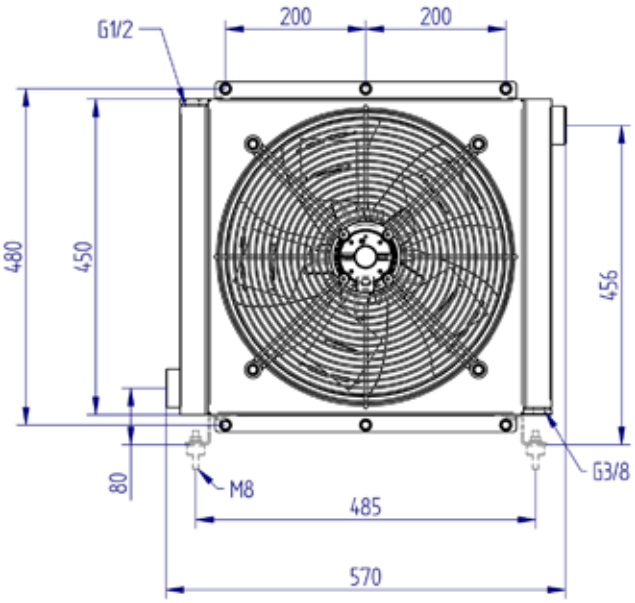
HY series

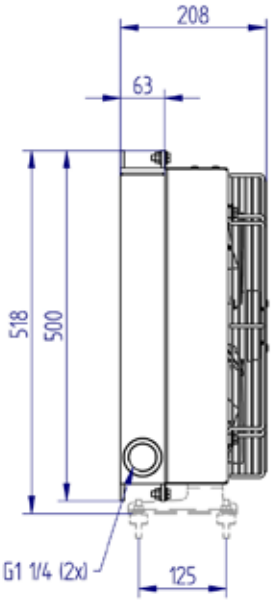
HY057.1-01A

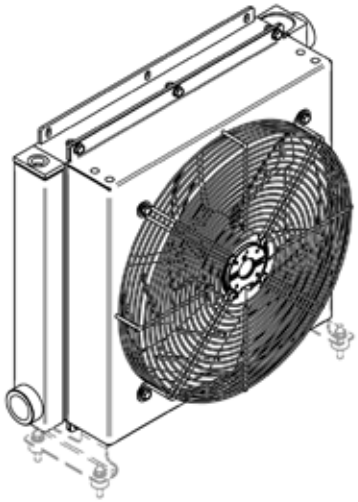
AIR-OIL HEAT EXCHANGERS

IP44

230 Volt



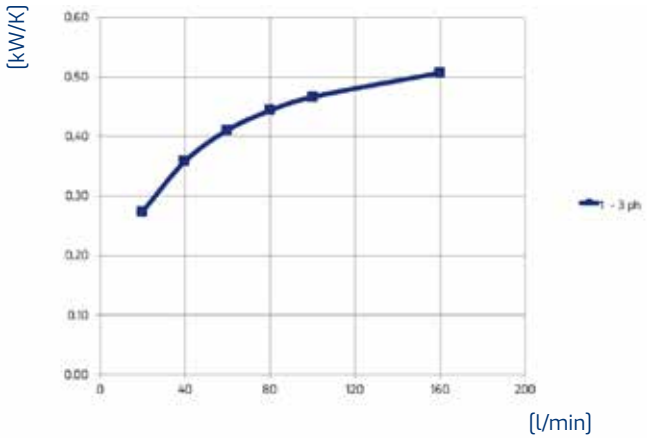




Technical data

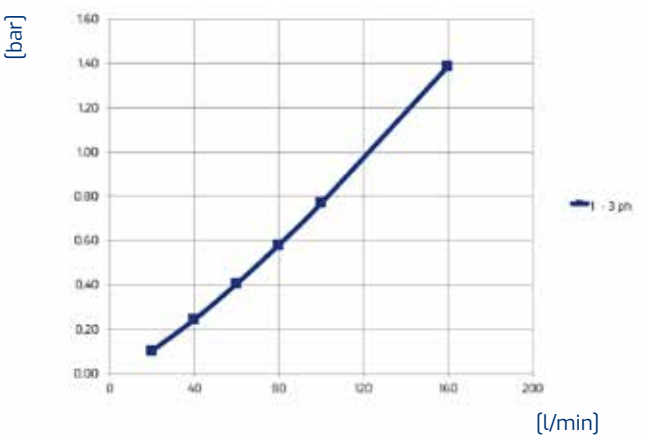
Item	Oil flow	Capacity	Weight	Voltage	Frequency	Current absorption	Power	Ø Fan	Air flow	Noise level	Rpm
	(l/min)	(l)	(kg)	(V)	(Hz)	(A)	(W)	(mm)	(m^3/h)	(db(A))	
HY057.1-01A	20-160	3,7	19,5	230	50/60	0,30	127	400	1830	69	

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

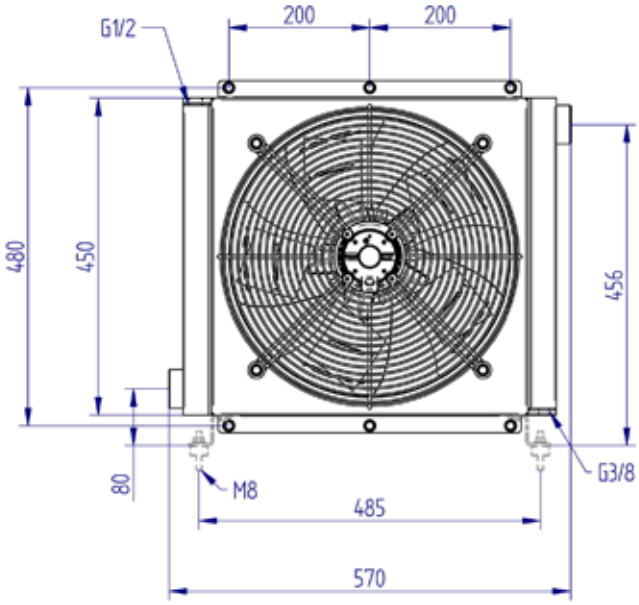
HY series

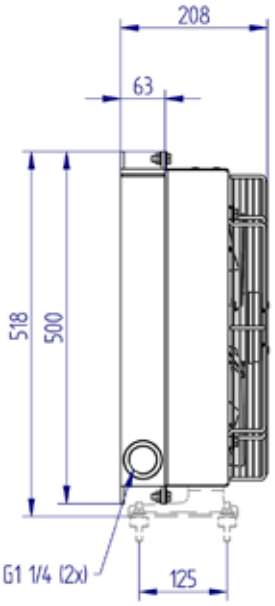
HY057.1-03A

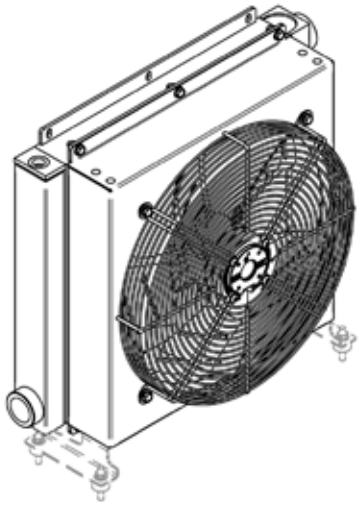
AIR-OIL HEAT EXCHANGERS

IP44

230/400 Volt



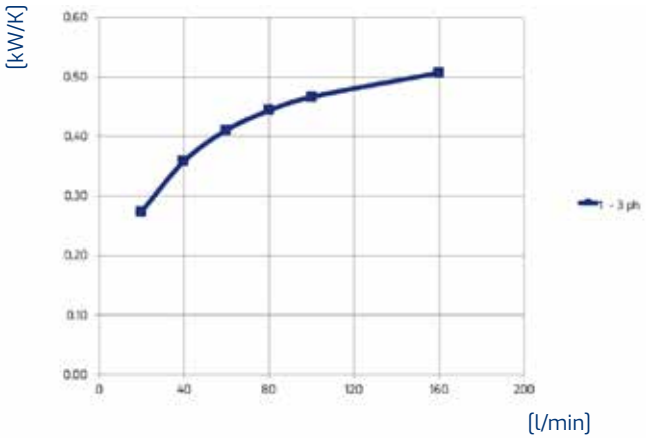




Technical data

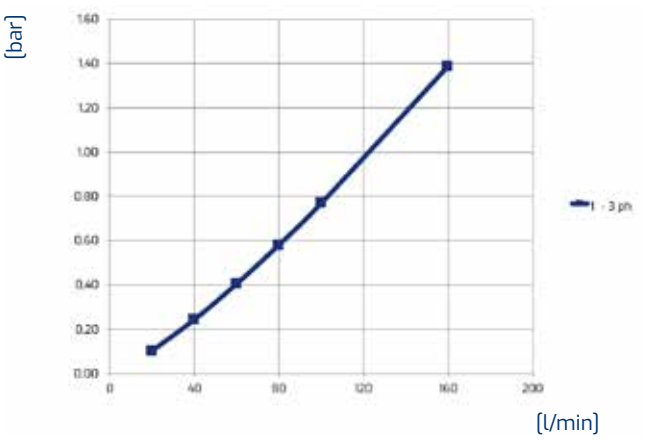
Item	Oil flow	Capacity	Weight	Voltage	Frequency	Current absorption	Power	Ø Fan	Air flow	Noise level	Rpm
	(l/min)	(l)	(kg)	(V)	(Hz)	(A)	(W)	(mm)	(m^3/h)	(dB(A))	
HY057.1-03A	20-160	3,7	19,5	230/400	50/60	0,58	134	400	1820	68	

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

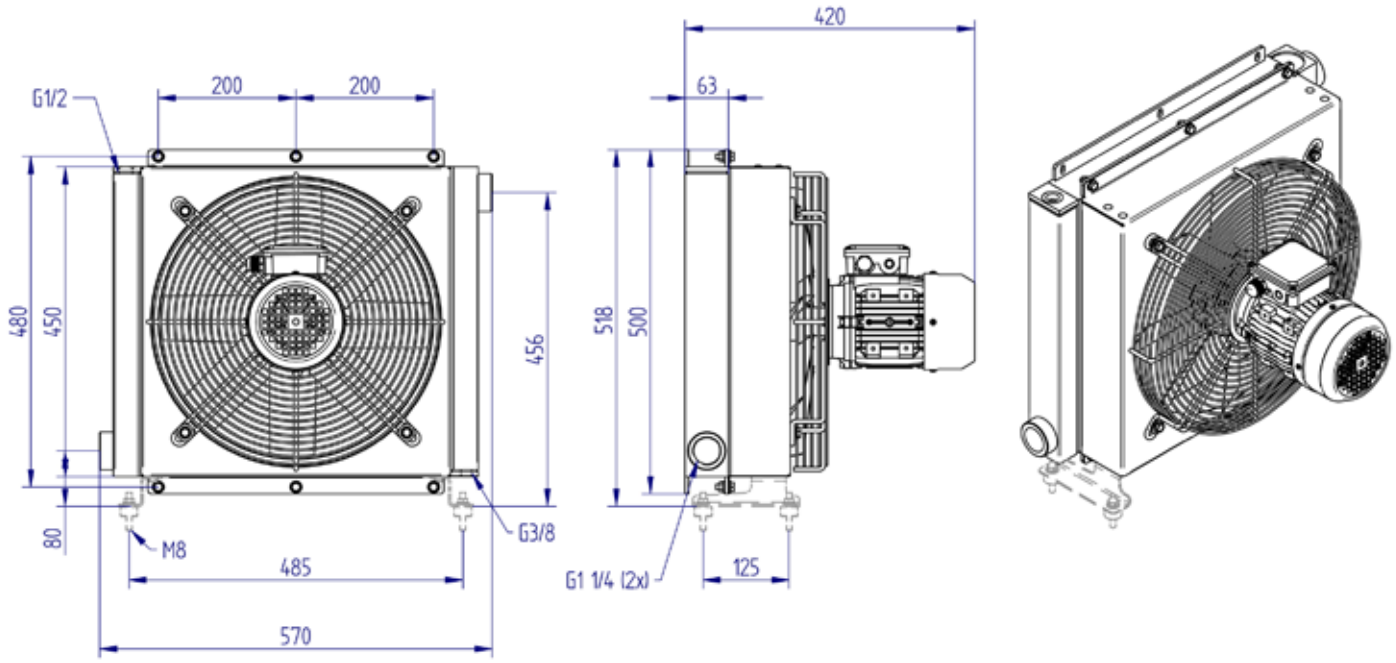
Oil	22	**32**	46	68	150
Correction factor	0,8	**1**	1,2	1,6	3

HY series

HY057.1-07A

AIR-OIL HEAT EXCHANGERS

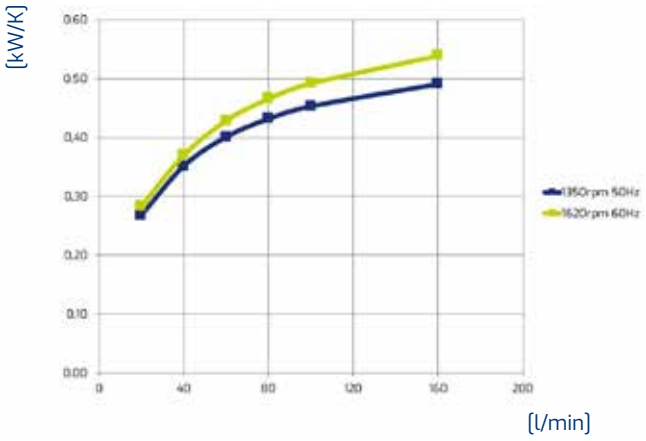
IP55 | 230/400 Volt | Elec.M. B 14



Technical data

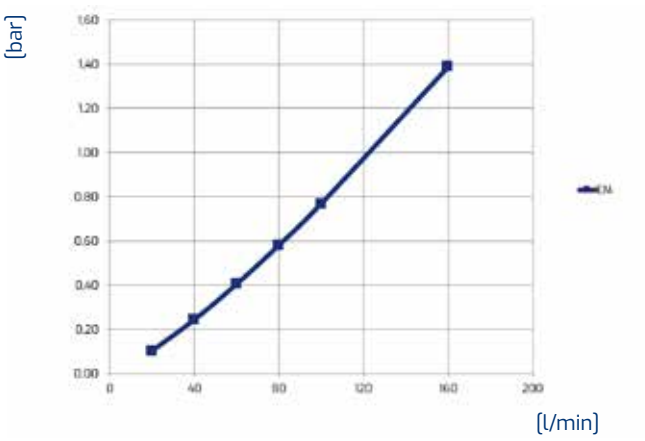
Item	Oil flow	Capacity	Weight	Voltage	Frequency	Current absorption	Power	Ø Fan	Air flow	Noise level	Rpm
	(l/min)	(l)	(kg)	(V)	(Hz)	(A)	(W)	(mm)	(m^3/h)	(db(A))	
HY057.1-07A	20-160	3,7	21	230/400	50/60	1,5	250	390	2620	77,2	1350

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

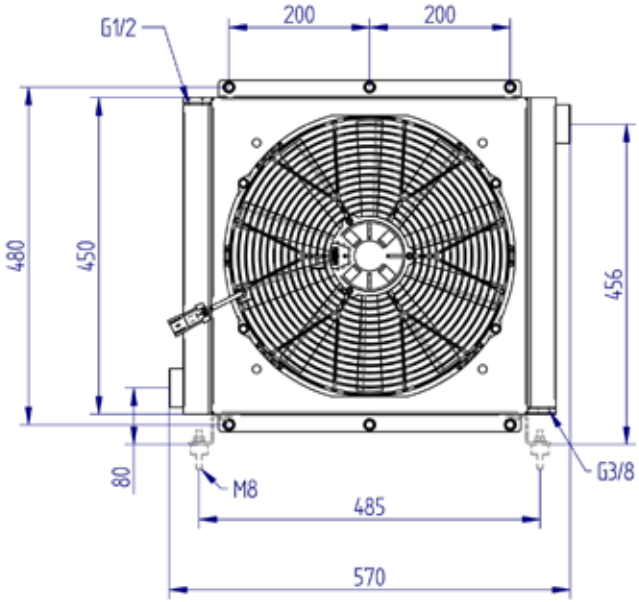
HY series

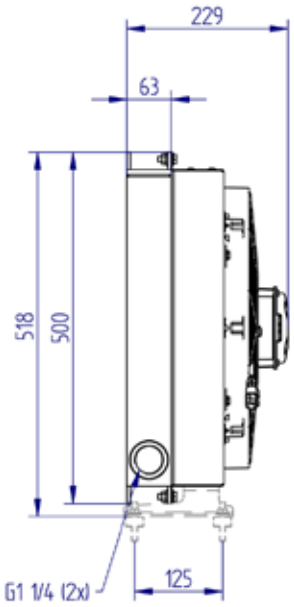
HY057.1-02A

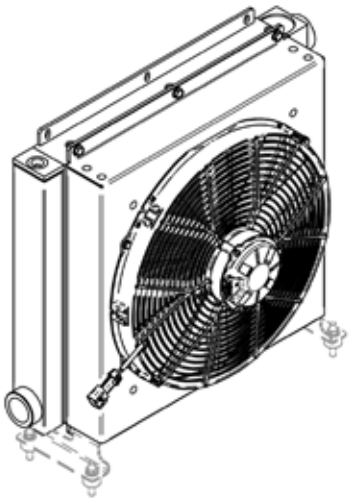
AIR-OIL HEAT EXCHANGERS

IP68

12 Volt



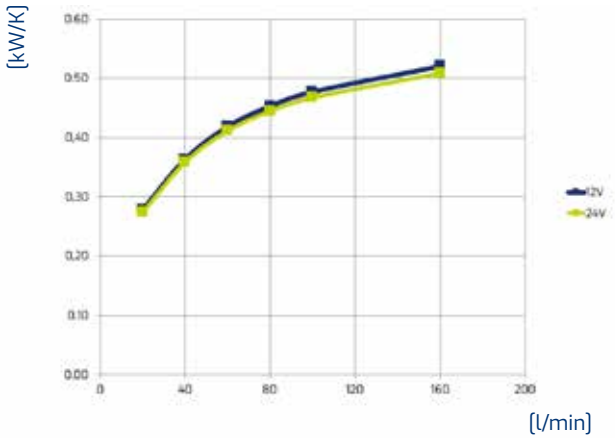




Technical data

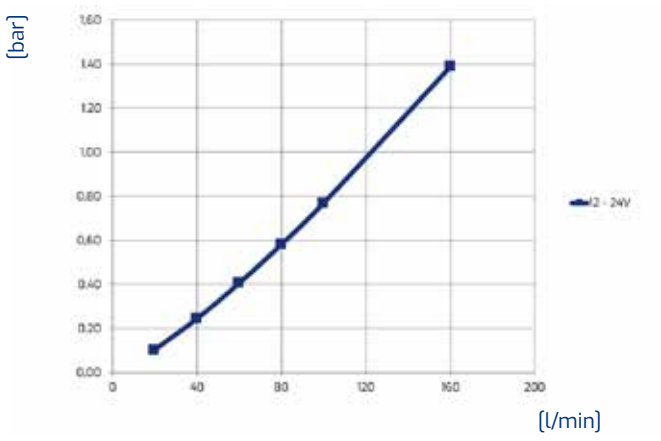
Item	Oil flow	Capacity	Weight	Voltage	Frequency	Current absorption	Power	Ø Fan	Air flow	Noise level	Rpm
	(l/min)	(l)	(kg)	(V)	(Hz)	(A)	(W)	(mm)	(m^3/h)	(db(A))	
HY057.1-02A	20-160	3,7	19	12		18,60	240	385	3260	72,4	

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

Technical data are not binding - The graphs show the central range of heat exchange data

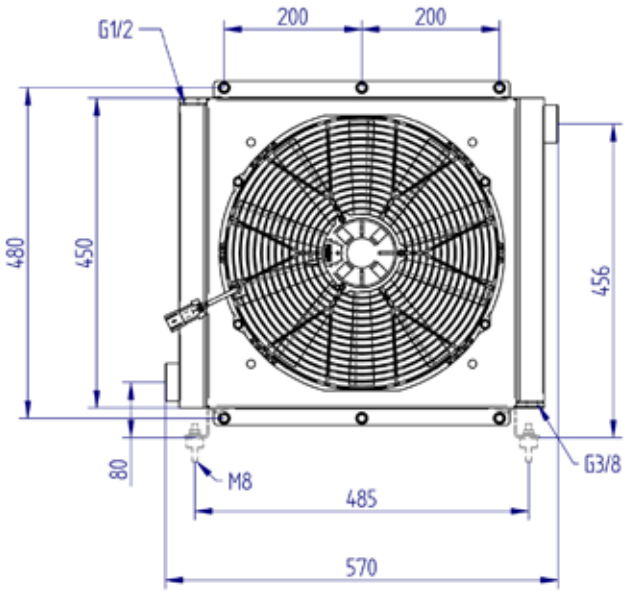
HY series

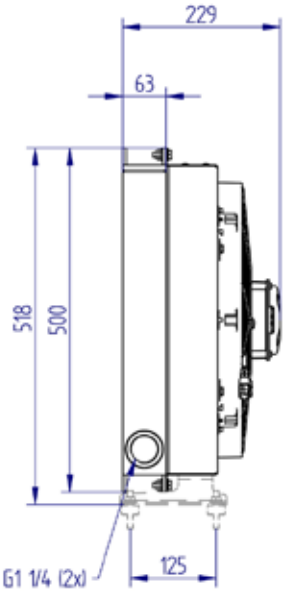
HY057.1-04A

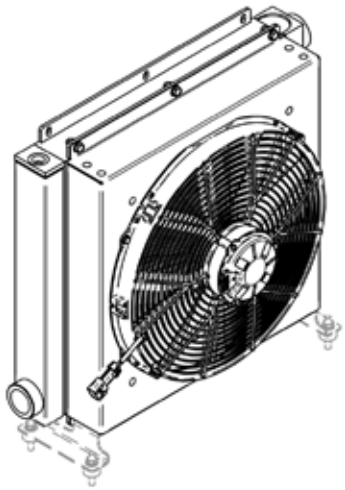
AIR-OIL HEAT EXCHANGERS

IP68

24 Volt



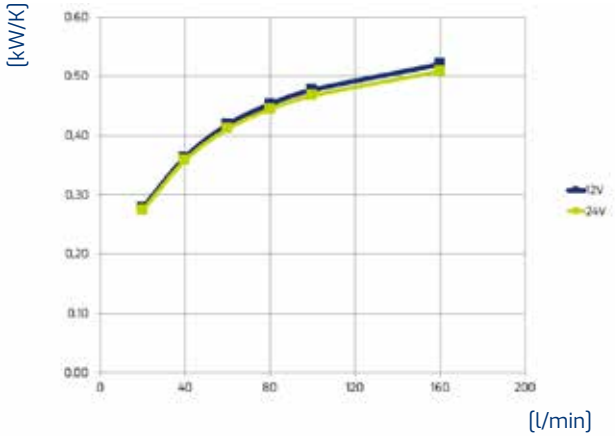




Technical data

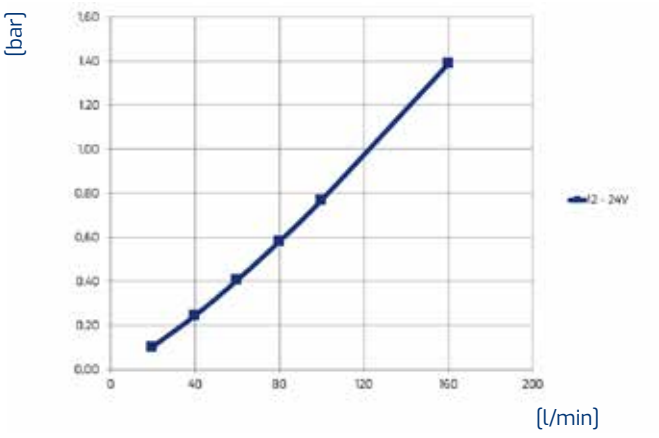
Item	Oil flow	Capacity	Weight	Voltage	Frequency	Current absorption	Power	Ø Fan	Air flow	Noise level	Rpm
	(l/min)	(l)	(kg)	(V)	(Hz)	(A)	(W)	(mm)	(m^3/h)	(db(A))	
HY057.1-04A	20-160	3,7	19	24		8,20	214	385	3390	72,2	

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

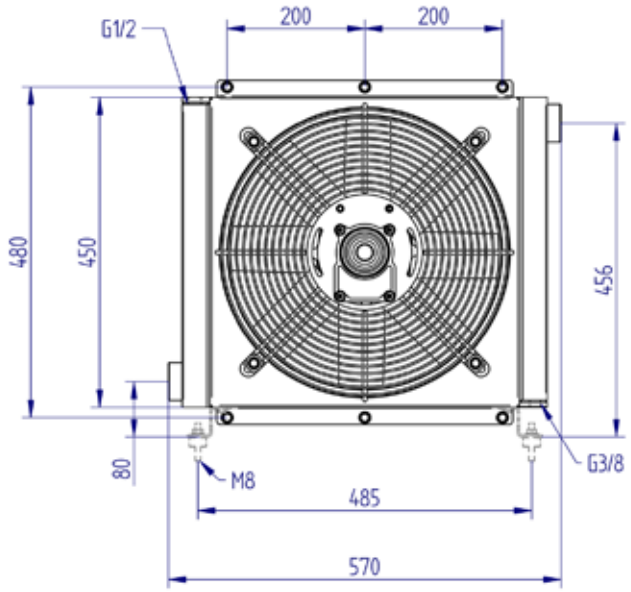
Oil	22	**32**	46	68	150
Correction factor	0,8	**1**	1,2	1,6	3

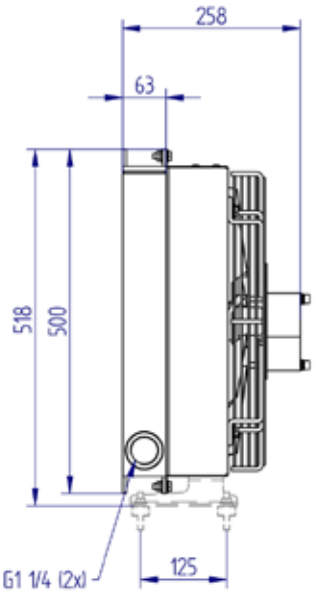
HY series

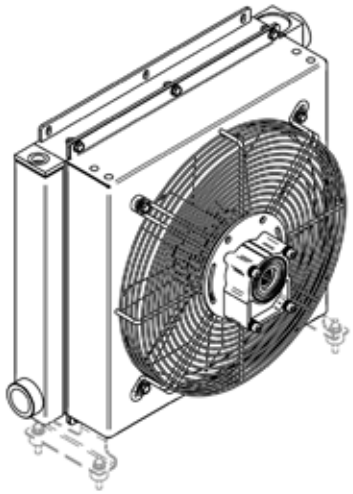
HY057.1-05A

AIR-OIL HEAT EXCHANGERS

Des. Hyd. M. | GR2



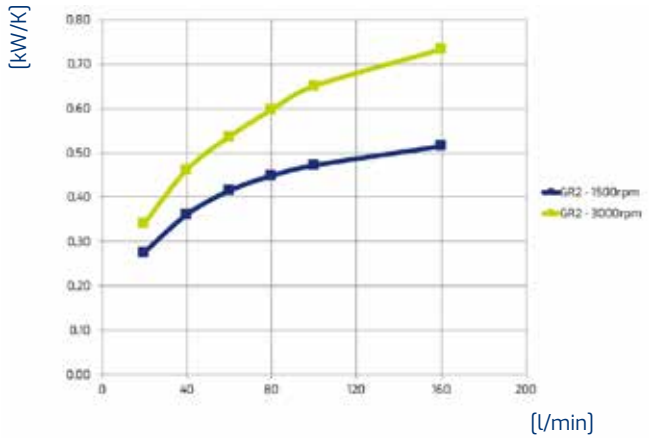




Technical data

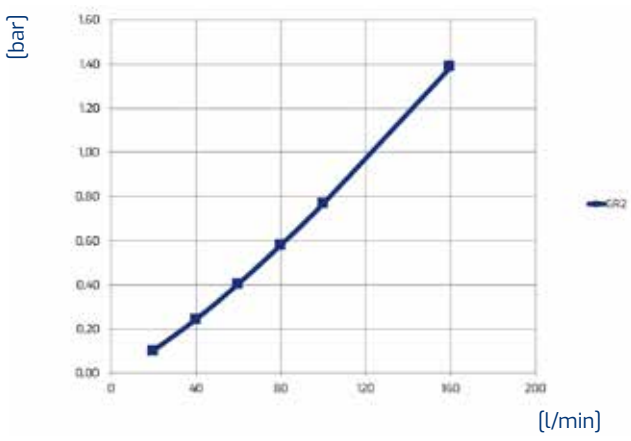
Item	Oil flow	Capacity	Weight	Voltage	Frequency	Current absorption	Ø Fan	Air flow	Noise level	Rpm
	(l/min)	(l)	(kg)	(V)	(Hz)	(A)	(mm)	(m^3/h)	(dB(A))	
HY057.1-05A	20-160	3,7	18				390	2810	76,9	1500
HY057.1-05A	20-160	3,7	18				390	5810	91,7	3000

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 product code

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 -1 6 1 5 -0 K

Series

Air-oil heat exchanger

Size / Size

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

Passages

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 avaiable sizes

Fan Unit

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

Fan Flow

A - Sucking/pulling fan
P - Blowing/pushing fan (available on request)

Please check with the Engineering Department for avaiable sizes

Thermostat

0 - Without thermostat
1 - Fixed
2 - Softstart
3 - Adjustable
4 - With speed regulation and reverse rotation

Thermostat degrees

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

Thermostat thread

1 - 1/2"G
3 - 3/8"G

Thermostat IP

4 - IP40
5 - IP65
7 - IP67

Accessories

DC Version
0 - Without WPC
1 - With WPC

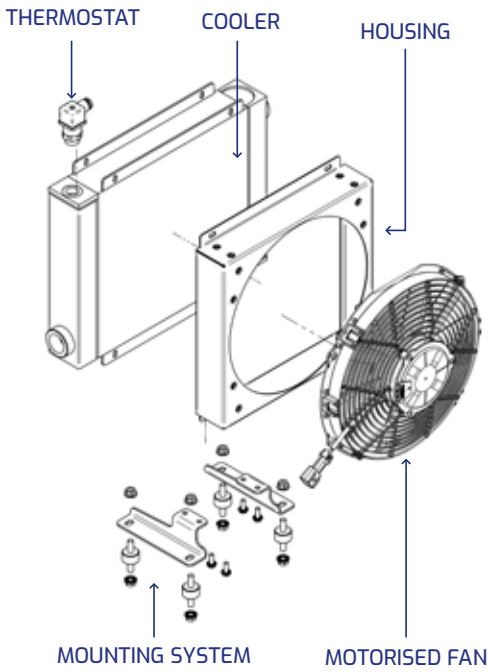
Designed for hydraulic motor version
0 - Without splined coupling
1 - With splined coupling

Mounting Systems

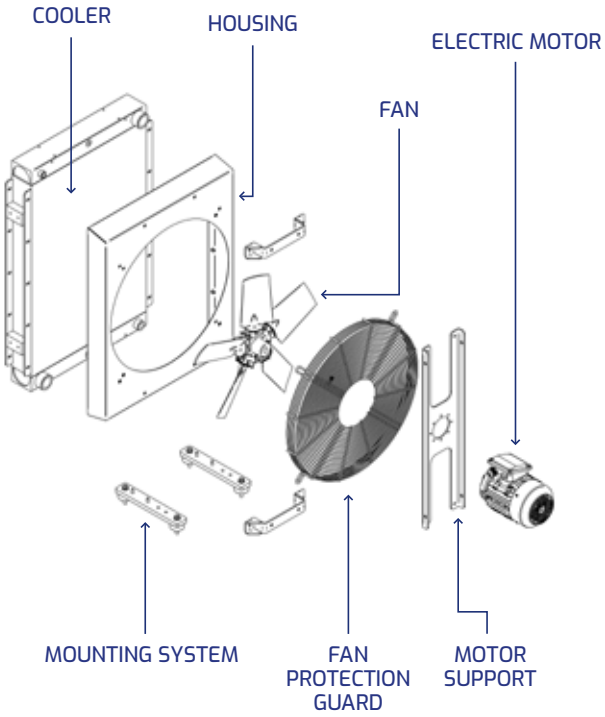
0 - Without bracket kit
K - With bracket kit

PRODUCT CONFIGURATION

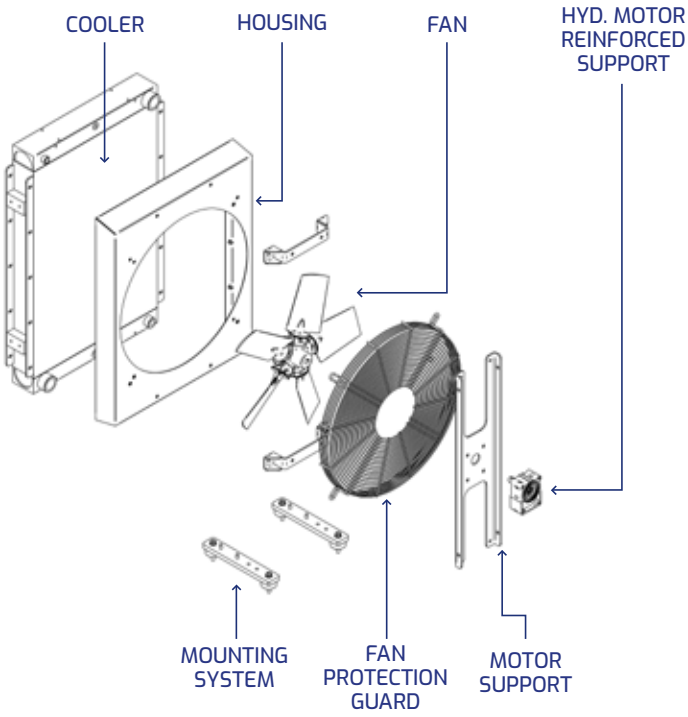
AC-DC



B14 ELECTRIC MOTOR



DESIGNED FOR HYDRAULIC MOTOR



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

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.

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

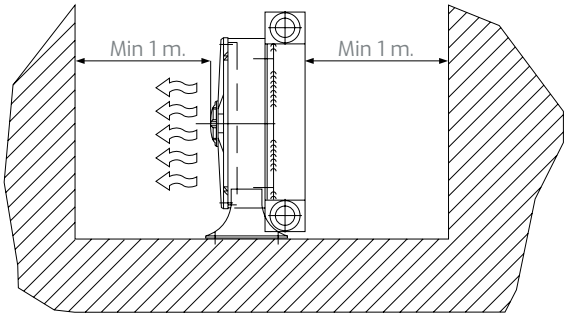


fig. 2

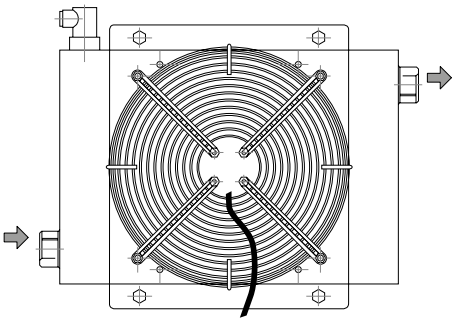


fig. 3

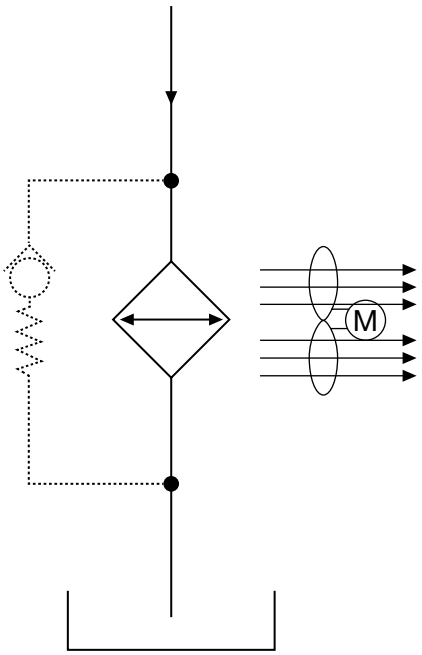
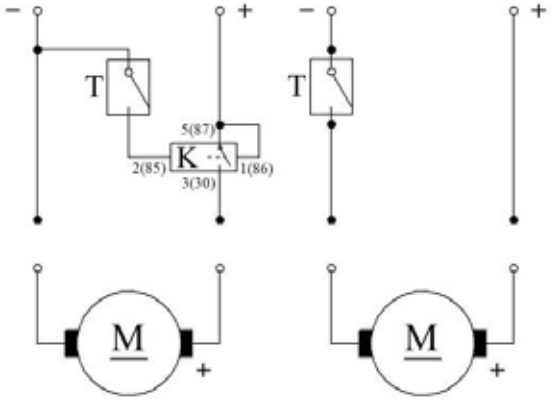


fig. 3

12-24V DC
PREFERRED OPTION

12-24V DC

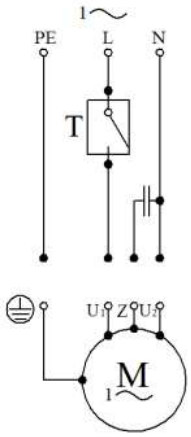


DC 12-24V fan connection

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

230V AC

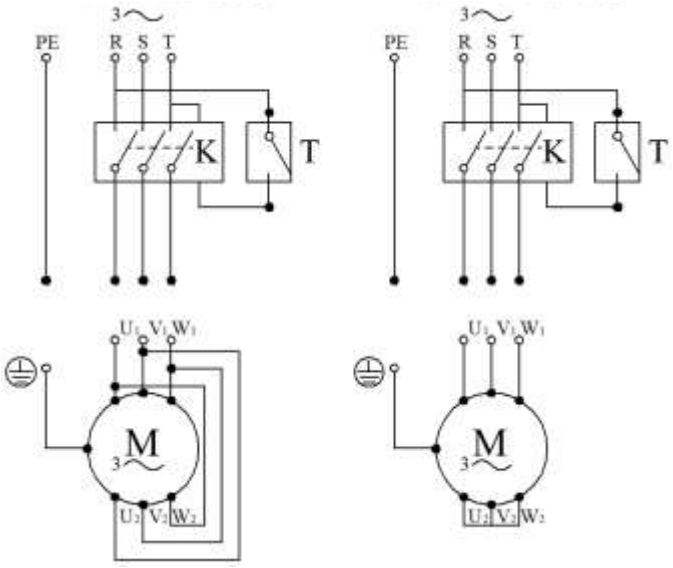


Single phase 230V 50Hz fan connection

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

230/400V AC

230/400V AC



TRIANGLE

STAR

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

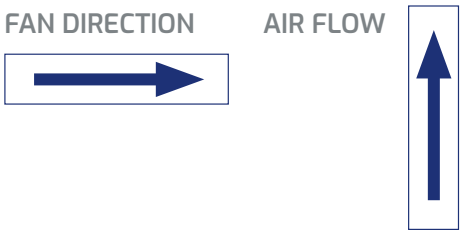
SPECIFICS FOR B14 ELECTRIC MOTOR VERSION

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.