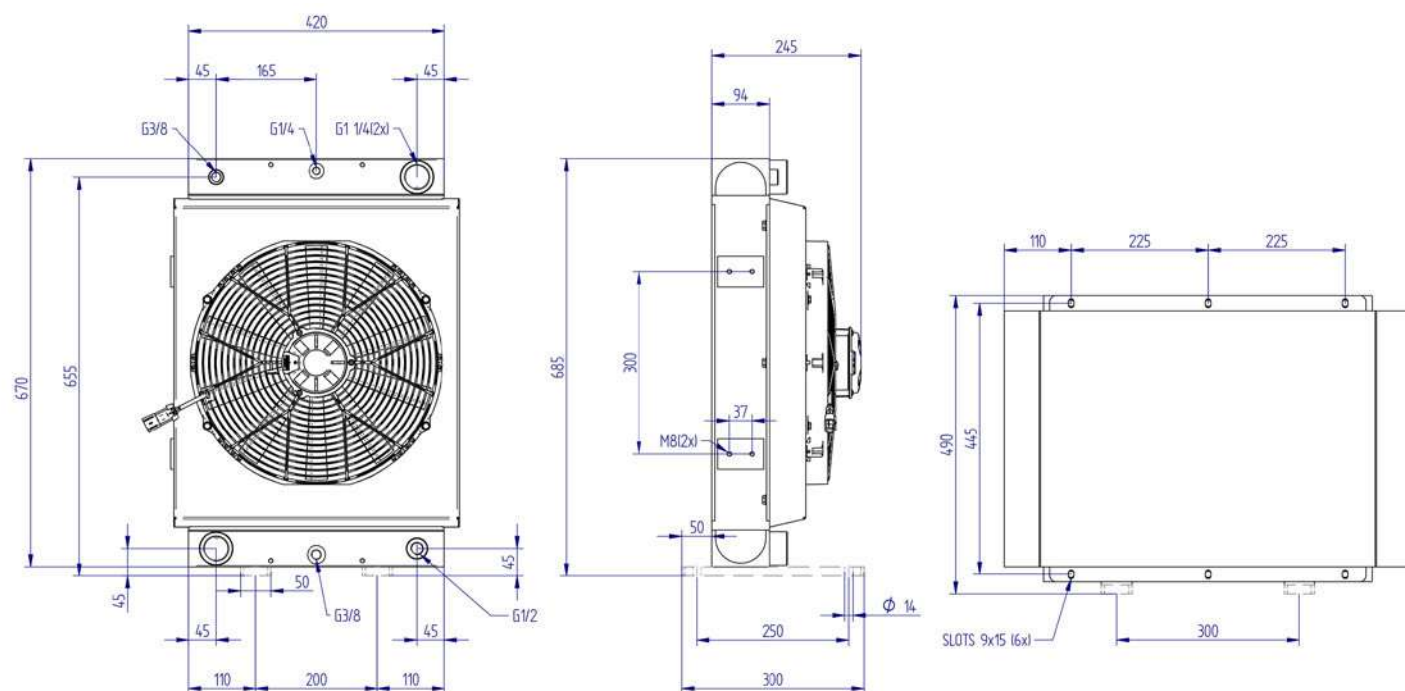
HY220.1-02A

AIR-OIL HEAT
EXCHANGERS

IP68

12

Volt

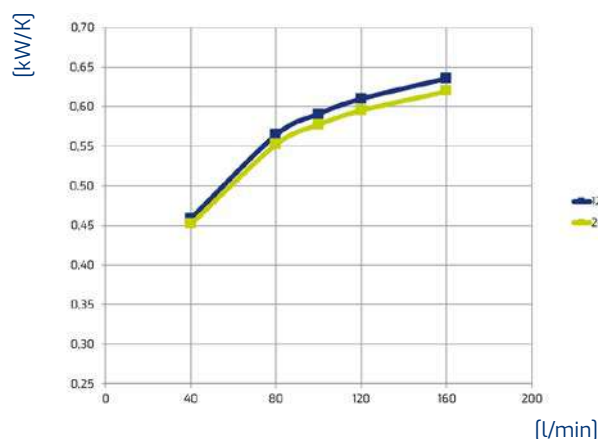


Vertical or horizontal mounting

Technical data

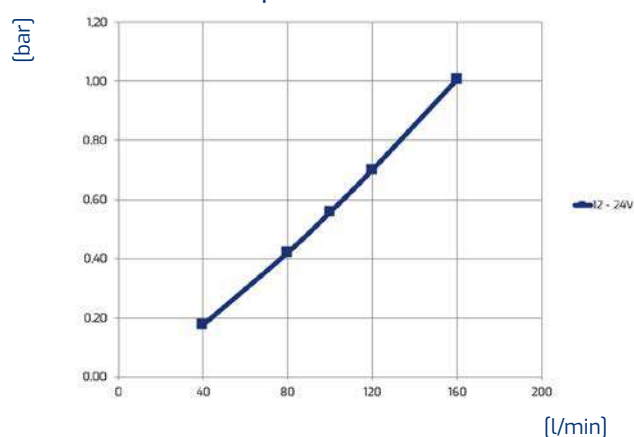
Item	Oil flow	Capacity	Weight	Voltage	Frequency	Current absorption	Power	Ø Fan	Air flow	Noise level	Rpm
	[l/min]	[l]	[kg]	[V]	[Hz]	[A]	[W]	[mm]	[m³/h]	[db(A)]	
HY220.1-02A	40-160	6,8	27	12		18,70	240	385	2801	72	

Performance



Oil T 80°C
T Amb. 40°C
1 kW = 860 Kcal/h - 1 HP = 0,75 kW

Pressure drop



ISO VG 32 at 40°C

Viscosity - ISO VG 32 Oil

Oil	22	32	46	68	150
Correction factor	0,8	1	1,2	1,6	3

HY series

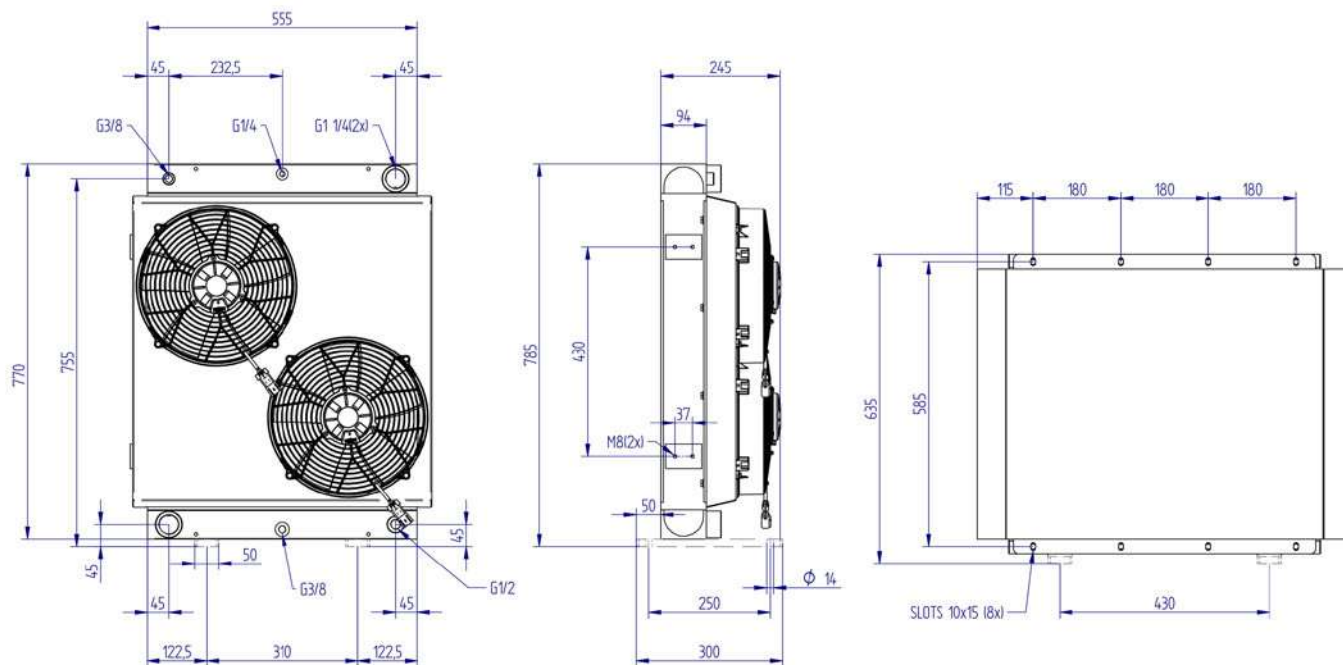
HY225.1-02A

AIR-OIL HEAT
EXCHANGERS

IP68

12

Volt

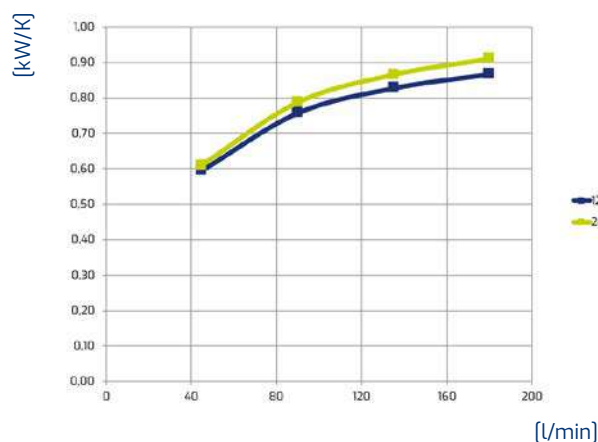


Vertical or horizontal mounting

Technical data

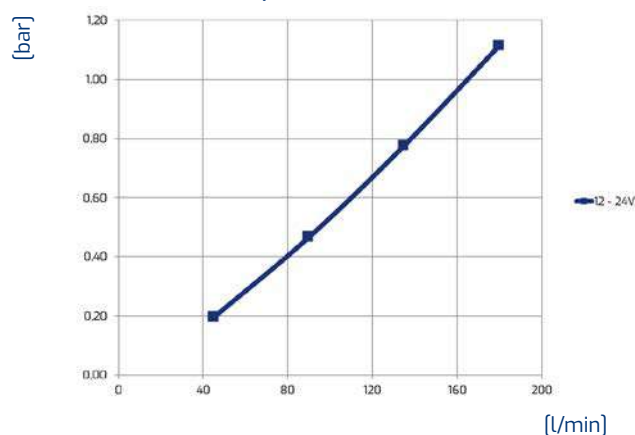
Item	Oil flow	Capacity	Weight	Voltage	Frequency	Current absorption	Power	Ø Fan	Air flow	Noise level	Rpm
	[l/min]	[l]	[kg]	[V]	[Hz]	[A]	[W]	[mm]	[m³/h]	[db(A)]	
HY225.1-02A	45-180	10	44	12		20,40	180	305 (x2)	3900	76,4	

Performance



Oil T 80°C
T Amb. 40°C
1 kW = 860 Kcal/h - 1 HP = 0,75 kW

Pressure drop

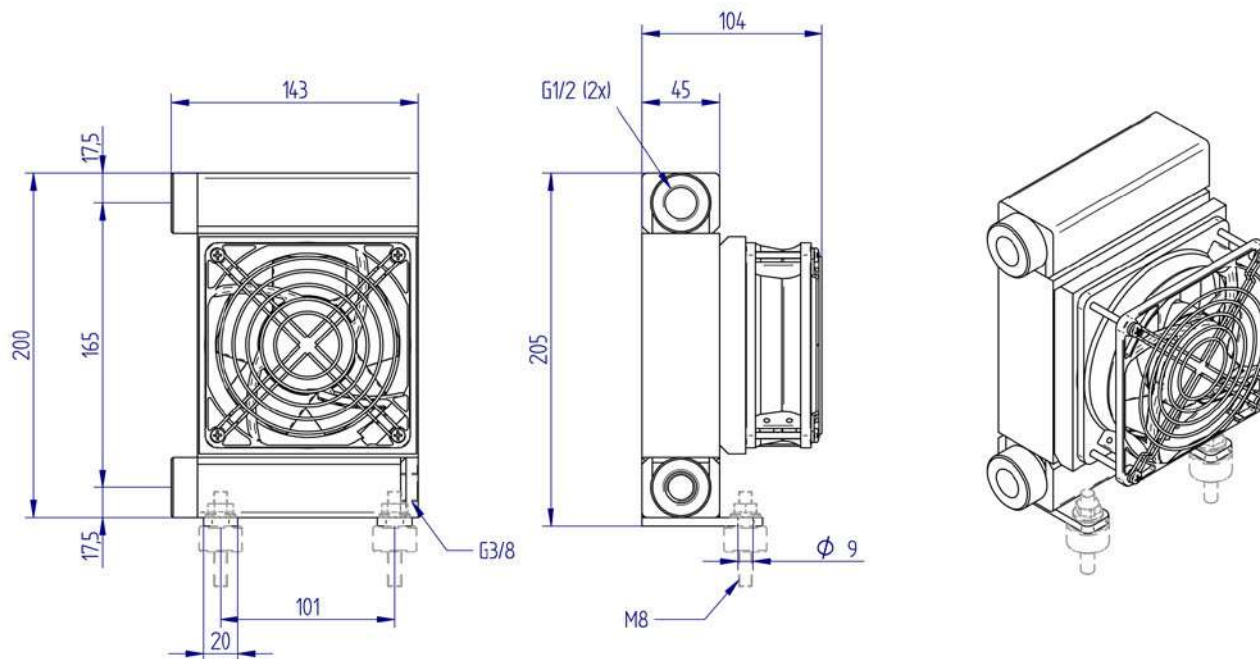


ISO VG 32 at 40°C

Viscosity - ISO VG 32 Oil

Oil	22	32	46	68	150
Correction factor	0,8	1	1,2	1,6	3

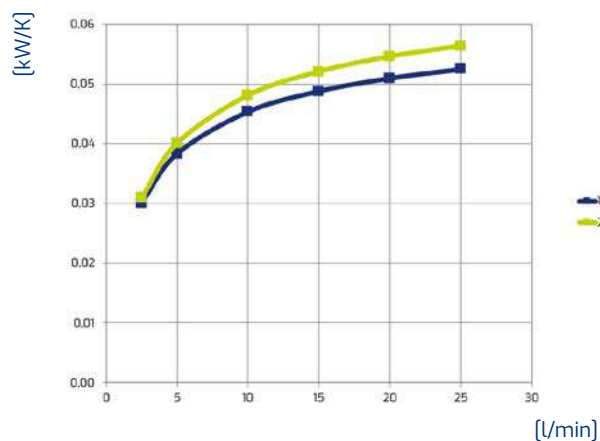
24V



Technical data

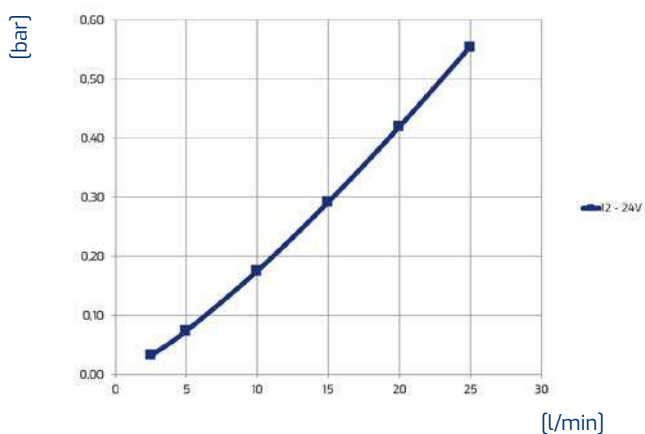
Item	Oil flow	Capacity	Weight	Voltage	Frequency	Current absorption	Power	Ø Fan	Air flow	Noise level	Rpm
	[l/min]	[l]	[kg]	[V]	[Hz]	[A]	[W]	[mm]	[m³/h]	[db(A)]	
HY005.1-04A	2,5-25	0,6	3	24		0,23	5	115	205	46	

Performance



Oil T 80°C
T Amb. 40°C
1 kW = 860 Kcal/h - 1 HP = 0,75 kW

Pressure drop



ISO VG 32 at 40°C

Viscosity - ISO VG 32 Oil

Oil	22	32	46	68	150
Correction factor	0,8	1	1,2	1,6	3

HY series

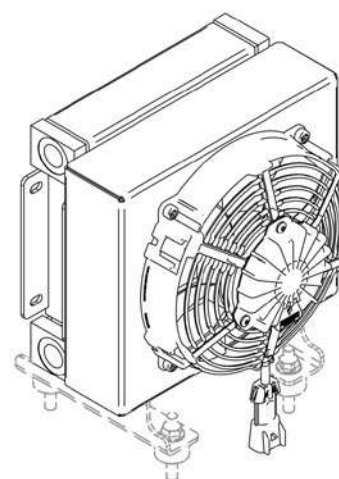
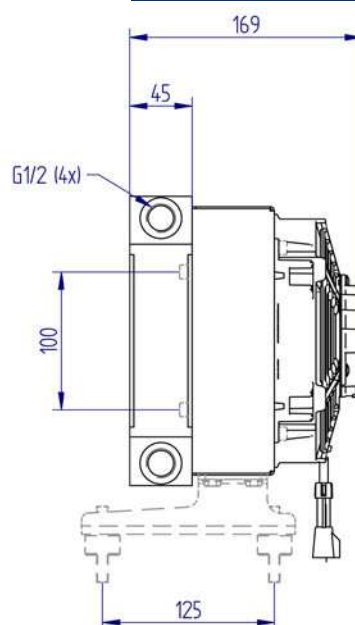
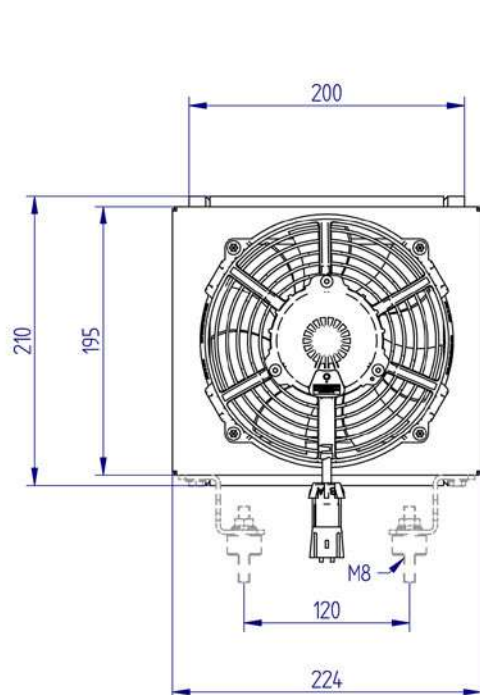
HY010.1-04A

AIR-OIL HEAT
EXCHANGERS

IP68

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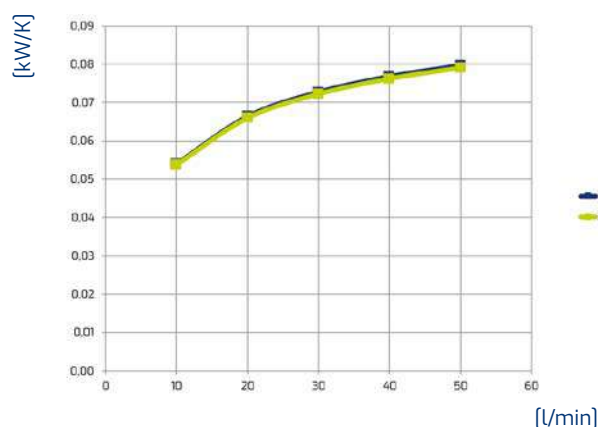
Volt



Technical data

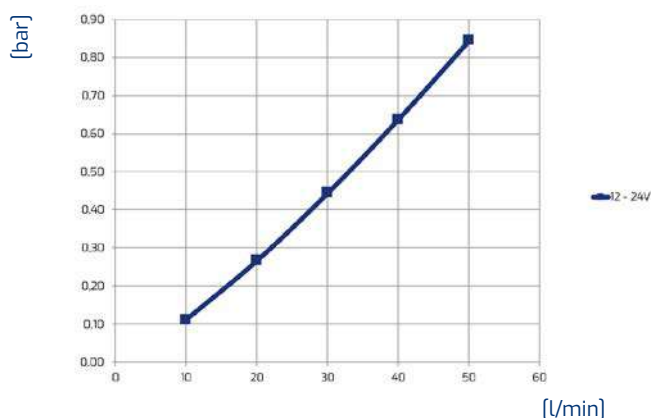
Item	Oil flow	Capacity	Weight	Voltage	Frequency	Current absorption	Power	Ø Fan	Air flow	Noise level	Rpm
	[l/min]	[l]	[kg]	[V]	[Hz]	[A]	[W]	[mm]	[m³/h]	[db(A)]	
HY010.1-04A	10-50	0,7	5	24		2,60	70	167	362	72,8	

Performance



OIL T 80°C
T Amb. 40°C
1 kW = 860 Kcal/h - 1 HP = 0,75 kW

Pressure drop



ISO VG 32 at 40°C

Viscosity - ISO VG 32 Oil

Oil	22	32	46	68	150
Correction factor	0,8	1	1,2	1,6	3

HY series

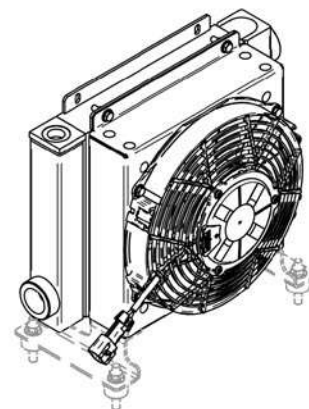
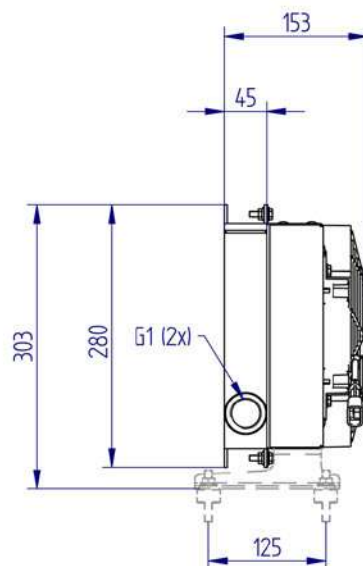
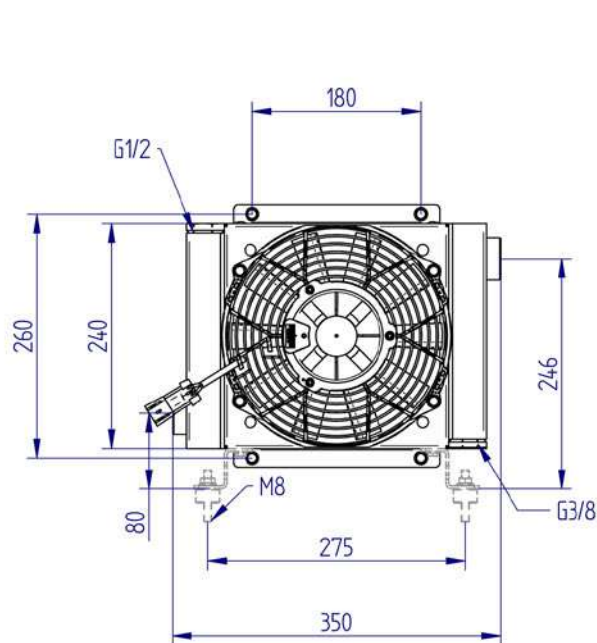
HY016.1-04A

AIR-OIL HEAT
EXCHANGERS

IP68

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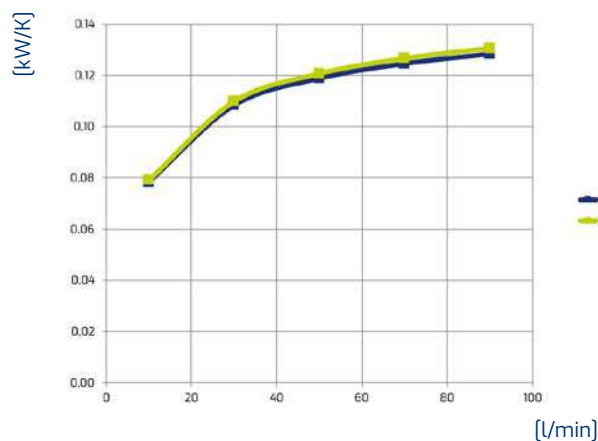
Volt



Technical data

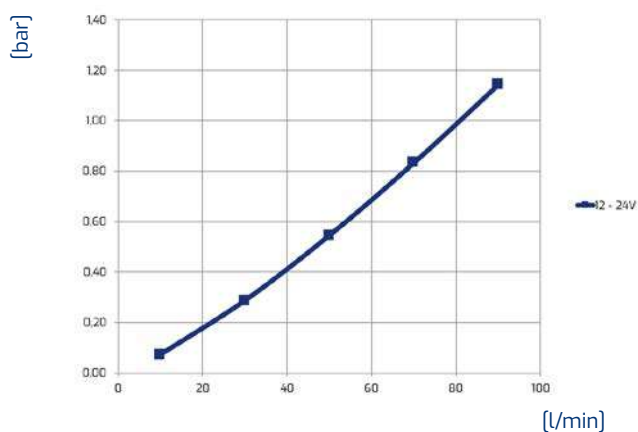
Item	Oil flow	Capacity	Weight	Voltage	Frequency	Current absorption	Power	Ø Fan	Air flow	Noise level	Rpm
	[l/min]	[l]	[kg]	[V]	[Hz]	[A]	[W]	[mm]	[m³/h]	[db(A)]	
HY016.1-04A	10-90	0,7	6,5	24		3,80	125	225	635	67,3	

Performance



Oil T 80°C
T Amb. 40°C
1 kW = 860 Kcal/h - 1 HP = 0,75 kW

Pressure drop



ISO VG 32 at 40°C

Viscosity - ISO VG 32 Oil

Oil	22	32	46	68	150
Correction factor	0,8	1	1,2	1,6	3

HY series

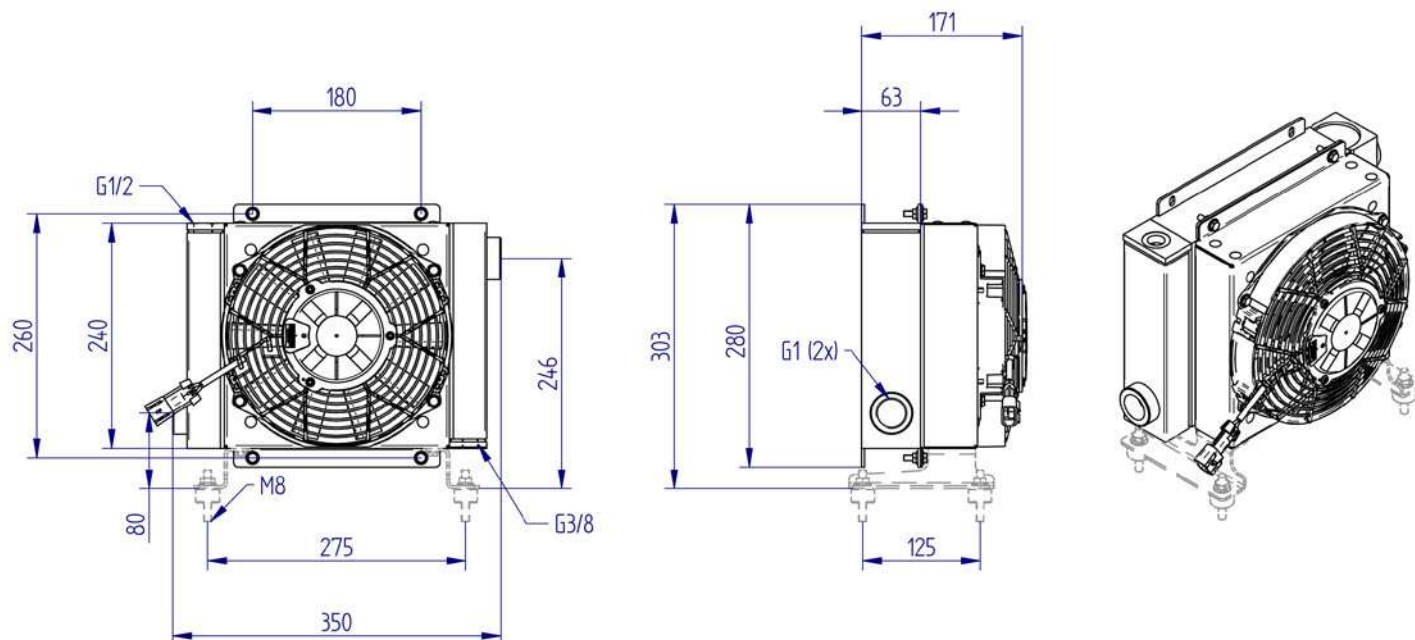
HY018.1-04A

AIR-OIL HEAT
EXCHANGERS

IP68

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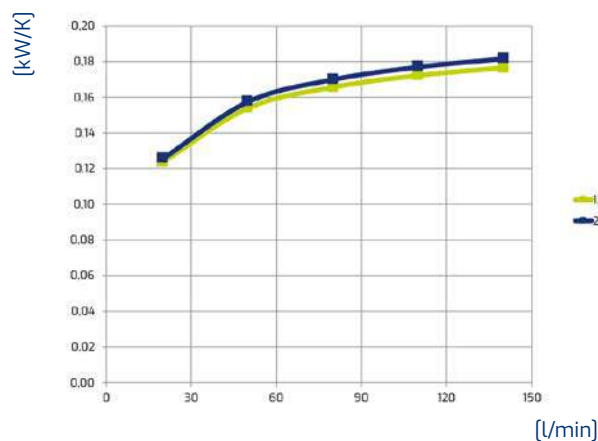
Volt



Technical data

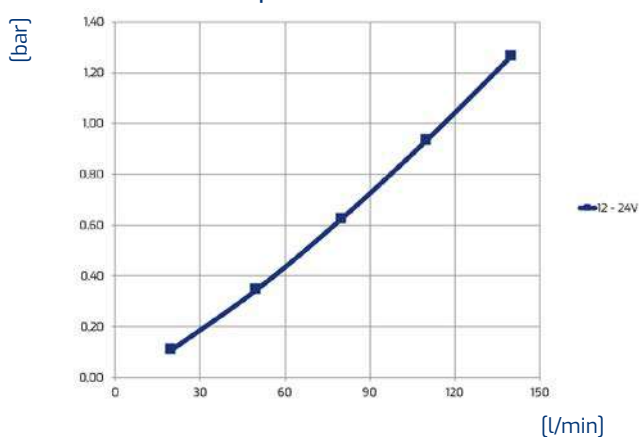
Item	Oil flow	Capacity	Weight	Voltage	Frequency	Current absorption	Power	Ø Fan	Air flow	Noise level	Rpm
	[l/min]	[l]	[kg]	[V]	[Hz]	[A]	[W]	[mm]	[m³/h]	[db(A)]	
HY018.1-04A	20-140	1,5	8	24		3,90	94	225	805	67,3	

Performance



Oil T 80°C
T Amb. 40°C
1 kW = 860 Kcal/h - 1 HP = 0,75 kW

Pressure drop



ISO VG 32 at 40°C

Viscosity - ISO VG 32 Oil

Oil	22	32	46	68	150
Correction factor	0,8	1	1,2	1,6	3

HY series

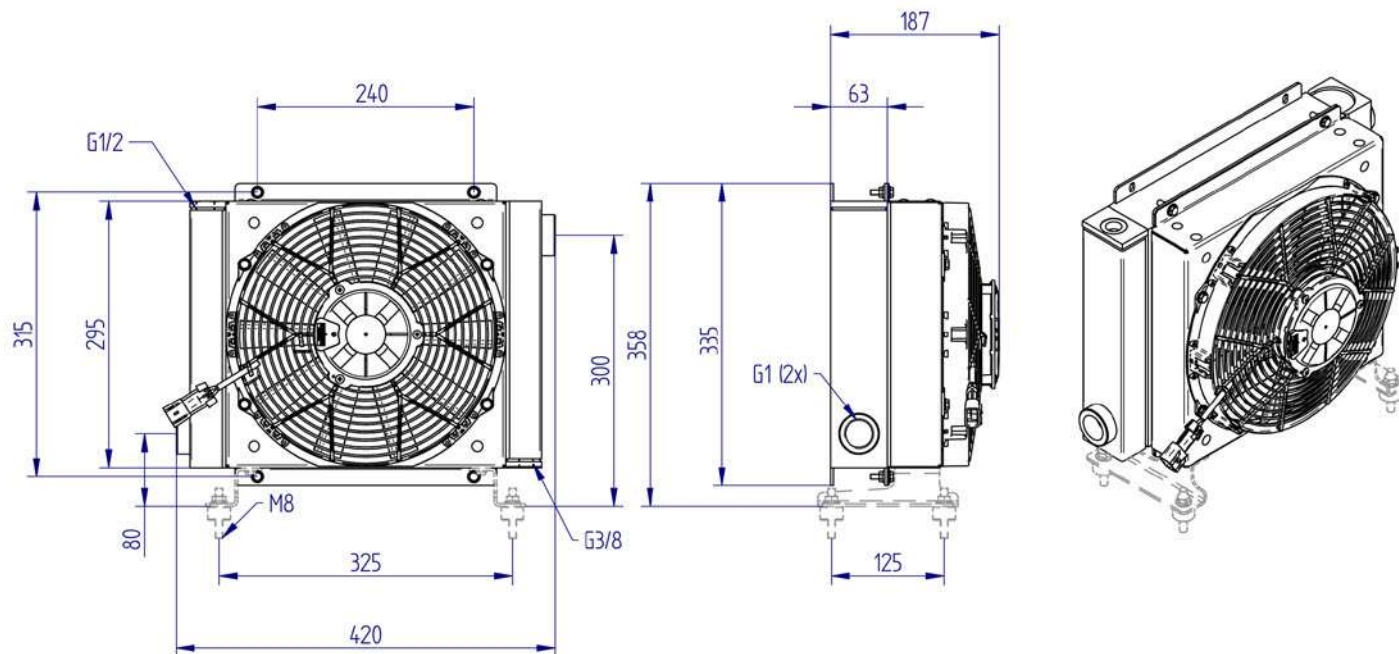
HY024.1-04A

AIR-OIL HEAT
EXCHANGERS

IP68

24

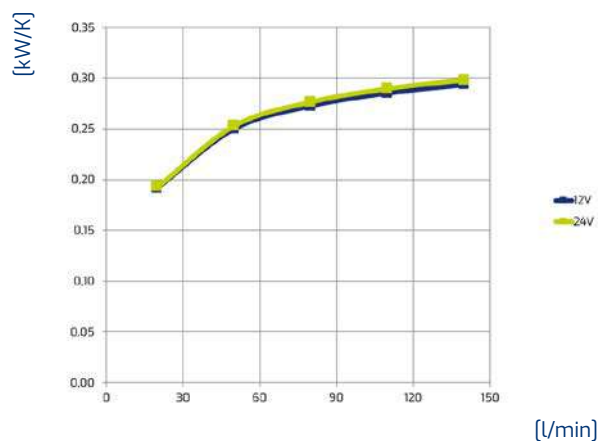
Volt



Technical data

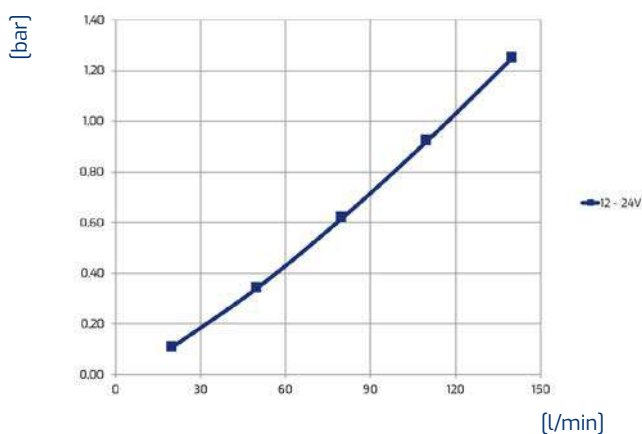
Item	Oil flow	Capacity	Weight	Voltage	Frequency	Current absorption	Power	Ø Fan	Air flow	Noise level	Rpm
	[l/min]	[l]	[kg]	[V]	[Hz]	[A]	[W]	[mm]	[m³/h]	[db(A)]	
HY024.1-04A	20-140	2	11	24		4,70	120	280	1235	74	

Performance



Oil T 80°C
T Amb. 40°C
1 kW = 860 Kcal/h - 1 HP = 0,75 kW

Pressure drop



ISO VG 32 at 40°C

Viscosity - ISO VG 32 Oil

Oil	22	32	46	68	150
Correction factor	0,8	1	1,2	1,6	3

HY series

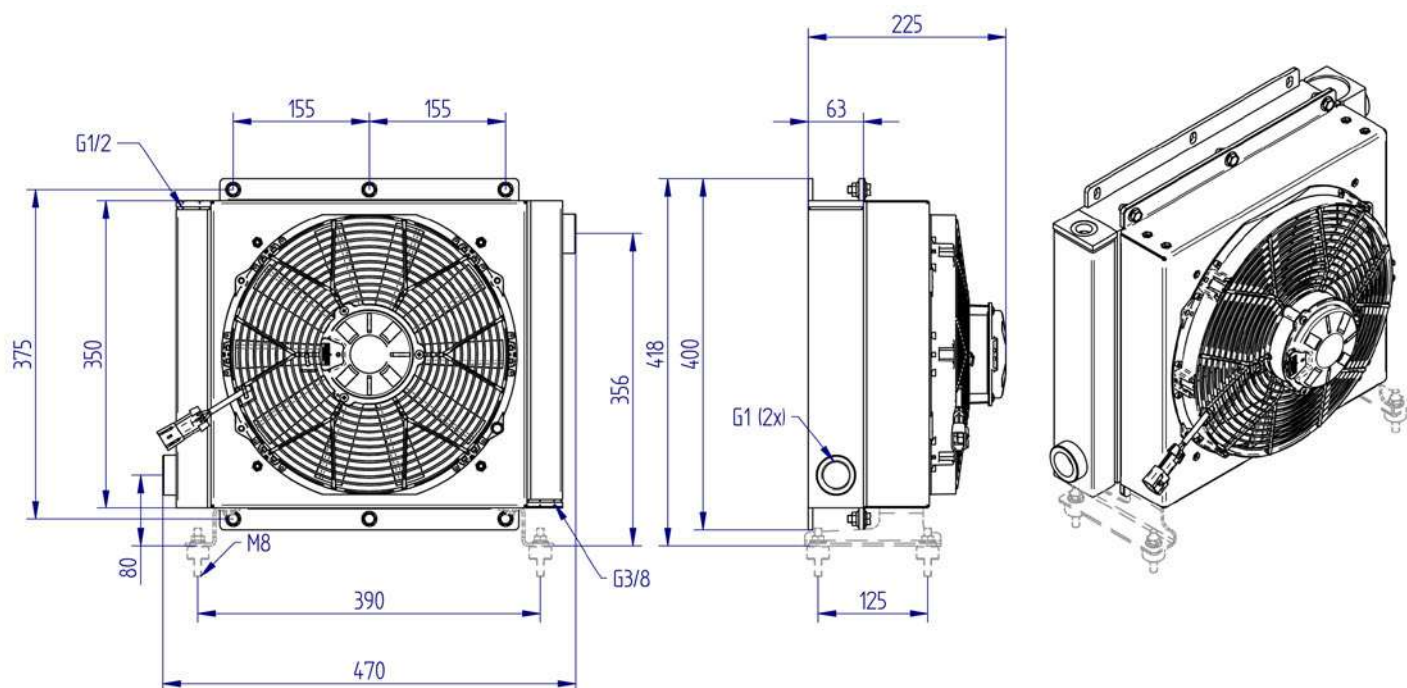
HY038.1-04A

AIR-OIL HEAT
EXCHANGERS

IP68

24

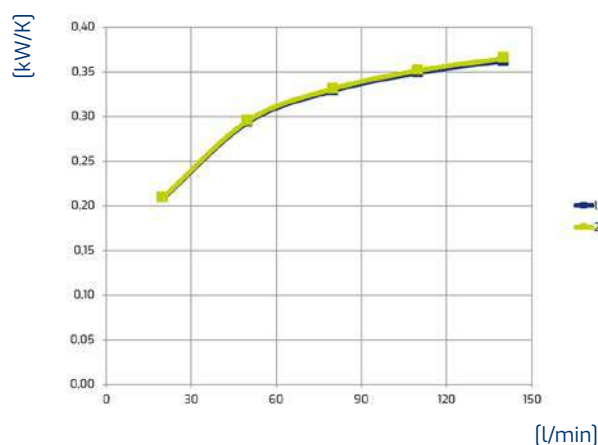
Volt



Technical data

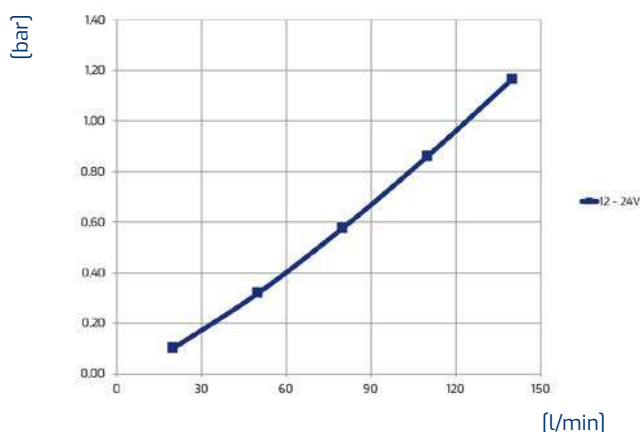
Item	Oil flow	Capacity	Weight	Voltage	Frequency	Current absorption	Power	Ø Fan	Air flow	Noise level	Rpm
	[l/min]	[l]	[kg]	[V]	[Hz]	[A]	[W]	[mm]	[m³/h]	[db(A)]	
HY038.1-04A	20-140	2,5	14,5	24		8,60	223	305	2045	73,7	

Performance



Oil T 80°C
T Amb. 40°C
1 kW = 860 Kcal/h - 1 HP = 0,75 kW

Pressure drop



ISO VG 32 at 40°C

Viscosity - ISO VG 32 Oil

Oil	22	32	46	68	150
Correction factor	0,8	1	1,2	1,6	3

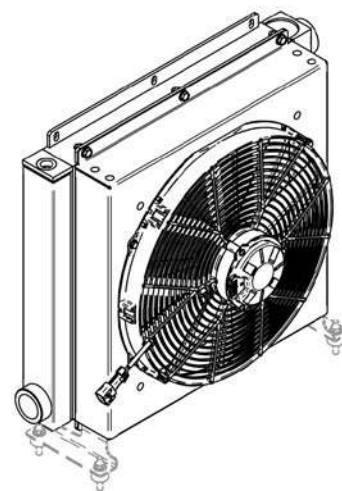
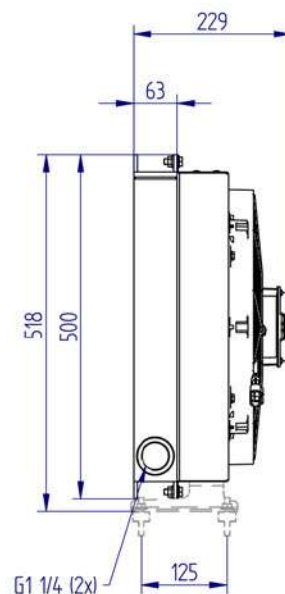
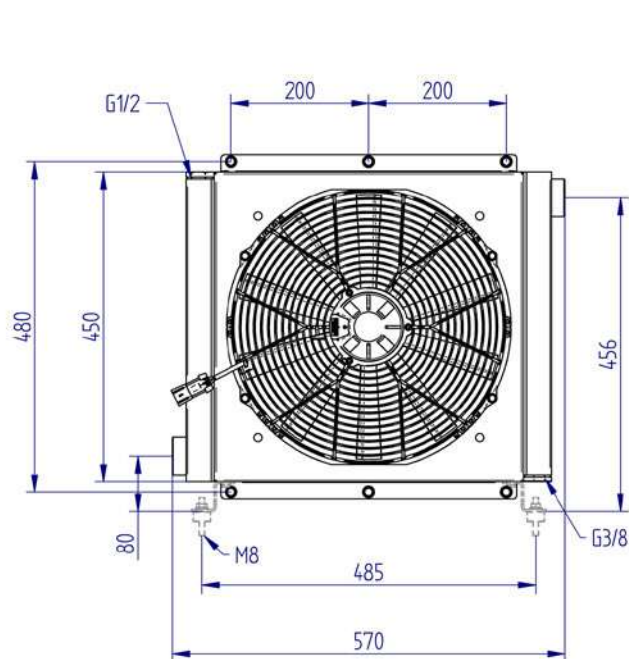
HY series

HY057.1-04A

AIR-OIL HEAT EXCHANGERS

IP68

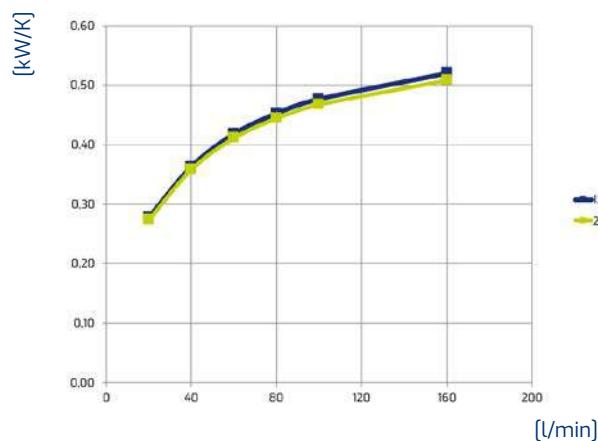
24
Volt



Technical data

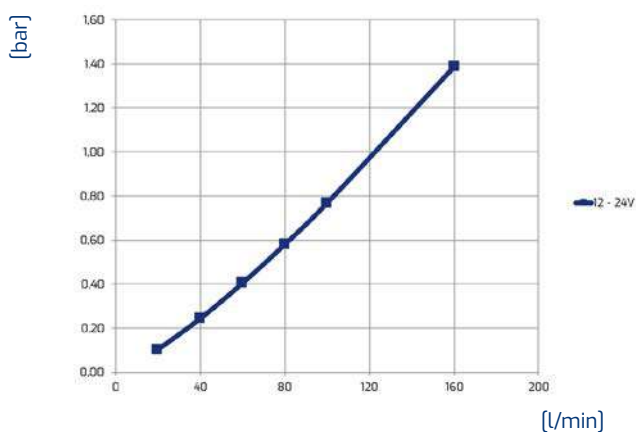
Item	Oil flow	Capacity	Weight	Voltage	Frequency	Current absorption	Power	Ø Fan	Air flow	Noise level	Rpm
	[l/min]	[l]	[kg]	[V]	[Hz]	[A]	[W]	[mm]	[m³/h]	[db(A)]	
HY057.1-04A	20-160	3,7	19	24		8,20	214	385	3390	72,2	

Performance



Oil T 80°C
T Amb. 40°C
1 kW = 860 Kcal/h - 1 HP = 0,75 kW

Pressure drop



ISO VG 32 at 40°C

Viscosity - ISO VG 32 Oil

Oil	22	32	46	68	150
Correction factor	0,8	1	1,2	1,6	3

HY series

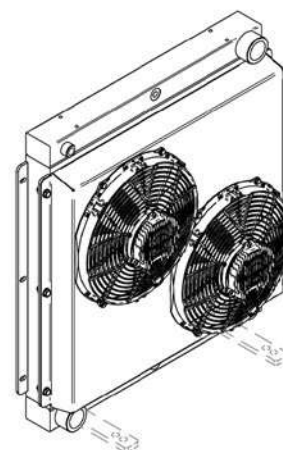
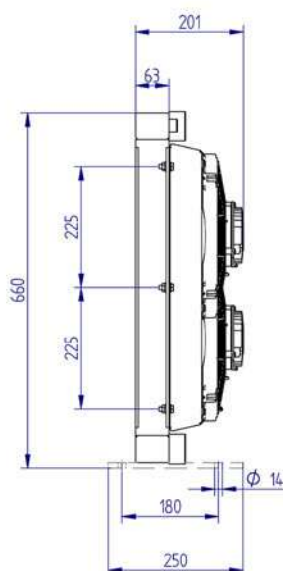
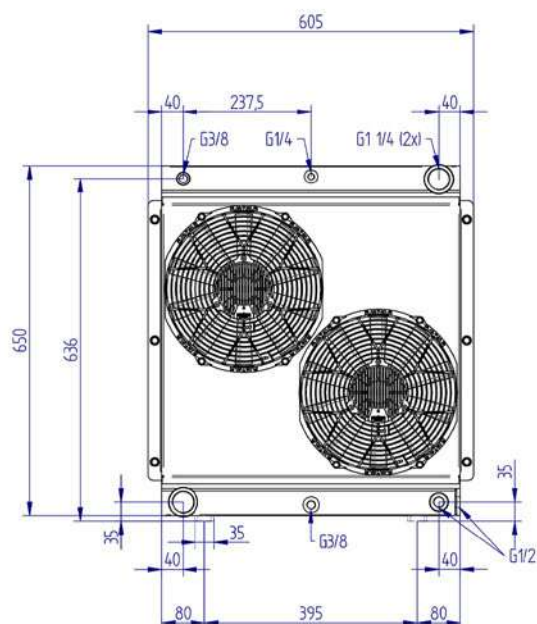
HY090.1-04A

AIR-OIL HEAT
EXCHANGERS

IP68

24

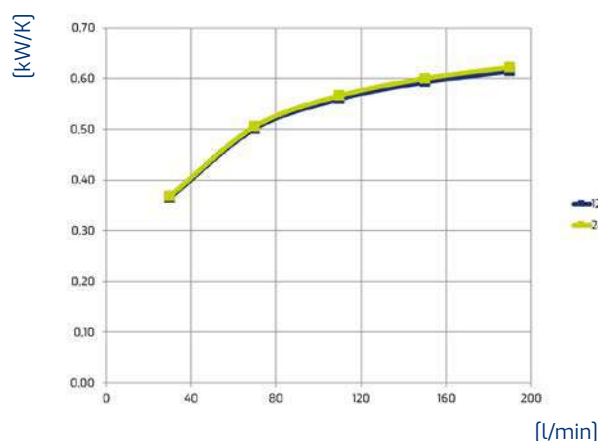
Volt



Technical data

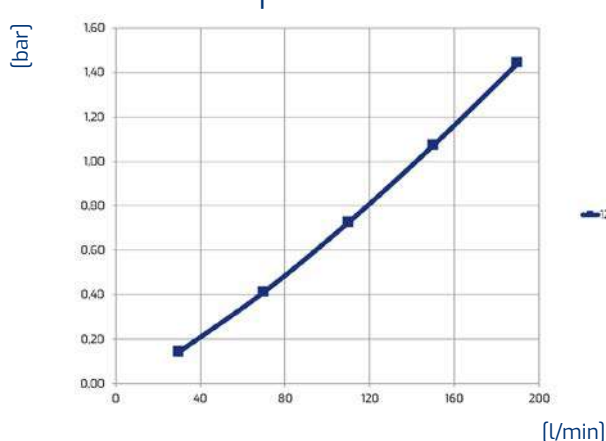
Item	Oil flow	Capacity	Weight	Voltage	Frequency	Current absorption	Power	Ø Fan	Air flow	Noise level	Rpm
	[l/min]	[l]	[kg]	[V]	[Hz]	[A]	[W]	[mm]	[m³/h]	[dB(A)]	
HY090.1-04A	30-190	5,3	30,8	24		6,90 (x2)	179 (x2)	280	3390	75	

Performance



Oil T 80°C
T Amb. 40°C
1 kW = 860 Kcal/h - 1 HP = 0,75 kW

Pressure drop



ISO VG 32 at 40°C

Viscosity - ISO VG 32 Oil

Oil	22	32	46	68	150
Correction factor	0,8	1	1,2	1,6	3

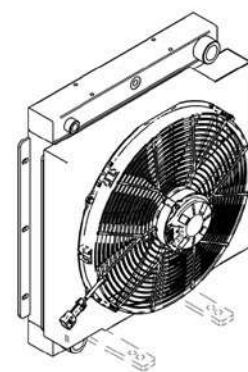
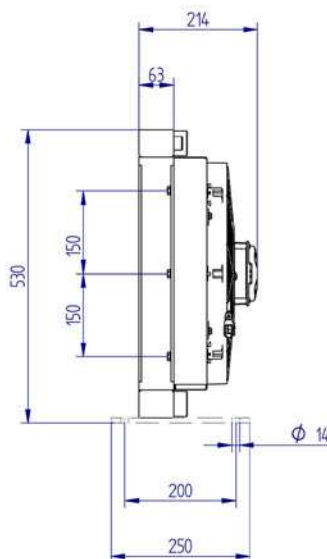
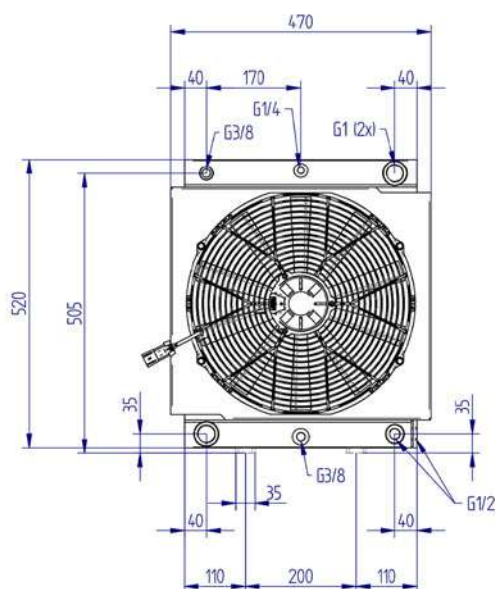
HY series

HY210.1-04A

AIR-OIL HEAT
EXCHANGERS

IP68

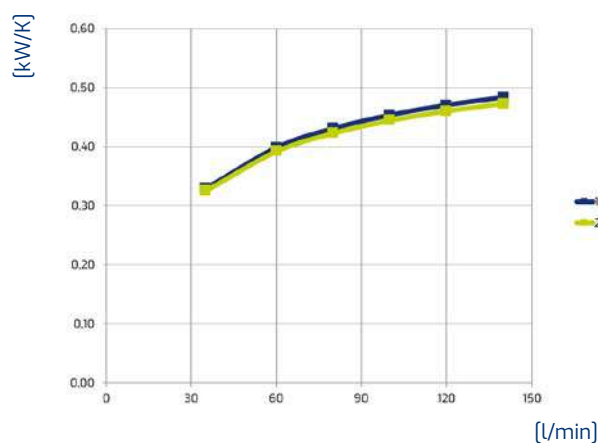
24
Volt



Technical data

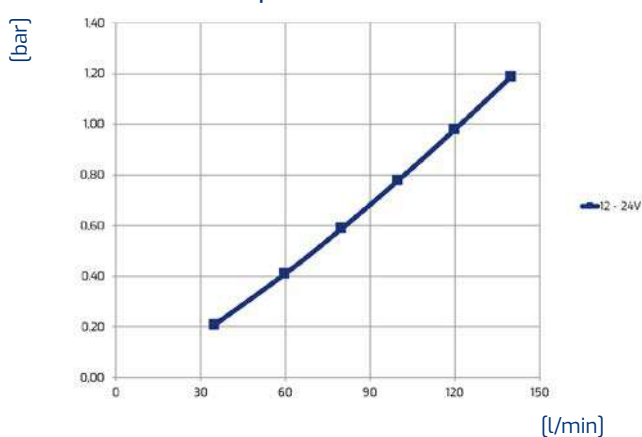
Item	Oil flow	Capacity	Weight	Voltage	Frequency	Current absorption	Power	Ø Fan	Air flow	Noise level	Rpm
	[l/min]	[l]	[kg]	[V]	[Hz]	[A]	[W]	[mm]	[m³/h]	[db(A)]	
HY210.1-04A	35-140	3,3	19	24		8,30	208	385	2625	72,2	

Performance



Oil T 80°C
T Amb. 40°C
1 kW = 860 Kcal/h - 1 HP = 0,75 kW

Pressure drop



ISO VG 32 at 40°C

Viscosity - ISO VG 32 Oil

Oil	22	32	46	68	150
Correction factor	0,8	1	1,2	1,6	3

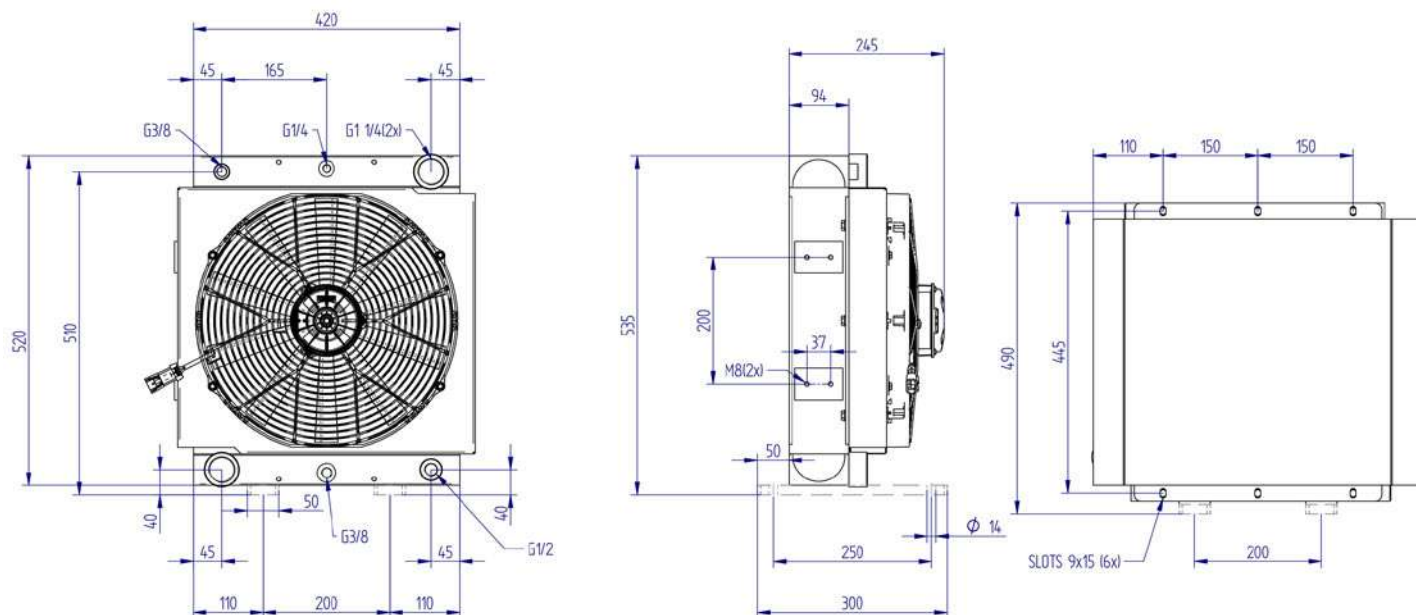
HY series

HY215.1-04A

AIR-OIL HEAT
EXCHANGERS

IP68

24
Volt

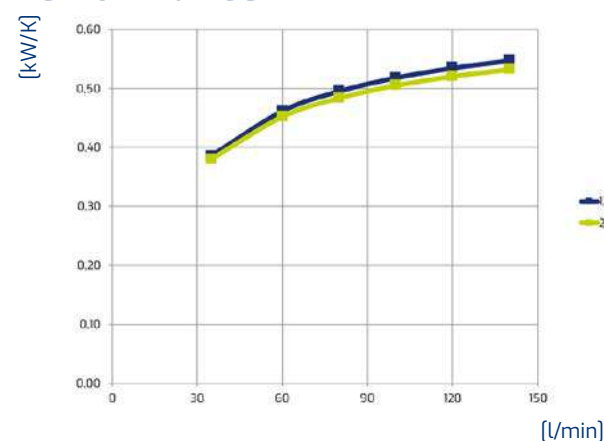


Vertical or horizontal mounting

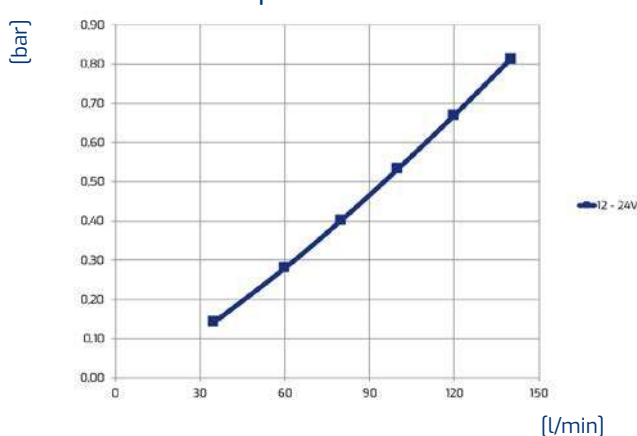
Technical data

Item	Oil flow	Capacity	Weight	Voltage	Frequency	Current absorption	Power	Ø Fan	Air flow	Noise level	Rpm
	[l/min]	[l]	[kg]	[V]	[Hz]	[A]	[W]	[mm]	[m³/h]	[db(A)]	
HY215.1-04A	35-140	5,3	24,5	24		8,30	210	385	2320	72,2	

Performance



Pressure drop



Viscosity - ISO VG 32 Oil

Oil	22	32	46	68	150
Correction factor	0,8	1	1,2	1,6	3

HY series

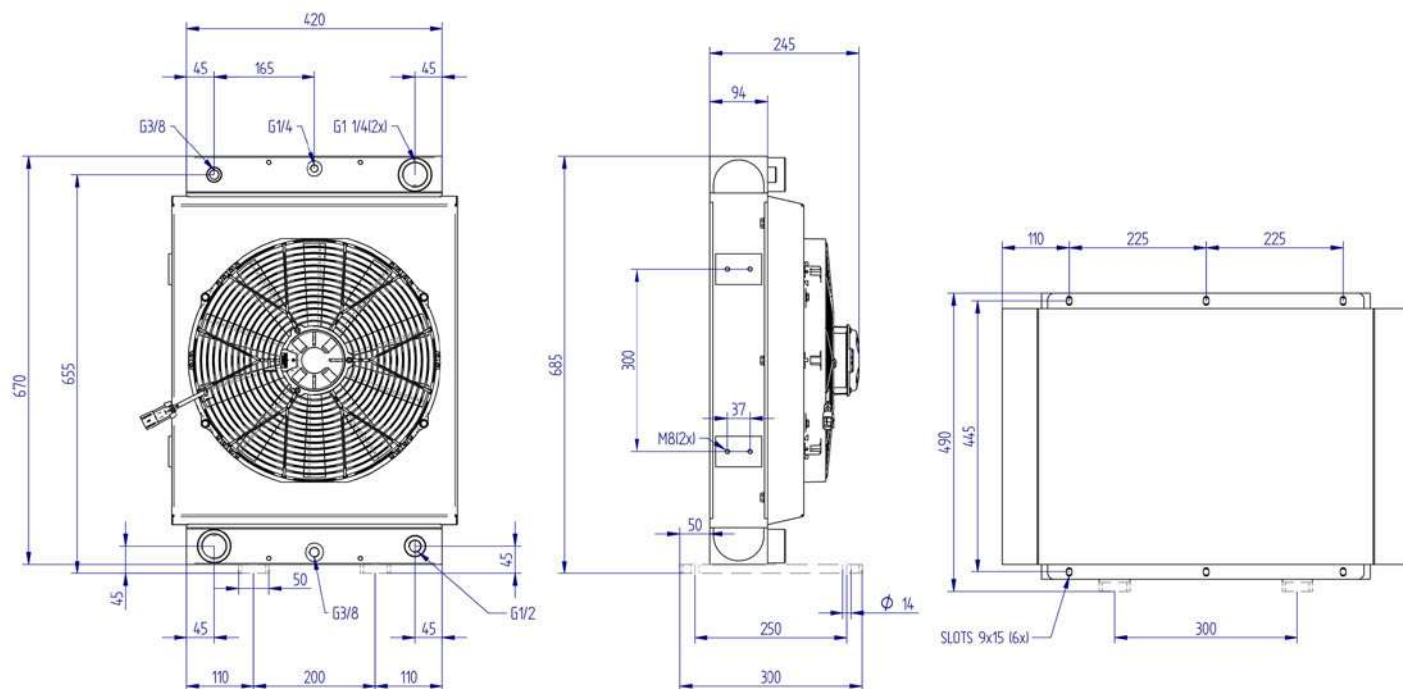
HY220.1-04A

AIR-OIL HEAT
EXCHANGERS

IP68

24

Volt

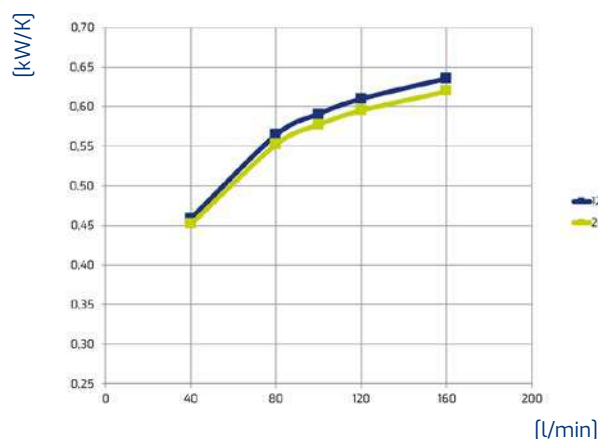


Vertical or horizontal mounting

Technical data

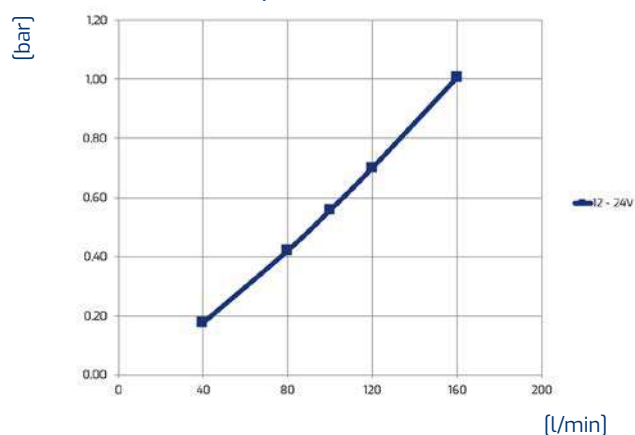
Item	Oil flow	Capacity	Weight	Voltage	Frequency	Current absorption	Power	Ø Fan	Air flow	Noise level	Rpm
	[l/min]	[l]	[kg]	[V]	[Hz]	[A]	[W]	[mm]	[m³/h]	[db(A)]	
HY220.1-04A	40-160	6,8	27	24		8,20	210	385	2881	73	

Performance



Oil T 80°C
T Amb. 40°C
1 kW = 860 Kcal/h - 1 HP = 0,75 kW

Pressure drop



ISO VG 32 at 40°C

Viscosity - ISO VG 32 Oil

Oil	22	32	46	68	150
Correction factor	0,8	1	1,2	1,6	3

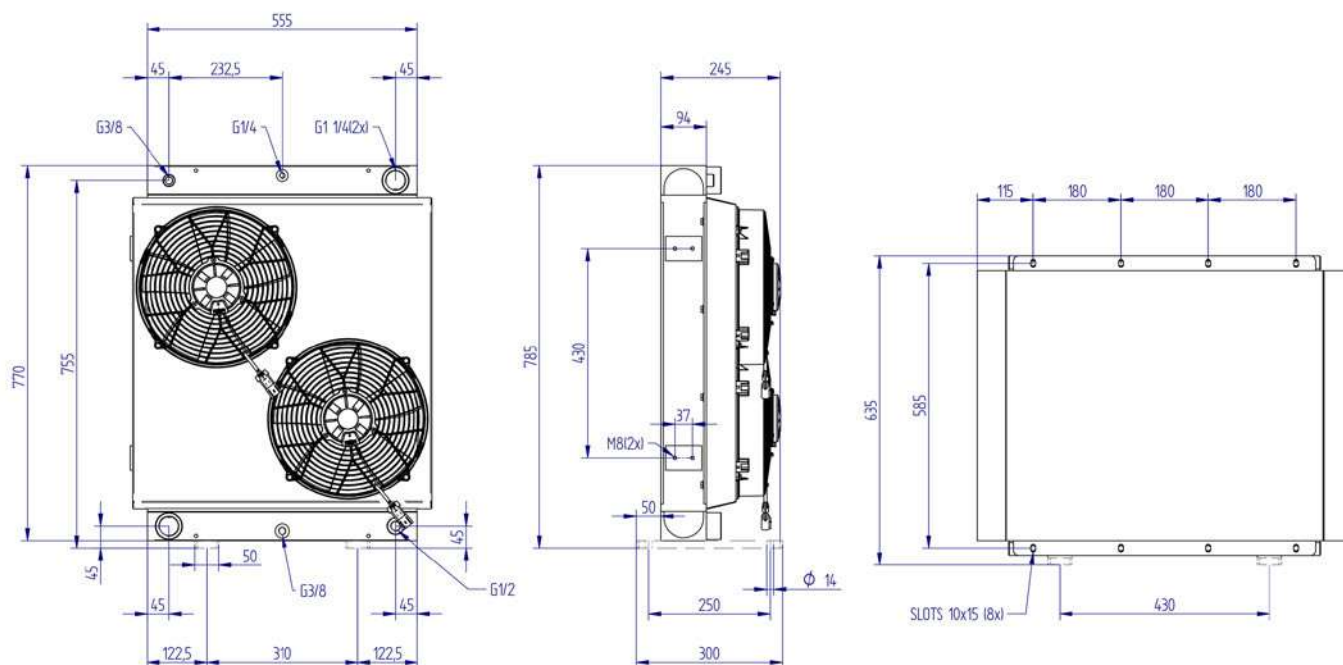
HY series

HY225.1-04A

AIR-OIL HEAT
EXCHANGERS

IP68

24
Volt

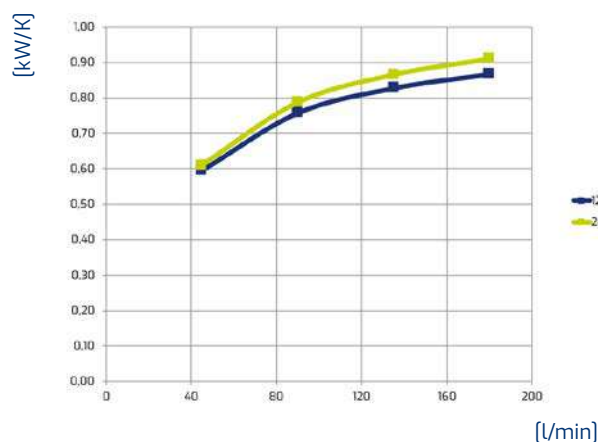


Vertical or horizontal mounting

Technical data

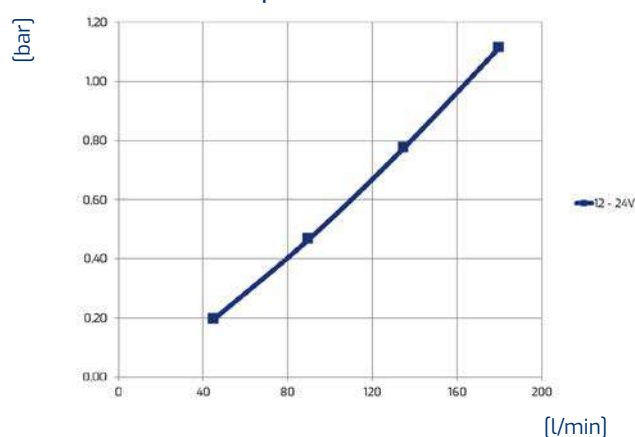
Item	Oil flow	Capacity	Weight	Voltage	Frequency	Current absorption	Power	Ø Fan	Air flow	Noise level	Rpm
	[l/min]	[l]	[kg]	[V]	[Hz]	[A]	[W]	[mm]	[m³/h]	[db(A)]	
HY225.1-04A	45-180	10	44	24		8,10	230	305 (x2)	4184	76,7	

Performance



Oil T 80°C
T Amb. 40°C
1 kW = 860 Kcal/h - 1 HP = 0,75 kW

Pressure drop



ISO VG 32 at 40°C

Viscosity - ISO VG 32 Oil

Oil	22	32	46	68	150
Correction factor	0,8	1	1,2	1,6	3

TIPO DI MOTORIZZAZIONE:
FAN UNIT TYPE:

PREDISPOSIZIONE
MOTORE IDRAULICO

DESIGNED FOR
HYDRAULIC MOTOR

GR2

HY series

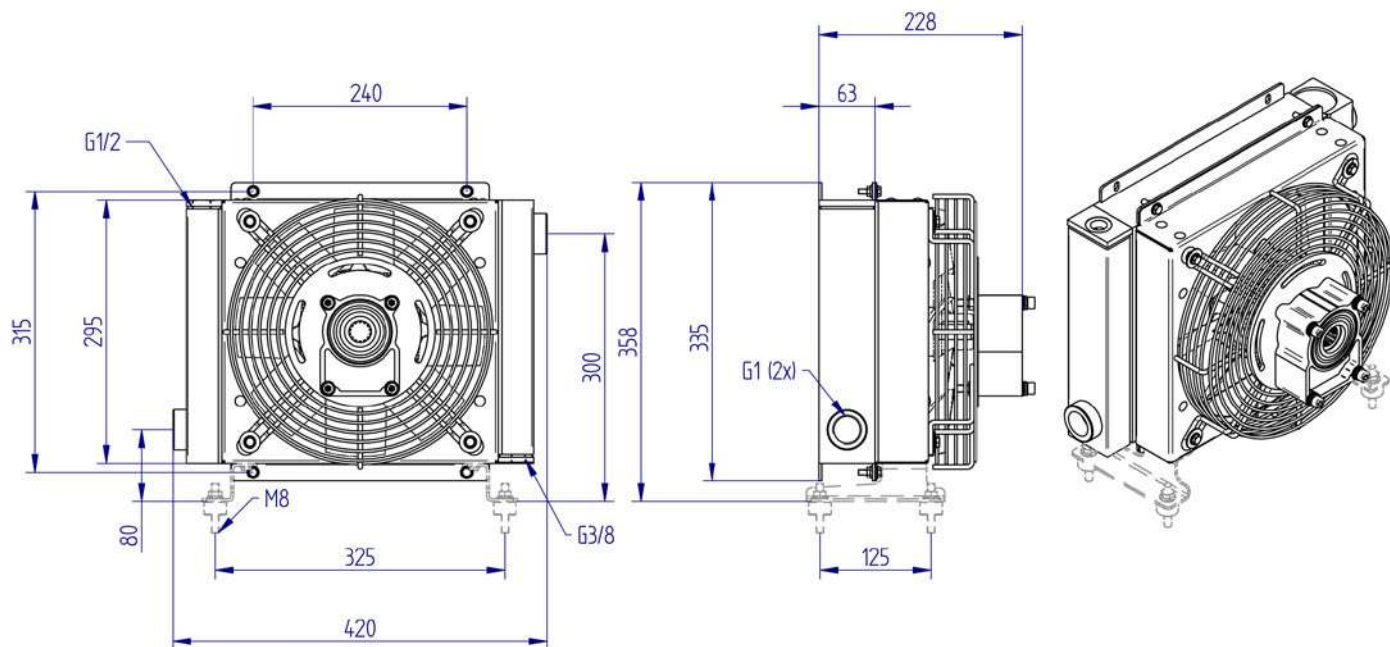
HY024.1-05A

AIR-OIL HEAT
EXCHANGERS

Suit.

HY M

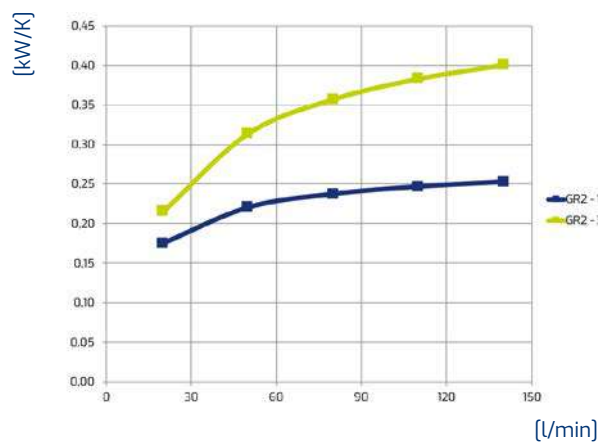
GR2



Technical data

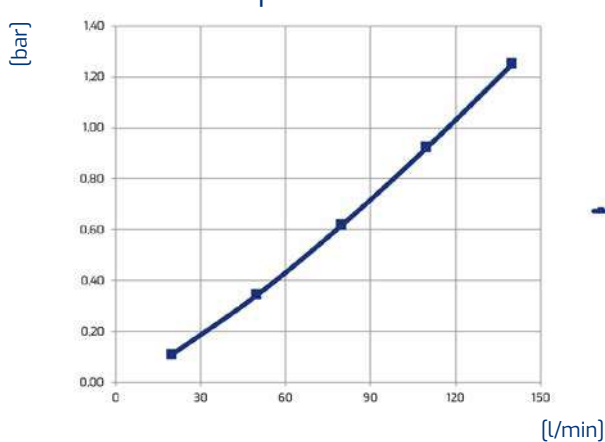
Item	Oil flow	Capacity	Weight	Voltage	Frequency	Current absorption	Ø Fan	Air flow	Noise level	Rpm
	[l/min]	[l]	[kg]	[V]	[Hz]	[A]	[mm]	[m³/h]	[db(A)]	
HY024.1-05A	20-140	2	12				280	1020	76,3	1500
HY024.1-05A	20-140	2	12				280	2090	91,3	3000

Performance



Oil T 80°C
T Amb. 40°C
1 kW = 860 Kcal/h - 1 HP = 0,75 kW

Pressure drop



ISO VG 32 at 40°C

Viscosity - ISO VG 32 Oil

Oil	22	32	46	68	150
Correction factor	0,8	1	1,2	1,6	3

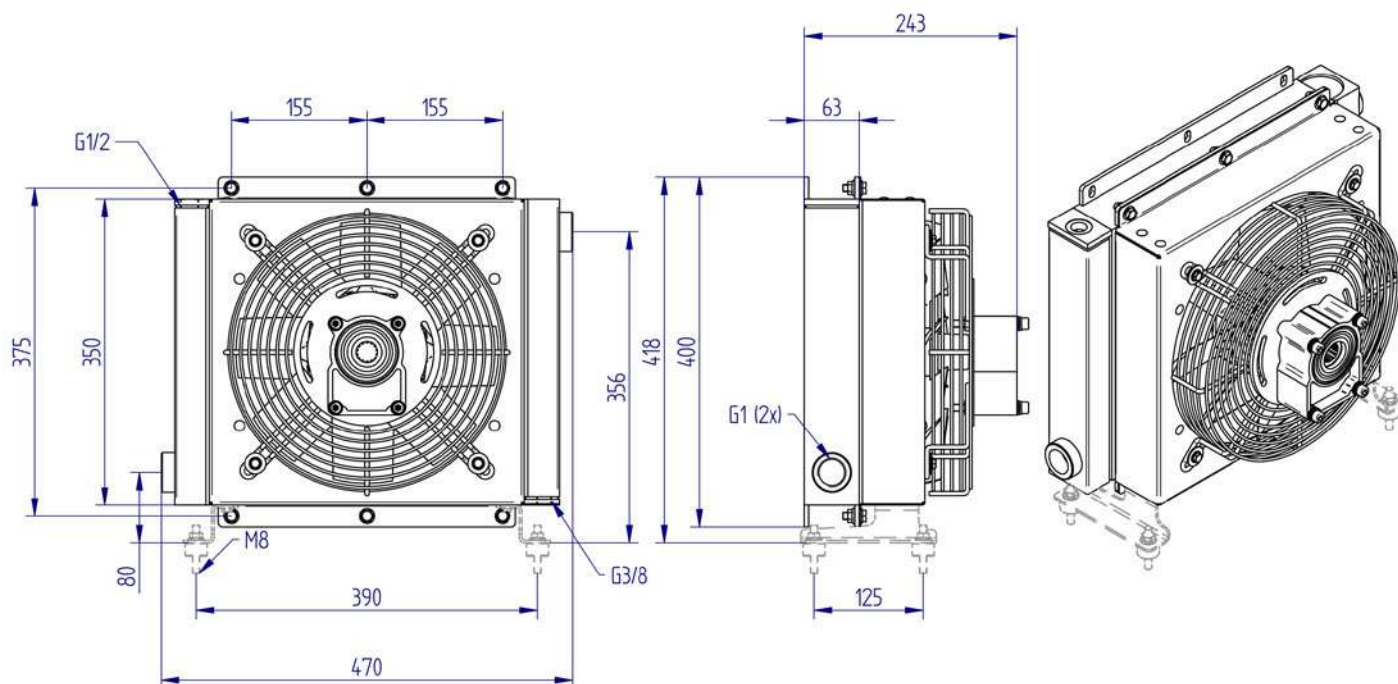
HY series

HY038.1-05A

AIR-OIL HEAT
EXCHANGERS

Suit.
HY M

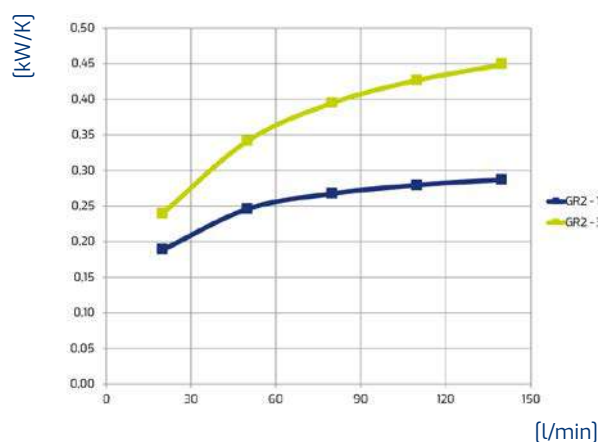
GR2



Technical data

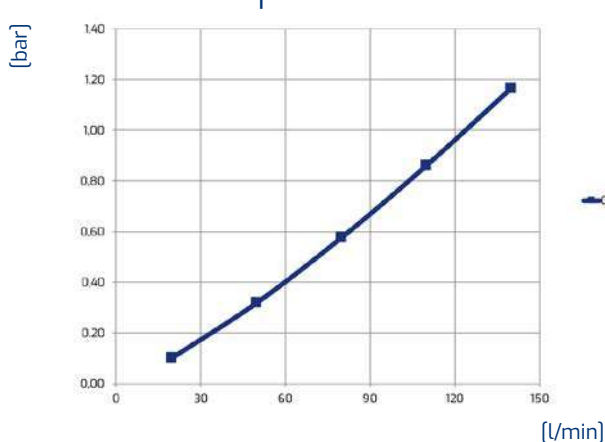
Item	Oil flow	Capacity	Weight	Voltage	Frequency	Current absorption	Ø Fan	Air flow	Noise level	Rpm
	[l/min]	[l]	[kg]	[V]	[Hz]	[A]	[mm]	[m³/h]	[db(A)]	
HY038.1-05A	20-140	2,5	13,5				300	1291	74	1500
HY038.1-05A	20-140	2,5	13,5				300	2658	88,8	3000

Performance



Oil T 80°C
T Amb. 40°C
1 kW = 860 Kcal/h - 1 HP = 0,75 kW

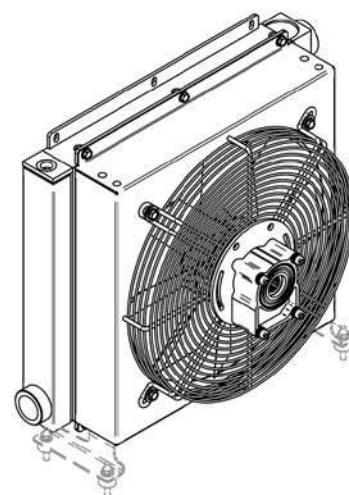
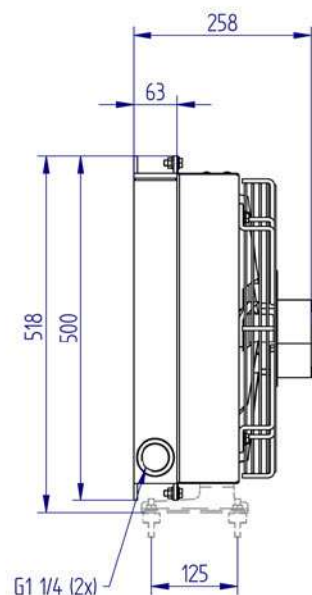
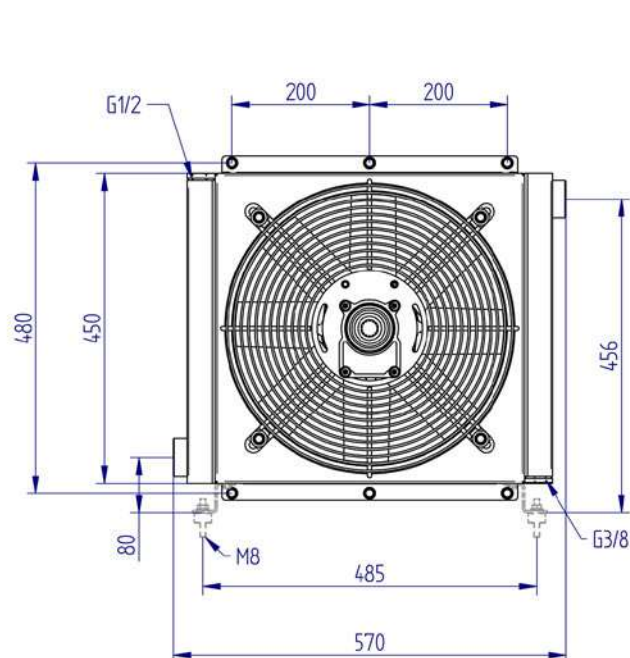
Pressure drop



ISO VG 32 at 40°C

Viscosity - ISO VG 32 Oil

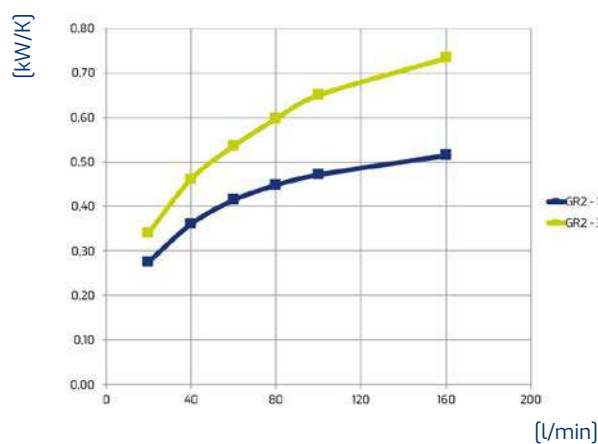
Oil	22	32	46	68	150
Correction factor	0,8	1	1,2	1,6	3



Technical data

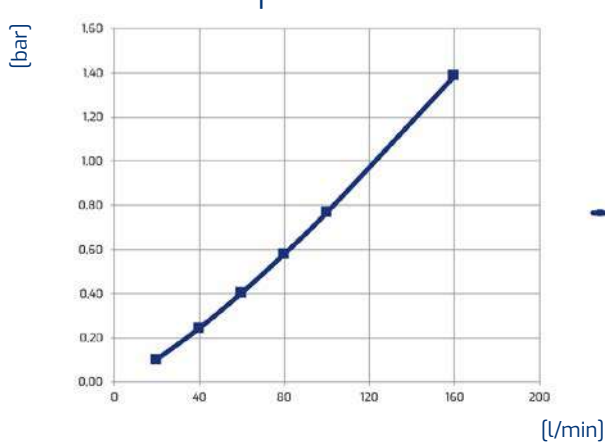
Item	Oil flow	Capacity	Weight	Voltage	Frequency	Current absorption	Ø Fan	Air flow	Noise level	Rpm
	[l/min]	[l]	[kg]	[V]	[Hz]	[A]	[mm]	[m³/h]	[dB(A)]	
HY057.1-05A	20-160	3,7	18				390	2810	76,9	1500
HY057.1-05A	20-160	3,7	18				390	5810	91,7	3000

Performance



Oil T 80°C
T Amb. 40°C
1 kW = 860 Kcal/h - 1 HP = 0,75 kW

Pressure drop



ISO VG 32 at 40°C

Viscosity - ISO VG 32 Oil

Oil	22	32	46	68	150
Correction factor	0,8	1	1,2	1,6	3

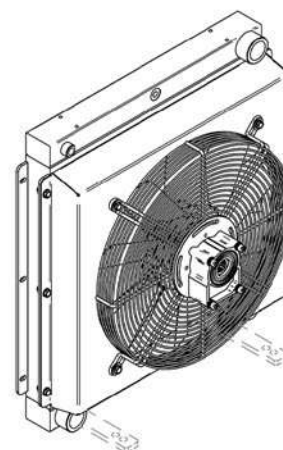
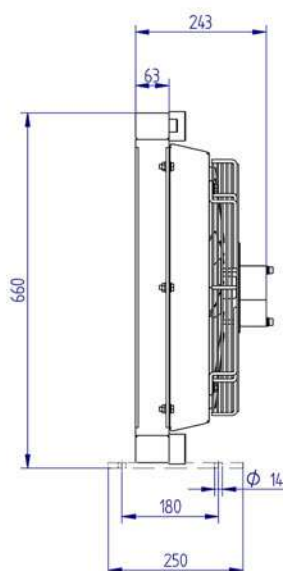
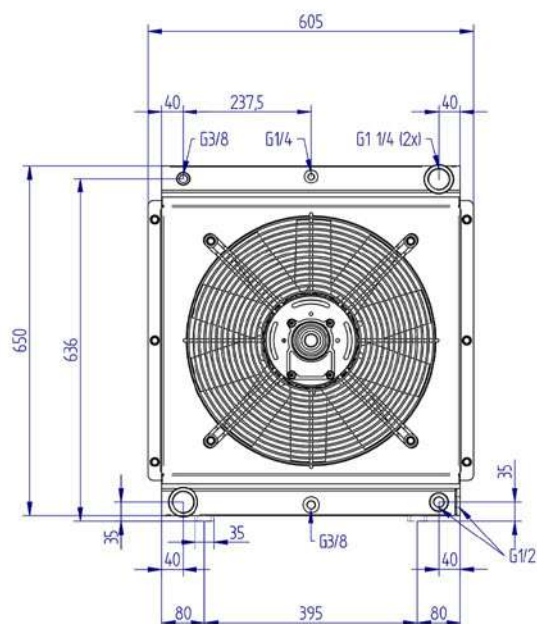
HY series

HY090.1-05A

AIR-OIL HEAT
EXCHANGERS

Suit.
HY M

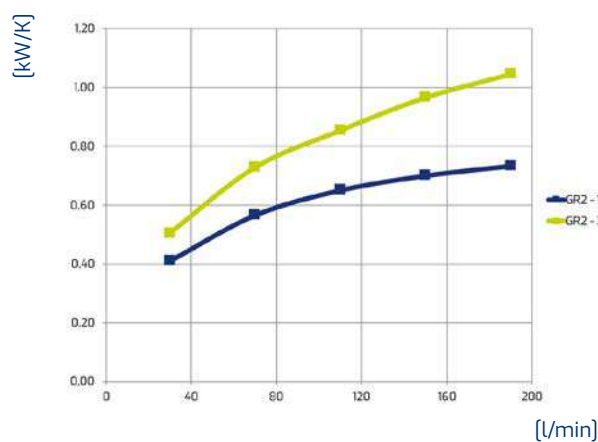
GR2



Technical data

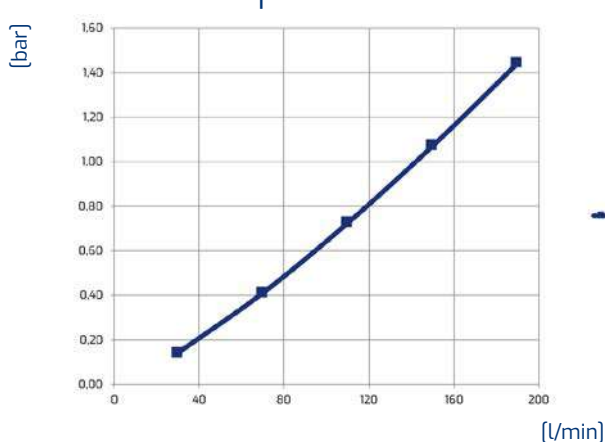
Item	Oil flow	Capacity	Weight	Voltage	Frequency	Current absorption	Ø Fan	Air flow	Noise level	Rpm
	[l/min]	[l]	[kg]	[V]	[Hz]	[A]	[mm]	[m³/h]	[db(A)]	
HY090.1-05A	30-190	5,3	29				450	5400	82	1500
HY090.1-05A	30-190	5,3	29				450	11300	97	3000

Performance



Oil T 80°C
T Amb. 40°C
1 kW = 860 Kcal/h - 1 HP = 0,75 kW

Pressure drop



ISO VG 32 at 40°C

Viscosity - ISO VG 32 Oil

Oil	22	32	46	68	150
Correction factor	0,8	1	1,2	1,6	3

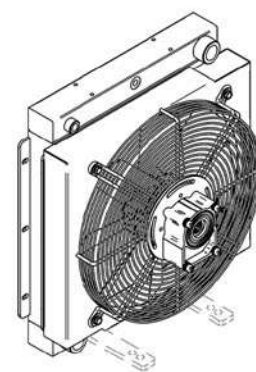
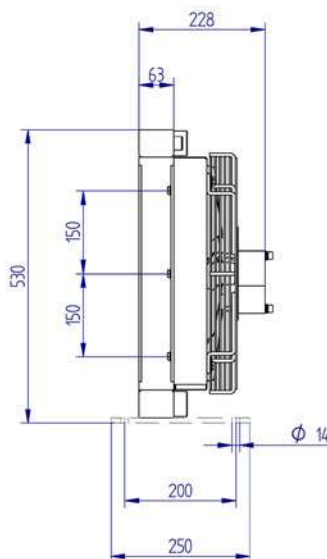
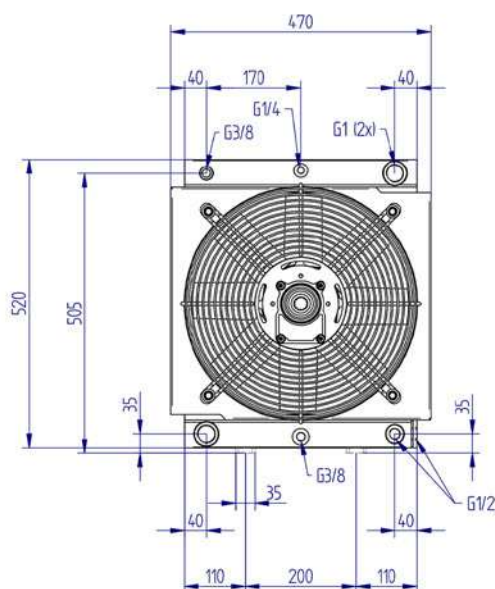
HY series

HY210.1-05A

AIR-OIL HEAT
EXCHANGERS

Suit.
HY M

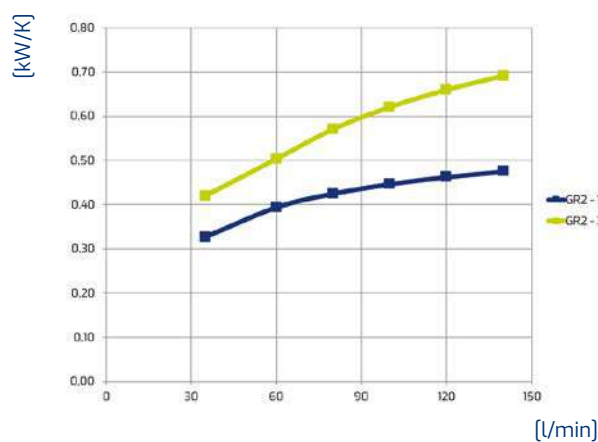
GR2



Technical data

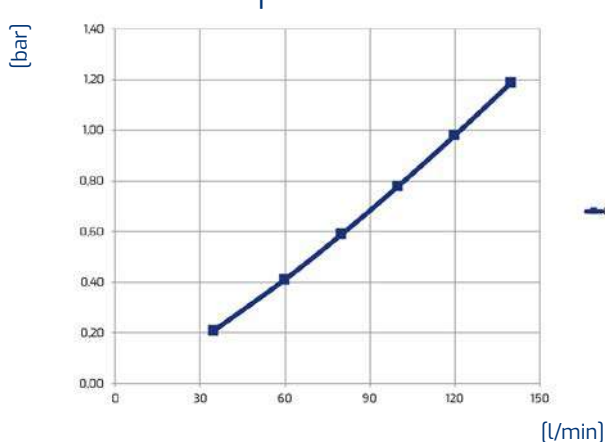
Item	Oil flow	Capacity	Weight	Voltage	Frequency	Current absorption	Ø Fan	Air flow	Noise level	Rpm
	[l/min]	[l]	[kg]	[V]	[Hz]	[A]	[mm]	[m³/h]	[db(A)]	
HY210.1-05A	35-140	3,3	20,5				390	2554	78	1500
HY210.1-05A	35-140	3,3	20,5				390	5402	92,5	3000

Performance



Oil T 80°C
T Amb. 40°C
1 kW = 860 Kcal/h - 1 HP = 0,75 kW

Pressure drop



ISO VG 32 at 40°C

Viscosity - ISO VG 32 Oil

Oil	22	32	46	68	150
Correction factor	0,8	1	1,2	1,6	3

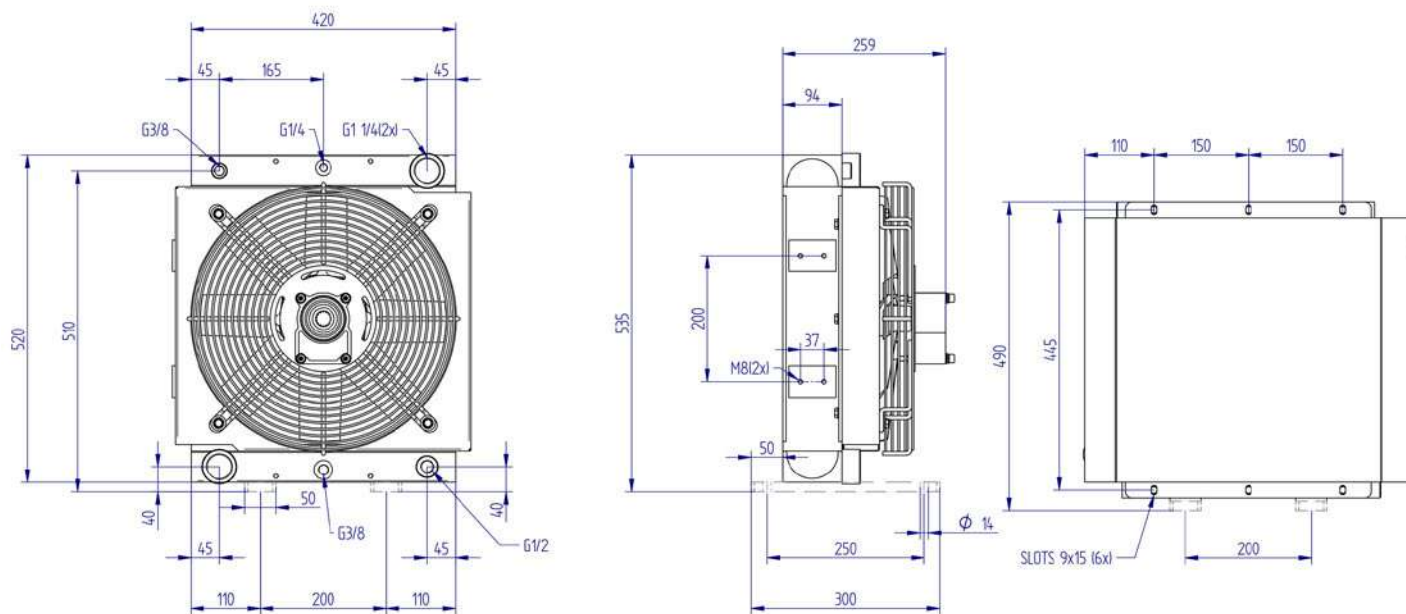
HY series

HY215.1-05A

AIR-OIL HEAT
EXCHANGERS

Suit.
HY M

GR2

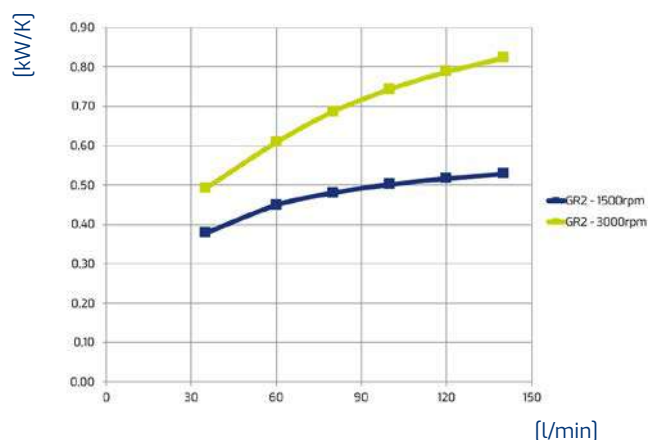


Vertical or horizontal mounting

Technical data

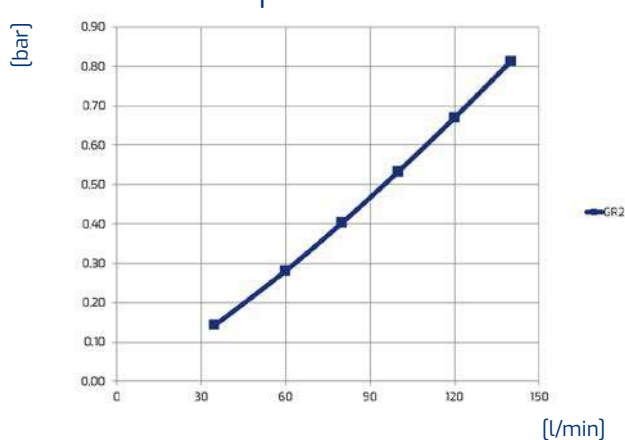
Item	Oil flow	Capacity	Weight	Voltage	Frequency	Current absorption	Ø Fan	Air flow	Noise level	Rpm
	[l/min]	[l]	[kg]	[V]	[Hz]	[A]	[mm]	[m³/h]	[db(A)]	
HY215.1-05A	35-140	5.3	26				390	2281	79,1	1500
HY215.1-05A	35-140	5.3	26				390	4860	92,5	3000

Performance



Oil T 80°C
T Amb. 40°C
1 kW = 860 Kcal/h - 1 HP = 0,75 kW

Pressure drop



ISO VG 32 at 40°C

Viscosity - ISO VG 32 Oil

Oil	22	32	46	68	150
Correction factor	0,8	1	1,2	1,6	3

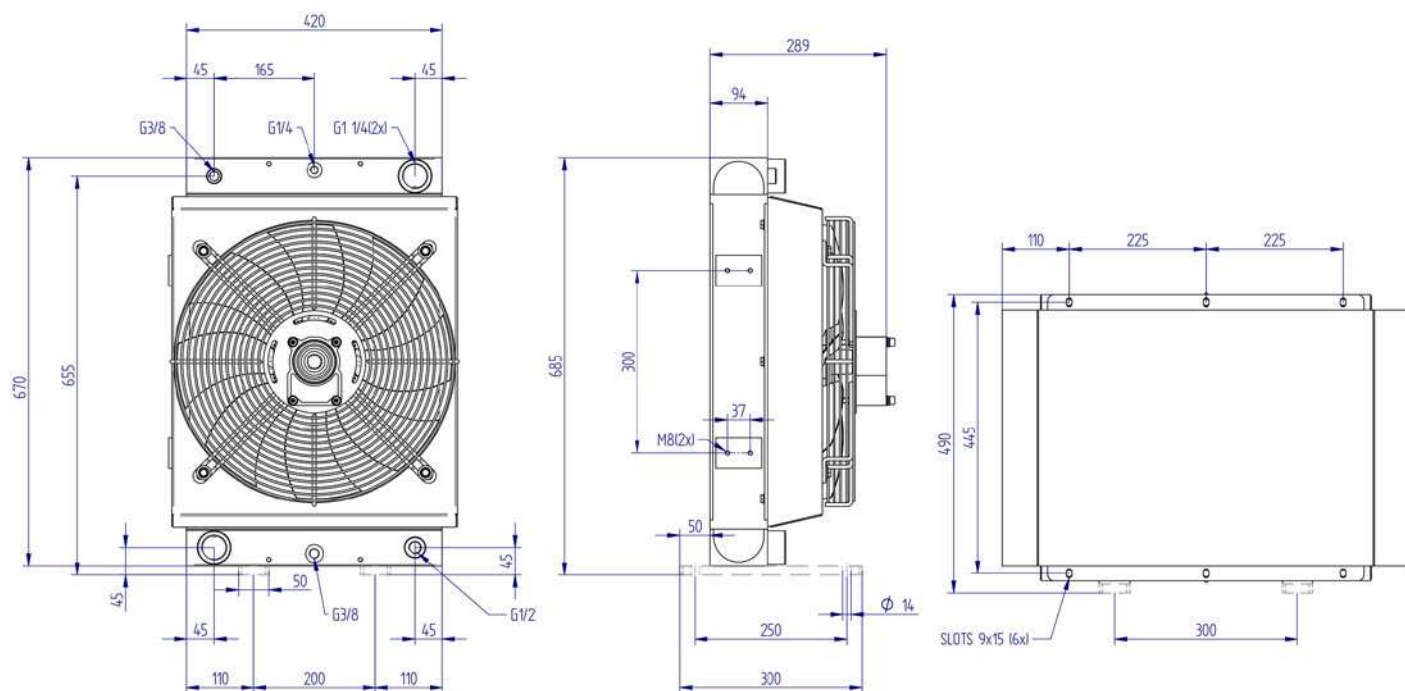
HY series

HY220.1-05A

AIR-OIL HEAT
EXCHANGERS

Suit.
HY M

GR2

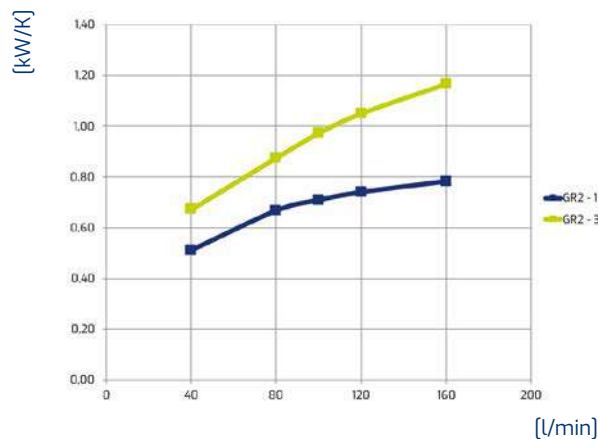


Vertical or horizontal mounting

Technical data

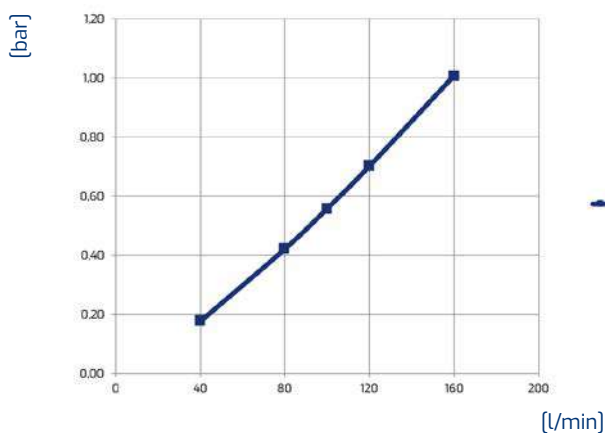
Item	Oil flow	Capacity	Weight	Voltage	Frequency	Current absorption	Ø Fan	Air flow	Noise level	Rpm
	[l/min]	[l]	[kg]	[V]	[Hz]	[A]	[mm]	[m³/h]	[db(A)]	
HY220.1-05A	40-160	6,8	34				450	3778	84,4	1500
HY220.1-05A	40-160	6,8	34				450	8461	102	3000

Performance



Oil T 80°C
T Amb. 40°C
1 kW = 860 Kcal/h - 1 HP = 0,75 kW

Pressure drop



ISO VG 32 at 40°C

Viscosity - ISO VG 32 Oil

Oil	22	32	46	68	150
Correction factor	0,8	1	1,2	1,6	3

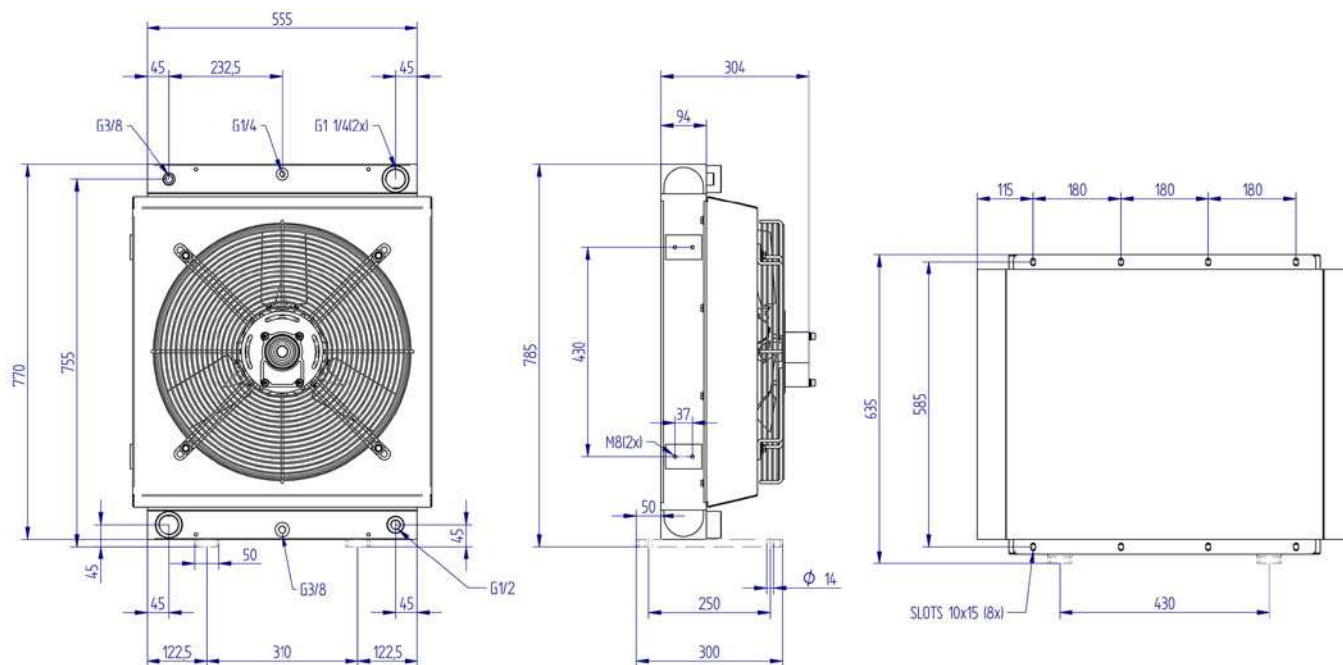
HY series

HY225.1-05A

AIR-OIL HEAT
EXCHANGERS

Suit.
HY M

GR2

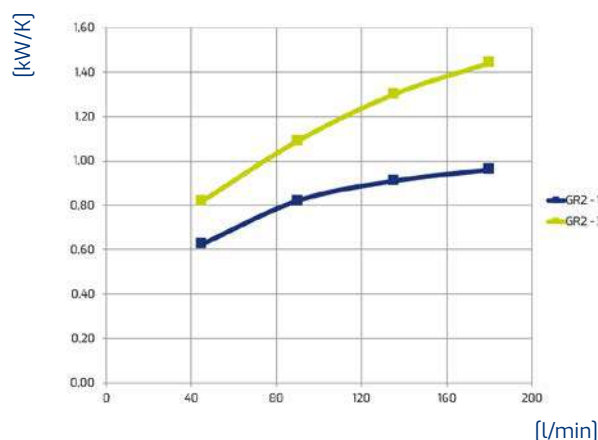


Vertical or horizontal mounting

Technical data

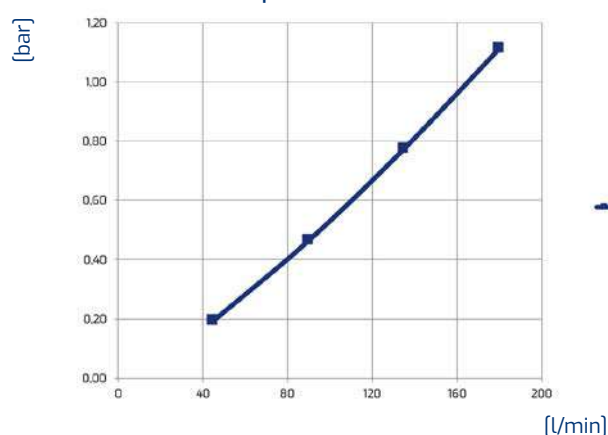
Item	Oil flow	Capacity	Weight	Voltage	Frequency	Current absorption	Ø Fan	Air flow	Noise level	Rpm
	[l/min]	[l]	[kg]	[V]	[Hz]	[A]	[mm]	[m³/h]	[db(A)]	
HY225.1-05A	45-180	10	46				500	4566	78	1500
HY225.1-05A	45-180	10	46				500	9641	94	3000

Performance



Oil T 80°C
T Amb. 40°C
1 kW = 860 Kcal/h - 1 HP = 0,75 kW

Pressure drop



ISO VG 32 at 40°C

Viscosity - ISO VG 32 Oil

Oil	22	32	46	68	150
Correction factor	0,8	1	1,2	1,6	3

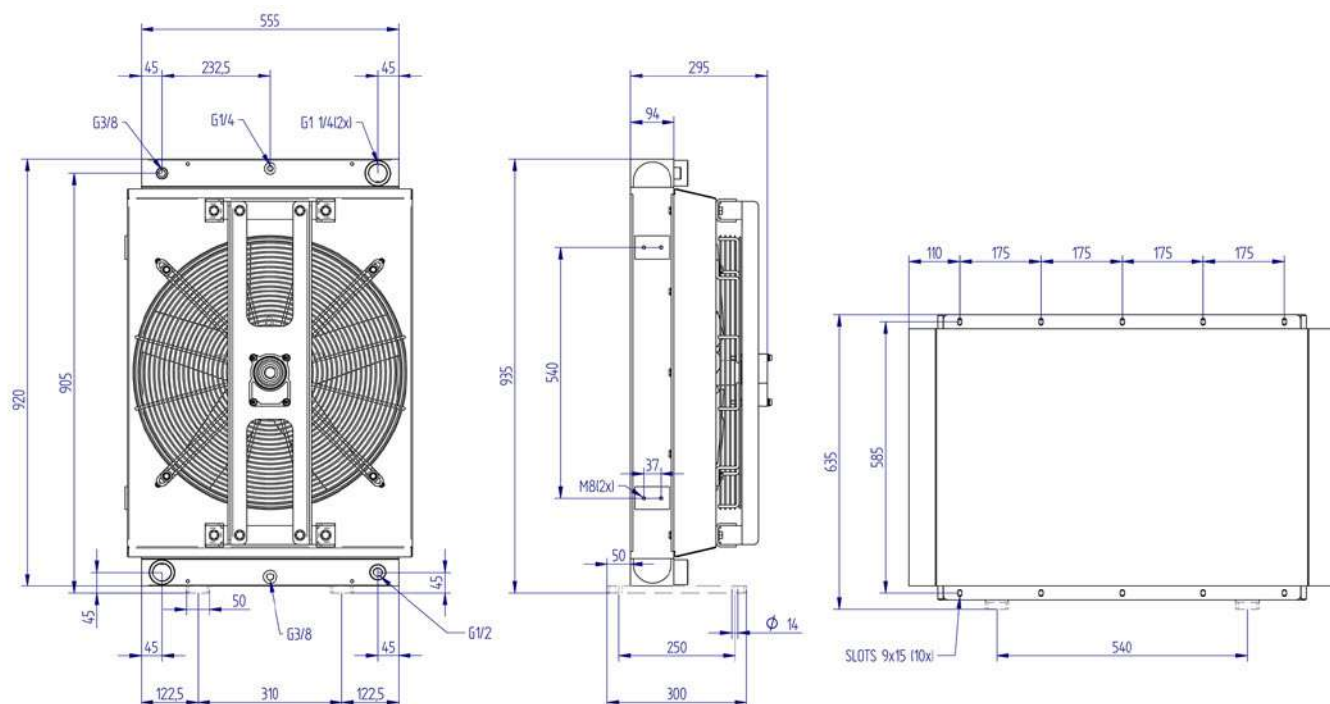
HY series

HY230.1-05A

AIR-OIL HEAT
EXCHANGERS

Suit.
HY M

GR2

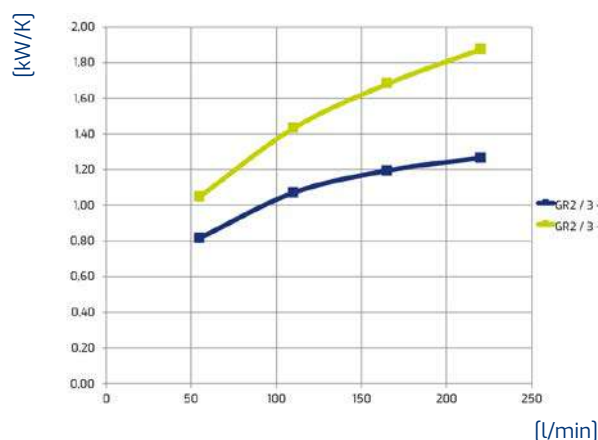


Vertical or horizontal mounting

Technical data

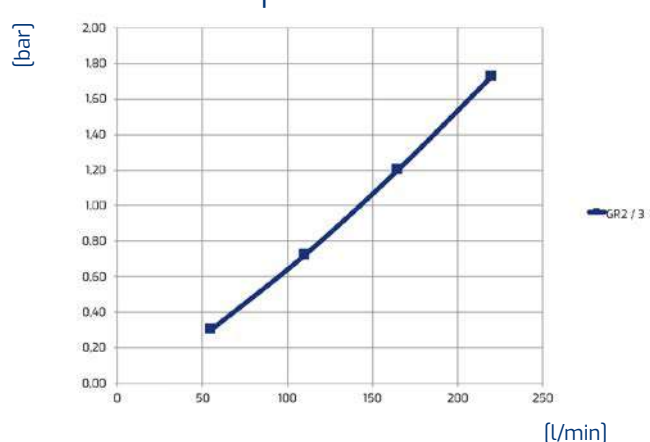
Item	Oil flow	Capacity	Weight	Voltage	Frequency	Current absorption	Ø Fan	Air flow	Noise level	Rpm
	[l/min]	[l]	[kg]	[V]	[Hz]	[A]	[mm]	[m³/h]	[db(A)]	
HY230.1-05A	55-220	11,5	55				560	6264	80	1500
HY230.1-05A	55-220	11,5	55				560	13151	95	3000

Performance



Oil T 80°C
T Amb. 40°C
1 kW = 860 Kcal/h - 1 HP = 0,75 kW

Pressure drop



ISO VG 32 at 40°C

Viscosity - ISO VG 32 Oil

Oil	22	32	46	68	150
Correction factor	0,8	1	1,2	1,6	3

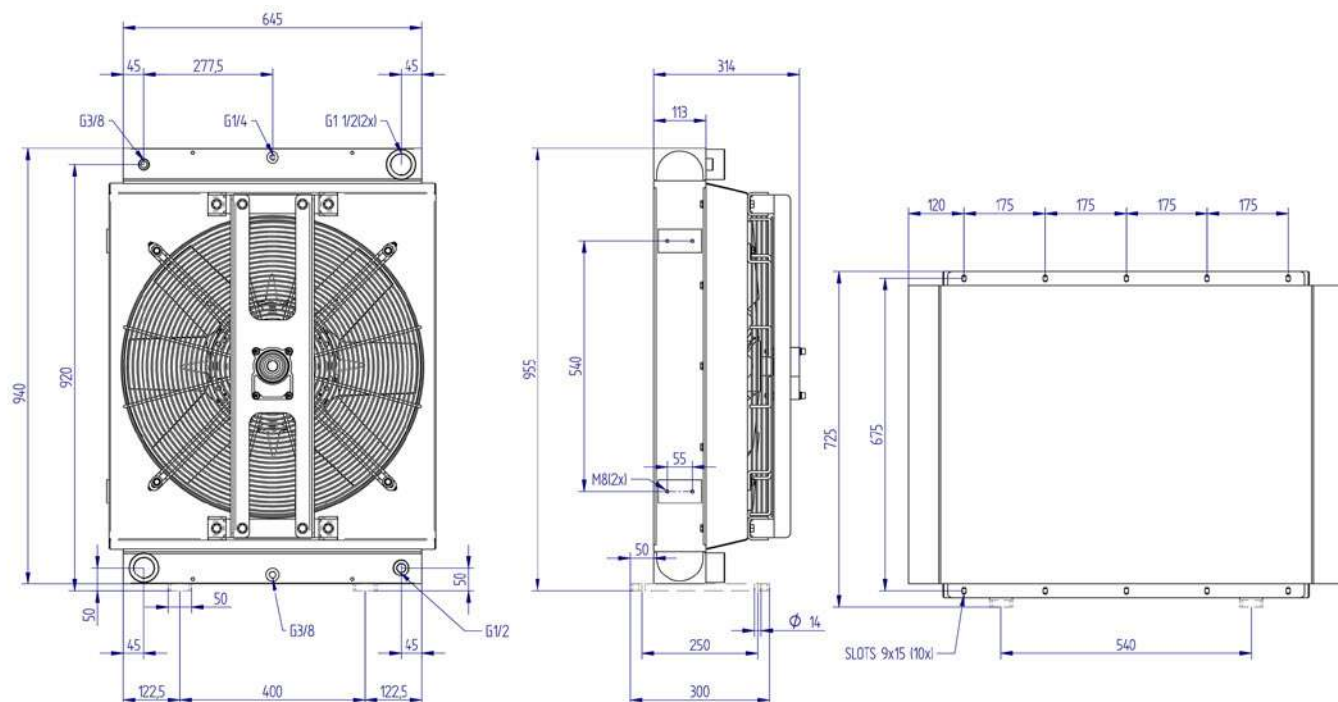
HY series

HY232.1-05A

AIR-OIL HEAT
EXCHANGERS

Des.
Hyd. M.

GR2

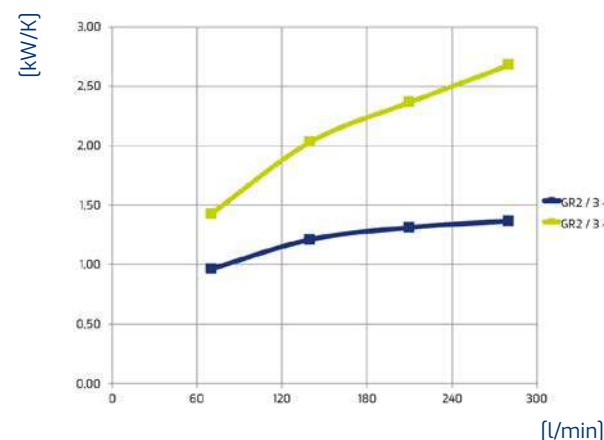


Vertical or horizontal mounting

Technical data

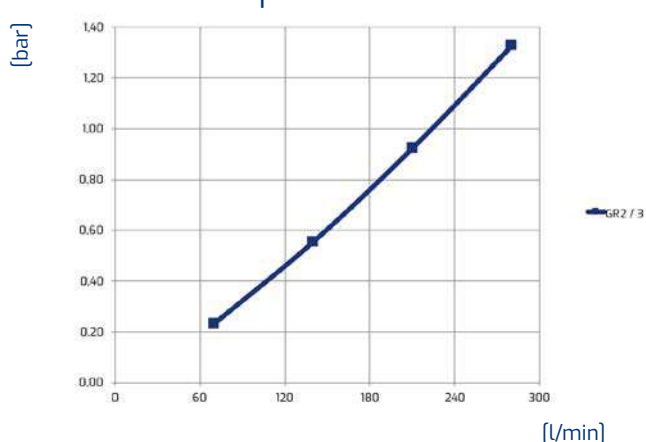
Item	Oil flow	Capacity	Weight	Voltage	Frequency	Current absorption	Ø Fan	Air flow	Noise level	Rpm
	[l/min]	[l]	[kg]	[V]	[Hz]	[A]	[mm]	[m³/h]	[dB(A)]	
HY232.1-05A	70-280	16,8	77				630	5893	81	1000
HY232.1-05A	70-280	16,8	77				630	19433	105	3000

Performance



Oil T 80°C
T Amb. 40°C
1 kW = 860 Kcal/h - 1 HP = 0,75 kW

Pressure drop



ISO VG 32 at 40°C

Viscosity - ISO VG 32 Oil

Oil	22	32	46	68	150
Correction factor	0,8	1	1,2	1,6	3

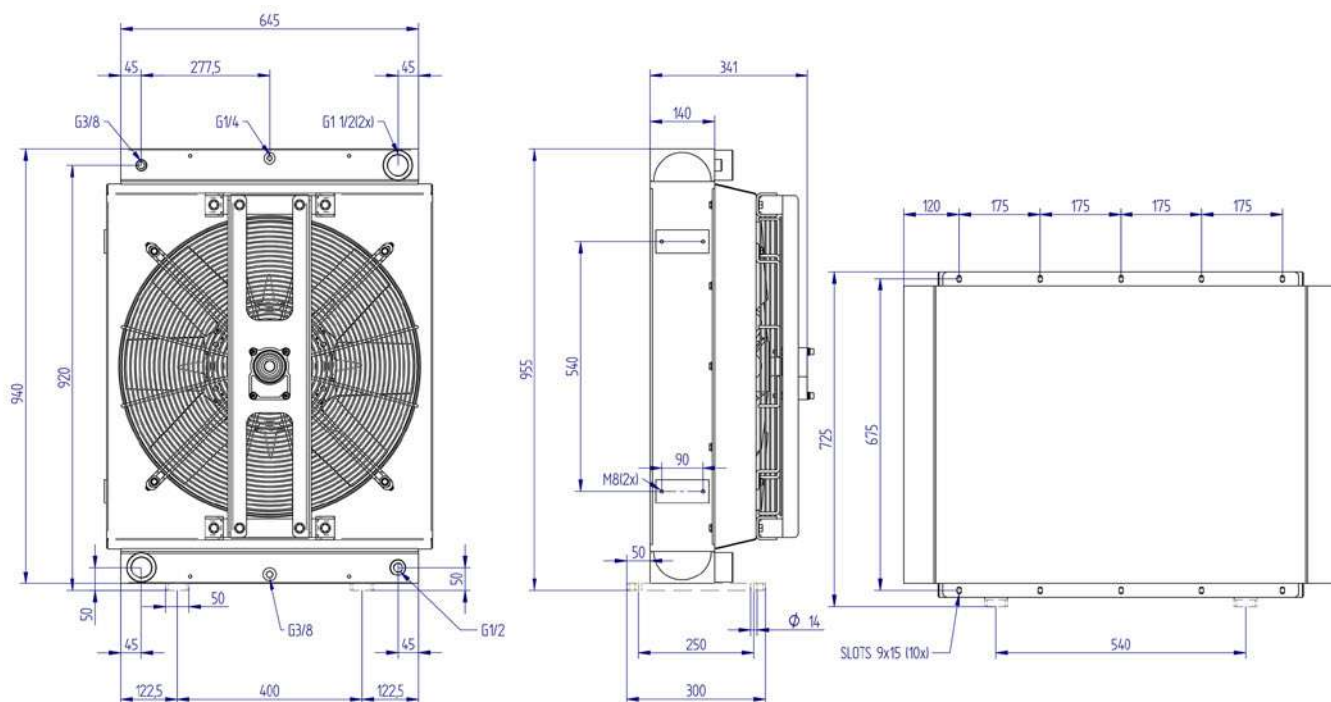
HY series

HY235.1-05A

AIR-OIL HEAT
EXCHANGERS

Suit.
HY M

GR2

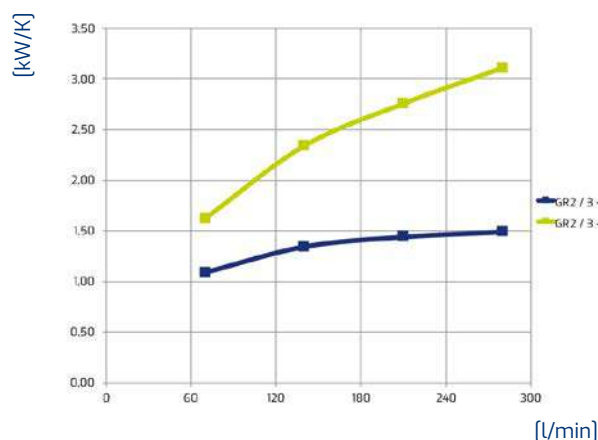


Vertical or horizontal mounting

Technical data

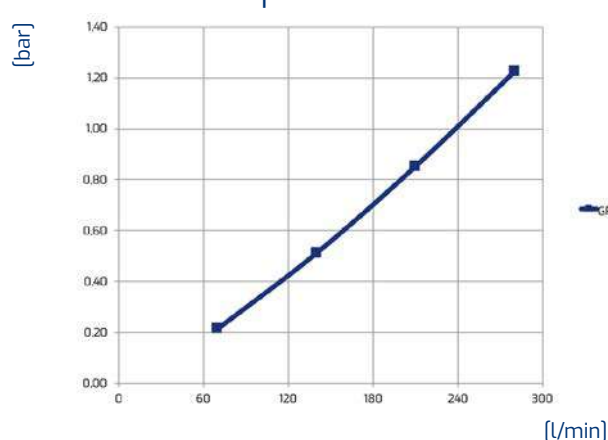
Item	Oil flow	Capacity	Weight	Voltage	Frequency	Current absorption	Ø Fan	Air flow	Noise level	Rpm
	[l/min]	[l]	[kg]	[V]	[Hz]	[A]	[mm]	[m³/h]	[db(A)]	
HY235.1-05A	70-280	20,2	89				630	5232	81	1000
HY235.1-05A	70-280	20,2	89				630	17500	105	3000

Performance



Oil T 80°C
T Amb. 40°C
1 kW = 860 Kcal/h - 1 HP = 0,75 kW

Pressure drop



ISO VG 32 at 40°C

Viscosity - ISO VG 32 Oil

Oil	22	32	46	68	150
Correction factor	0,8	1	1,2	1,6	3

GR3

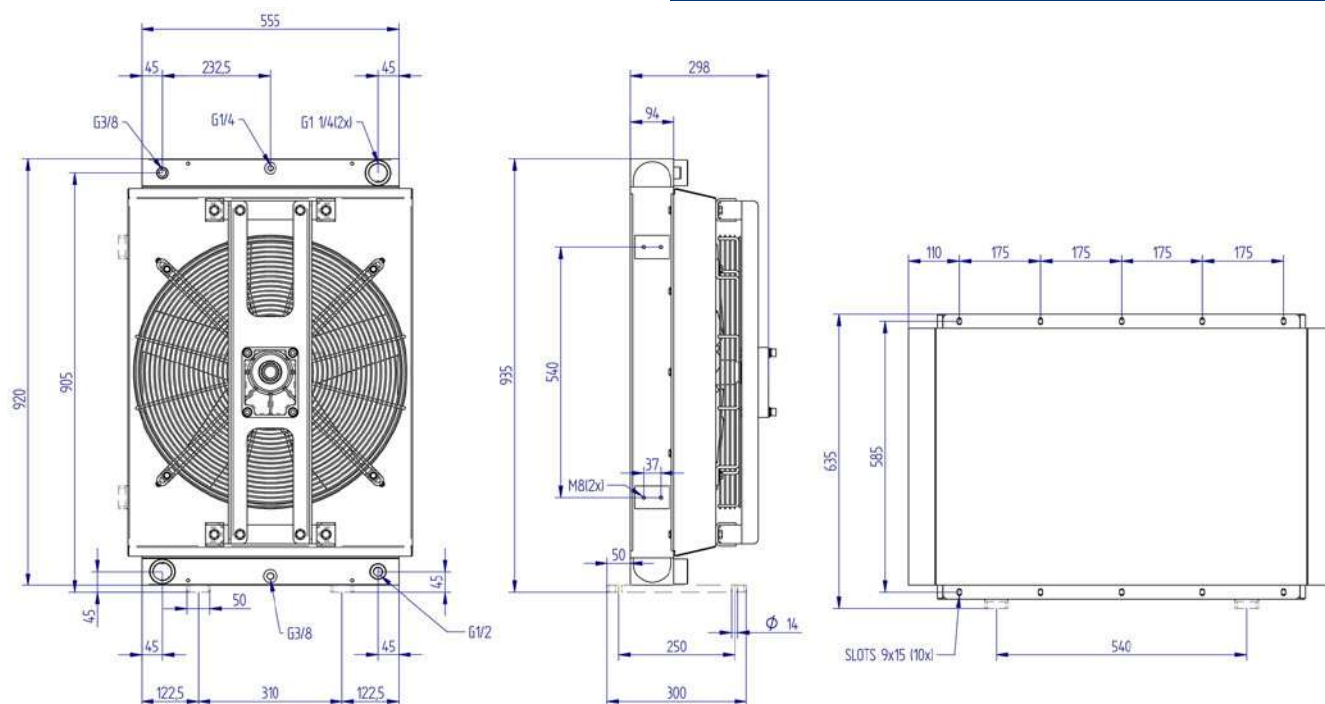
HY series

HY230.1-06A

AIR-OIL HEAT
EXCHANGERS

Suit.
HY M

GR3

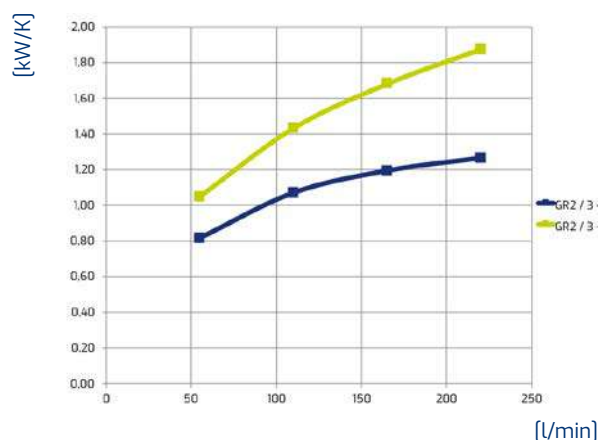


Vertical or horizontal mounting

Technical data

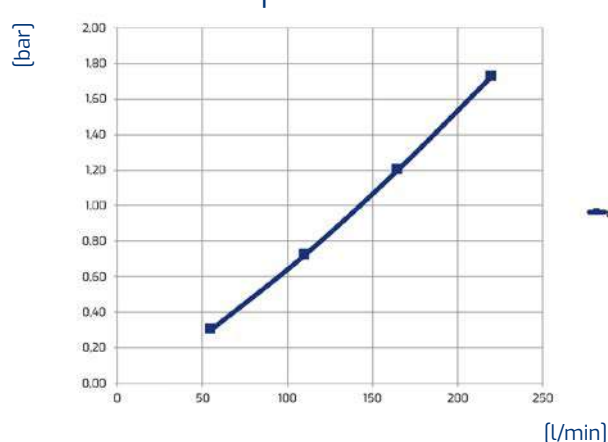
Item	Oil flow	Capacity	Weight	Voltage	Frequency	Current absorption	Ø Fan	Air flow	Noise level	Rpm
	[l/min]	[l]	[kg]	[V]	[Hz]	[A]	[mm]	[m³/h]	[db(A)]	
HY230.1-06A	55-220	11,5	55				560	6264	80	1500
HY230.1-06A	55-220	11,5	55				560	13151	95	3000

Performance



Oil T 80°C
T Amb. 40°C
1 kW = 860 Kcal/h - 1 HP = 0,75 kW

Pressure drop



ISO VG 32 at 40°C

Viscosity - ISO VG 32 Oil

Oil	22	32	46	68	150
Correction factor	0,8	1	1,2	1,6	3

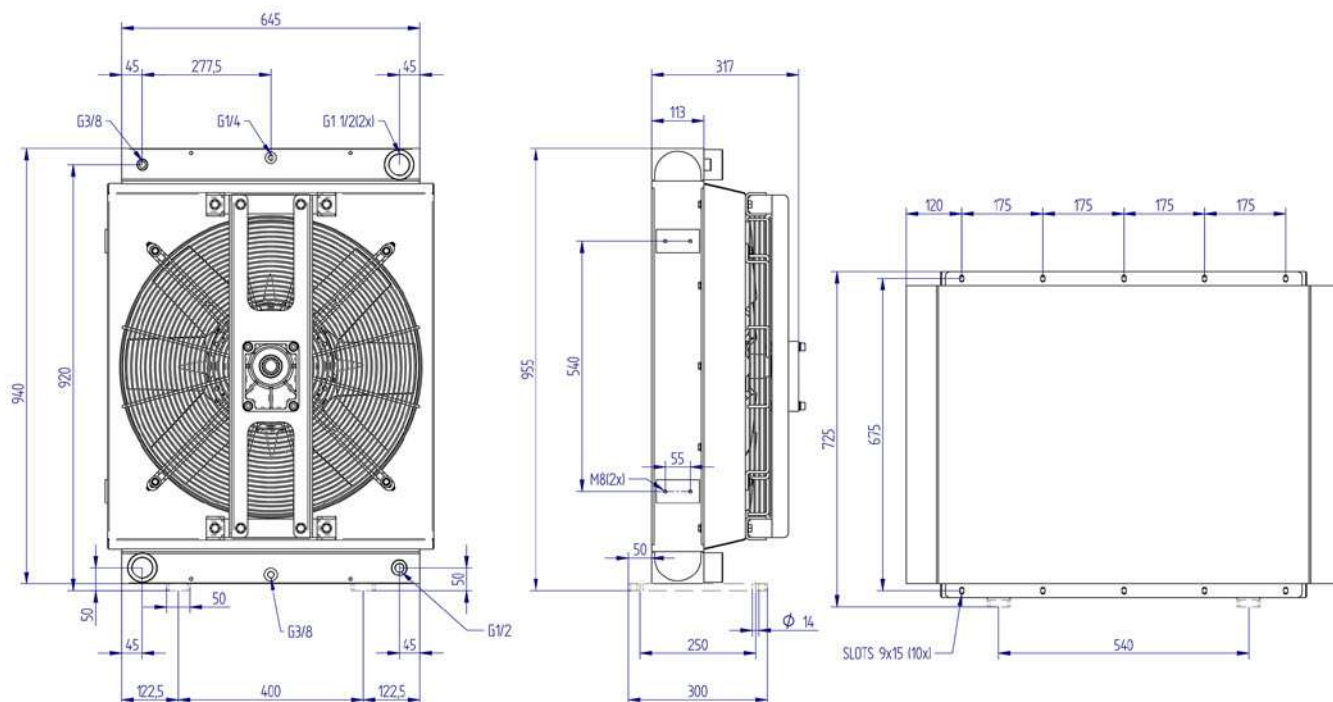
HY series

HY232.1-06A

AIR-OIL HEAT
EXCHANGERS

Suit.
HY M

GR3

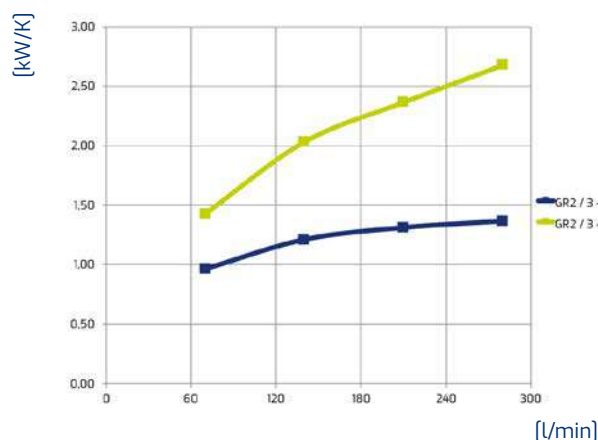


Vertical or horizontal mounting

Technical data

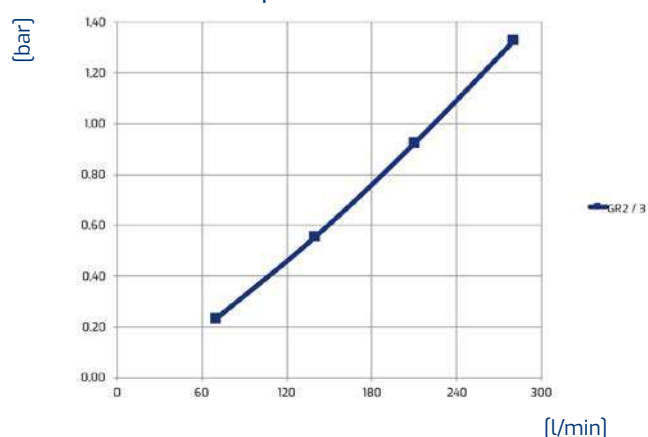
Item	Oil flow	Capacity	Weight	Voltage	Frequency	Current absorption	Ø Fan	Air flow	Noise level	Rpm
	[l/min]	[l]	[kg]	[V]	[Hz]	[A]	[mm]	[m³/h]	[db(A)]	
HY232.1-06A	70-280	16,8	77				630	5893	81	1000
HY232.1-06A	70-280	16,8	77				630	19433	105	3000

Performance



Oil T 80°C
T Amb. 40°C
1 kW = 860 Kcal/h - 1 HP = 0,75 kW

Pressure drop



ISO VG 32 at 40°C

Viscosity - ISO VG 32 Oil

Oil	22	32	46	68	150
Correction factor	0,8	1	1,2	1,6	3

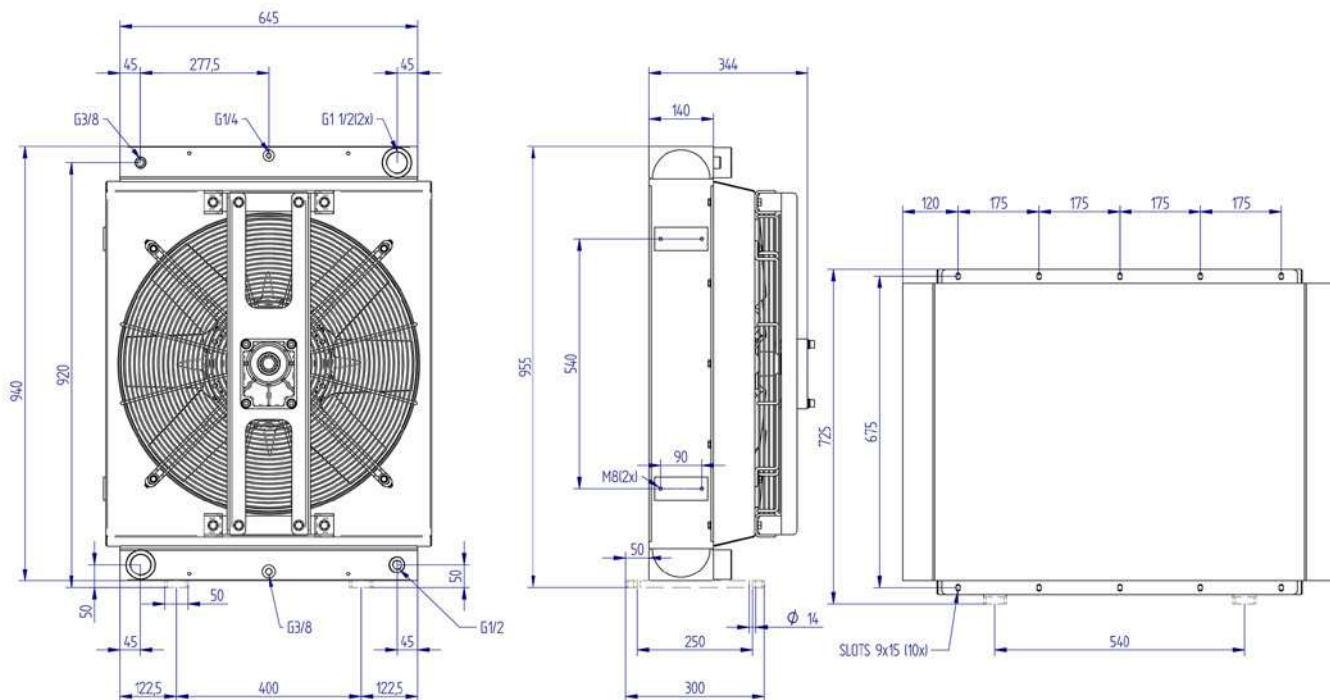
HY series

HY235.1-06A

AIR-OIL HEAT EXCHANGERS

Suit.
HY M

GR3

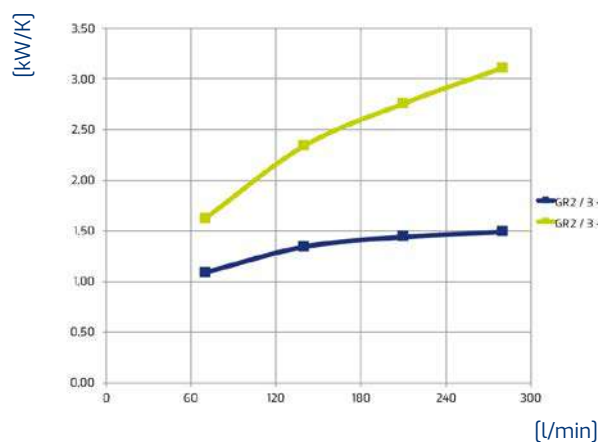


Vertical or horizontal mounting

Technical data

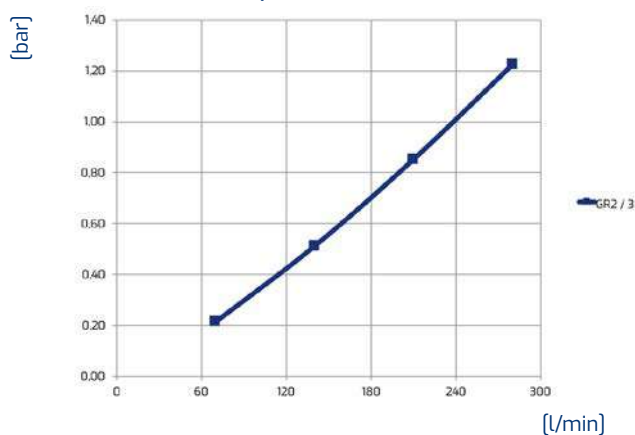
Item	Oil flow	Capacity	Weight	Voltage	Frequency	Current absorption	Ø Fan	Air flow	Noise level	Rpm
	[l/min]	[l]	[kg]	[V]	[Hz]	[A]	[mm]	[m³/h]	[db(A)]	
HY235.1-06A	70-280	20,2	89				630	5232	81	1000
HY235.1-06A	70-280	20,2	89				630	17500	105	3000

Performance



Oil T 80°C
T Amb. 40°C
1 kW = 860 Kcal/h - 1 HP = 0,75 kW

Pressure drop



ISO VG 32 at 40°C

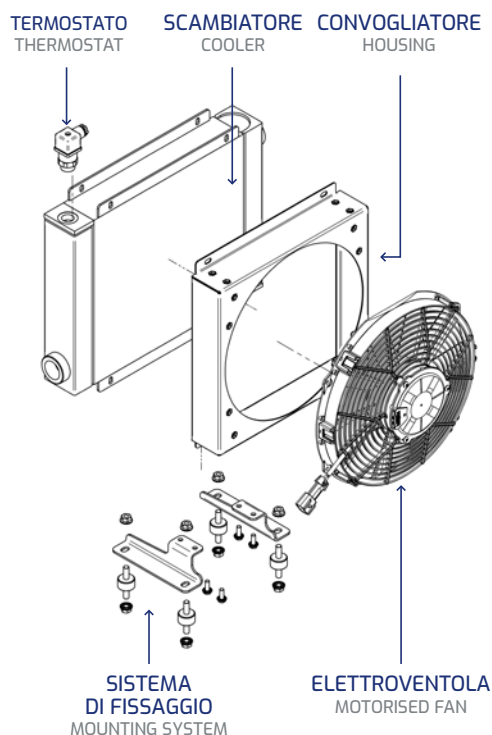
Viscosity - ISO VG 32 Oil

Oil	22	32	46	68	150
Correction factor	0,8	1	1,2	1,6	3

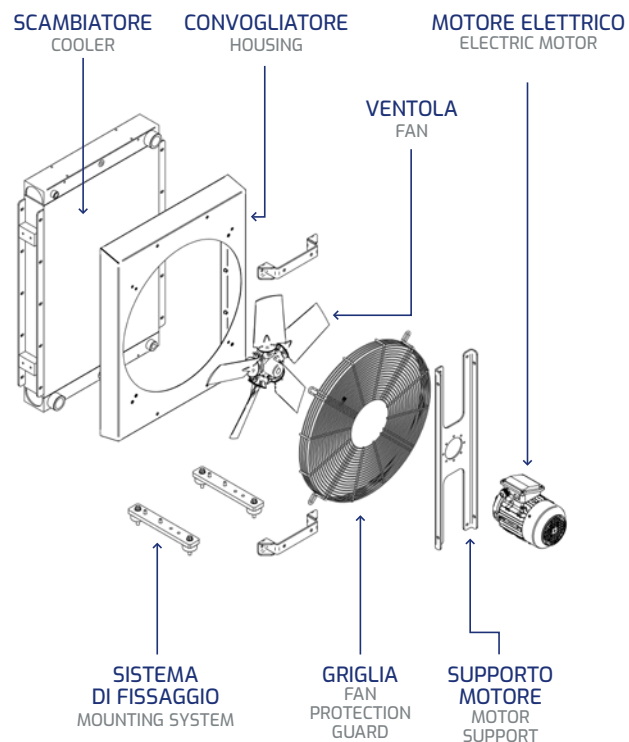


CONFIGURAZIONE / PRODUCT CONFIGURATION

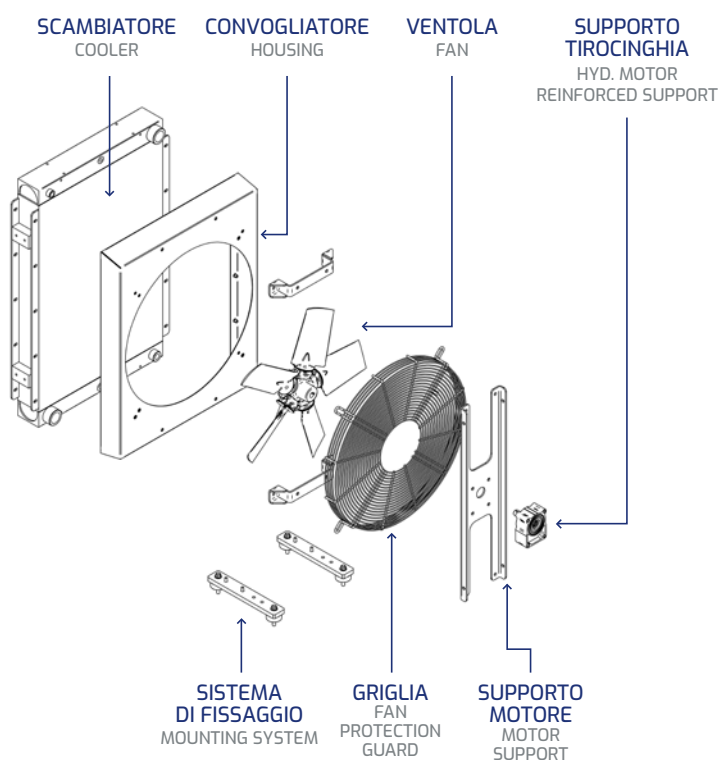
AC-DC



MOTORE ELETTRICO B14 B14 ELECTRIC MOTOR



PREDISPOSIZIONE MOTORE IDRAULICO DESIGNED FOR HYDRAULIC MOTOR



ACCESSORI



SISTEMI DI FISSAGGIO

KTB0000530

Kit staffe e antivibranti per taglie da HY010 a HY057

KTB0000540

Kit staffe e antivibranti per taglie da HY090 a HY210

KTB0000550

Kit staffe e antivibranti per taglie da HY215 a HY230

KTB0000560

Kit verticale: staffe e antivibranti per taglie da HY232 a HY235

KTB0000570

Kit orizzontale: staffe e antivibranti per taglie da HY232 a HY235 e HY230.1-03A



TERMOSTATI FISSI



TE038.00

Termostato Bimetallico 40°C 3/8"G IP65

TE039.00

Termostato Bimetallico 50°C 3/8"G IP65

TE037.00

Termostato Bimetallico 60°C 3/8"G IP65

TE040.00

Termostato Bimetallico 70°C 3/8"G IP65

TE084.00

Termostato Bimetallico 40°C 3/8"G IP67

TE056.01

Termostato Bimetallico 50°C 3/8"G IP67

TE020.00

Termostato Bimetallico 60°C 3/8"G IP67

TE087.00

Termostato Bimetallico 70°C 3/8"G IP67

TE073.00

Termostato Bimetallico 40°C 1/2"G IP65

TE069.00

Termostato Bimetallico 50°C 1/2"G IP65

TE029.00

Termostato Bimetallico 60°C 1/2"G IP65

TE049.00

Termostato Bimetallico 70°C 1/2"G IP65

TE096.00

Termostato Bimetallico 40°C 1/2"G IP67

TE078.00

Termostato Bimetallico 50°C 1/2"G IP67

TE044.00

Termostato Bimetallico 60°C 1/2"G IP67

TE061.00

Termostato Bimetallico 70°C 1/2"G IP67

TERMOSTATO REGOLABILE

TE035.00

Termostato Regolabile 0-90°C 1/2" NPT IP40





TERMOSTATI CON SOFTSTART (SOLO PER MODELLI DC)

TE071.00	Termostato con Softstart 50°C 3/8"G IP67 con connettore Metri-Pack
TE058.00	Termostato con Softstart 60°C 3/8"G IP67 con connettore Metri-Pack
TE072.00	Termostato con Softstart 50°C 1/2"G IP67 con connettore Metri-Pack
TE062.00	Termostato con Softstart 60°C 1/2"G IP67 con connettore Metri-Pack



TERMOSTATI CON REGOLAZIONE DI VELOCITÀ E INVERSIONE DELLA ROTAZIONE (SOLO PER MODELLI DC)

TE090.00	Termostato reg. velocità e invers. rotazione Softstart da 40 a 60° 3/8"G IP67
TE091.00	Termostato reg. velocità e invers. rotazione Softstart da 40 a 50° 3/8"G IP67
TE092.00	Termostato reg. velocità e invers. rotazione Softstart da 30 a 50° 3/8"G IP67
TE093.00	Termostato reg. velocità e invers. rotazione Softstart da 40 a 60° 1/2"G IP67
TE094.00	Termostato reg. velocità e invers. rotazione Softstart da 40 a 50° 1/2"G IP67
TE095.00	Termostato reg. velocità e invers. rotazione Softstart da 30 a 50° 1/2"G IP67



CONNETTORE (SOLO PER MODELLI DC)

KTC0001890	Connettore metripack Faston femmina (water-proof) IP67
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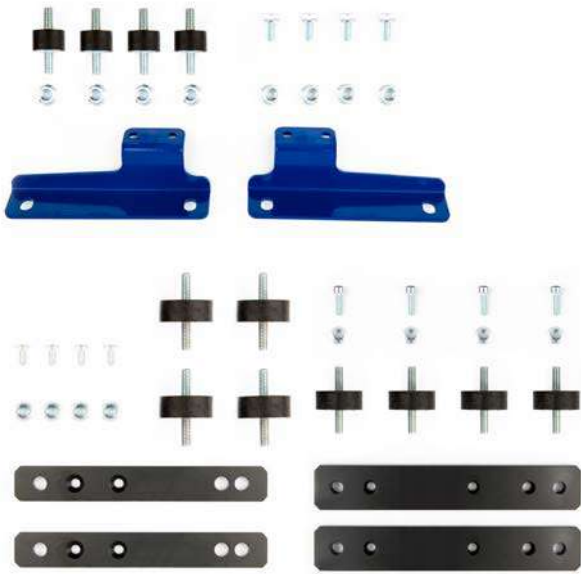


SEMIGIUNTI SCANALATI (SOLO PER MODELLI CON PREDISPOSIZIONE MOTORE IDRAULICO)

SU001	Semigiunto scanalato Conicità 1:8 DIN 5482B 25X22 Gr.2 Ch.4,0
SU018	Semigiunto scanalato Conicità 1:8 DIN 5482B 25X22 Gr.2 Ch.3,2
SU003	Semigiunto scanalato Conicità 1:8 DIN 5482B 35x31 Gr. 3 Ch. 4

Le immagini sono fornite al solo scopo illustrativo.

ACCESSORIES



MOUNTING SYSTEMS

- KTB0000530** Brackets and shock absorbers kit for sizes from HY010 to HY057
- KTB0000540** Brackets and shock absorbers kit for sizes from HY090 to HY210
- KTB0000550** Brackets and shock absorbers kit for sizes from HY215 to HY230
- KTB0000560** Vertical kit: brackets and shock absorbers for sizes from HY232 to HY235
- KTB0000570** Horizontal kit: brackets and shock absorbers for sizes from HY232 to HY235 and HY230.1-03A



FIXED TEMPERATURE THERMOSTATS

- TE038.00** Bimetallic Thermostat 40°C 3/8"G IP65
- TE039.00** Bimetallic Thermostat 50°C 3/8"G IP65
- TE037.00** Bimetallic Thermostat 60°C 3/8"G IP65
- TE040.00** Bimetallic Thermostat 70°C 3/8"G IP65
- TE084.00** Bimetallic Thermostat 40°C 3/8"G IP67
- TE056.01** Bimetallic Thermostat 50°C 3/8"G IP67
- TE020.00** Bimetallic Thermostat 60°C 3/8"G IP67
- TE087.00** Bimetallic Thermostat 70°C 3/8"G IP67
- TE073.00** Bimetallic Thermostat 40°C 1/2"G IP65
- TE069.00** Bimetallic Thermostat 50°C 1/2"G IP65
- TE029.00** Bimetallic Thermostat 60°C 1/2"G IP65
- TE049.00** Bimetallic Thermostat 70°C 1/2"G IP65
- TE096.00** Bimetallic Thermostat 40°C 1/2"G IP67
- TE078.00** Bimetallic Thermostat 50°C 1/2"G IP67
- TE044.00** Bimetallic Thermostat 60°C 1/2"G IP67
- TE061.00** Bimetallic Thermostat 70°C 1/2"G IP67



ADJUSTABLE THERMOSTAT

- TE035.00** Adjustable Thermostat 0-90°C 1/2" NPT IP40



THERMOSTATS WITH SOFTSTART (FOR DC MODELS ONLY)

TE071.00	Thermostat with Softstart 50°C 3/8"G IP67 with Metri-Pack connector
TE058.00	Thermostat with Softstart 60°C 3/8"G IP67 with Metri-Pack connector
TE072.00	Thermostat with Softstart 50°C 1/2"G IP67 with Metri-Pack connector
TE062.00	Thermostat with Softstart 60°C 1/2"G IP67 with Metri-Pack connector



THERMOSTATS WITH SPEED REGULATION AND REVERSE ROTATION (FOR DC MODELS ONLY)

TE090.00	Thermostat with speed reg. and reverse rot. Softstart from 40 to 60° 3/8"G IP67
TE091.00	Thermostat with speed reg. and reverse rot. Softstart from 40 to 50° 3/8"G IP67
TE092.00	Thermostat with speed reg. and reverse rot. Softstart from 30 to 50° 3/8"G IP67
TE093.00	Thermostat with speed reg. and reverse rot. Softstart from 40 to 60° 1/2"G IP67
TE094.00	Thermostat with speed reg. and reverse rot. Softstart from 40 to 50° 1/2"G IP67
TE095.00	Thermostat with speed reg. and reverse rot. Softstart from 30 to 50° 1/2"G IP67



CONNECTOR (FOR DC MODELS ONLY)

KTC0001890	Faston female connector metripack (water-proof) IP67
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SPLINED COUPLINGS (FOR MODELS DESIGNED FOR HYDRAULIC MOTOR ONLY)

SU001	Splined coupling Taper ratio 1:8 DIN 5482B 25X22 Gr.2 Key 4,0
SU018	Splined coupling Taper ratio 1:8 DIN 5482B 25X22 Gr.2 Key 3,2
SU003	Splined coupling Taper ratio 1:8 DIN 5482B 35x31 Gr.3 Key 4

The images shown here are for illustrative purposes only.

MANUALE D'USO

AVVERTENZE PER L'USO E LA SICUREZZA

Lo scambiatore di calore deve essere usato esclusivamente per il compito per il quale è stato progettato. La messa in funzione di macchine/impianti in cui viene installato è subordinata alla conformità dell'insieme ai requisiti essenziali di sicurezza della direttiva 2006/42/CE. Non è possibile utilizzare lo scambiatore di calore su macchine/impianti che non siano a loro volta certificati, prevedendo esattamente l'utilizzo sicuro della parte.

Dopo aver tolto l'imballaggio, assicurarsi dell'integrità del prodotto. Nel caso in cui vengano individuate delle anomalie, è necessario contattare il fabbricante per ottenere l'assistenza e le informazioni tecniche specifiche necessarie a operare.

Il collegamento dello scambiatore di calore al motore endotermico deve essere effettuato solo da personale competente e di provata esperienza. Lo scambiatore di calore può essere abbinato **ESCLUSIVAMENTE** a macchine/impianti certificati che prevedano, per il funzionamento, l'alimentazione e il controllo dello scambiatore stesso.

UTILIZZARE SEMPRE I DISPOSITIVI DI PROTEZIONE INDIVIDUALE.

Verificare che limiti di funzionamento dell'apparecchiatura siano congruenti con l'applicazione finale, facendo riferimento alla scheda tecnica dello scambiatore.

Non toccare mai lo scambiatore mentre è in funzione. Durante il suo funzionamento lo scambiatore potrebbe avere superfici troppo calde al contatto.

ASPETTARE CHE SI SIA RAFFREDDATO A TEMPERATURA AMBIENTE PRIMA DI ESEGUIRE LE OPERAZIONI DI MANUTENZIONE.

Prima di azionare lo scambiatore di calore assicurarsi che le protezioni siano correttamente montate.

NON OSTRUIRE ALCUNA APERTURA DI VENTILAZIONE O SUPERFICIE DI SMALTIMENTO DEL CALORE.

Se si avvertono rumori inusuali, spegnere immediatamente lo scambiatore di calore e mantenersi a distanza di sicurezza fino a quando non si sarà completamente arrestato.

LA MANUTENZIONE DEVE ESSERE ESEGUITA DA PERSONALE ADDESTRATO.

In caso contrario queste operazioni possono arrecare gravi danni allo scambiatore e portare a incidenti, anche gravi per il personale.

Controllare periodicamente tutte le connessioni oleodinamiche delle tubazioni e verificare che non vi siano trafile. Controllare periodicamente le connessioni elettriche e verificare che non vi siano danni, tagli, cortocircuiti ecc.

MONTAGGIO E INSTALLAZIONE

Gli scambiatori di calore aria-olio, serie HY, possono essere impiegati per il raffreddamento di circuiti oleodinamici inseriti in impianti industriali, macchine utensili o macchine mobili.

Lo scambiatore di calore deve essere installato su un supporto stabile e idoneo a reggere il peso, utilizzando le apposite staffe di fissaggio. Posizionare lo scambiatore aria-olio secondo il disegno rappresentato in **fig. 1**, garantendo così oltre alla massima funzionalità, l'elevata manovrabilità sia in fase di collegamento dei collettori, sia in fase di manutenzione.

Effettuare il collegamento dello scambiatore di calore al circuito oleodinamico della macchina/impianto. Si consiglia di posizionare la tubazione di ingresso olio ad altezza inferiore a quella di uscita, e di utilizzare collegamenti idraulici tramite tubi flessibili dello stesso diametro dei collettori senza alcuna riduzione interposta, come nell'esempio in **fig.2**.

Assicurarsi che il circuito oleodinamico in cui viene inserito lo scambiatore non sia sottoposto a sbalzi di pressione ("colpi d'ariete") superiori alla pressione massima di esercizio consentita dallo stesso.

Prima di effettuare il collegamento alla fonte di alimentazione, verificare la corrispondenza di tensione e frequenza rispetto alla scheda tecnica del modello ed eseguire l'allacciamento

elettrico secondo quanto illustrato nella **fig. 3**.

Per il bloccaggio dell'apparecchiatura devono essere usati bulloni, rondelle e dadi, utilizzando una coppia di serraggio (consultare le ISTRUZIONI PER L'ASSEMBLAGGIO complete per verificare le coppie di serraggio consigliate). Il cliente finale deve provvedere all'installazione di un numero adeguato di antivibranti in funzione del peso complessivo dello scambiatore di calore, del liquido in esso contenuto e degli eventuali altri accessori su di esso installati, qualora gli antivibranti non vengano forniti dal fabbricante.

Per applicazioni diverse da quanto indicato, rivolgersi al servizio tecnico d'assistenza Oesse.

fig. 1

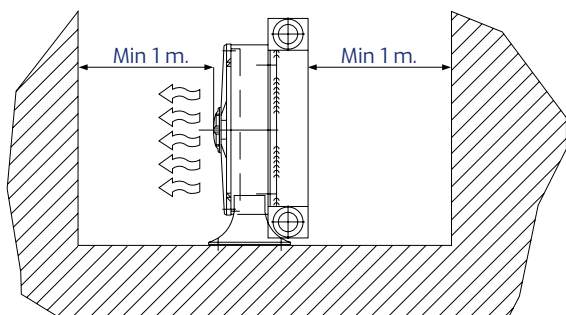


fig. 2

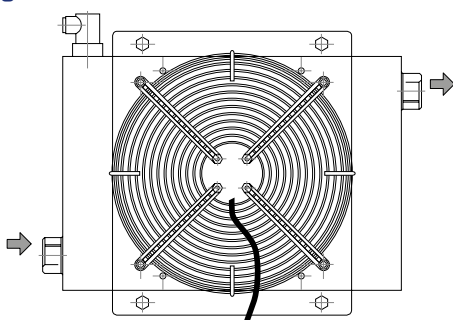


fig. 3

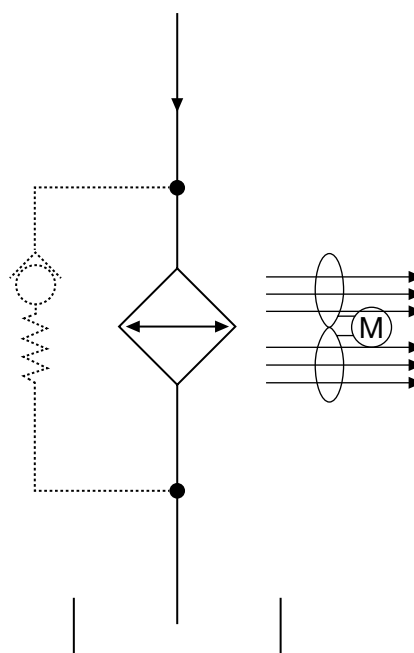
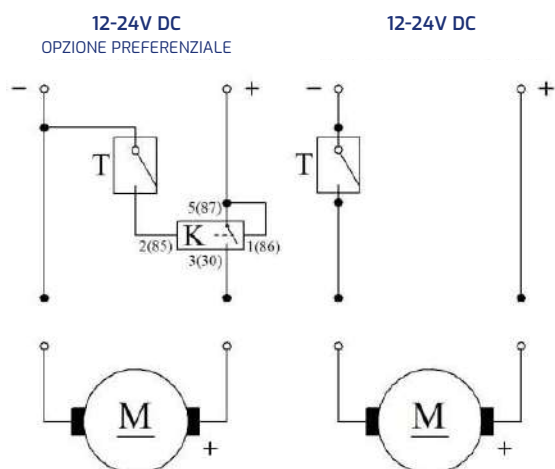


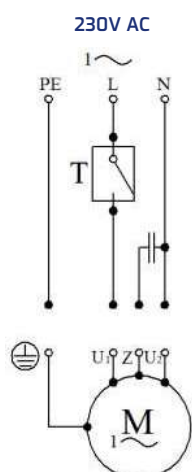
fig. 3



Collegamento elettroventola DC 12-24V

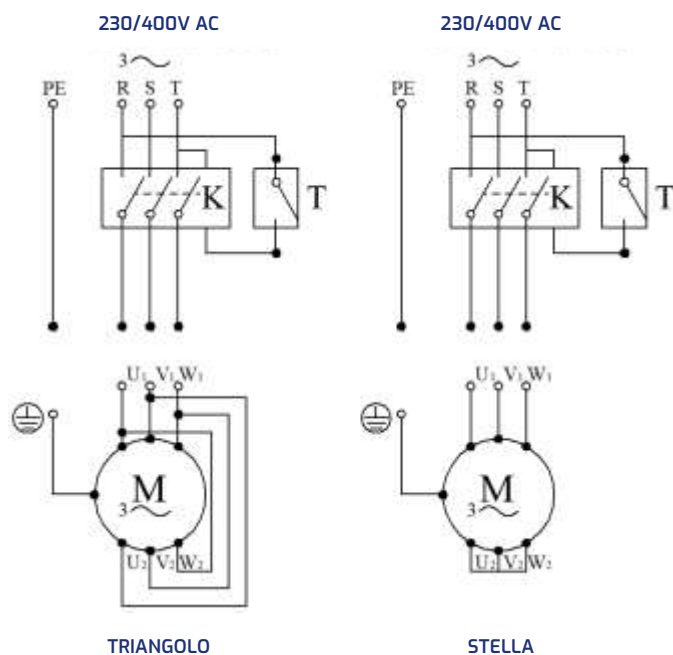
T = termostato
K = relè (non incluso nella soluzione standard)
 I_T = corrente termostato
 I_M = corrente motore
 I_K = corrente relè
Polo negativo «-» = NERO
Polo positivo «+» = ROSSO

$I_{K\max}$ = corrente massima al relè 12V = 30A
 $I_{K\max}$ = corrente massima al relè 24V = 40A
 $I_{T\max}$ = corrente massima termostato con 12V = 10A
 $I_{T\max}$ = corrente massima termostato con 24V = 5A



Collegamento elettroventilatore monofase 230V 50Hz

T = termostato
Fase «L» = BLU
Neutro «N» = NERO
Pe = messa a terra
 $I_{T\max}$ = corrente termostato massima 10A



Collegamento elettroventilatore trifase

T = termostato
K = teleruttore
(non incluso nella soluzione standard)

PE = messa a terra
U1 = NERO
V1 = BLU
W1 = MARRONE
U2 = VERDE
V2 = BIANCO
W2 = GIALLO

SPECIFICHE PER VERSIONE CON MOTORE ELETTRICO B14

Controllare la scheda tecnica del prodotto per tipologia di motore installato e l'eventuale documentazione accessoria. Prima di creare il collegamento di alimentazione assicurarsi che:

- l'impianto elettrico sia conforme alle norme vigenti nel Paese interessato
- la tensione di rete e la frequenza corrispondano al valore indicato nell'apparecchio
- il circuito sia dotato di messa a terra
- il circuito elettrico sia protetto con un dispositivo differenziale o un fusibile adeguatamente dimensionato (vedere scheda documentazione tecnica).

Nella pagina precedente sono presenti gli schemi di collegamento delle varie tipologie di motore elettrico disponibili.

COLLAUDO

Assicurarsi che il circuito in cui viene inserito lo scambiatore non sia sottoposto a sbalzi di pressione ("colpi d'ariete") superiori alla pressione massima di esercizio consentita dallo stesso. Non appena terminata l'installazione, eseguire un breve collaudo dello scambiatore di calore. In caso di mancato funzionamento, non tentare di riparare lo scambiatore, ma interrompere il collaudo e interpellare immediatamente la ditta costruttrice.

Procedura di collaudo:

- Riempire ogni circuito del radiatore con il relativo liquido. Usare gli sfiati, se necessario.
- Alimentare l'impianto verificando il senso di rotazione della ventola e la direzione del flusso d'aria, secondo le frecce posizionate sul convogliatore.

FAN DIRECTION



AIR FLOW



- Pressurizzare il sistema per controllare che non ci siano perdite in tutti i circuiti, avviando il motore endotermico.

MANUTENZIONE E PULIZIA

Durante le operazioni di manutenzione le macchine/impianti in cui lo scambiatore di calore è installato devono essere scollegate **FISICAMENTE** dalle varie alimentazioni. È inoltre necessario scaricare la pressione residua sui

vari circuiti. Prima di iniziare le operazioni di manutenzione attendere il tempo necessario affinché le superfici dello scambiatore di calore si siano raffreddate.

Circuito primario (interno)

Per pulire i circuiti è necessario sconnettere lo scambiatore di calore dalle relative connessioni. Per la pulizia, iniettare controcorrente un detergente sgrassante compatibile con l'alluminio. In caso di rigenerazione o di sostituzione dell'olio utilizzato, si consiglia di effettuare una pulizia accurata del circuito primario interno. Assicurarsi che non sia presente alcun residuo prima di ricollegare lo scambiatore al circuito. Qualora previsto, è possibile scaricare il circuito acqua utilizzando il connettore posto nella parte bassa dello scambiatore. Non disperdere alcuna quantità d'olio nell'ambiente. Oesse raccomanda di utilizzare esclusivamente l'apposito servizio per la raccolta degli oli esausti.

Circuito secondario - aria (esterno)

Per pulire i circuiti è necessario sconnettere lo scambiatore di calore dalle relative connessioni. Per operazioni di ordinaria manutenzione, mantenere la massa radiante pulita da possibili ostruzioni derivanti dall'inquinamento dell'ambiente di lavoro. Il gruppo di raffreddamento è stato sottoposto ad un trattamento di verniciatura.

Se lo scambiatore non è esposto alle intemperie, ma è posto all'interno, si può procedere alla pulizia in 2 modi:

- acqua calda MAX. 60°C (*) e pressione MAX. 3 bar (**), 1-2 volte all'anno
- mediante getto d'aria compressa (MAX. 3 bar) 1-2 volte all'anno.

Se lo scambiatore diversamente è esposto alla pioggia (posto all'esterno), si può procedere alla pulizia secondo queste istruzioni:

- acqua calda MAX. 60°C (*) e pressione MAX. 3 bar (**), 2-3 volte all'anno
- mediante getto d'aria compressa (MAX. 3 bar) 2-3 volte all'anno.

Note:

(*) la temperatura dello scambiatore al momento del lavaggio deve essere inferiore a 60°C. Fare attenzione a temperature prossime e superiori a 80°C.

(**) la pressione dell'acqua utilizzata per la pulizia deve essere MAX. 3 bar.

Il getto d'acqua deve essere usato con cautela, evitare di avvicinarsi troppo alla superficie e di insistere sulle aree danneggiate o dove ci sono gomme e/o parti in plastica. Avvicinarsi con cautela ai canali esterni, in quanto potrebbero

essere danneggiati: in tutta questa zona, lavare a una distanza di circa un metro. Se il gruppo di raffreddamento viene a contatto con sostanze chimiche aggressive e/o solventi, risciacquare abbondantemente con acqua.

ATTENZIONE: Direzionare il flusso parallelamente alle alette di raffreddamento (turbolatori), e verificare che il ventilatore sia spento, prima di procedere alla pulizia. Una pulizia impropria o l'uso di detergenti aggressivi non compatibili con lo scambiatore o i suoi componenti, possono essere pericolosi, oltre che comprometterne il funzionamento.

SERRAGGIO

Controllare periodicamente (consigliato ogni sei mesi) la tenuta di viti e bulloni, soprattutto nel caso di scambiatori installati su supporti soggetti a vibrazioni. In caso di rumori anomali fermare immediatamente lo scambiatore e assicurarsi del corretto funzionamento (consultare le ISTRUZIONI PER L'ASSEMBLAGGIO complete per verificare le coppie di serraggio consigliate).

STOCCAGGIO E MOVIMENTAZIONE

Lo scambiatore di calore deve essere stoccato e movimentato unitamente alla sua confezione d'imballo integra, e comunque in maniera da non danneggiare o deformare in alcun modo ogni suo componente. Si consiglia un ambiente di stoccaggio a una temperatura in grado di evitare condensazioni interne al circuito.

LUBRIFICANTI

I nostri scambiatori di calore sono progettati per funzionare con diversi tipi di olio idraulico (ad esempio ISO-VG). Le prestazioni degli scambiatori possono variare in funzione delle caratteristiche dell'olio utilizzato nell'applicazione.

Se non diversamente richiesto, sono sviluppati per oli idraulici classificati come non pericolosi secondo CLP CE 1272/2008.

Per oli sintetici o semi-sintetici richiedere la compatibilità al fabbricante.

Oesse consiglia l'uso di oli minerali senza contaminanti o elementi dannosi per l'ambiente. Non disperdere alcuna quantità d'olio nell'ambiente. Si raccomanda di utilizzare esclusivamente l'apposito servizio per la raccolta degli oli esausti.

SMALTIMENTO

Gli scambiatori di calore Oesse sono costituiti da materiali interamente riciclabili e sono quindi smaltibili nel rispetto dell'ambiente secondo le regole di smaltimento vigenti nella zona di utilizzo.

ATTESTATO DI CONTROLLO

Tutti gli scambiatori di calore Oesse sono soggetti a controllo finale di funzionamento e di conformità progettuale del prodotto. La presenza del marchio qui sotto rappresentato attesta il superamento di tali controlli.



DICHIARAZIONI

Oesse può fornire, se disponibili e su esplicita richiesta, dichiarazioni inerenti a collaudi, test sperimentali o prove effettuate sul prodotto e presenti nel fascicolo tecnico dello stesso, presso la ditta costruttrice, in accordo alle normative di settore.

[Scarica le istruzioni per l'assemblaggio complete.](#)





USER MANUAL

WARNINGS FOR USE AND SAFETY

The heat exchanger must be used exclusively for the purpose for which it was designed. The commissioning of the machines/systems in which it is installed is subject to the compliance of the complete system with the essential safety requirements of Directive 2006/42/EC. It is not possible to use the heat exchanger on machines/systems which are not themselves certified for the safe use of the part.

After removing the packaging, make sure that the product is intact. If any faults are found, contact the manufacturer to obtain assistance and the specific technical information required to operate.

The connection of the heat exchanger to the internal combustion engine must be executed only by competent and experienced personnel. The heat exchanger can be combined EXCLUSIVELY with certified machines/plants that provide for the operation, power supply and control of the exchanger itself.

ALWAYS USE PERSONAL PROTECTIVE EQUIPMENT.

Ensure that the operational limits of the equipment are suitable for the final application, referring to the technical data sheet of the exchanger.

Never touch the heat exchanger while it is running. During its operation, the heat exchanger may have surfaces that are too hot to touch.

WAIT UNTIL IT HAS COOLED DOWN TO ROOM TEMPERATURE BEFORE PERFORMING MAINTENANCE OPERATIONS.

Before operating the heat exchanger, make sure that the protections are correctly installed.

DO NOT OBSTRUCT ANY VENTILATION OPENING OR HEAT DISSIPATION SURFACE.

If unusual noises are heard, turn off the heat exchanger immediately and keep a safe distance until it has completely stopped.

MAINTENANCE MUST BE PERFORMED BY TRAINED PERSONNEL.

Otherwise these operations can cause serious damage to the heat exchanger and lead to accidents, even serious ones for personnel.

Periodically check the hydraulic connections of the pipes and make sure that there are no leaks. Periodically inspect the electrical connections and check that there are no damages, cuts, short circuits, etc.

ASSEMBLY AND INSTALLATION

The air-oil heat exchangers of HY range can be used as coolers for hydraulic circuits in industrial plants, machine tools or mobile machines.

The heat exchanger must be installed on a stable support able to bear its weight using the appropriate fixing brackets.

The heat exchanger must be installed according to **fig. 1** to guarantee best performances and high manoeuvrability both during the connection of manifolds and during maintenance. Connect the heat exchanger to the hydraulic circuit of the machine/system. It's recommended to position the oil inlet pipe at a lower height than the outlet pipe and to make

the hydraulic connections using flexible pipes of the same diameter as the manifolds without any adapter as illustrated by examples shown in **fig. 2**.

Make sure that the hydraulic circuit in which the heat exchanger is inserted is not subjected to pressure changes (water hammer) higher than the maximum operating pressure allowed.

Before connecting to the power source, check the correspondence of voltage and frequency with the technical data sheet of the model and proceed with the electrical connection as shown in **fig. 3**. The equipment must be secured with bolts, washers and nuts, using torque (refer to the complete ASSEMBLY INSTRUCTIONS for recommended tightening torques).

The end customer must provide for the installation of an adequate number of antivibration shock absorbers according to the total weight of the heat exchanger, the liquid it contains and any other accessories installed on it, if antivibration shock absorbers are not provided by the manufacturer.

In case of different applications, please contact Oesse technical service for assistance.

fig. 1

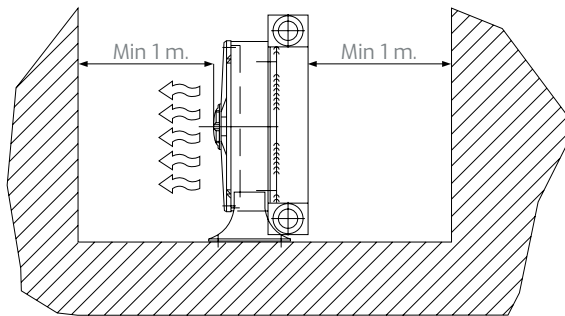


fig. 2

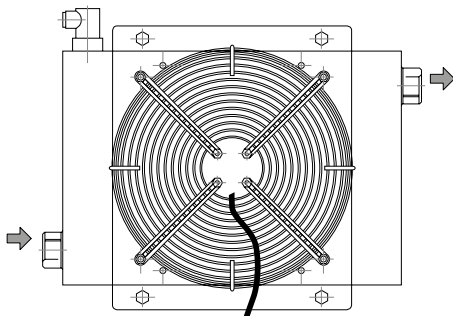


fig. 3

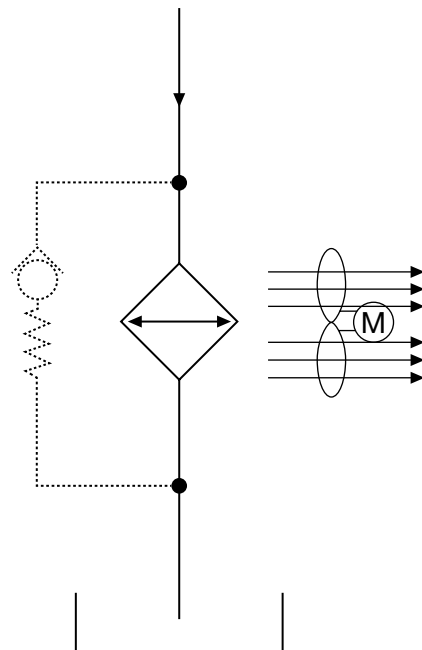
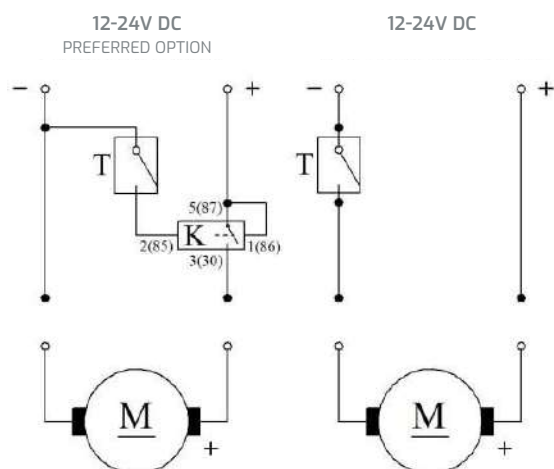


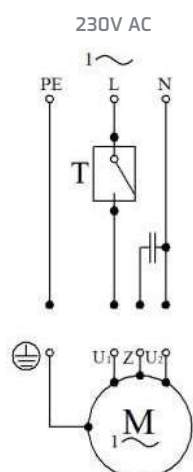
fig. 3



DC 12-24V fan connection

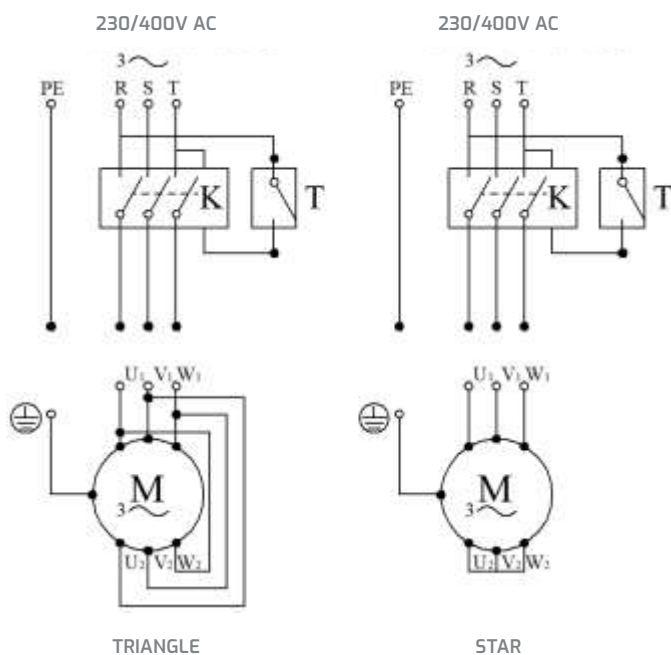
T = thermostat
 K = relay (not included in standard solution)
 I_T = thermostat current
 I_M = motor current
 I_K = relay current
 Negative pole «-» = BLACK
 Positive pole «+» = RED

$I_{K \max}$ = max relay current 12V = 30A
 $I_{K \max}$ = max relay current 24V = 40A
 $I_{T \max}$ = max thermostat current 12V = 10A
 $I_{T \max}$ = max thermostat current 24V = 5A



Single phase 230V 50Hz fan connection

T = thermostat
 Phase «L» = BLUE
 Neutral «N» = BLACK
 Pe = earthing
 $I_{T \max}$ = max thermostat current 10A



Three phase 230/400V 50Hz fan connection

T = thermostat
 K = contactor
 (not included in the standard solution)

PE = earthing
 U1 = BLACK
 V1 = BLUE
 W1 = BROWN
 U2 = GREEN
 V2 = WHITE
 W2 = YELLOW

SPECIFICS FOR B14 ELECTRIC MOTOR VERSION

See the product data sheet for the type of motor installed and any additional documents. Before connecting to the power supply, make sure that:

- the electrical system complies with the regulations in force in the country concerned
- the mains voltage and frequency correspond to the value indicated in the appliance
- the circuit is earthed
- the electrical circuit is protected with a properly sized differential device or fuse (see technical documentation sheet).

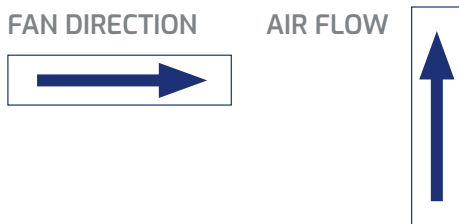
The previous page shows the connection diagrams of the various types of electric motor available.

TESTING

Make sure that the hydraulic circuit in which the heat exchanger is inserted is not subjected to pressure changes (water hammer) higher than the maximum operating pressure allowed. As soon as the installation is completed, perform a brief test on the heat exchanger. In case of failure, do not attempt to repair the heat exchanger, but stop the test and contact the manufacturer immediately.

Testing Procedure:

- a) Fill each radiator circuit with the proper fluid. Use vents if necessary.
- b) Supply the system checking the direction of rotation of the fan and the direction of the air flow, according to the arrows placed on the conveyor.



- c) Pressurize the system to check for leaks in all circuits, running the endothermic engine.

MAINTENANCE AND CLEANING

During maintenance operations, the machine/ system in which the heat exchanger is installed must be PHYSICALLY disconnected from all power supplies. It is also necessary to release the residual pressure on the different circuits. Before starting maintenance operations, wait until the surfaces of the heat exchanger have cooled down.

Primary circuit (internal)

To clean the circuits, disconnect the heat exchanger from its connections. Then counter-current inject a degreasing detergent compatible with aluminium. In case of regeneration or replacement of the oil used, it is recommended to carefully clean the internal primary circuit. Make sure that there is no residue before reconnecting the heat exchanger to the circuit. If foreseen, it is possible to drain the water circuit using the connector located in the lower part of the exchanger. Do not disperse any amount of oil in the environment. Oesse recommends using only the specific service for collecting used oils.

Secondary circuit - air (external)

To clean the circuits, disconnect the heat exchanger from its connections. For routine maintenance operations, keep the core clean from possible obstructions resulting from pollution of the work environment. The cooling unit has been subjected to a painting treatment.

If the heat exchanger is not exposed to the weather, but is placed inside, it can be cleaned in 2 ways:

- with hot water MAX. 60°C (*) and MAX pressure 3 bar (**), 1-2 times a year
- using compressed air (MAX 3 bar) 1-2 times a year.

If the heat exchanger is otherwise exposed to rain (placed outside), it can be cleaned according to these instructions:

- with hot water MAX 60°C (*) and MAX pressure 3 bar (**), 2-3 times a year
- using compressed air (MAX 3 bar) 2-3 times a year.

Notes:

(*) the temperature on the heat exchanger at the time of washing must be lower than 60°C. Pay attention to temperatures close to and higher than 80°C.

(**) the pressure of the water used for cleaning must be MAX. 3 bar. The water jet must be used with caution; avoid getting too close to the surface and do not insist on damaged areas or where there are rubber and/or plastic parts. Approach the external channels with caution, as they could be damaged easily; throughout this area, wash at a distance of about one meter. If the cooling unit comes into contact with aggressive chemicals and/or solvents, rinse thoroughly with water.

WARNING: Direct the flow parallel to the cooling fins (turbulators), and make sure that the fan is

switched off before cleaning. Improper cleaning or the use of aggressive detergents that are not compatible with the heat exchanger or its components can be dangerous as well as compromising its operation.

TIGHTENING

Periodically check (recommended every six months) the tightness of screws and bolts, especially in the case of heat exchangers installed on supports subject to vibration. In case of abnormal noises, stop the heat exchanger immediately and check that it is working properly (consult the complete ASSEMBLY INSTRUCTIONS to check the recommended tightening torques).

STORAGE AND HANDLING

The heat exchanger must be stored and handled with its packaging intact, and always in such a way as not to damage or deform any of its components in any way. It is advisable to store the heat exchanger in an environment where the temperature avoids condensation inside the circuit.

LUBRICANTS

Our heat exchangers are designed to work with different types of hydraulic oil (e.g. ISO-VG). The performance of the heat exchangers may vary depending on the characteristics of the oil used in the application.

Unless otherwise required, they are developed for hydraulic oils classified as non-hazardous according to CLP EC 1272/2008.

For synthetic or semi-synthetic oils, ask the manufacturer for compatibility.

Oesse recommends the use of mineral oils without contaminants or environmentally damaging elements. Do not disperse any amount of oil into the environment. It is recommended to use only the specific service for the collection of used oils.

DISPOSAL

Oesse heat exchangers are made entirely of recyclable materials and can therefore be disposed of in an environmentally friendly manner according to the disposal rules in force in the area of use.

QUALITY CERTIFICATE

All Oesse heat exchangers are subjected to final functional check and product design compliance. The presence of the following mark on the product certifies that all checks has been passed.



STATEMENTS

Oesse can provide, if available and upon explicit request, statements relating the tests, experimental tests or trials executed on the products and available in the technical file at the manufacturer's company, in accordance with the sector regulations in force.

[Download complete assembly instructions.](#)



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