

ACCORRONI

The Accorroni plants









Italy – Company headquarters and production site



TABLE OF CONTENTS

Foreword

- 2-3 Gas-fired convection heaters GHIBLI HT HTV air-tight units with natural draft
- 4-6 Gas-fired convection heaters GHIBLI 4-5-6 air-tight units with forced draft
- 7-10 Gas-fired convection heaters W WR WD air-tight units with forced draft
- 11-15 Wall-mounted air heaters MEC for indoor installation
- 16-20 Wall-mounted air heaters MEC C for ducted installation
- 21-25 Wall-mounted air heaters for outdoor installation MEC EX C for ducted outdoor installation
- 26-29 Wall-mounted air heaters for outdoor installation MEC EX A for outdoor installation
- 30-34 Air heaters AS AS EX
- 35-36 Radiant tubes TR
- 37-45 The GHP range
- 46-47 Refrigeration units RPE 5÷16 Heat pumps HPE 5÷16
- 48-51 Refrigeration units RPE 20+130 Heat pumps HPE 20+130
- 52-55 Refrigeration units RGE 150+520 Heat pumps HGE 150+520
- 56-61 Fan coils Wall-mounted and ceiling-mounted units F-FR Encased fan coils Wall-mounted and ceiling-mounted units FC-FCR
- 62-65 Climate control units AMW
- 66-69 Ducted terminal air treatment units MHD
- 70-72 Arianne 1 and 2

Gas-fired convection heaters GHIBLI HT-HTV

air-tight units with natural draft

The combustion circuit of these independent natural-draft gas heaters is room sealed off from the environment. Model HT distributes hot air in the room by natural convection. It is particularly suited to heating rooms without electricity or where absolute silence is required. It has a piezoelectric pilot burner ignition system activated by a button on the front of the unit and a thermocouple-type burner control. The electronic model HTV distributes hot air by using a two-speed centrifugal fan. However, this fan can be deactivated when absolute silence is required - this feature being particularly useful in areas where high acoustic comfort is required. This model is equipped with an electronic control box with the following characteristics: electronic ignition without pilot flame, ionisation flame detection, safety solenoid valve on the gas line with incorporated filter and pressure regulator. The unit has a Ø 3/8" gas feed line. The control panel includes: on/off switch, warning lights indicating when the unit is on or locked out, room thermostat control knob, fan speed selector, and reset button. All units in the GHIBLI natural-draft series come equipped with an intake/exhaust kit including a terminal for walls up 40 cm thick.



mod. HT



Model	nominal the	ermal power	therma	l power			
		kW	kcal/h	kW	kcal/h		
Ghibli HT thermocouple	code 35870000	3.00	2.600	2.60	2,250	510.00	
3-speed electronic Ghibli HTV	code 35970000	3.00	2.600	2.60	2,250	700.00	



Detail of control panel complete with weekly clock programmer for model Ghibli HTV. The weekly clock programmer is supplied on request as an accessory.

- Dedicated electronics (HTV)
- Safe and guaranteed units thanks to the patented die-cast aluminium enbloc exchanger
- Immediate heating of each single room, only when required
- no need to have flues or ventilation openings
- no need to have water mains
- both natural gas operation and LPG operation are possible
- Five-year warranty (combustion chamber, burner and heat exchanger)

Models Ghibli HT - HTV



digital weekly clock programmer kit only for model HTV including everything required for installation plus instructions code 35619900

104,00



intake and exhaust duct Ø 90 mm length 80 cm code 35850060

42,00

31,00

terminal protection grate code 15553230



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Description			Ghibli HT	Ghibli HTV
Min-max	Methane G20	m³/h	0.19-0.32	0.32
gas-flow	Butane G30	kg/h	0.14 -0.24	0.24
(15 °C-1.013 mbar)	Propane G31	kg/h	0.13-0.23	0.23
Min-max pressure	G20 p 20 mbar	mbar	5.0-12.0	13.5
at burner	G30 p 28-30 mbar	mbar	11.0-28.0	28.0
(15 °C-1.013 mbar)	G31 p 37 mbar	mbar	13.5-36.5	36.5
Gas nozzle diameter	G20	mm/100	150	150
Main burner	G20/G31	mm/100	90	93
Gas nozzle diameter	G20	mm/100	36	/
Pilot burner	G20/G31	mm/100	19	/
Air flow		m³/h	/	220
Gas inlet diameter		m³/h	RP	3/8
Fume exhaust/Air inlet dia	imeter	mm	g	90
Power supply			/	230 V~50 Hz
Fuse (qick type)		А	/	2
Absorbed power		W	/	35
Noise level at a 3 m		db(A)	/	27.5-29.0
net weight		kg	16.8	17.6





Gas-fired convection heaters GHIBLI 4-5-6

air-tight units with forced draft

The combustion circuit of these independent gas heaters is room sealed off from the environment.

These units have a fan installed downstream of the combustion circuit to create forced draft. They are ideal for heating homes and offices in that they allow for personalised room-by-room temperature control.

The combustion chamber-heat exchanger assembly has been created using a highly efficient patented system of finned tubes with a large exchange surface.

The atmospheric methane or LPG burner gives off low NOx emissions and generates an axial flame.

This model is equipped with an electronic control box having the following characteristics: electronic ignition without pilot flame, ionisation flame detection, safety thermostat to cut off burner gas flow if the unit overheats. These units are equipped with a tangential fan (model 4) or double-volute 2-speed centrifugal fans (models 5-6) to circulate air through the area. These fans are equipped with a thermostat to control operation according to heat exchanger temperature.

All units in the GHIBLI forced-draft series are equipped with an intake/exhaust kit for walls up to 40 cm thick that is made up of a single double-section pipe (\emptyset 65 mm) complete with wind-proof terminal.

A wide range of accessories are available to solve any installation problems.





Detail of control panel complete with weekly clock programmer for models Ghibli 4-5-6. The weekly clock programmer is supplied on request as an accessory

Model	nominal thermal power				thermal power			
		kW	kcal/h	kW	kcal/h			
Electronic Ghibli 4	code 35620000	3.72	3,200	3.35	2,880	700.00		
2 speed electronic Ghibli 5	code 35670000	4.83	4,150	4.37	3,760	780.00		
2 speed electronic Ghibli 6	code 35720000	5.52	4,750	4.91	4,220	800.00		

The GHIBLI line can be used to integrate an existing system in order to meet new requirements. It is ideal for single family homes, holiday homes, offices, shops, and laboratories.

It is the best solution for upgrading buildings where the installation of a traditional system would require costly builders' work. With the GHIBLI gas heaters each room is independently heated, as they operate at the desired temperature and at the time needed. This enables users to manage the heating function according to their own habits and requirements.

The GHIBLI units are designed and manufactured based on stateof-the-art technologies, the best selection of materials and the relentless research for quality. That is why they are safe and reliable products.

Thanks to an organisation comprising 50 Agents and 250 Technical Assistance Centres, all customers have at their disposal an efficient service able to meet their requirements, from consultancy on the system to specific technical actions.

The UNI-CIG 7129/92 standard "Gas systems for home use fed by the gas pipe network" published in the Italian Official Gazette 3/5/1993 regulates among other things the distance under the window required for gas unit exhaust terminals.

For forced-draft units with a nominal thermal power from 4 to 7 kW this distance is 30 cm. It is easy to achieve this minimum distance, as all the gas heaters in this series are only 46 cm high. All GHIBLI models are not required to vent flue gases above the roof (D.P.R. 26/8/93 no.412 implementing Art.4, paragraph 4 of the law 9/1/91 no.10 regarding the rational use of energy and energy saving).

The system does not require the ventilation openings called for in the standard for combustion air flow, since the combustion circuit is air tight and sealed off from the heated room. The splitter makes it possible to solve all problems related to the position of the fume flue. Intake and exhaust ducts are separate and can cover distances up to 3 m each. 90° elbows make it possible to move the ducts sideways, as the total length of 3 m must be reduced by 50 cm for each elbow used.



- Maximum safety thanks to the particular combustion circuit: a slight vacuum with respect to the installation area is achieved by the fume extractor located downstream of the exchanger
- Dedicated electronics
- GHIBLI 5-6 units are the only gas-fired convection heaters with double 2-speed centrifugal fan
- Easy and quick installation thanks to the new templates
- Both natural gas operation and LPG operation are possible
- Economical units thanks to their very high thermal efficiency
- Five-year warranty (combustion chamber, burner and heat exchanger)

THANKS TO THE SPLITTER, WHICH IS SUPPLIED AS AN ACCESSORY, THE GHIBLI UNITS CAN BE INSTALLED INTO WALLS THAT ARE NOT OUTSIDE MAIN WALL TOO



max 3 metres + 3 metres The splitter makes it possible to solve all problems related to the position of the fume flue. Intake and exhaust ducts are separate and can cover distances up to 3 m each. 90° elbows make it possible to move the ducts sideways, as the total length of 3 m must be reduced by 50 cm for each elbow used.

Models Ghibli 4 - 5 - 6





SPLITTER

FUME OUTLET

COMBUSTION AIR INLET

Accessories



	Description			Ghibli 4	Ghibli 5	Ghibli 6	
	Gas flow	Methane G20	m³/h	0.39	0.51	0.58	
		Butane G30	kg/h	0.29	0.38	0.44	
	(15 °C-1.013 mbar)	Propane G31	kg/h	0.29	0.37	0.43	
	Gas pressure	G20 p 20 mbar	mbar	11.5	11.5	11.5	
	at burner	G30 p 28-30 mbar	mbar	27.8-29.8	27.7-29.8	27.7-29.8	
	(15 °C-1.013 mbar)	G31 p 37 mbar	mbar	36.5	36.5	36.5	
	Gas nozzle	G20	mm/100	170	190	205	
	diameter	G30/G31	mm/100	100	110	115	
	Fan air	Minimum speed	m³/h	110	180	240	
	flow	Maximum speed	m³/h	-	240	300	
	gas inlet diameter		m³/h		RP 3/8		
	Fume exhaust/Air inlet diameter		mm		65		
	Fuse (quick type)		А		2		
Power supply				230 V~50 Hz			
	Absorbed power		W	47	80	102	
	Noise level a 3 m		db(A)	29	29.5-31.5	31.5-33.5	
	Net weight		kg	21	27	27	

Emission of hot air with low thermal heads

Special combustion circuit: a slight vacuum with respect to the installation area is achieved by the fume extractor located downstream of the exchanger

Steel finned exchanger with high thermal efficiency

Two speed centrifugal fan assembly



Burner generating a low-NOx axial flame

Control panel

Electronic control box

Gas-fired convection heaters **W - WR - WD**

air-tight units with forced draft

These gas-fired air heaters are absolutely new in that they can either be wall-mounted (W) or ceiling-mounted (WR). Thanks to the special patented gas burner they are the ideal solution for heating homes, commercial spaces, offices, professional studios, etc.

The two-speed fan makes it possible to reach the desired temperature very quickly and then maintain it with remarkable fuel consumption saving. The direction of the air delivery grates is adjustable and the intake filter limits the impurities suspended in the air. The wall-mounted model incorporates the standard control panel, while the ceiling-mounted version is remote controlled. The combustion cycle is air tight. A slight vacuum with respect to the installation area is achieved by the fume extractor located downstream of the exchanger. The differential safety air pressure switch guarantees that the combustion products are properly discharged, cutting off burner operation if the combustion circuit becomes plugged.

The electronic control unit has the following features: direct burner ignition and ionisation flame control. The WD series (with ducts) has been designed in order to service several areas with a single unit thanks to rigid or flexible ducts. Available in two capacities, the ceiling-mounted model has a galvanised sheet-metal casing. It is ideal for installation in false ceilings or in service areas. This model can provide partial or full outside air exchange by using the special plenum provided as an accessory.

For all three models the intake and exhaust kits come standard with separate rigid pipes and the related terminals for wall up to 40 cm thick. The maximum length for intake and exhaust ducts is 300+300 cm without elbows.





mod. WR



Model	nominal the	rmal power	therma	lpower			
		kW	kcal/h	kW	kcal/h		
Wall-mounted electronic model W10	code 35250000P	10.50	9,030	9.24	7,950	1.720.00	
Ceiling-mounted electronic model WR10	code 35250000S	10.50	9,030	9.24	7,950	1.810.00	
Ducted electronic model WD10	code 35250000D	10.50	9,030	9.24	7,950	1.810.00	

(*) Models W (wall-mounted) are equipped with intake and exhaust kit Model WR-WD (ceiling-mounted) are equipped with intake and exhaust kit

Thanks to heaters W-WR-WD the temperature desired is quickly reached and fuel consumption saving can amount to 30%. All you need to install the W-R units are a gas feed line and a power supply outlet. There is no need to have a water supply line and an exhaust flue. A cardboard template is supplied to correctly carry out the wall connections needed.

The gas-fired heater W is equipped with two adjustable 2-speed centrifugal fans, although it can also operate with a single fan (summer ventilation). The low thermal head of treated air permits excellent distribution of the air, thus achieving great environmental comfort.

The combustion cycle is air-tight, sealed off from the room where the unit is installed. Combustion air is taken in from the outside and combustion products are fan-discharged to the outside. A safety device constantly checks circuit operation, ensuring reliability and safety.



Separate intake and exhaust ducts allow for particular developments - with elbows too.



model WD (ducted)



Accessories W - WR

painted sheet-metal molding to cover WR connections code 37065000 99.00

pipes and elbow 90° Ø 60 (also for model WD

> 37.00 42.00 37.00



pipe m 1 code 37500045 elbow 90° code 37800020

Accessories WD





Detail of the new

electronics-dedicated control panel mounted on gas-fired convection heater (version W -wall-mounted). For versions WR (ceiling-mounted) and WD (ducted ceiling-mounted), the remote control is supplied as standard.



Description			W - WR 10	WD 10
Min - max gas flow	Methane G20	m³/h	1	11
	Butane G30	kg/h	0.8	83
(15 °C-1.013 mbar)	Propane G31	kg/h	0.8	81
Gas pressure	G20 p 20 mbar	mbar	12	2.0
at burner	G30 p 28-30 mbar	mbar	27.0 -	- 29.0
(15 °C-1.013 mbar)	G31 p 37 mbar	mbar	36	5.0
Gas nozzle	G20	mm/100	28	30
diameter	G30/G31	mm/100	17	70
fan air	Minimum speed	m³/h	850	730
flow	Maximum speed	m³/h	1.040	850
gas inlet diameter		m³/h	1,	/2
Fume exhaust/Air inlet diameter		mm	6	0
Fuse (quick type)		A	2	2
Power suplly			230 V~/	1/50 Hz
Absorbed power		W	180	190
Noise level	Minimum speed	db(A)	43	42
a 3 m	Maximum speed	db(A)	45,5	43
Effective pressure	Maximum speed	Ра	/	40
Net weight		kg	58	56



Extractable air intake filter



Gas solenoid valve

Wall-mounted air heaters **MEC** for indoor installation

Wall-mounted **MEC** air heaters are the best available on the market, in terms of both performance and reliability. These units meet all harmonised European standards and regulations thanks to thorough in-depth testing - including aging tests - thus making this the best family of wall-mounted air heaters on the market in terms of safety, performance and reliability. These air heaters are independent wallmounted units that do not require any central heat generators, water mains and duct systems.

MEC air heating systems make it possible to create modular systems made up of one or more units in order to meet a wide range of heating requirements: from small areas such as workshops to large areas such as industrial buildings, warehouses, churches, sports centres. As specified by law, in the installation of such air heaters as type C units (airtight and sealed off from the area of installation) the intake duct and exhaust flue - including the corresponding terminals - are considered as parts of the air heater itself. Therefore when ordering the unit, these parts must be requested too. Accorroni s.r.l. guarantees their compliance and performance.



Model MEC 20-30 DP is supplied standard with the remote control panel, which is available as an accessory on request for the other models.

Model		nominal th	ermal power	thermal	power		
		kW	kcal/h	kW	kcal/h		
MEC 25	code 30120000	25.0	21.500	22.9	1,700	1.930.00	
MEC 35	code 30220000	34.8	29.900	31.9	27,400	2.020.00	
MEC 20-30 DP	code 30020000	20.0 - 30.0	17,200 - 25,800	17.5 - 27.5	15,050 - 23,650	2.220.00	
MEC 50	code 30270000	50.0	43,000	45.3	38,960	2.840.00	
MEC 57	code 30320000	57.0	49,000	51.6	44,380	2.960.00	
MEC 85	code 30370000	85.0	73,100	75.6	65,050	4.340.00	

MEC air heaters are easy and inexpensive to install. There is no hydraulic circuit. Therefore there is no risk of the water freezing and builders' work is reduced to a minimum. No central heat generator and no dedicated space for a central heat generating system are required. Moreover, since MEC generators are quickly installed, the area to be heated is out of commission for a brief period of time. In addition, these units reach operating temperature guickly and this translates into a significant reduction in fuel consumption. MEC 20-30 DP is particularly suited to heating churches. The double power mode lets you quickly heat the area at maximum power, while the minimum setting lets you maintain the temperature with minimum noise and fuel consumption.

Examples of installations

Tipo C12

The combustion circuit is air-tight and sealed off from the environment. The ducts cross the outside wall directly, with terminals included inside a square (side = 50 cm).

Installation includes the following accessories:

- horizontal wall exhaust kit
- air intake kit

- Extremely safe: stainless steel combustion chamber, heat exchanger and faned flue
- Very silent: well-designed ventilation profiles
- Highly performing: over 90% IMQ and ITALGAS certified
- Five-year warranty (combustion chamber, burner and heat exchanger)



Thermal efficiency guaranteed over 90%

top view





Tipo C52

The combustion circuit is air-tight and sealed off from the environment. Both ducts are connected to the outside, but their terminals may be situated on different walls of the room.

Installation is carried out by using the following accessories:

- horizontal wall exhaust kit
- air intake kit
- 90 °elbow Ø 80 with condensate drain
- roof exhaust terminal kit
- duct length 1 m Ø 80 cod. 37800035
- lead tile cod. 37503000



Top view of installation of **MEC 25** Terminals are far away from each other and are situated on different walls



Side view of installation of **MEC 25** Wall intake and exhaust duct beyond building roof

Models MEC 25 - 35 - 20/30 DP with axial fans





А	В	С	D	Е	F	G	Н	I	L	М
695	415	840	477	470	400	120	695	93	528	113
Ν	0	Р	Q	R	S	Т	U	Air	Fumes	Gas
283	440	35	62	48	315	76	398	Ø 140	Ø 80	1/2"

Tipo B22

Open combustion circuit with combustion air intake from inside the environment. In this case suitable wall openings must guarantee that combustion air is properly supplied (see standards UNI-CIG 7129 and 7131, Italian Ministry of the Interior's Fire Protection Regulations)

Installation is carried out by using the following accessories:

- 90 °elbow Ø 80 with condensate drain
- roof exhaust terminal kit
- duct length 1 m Ø 80 cod. 37800035
- lead tile cod. 37503000



Side view of installation of MEC 25



Side view of installation of **MEC 25** Vertical exhaust duct beyond building roof

Models MEC 50 - 57 with axial fans



Model MEC 85 with axial fans





А	В	С	D		Е	F	
1.748	480	870	542	2	1358	400	
G	Н	I	L		Μ	N	
1.133	715	874	133	3	113	353	
0	Р	Q			R	S	
515	35	62			48	315	
Т	U	Air		F	umes	Gas	
424	900	Ø 14	0	Q	ð 100	1/2"	

С

Distanze di rispetto



Accessories



duct m 1	
Ø 80 code 37800035	47.00
Ø 100 code 37800050	52.00
elbow 90°	
Ø 80 code 37800030	42.00
Ø 100 code 37800031	42.00
elbow 45°	
Ø 80 code 37800032	42.00
Ø 100 code 37800034	42.00
elbow with condensate drain	
Ø 80 code 37800037	47.00
Ø 100 code 37800039	52.00

air intake kit including:

Ø 140 duct, length 50 cm with outside terminal; flexible Ø 140 pipe, length 3 m; 2 pipe clamps; plug for combustion air intake hole 2585 code 30170040

62.00



horizontal wall exhaust kit including: exhaust duct (Ø 80 MEC 2535; Ø100 MEC 5085), length 100 cm; connection clamp with gasket; outside terminal model

model	
25÷35 code 30170050	57.00
50÷85 code 30320050	78.00

roof exhaust terminal kit including: exhaust duct (Ø 80 MEC 2535; Ø100 MEC 5085), length 100 cm; connection clamp with gasket; outside terminal, plastic sealing cap fit with gasket and clamp

exha MEC S clamp wit sea model

remote control with the following functions: on/off switch, electronic room thermostat, on and lockout warning lights, reset button, summer fan function



cable 4 m code 30170010124.00cable 10 m code 30170015140.00

model

25÷35 code 30171501

50÷57 code 30321501

85 code 30371501

additional air delivery grate with adjustable vertical fins

> 73.00 119.00 140.00

support shelves model 2585 cod. 30170085

73.00

lead tile cod. 37503000

68.00

plug for fume uptake hole cod. 30170057

7.00



\square	

107.00 124.00

25÷35 code 30170055 50÷85 code 30320055

Safety thermostat	Fume extractor
Heat exchanger	Combustion air inlet
Adjustable	Electronic equipment
louvres	Gas solenoid valve
Pressure switch	Burner

Description			25	20-30 DP	35	50	57	85
Gas flow	Methane G20	m³/h	2.65	2.12 - 3.17	3.70	5.29	6.03	9.00
min-max	Butane G30	kg/h	1.97	1.58 - 2.37	2.76	3.94	4.49	6.70
(15 °C-1.013 mbar)	Propane G31	kg/h	1.94	1.55 - 2.32	2.71	3.88	4.42	6.60
Gas pressure	G20 p 20 mbar	mbar	10.0	4.5 - 10.0	12.0	10.4	10.5	11.0
at burner	G30 p 28-30 mbar	mbar	27.7	11.0 - 24.0	27.4	24.2	24.2	25.0
(15 °C-1.013 mbar)	G31 p 37 mbar	mbar	36.5	13.0 - 32.0	36.0	32.5	32.5	32.5
Diameter	G20	mm/100	310	340	350	350	370	400
of nozzles	G30/G31	mm/100	175	205	210	185/240	220	240
Diameter gas inlet								
Diameter air inlet		mm						
Diameter of fume flue		mm	80 100					
Powersupply			230 V~/1/50/ Hz					
 Air flow		m³/h	2.100	1.500 - 2.300	2.500	4.600	5.000	7.400
 Revolution per minute		n°	1.095	800 - 1.215	1.370	1.260	1.350	1.335
Range		m	16	13 - 18	22	18	22	22
Thermal head		°C	33 34.5 - 35 37 30 31				30	
 Noise level (a 5 m)		db(A)	45 45 - 47.5 50.5 50.5 54				55.5	
Electrical power		W	175 215 215 380 400				530	
Fuse		A	4					
Net weight		kg	64	66	64		106	180

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Wall-mounted air heaters MEC C

for ducted installation

MEC C wall-mounted air heaters are based on the corresponding **MEC** series models. They have the same thermal/ventilation characteristics, except that their centrifugal fans achieve higher effective static air flow pressure. As specified by law, in the installation of such air heaters as type C units (air-tight and sealed off from the area of installation) the intake duct and exhaust flue - including the corresponding terminals - are considered as parts of the air heater itself. Therefore when ordering the unit, these parts must be requested too. Accorroni s.r.l. guarantees their compliance and performance. All **MEC C** air heaters are manufactured for indoor installation, whether they are to be used in central heat generating systems or for other purposes (i.e. direct room heat production). **MEC C** heaters can be used in the following situations:

- inside rooms where air distribution proves difficult or where there are obstacles such as dividing walls, shelving or cumbersome machinery impeding proper diffusion and requiring air ducting;

- in special heat generating systems, when regulations in force do not permit installation inside the area to be heated because of the activities performed or the nature of the materials contained therein. **MEC C** units are also suitable when the intake duct requires a filter and/or when ducted intake of outside air is required.

The only measurement that differs between the **MEC C** and **MEC** models is the size of the centrifugal fan, as shown in the figure.





Model	nom	ninal ther	mal power	thermal power			
		kW	kcal/h	kW	kcal/h		
MEC 35 C installation with ducts	code 30230000	34.8	29,900	31.9	27,400	2.180.00	
MEC 57 C installation with ducts	code 30330000	57.0	49,000	51.6	44,380	3.360.00	
MEC 85 C installation with ducts	code 30380000	85.0	73,100	75.6	65,050	4.900.00	

Side view of a **MEC 35 C** installation inside a heating generating system (*).

Ducted air delivery by insertion of vibration damper, duct with air ejection gate (**), fire barrier air lock REI 120, air delivery grate with double row of adjustable fins, inside/outside air intake. Installation includes the following accessories:

- vibration damper for ducting
- duct with air ejection gate
- connection duct for air intake
- fire barrier air lock REI 120
- air delivery grate with double row of adjustable fins



- Extremely safe: stainless steel combustion chamber, heat exchanger and fume enbloc collector
- Very silent: well-designed ventilation profiles
- Highly performing: over 90% IMQ and ITALGAS certified
- Five-year warranty (combustion chamber, burner and heat exchanger)

(*) When **MEC C** is installed inside a heat generating system, support shelves supplied as an accessory cannot be used

(**) delivery duct "B" - where the air ejection gate is situated - is designed for side gate application too (see broken line)

Model MEC 35 C with centrifugal fan



A	В	С	D	E	F	G	Н	I	L	Μ	
695	415	840	797	470	400	120	695	93	528	113	
N	0	Р	Q	R	S	Т	U	Air	Fumes	Gas	
283	440	35	382	48	315	76	398	Ø 140	Ø 80	1/2"	

Model MEC 57 C with centrifugal fans



Model MEC 85 C with centrifugal fans







1	А	В	С)	Е	F	
	1.748	480	870	86	62	1358	400	
	G	Н	I	L		М	N	
	1.133	715	874	133		113	353	
1					_			
1	0	Р	Q	Q		R	S	
	515	35	382			48	315	
	Т	U	Air	Air		umes	Gas	
	424	900	Ø 14	Ø 140		Ø 100	1/2"	

Examples of installations



air delivery, insertion of vibration damper and total inside air intake. Installation carried out by using the following accessories: - vibration damper for ducting

- support shelf

opening for perforated polyethylene pipe.

Installation carried out by using the following accessories:

- circular connection opening for air delivery polyethylene duct - perforated polyethylene pipe \emptyset 400 mm, length 25 m

- support shelf

0

remote cont on/off swite	rol with the following functions: ch, electronic room thermostat, on and lockout warning lights, et button, summer fan function	model	air delivery grate with double row of adjustable fins	
	124.00	35 code 30172210	145.00	
4 m code 30170010	140.00	57 code 30322210	223.00	
10 m code 30170015	5	85 code 30372210	357.00	
	duct with air ejection gate to be combined with fire barrier air lock for installation in heat generating system		ducts and elbows to extend the exhaust kit (Ø 80 MEC 35) (Ø100 MEC 57÷85)	
model		duct m 1		
35 code 30172225	192.00	Ø 80 code 37800035	47.00	
57 code 30322225	233.00	Ø 100 code 37800050	52.00	
85 code 30372225	233.00	elbow 90°		
		Ø 80 code 37800030	42.00	
		Ø 100 code 37800031	42.00	
		elbow 45°	10.00	
		Ø 80 code 37800032	42.00	

elbow 45 ° Ø 80 code 37800032
Ø 80 code 37800032
Ø 100 code 37800034 elbow with condensate drain
Ø 80 code 37800037
Ø 100 code 37800039

air intake kit including: Ø 140 duct, length 50 cm with outside terminal; flexible Ø 140 pipe, length 3 m; 2 pipe clamps; plug for combustion air intake hole 35+85 code 30170040

62.00

42.00

47.00 52.00



horizontal wall exhaust kit including: exhaust duct (Ø 80 MEC 35; Ø100 MEC 57 + 85), length 100 cm; connection clamp with gasket; outside terminal

> 57.00 78.00



25÷35 code 30170050 50÷85 code 30320050

> roof exhaust terminal kit including: exhaust duct (Ø 80 MEC 35; Ø100 MEC 57÷85), length 100 cm; connection clamp with gasket; outside terminal, plastic sealing cap fit with gasket and clamp

model	
25÷35 code 30170055	107.00
50÷85 code 30320055	124.00

cable 4 m code 30170010
cable 10 m code 30170015



connection duct for air intake

73.00
104.00
130.00



vibration damper for ducting

model	
35 code 30172230	114.00
57 code 30322230	171.00
85 code 30372230	197.00

REI 120 for ducting model 35 cod. 30172210 512.00

57 cod. 30322210 620.00 724.00 85 cod. 30372210

> lead tile cod. 37503000

fire barrier air lock

68.00





circular connection opening for air delivery polyethylene duct

model 35 code 30170065 57 code 30320065

plug for fume uptake hole cod. 30170057

7.00

176.00

236.00

300.00



perforated polyethylene pipe Ø 400 mm length 25 m when ordering the pipe for MEC 85 specify two openings code 10152205

197.00

support shelves code 30150090
73.00

Description			35	57	85		
Gas flow	Methane G20	m³/h	3.70	6.03	9.00		
min-max	Butane G30	kg/h	2.76	4.49	6.70		
(15 °C-1.013 mbar)	Propane G31	kg/h	2.71	4.42	6.60		
Gas pressure	G20 p 20 mbar	mbar	12.0	10.5	11.0		
at burner	G30 p 28-30 mbar	mbar	27.4	24.2	25.0		
(15 °C-1.013 mbar)	G31 p 37 mbar	mbar	36.0	32.5	32.5		
Diameter	G20	mm/100	350	370	400		
of nozzles	G30/G31	mm/100	210	220	240		
Diameter of gas inlet		"	G 1/2				
Diameter of air inlet		mm	140				
Diameter fume flue		mm	80 100				
Power suplly			230 V~/1/50/ Hz				
Air flow		m³/h	2.500	5.000	7.300		
Revolutions per minu	ite	n°	930	930	950		
Effective pressure		Ра	80	80	80		
Thermal head		°C	37	31	31		
Noise level (5 m)		db(A)	48.5	51.5	53		
Electrical power		W	580	1.050	1.550		
Fuse		A	6.3	10	15		
Net weight		kg	73	125	207		



Wall-mounted air heaters for outdoor installation MEC EX C

MEC EX wall-mounted air heaters have been specifically designed and certified for outdoor installation. The units are equipped with centrifugal fans and electrical components specifically designed for outdoor use.

If regulations in force do not permit installation inside the area to be heated - because of the activities performed in the area or the nature of the materials contained therein - **MEC EX C** units can be installed on the outside close to the wall of the building. Depending on how applicable regulations classify the activities performed in the area where the air heaters are to be used, several different system set-ups are possible such as the use of fire barrier air locks, recirculation of inside air, total outside air intake, filtration, mixing, etc. These solutions can be achieved by using the accessories available on request. **MEC X C** air heaters are equipped with a connector for the delivery duct (*), a connector for the air intake duct complete with grate (**), a fume exhaust kit, and a combustion air intake kit.

The standard electronic control panel is connected to the unit through a 10 m cable. It makes the unit easy to use and lets you safely control operating and environmental parameters. The unit provides the following functions:

- heating / off / summer ventilation
- digital display showing environmental temperature or temperature setting
- electronic timer for turning fans on and off
- reset button
- desired temperature setting
- on and lockout warning lights
- two-stage temperature to be set in automatic or manual mode

Model		nominal t	hermal power	thermal	power		
		kW	kcal/h	kW	kcal/h		
MEC 35 EX C for ducted outdoor installation with centrifugal fan	code 30240000	34.8	29,900	31.9	27,400	2.480.00	
MEC 57 EX C for ducted outdoor installation with centrifugal fan	code 30340000	57.0	49,000	51.6	44,380	3.820.00	
MEC 85 EX C for ducted outdoor installation with centrifugal fan	code 30390000	85.0	73,100	75.6	65,050	5.800.00	

(*) Connector for delivery duct:

code 30192200 (MEC 35 EX C) value ¤ 135.00 code 30292200 (MEC 57 EX C) value ¤ 149.00 code 30392200 (MEC 85 EX C) value ¤ 211.00

(**) Connector for intake duct complete with filter:

code 30242250 (MEC 35 EX C) value ¤ 190.00 code 30342250 (MEC 57 EX C) value ¤ 289.00 code 30392250 (MEC 85 EX C) value ¤ 380.00



- CE approved for outdoor installation
- Degree of casing protection IP 44
- Five-year warranty (combustion chamber, burner and heat exchanger)

Air heaters come equipped with:

- connector for delivery duct
- horizontal air intake duct
- inclined air intake duct complete with grate
- fume exhaust kit
- combustion air intake kit
- remote control panel complete with
- sheath and electric cable (length 10 m)







А	В	С	D	Е	F	G	Н	I.	J	К	L	М	Ν	
695	1.386	840	167	415	402	470	400	195	330	470	472	187	305	
0	Р	Q	R	S	Т	U	V	W	Х	Y	Air	Fumes	Gas	
48	315	76	398	113	283	440	695	685	120	160	Ø 140	Ø 80	1/2"	

Model MEC 57 EX C









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А	В	С	D	Е	F	G	
1.147	1.035	840	167	415	402	922	
Н	I	J	К	L	Μ	Ν	
400	195	330	937	475	187	255	
	•						

0	Р	Q	R	U	V	Gas	
48	315	81	840	440	684	1/2"	
Y	W	S	Т	Х	Air	Fumes	
136	665	113	290	113	Ø 140	Ø 80	

Model MEC 85 EX C









А	В	С	D	Е	F	G	
1.748	1.345	870	102	480	402	1.360	
Н	I	J	K	L	Μ	Ν	
400	195	330	1.450	545	160	255	

0	Р	Q	R	S	Т	U	
48	315	424	900	113	353	515	
V	W	Х	Y	Air	Fumes	Gas	
715	665	1.133	136	Ø 140	Ø 100	1/2"	

Examples of installations



Side view of MEC 35 EX installation with free air delivery into the environment, fire barrier air lock, grate with double row of adjustable fins, total outside air intake designed to accept filter, and exhaust duct extended with duct complete with clamp and gasket. Installation carried out by using the following accessories: - fire barrier air lock REI 120

- air delivery grate with double row of adjustable fins

- air intake filter
- support shelf

Side view of MEC 57 EX roof installation (ROOF TOP) with ducted air delivery, fire barrier air lock and vibration damper. Ducted inside and outside air intake with calibration air lock (*). (*) in order to connect intake duct to standard duct "A", the grate should be disassembled. The grate can be used for environment air intake.

Installation carried out by using the following accessories: - fire barrier air lock REI 120

- vibration damper



Installation of MEC EX unit with air intake from heated environment



	ducts and elbows to extend the exhaust kit (Ø 80 MEC 35) (Ø100 MEC 57÷85)
duct m 1	
Ø 80 code 37800035	47.00
Ø 100 code 37800050	52.00
elbow 90 $^{\circ}$	
Ø 80 code 37800030	42.00
Ø 100 code 37800031	42.00
elbow 45°	
Ø 80 code 37800032	42.00
Ø 100 code 37800034	42.00
elbow with condensate drain	
Ø 80 code 37800037	47.00
Ø 100 code 37800039	52.00





support shelve	es
code 3024009	90

73.00

ated polyethylene pipe Ø 400 mm length 25 r when ordering the pipe for MEC 85 specify 2 opening	perforate	
code 1015220		
		0

197.00

circular connection opening for air delivery polyethylene duct

176.00
236.00
300.00

model 35 code 30170065

57 code 30320065 (2 openings) cod. 30370065

air delivery grate with

145.00	
223.00	
357.00	

double row of adjustable fins

145.00
223.00
357.00

145	.00
223	.00
357	.00

35 code 30172210 57 code 30322210 85 code 30372210

model



vibration damper for ducting

fire barrier air lock REI 120 for insertion in ducts

model	
35 code 30172230	114.00
57 code 30322230	171.00
85 code 30372230	197.00



model



35 code 30172205 57 code 30322205 85 code 30372205



37.00

47.00

62.00

52.00

512.00

620.00

724.00

model 35 code 30175610 57 code 30325610 85 code 30375610





35÷85 code 30242010

model



Description			35	57	85			
Gas flow	Methane G20	m³/h	3.70	6.03	9.00			
min-max	Butane G30	kg/h	2.76	4.49	6.70			
(15 °C-1.013 mbar)	Propane G31	kg/h	2.71	4.42	6.60			
Gas pressure	G20 p 20 mbar	mbar	12.0	10.5	11.0			
at Burner	G30 p 28-30 mbar	mbar	27.4	24.2	25.0			
(15 °C-1.013 mbar)	G31 p 37 mbar	mbar	36.0	32.5	32.5			
Diameter	G20	mm/100	350	370	400			
of nozzles	G30/G31	mm/100	210	220	240			
Diameter of gas inlet		"	Gí	1/2				
Diameter of air inlet		mm	140					
Diameter of fume flue		mm	80	100				
Power supply			230 V~/*	1/50/ Hz				
	Air flow	m³/h	2.500	5.000	7.300			
	rpm	n°	930	930	950			
Ventilation	Effective press.	Pa	100	100	100			
	Thermal head	°C	37	31	31			
	Noise level (a 5 m)	db(A)	48.5	51.5	53			
Degree of casing prote	ction		IP	44				
Nominal electrical power	er*	W	850	1.650	2.500			
Fuse		A	6.3	10	15			
Net weight		kg	73	125	207			

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Wall-mounted air heaters for outdoor installation **MEC EX A**

for outdoor installation

The MEC EX line of heat generators for outdoor installation has now been expanded to include models with axial fan **MEC EX A**.

These units are the ideal solution when a ducted hot air distribution network is not required. They come supplied standard with a fume exhaust kit and a device that regulates air flow according to outside temperature. This device starts minimum fan speed when air temperature falls below the set point.

In addition, an electronic control system is available upon request. This system modulates the speed of the fan to keep warm air the environment at a steady temperature. **MEC X A** air heaters are equipped with a connector for the delivery duct (*), a connector for the air intake duct complete with grate, a fume exhaust kit, and a combustion air intake kit. The standard electronic control panel is connected to the unit through a 10 m cable. It makes the unit easy to use and lets you safely control operating and environmental parameters.

The unit provides the following functions:

- heating / off / summer ventilation
- digital display showing environmental temperature or temperature setting
- electronic timer for turning fans on and off
- reset button
- desired temperature setting
- on and lockout warning lights
- two-stage temperature to be set in automatic or manual mode





Model	ominal thermal power power supply					
		kW	kcal/h	kW	kcal/h	
MEC 35 EX A for outdoor installation with propeller fan	code 30240002	34,8	29.900	31,9	27.400	2.340,00
MEC 57 EX A for outdoor installation with propeller fan	code 30340002	57,0	49.000	51,6	44.380	3.320,00
MEC 85 EX A for outdoor installation with propeller fan	code 30390002	85,0	73.100	75,6	65.050	4.650,00

(*) Connector for delivery duct: code 30192200 (MEC 35 EX A) value ¤ 135.00 code 30292200 (MEC 57 EX A) value ¤ 149.00 code 30392200 (MEC 85 EX A) value ¤ 211.00

• CE approved for outdoor installation

• Degree of casing protection IP 44

Five-year warranty

(combustion chamber, burner and heat exchanger)



Model MEC 35 EX A









А	В	С	D	Е	F	G	Н	I	J	К	L	М	Ν	
695	984	840	167	415	402	470	400	195	330	470	472	195	276	
0	Р	Q	R	S	Т	U	V	W	Х	Y	Air	Fumes	Gas	
48	315	76	398	113	283	440	695	671	120	112	Ø 140	Ø 80	1/2"	

Model MEC 57 EX A









А	В	С	D	E	F	G	Н	1	J	K	L	Μ	Ν	
1.147	984	840	167	415	402	922	400	195	330	922	472	195	276	
0	Р	Q	R	S	Т	U	V	W	Х	Y	Air	Fumes	Gas	
48	315	81	840	113	290	440	684	665	113	112	Ø 140	Ø 100	1/2"	

Model MEC 85 EX A









А	В	С	D	Е	F	G	
1.748	1.073	870	102	480	402	1.360	
Н	1	J	K	L	Μ	Ν	
400	195	330	1.450	545	160	255	

0	Р	Q	R	S	т	U	
48	315	424	900	113	353	515	
V	W	Х	Y	Air	Fumes	Gas	
715	671	1.133	115	Ø 140	Ø 100	1/2"	

	ducts and elbows to extend the exhaust kit (Ø 80 MEC 35) (Ø100 MEC 57÷85)
duct m 1	
Ø 80 code 37800035	47.00
Ø 100 code 37800050	52,00
elbow 90°	
Ø 80 code 37800030	42,00
Ø 100 code 37800031	42,00
elbow 45°	
Ø 80 code 37800032	42,00
Ø 100 code 37800034	42,00
elbow with condensate drain	
Ø 80 code 37800037	47,00
Ø 100 code 37800039	52,00

plug for fume upta	ake hole
code 30)170057
	7,00

support shelves code 30240090

73,00

electronic device varying fan speed in a continuously according to delivery air temperature. Adjustment is carried out on the device directly.

269,00

0 0 01

> model 35÷85 code 30242005

air delivery grate with double row of adjustable fins

145,00 223,00 357,00



model 35 code 30172210 57 code 30322210 85 code 30372210



fire barrier air lock REI 120 for insertion in ducts

512,00

620,00 724,00

model	
35 code 30172230	114,00
57 code 30322230	171,00
85 code 30372230	197,00



model 35 code 30172205 57 code 30322205 85 code 30372205



Description			35	57	85		
Gas flow	Methane G20	m³/h	3,70	6,03	9,00		
min-max	Butane G30	kg/h	2,76	4,49	6,70		
(15 °C-1.013 mbar)	Propane G31	kg/h	2,71	4,42	6,60		
Gas pressure	G20 p 20 mbar	mbar	12,0	10,5	11,0		
at Burner	G30 p 28-30 mbar	mbar	27,4	24,2	25,0		
(15 °C-1.013 mbar)	G31 p 37 mbar	mbar	36,0	32,5	32,5		
Diameter	G20	mm/100	350	370	400		
of nozzles	G30/G31	mm/100	210	220	240		
Diameter of gas inlet		"					
Diameter of air inlet		mm		140			
Diameter of fume flue		mm	80	100			
Power supply			230 V~/*				
	Air flow	m³/h	2.500	5.000	7.400		
	rpm	n°	1.370	1.350	1.335		
Ventilation	Effective press.	m	20	20	20		
	Thermal head	°C	37	31	30		
Noise level (a 5 m)		db(A)	51	54	56		
Degree of casing prote	ction			IP 44			
Nominal electrical pow	er*	W	250	450	600		
Fuse		A	4	6	6		
Net weight		kg	68	115	193		

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Air heaters **AS - AS EX**

The **AS** series air heaters (for indoor installation) and **AS EX** series air heaters (for outdoor installation) cover a full range of 11 models ranging in capacity from 38,000 to 820,000 Kcal/h. They are an efficient solution for private and industrial use when you need to get the system up to operating temperature quickly or when the need for heat production is intermittent and thermal inertia is low.

These air heaters can be installed directly inside the areas to be heated, if this is allowed by the regulations in force. These units are fit with a plenum air delivery system with adjustable opening grates for better air distribution. If the heater is installed in a heat generating system, the air is distributed through ducts that silently and quickly deliver hot air to each room. The AS series air heaters are also particularly suited for use in specific fields, i.e. in agriculture for greenhouses or breeding farms and in some industrial processes such as painting or drying. The combustion chamber is made of special steel with double gas circulation. The heat exchanger has flattened tubular ducts with a large surface. The fan assembly is made up of statically and dynamically balanced double-intake centrifugal fans that are controlled by an electric motor on a belt stretcher slide. Thermostatic controls are used in starting the fan and controlling the safety limit. Summer ventilation is standard on all models.

The entire range of **AS-AS** EX air heaters can be supplied without burner or with either gas or oil burner.





Model	Model Nominal Thermal power		Nominal	Thermal	Without burner	Oil burner (*)	Gas burner (**)	Three-way plenum	Opening on 4 th	Frame for intake filter complete with filter	
	kW	kcal/h	KW	Kcal/h							
AS 40	45.0	20 700	40.7	25.000	2.210,00	000.00	0.40,00	4/0.00	40.00	1/0.00	
AS 40 EX	45,0	38.700	40,7	35.000	2.870,00	820,00	940,00	460,00	40,00	160,00	
AS 70	00.7	70.000	75 /	(5 000	2.780,00		1 (20, 00	(40, 00	70.00	240.00	
AS 70 EX	83,7	/2.000	/5,6	65.000	3.410,00	950,00	1.620,00	640,00	70,00	240,00	
AS 90	104 7	00.000	05.0	00.000	3.670,00	1 000 00	1 (00 00	(70.00	00.00	0/0.00	
AS 90 EX	104,7	90.000	95,3	82.000	4.640,00	1.020,00	1.620,00	670,00	80,00	260,00	
AS 110	100 (110 000	11/0	100.000	3.790,00	1 000 00	1 000 00	(70.00	00.00	0/0.00	
AS 110 EX	128,6	110.000	116,3	100.000	4.790,00	1.030,00	1.930,00	670,00	80,00	260,00	
AS 170	100.1	1/5 000	470.0	150.000	5.260,00	4 070 00		770.00	00.00	040.00	
AS 170 EX	192,1	165.200	1/3,3	150.000	6.690,00	1.070,00	2.690,00	//0,00	80,00	310,00	
AS 230	257.0	221 700	222.4	200,000	6.110,00	1 1 (0 0 0	2 400 00	000.00	100.00	2/0.00	
AS 230 EX	257,8	221.700	232,0	200.000	7.620,00	1.160,00	3.480,00	930,00	100,00	300,00	
AS 280	210 7	274 100	200 7	250,000	8.170,00	1 1/0 00	2 400 00	1 110 00	200.00	F20.00	
AS 280 EX	318,1	274.100	290,7	200.000	9.980,00	1.160,00	3.480,00	1.110,00	200,00	520,00	
AS 340	207.2	220.000	240.4	200.000	8.850,00	2 000 00	4 350 00	1 110 00	200.00	F20.00	
AS 340 EX	301,2	330.000	348,4	300.000	10.810,00	2.000,00	4.350,00	1.110,00	200,00	520,00	
AS 420	102.2	414 000	126.0	275 000	13.140,00	2 000 00	4 070 00(**)	1 070 00	2/0.00	(00.00	
AS 420 EX	402,3	414.800	430,0	375.000	16.020,00	2.000,00	4.970,00(^^)	1.270,00	260,00	600,00	
AS 550	422.2	E42 000	E40 0	100 000	15.240,00	0 500 00	7 770 00(**)	1 400 00	0/0.00	7/0.00	
AS 550 EX	032,3	543.000	007,8	470.000	19.000,00	2.500,00	1.110,00(^^)	1.430,00	260,00	/60,00	
AS 850	057.2	022 200	072 1	750 000	20.310,00	F 120 00	0 220 00/**)	2 140 00	200.00	1 420 00	
AS 850 EX	751,5	023.300	072,1	730.000	23.120,00	5.130,00	9.320,00("")	2.140,00	290,00	1.430,00	

(*) to order a AS-AS EX unit complete with burner, add the code of the desired burner to the code of the air heater (burner price includes assembly) (**) double-stage burners





Connection of air delivery duct

Connection of air intake duct





When the heater is installed in a heat generating system, the air is distributed through ducts that silently and quickly deliver hot air to each room



	Dimension in mm. Length / Width / Height		Plenum height	Plenum Fume flue height		Air delivery connection		Air intake connection		Fumes		
Models	A (*)	В	С	D	Ĕ	F	G	Н	I	L	Ø	
AS 40	660	530	1430	305	1215	490	620	480	620	20	150	
AS 70	870	636	1750	305	1500	596	830	630	830	20	180	
AS 90	1000	750	1900	405	1675	670	920	770	920	40	200	
AS 110	1000	750	1900	405	1675	670	920	770	920	40	200	
AS 170	1260	900	2060	405	1750	820	1180	760	1180	40	250	
AS 230	1440	1020	2340	405	1975	940	1360	760	1360	40	250	
AS 280	1790	1020	2340	405	1975	940	1710	760	1710	40	300	
AS 340	1790	1020	2340	405	1975	940	1710	760	1710	40	300	
AS 420	1960	1280	2660	405	2280	1200	1880	930	1880	40	300	
AS 550	2300	1340	2660	405	2280	1260	2220	930	2220	40	300	
AS 850	2820	1620	3100	445	2672	1540	2740	970	2740	40	400	

(*) Side A does not take into account the space needed for the burner. Leave approximately 90 cm. for maintenance. Model AS 850 is manufactured in two sections with the following heights: C1 1050 and C2 2050 for the ventilation section and heating section respectively.



Models	N	0	S	E
AS 40 EX	500	1100	1120	1215
AS 70 EX	500	1280	1330	1500
AS 90 EX	700	1580	1620	1675
AS 110 EX	700	1580	1620	1675
AS 170 EX	700	1780	1880	1750
AS 230 EX	800	2130	2160	1975
AS 280 EX	800	2130	2510	1975
AS 340 EX	800	2130	2510	1975
AS 420 EX	800	2345	2680	2280
AS 550 EX	900	2410	3120	2280
AS 850 EX	1100	2850	3840	2672

Example of outdoor installation





Accessories	Without burner	Oil burner	Gas burner	Frame for intake filter complete with filter	Three-way plenum	Opening on 4 th side	
AS 40	code 38000000				code 38000020	code 38000021	
AS 40 EX	code 38000001	code 38004402	code 38004401	code 38000025	-	-	
AS 70	code 38020000				code 38020020	code 38020021	
AS 70 EX	code 38020001	code 38024402	code 38024401	code 38020025	-	-	
AS 90	code 38030000				code 38040020	code 38040021	
AS 90 EX	code 38030001	code 38034402	code 38024401	code 38040025	-	-	
AS 110	code 38040000				code 38040020	code 38040021	
AS 110 EX	code 38040001	code 38044402	code 38044401	code 38040025	-	-	
AS 170	code 38060000				code 38060020	code 38060021	
AS 170 EX	code 38060001	code 38064402	code 38064401	code 38060025	-	-	
AS 230	code 38080000				code 38080020	code 38080021	
AS 230 EX	code 38080001	code 38084402	code 38084401	code 38080025	-	-	
AS 280	code 38100000	1 0000 (400	1 00004404	1 00400005	code 38120020	code 38120021	
AS 280 EX	code 38100001	code 38084402	code 38084401	code 38120025	-	-	
AS 340	code 38120000				code 38120020	code 38120021	
AS 340 EX	code 38120001	code 38124402	code 38124401	code 38120025	-	-	
AS 420	code 38140000	anda 20124402	aada 20144401	and 20140025	code 38140020	code 38140021	
AS 420 EX	code 38140001	code 38124402	code 38144401	code 38140025	-	-	
AS 550	code 38160000	anda 20144402	aada 20164401	ando 20160025	code 38160020	code 38160021	
AS 550 EX	code 38160001	code 38164402	code 38164401		-	-	
AS 850	code 38180000	codo 2010///02	codo 2010//01	codo 20100025	code 38180020	code 38180021	
AS 850 EX	code 38180001	LUUE 30104402		LUUE 38 180023	-	-	

Example of installation inside the room to be heated

Fume flue

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Direct distribution

into environment

Air

intake -

Aeration opening for

methane operation

Aeration

opening for LPG operation

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Fume flue

Intake grate (supplied standard on the left from model 40 to 230, on the right from model 280 to 850. For specific installation requirements, the position of the grate can be inverted)

Example of installation inside heat generating system

Air ejection

gate

Aeration opening for methane

operation

Aeration

opening for LPG

operation

b

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Direct or ducted distribution

Fire barrier

air lock

Air

intake

Fume flue

Intake filter

Frame for intake filter

Air heaters 40-70

- 1) Air delivery
- 2) Fume box door
- 3) Flame peephole
- 4) Burner plate
- 5) Centrifugal fan
- 6) Air intake
- 7) Front fume box
- 8) Chimney connection
- 9) Rear fume box
- 10) Heat exchanger
- 11) Combustion chamber
- 12) Directly coupled fan motor
- 13) Fan-Limit-Limit 2
- 14) Electric control panel
- 15) Air deflector
- 16) Aluminium profile frame
- 17) Outside panels insulated with glass wool thickness 25 mm

Air heaters 90 - 110 - 170 - 230

- 1) Air delivery
- 2) Fume box door
- 3) Flame peephole
- 4) Burner plate
- 5) Centrifugal fan
- 6) Air intake
- 7) Front fume box
- 8) Chimney connection
- 9) Rear fume box
- 10) Heat exchanger
- 11) Combustion chamber
- 12) Fan motor
- 13) Fan-Limit-Limit 2
- 14) Electric control panel
- 15) Air deflector
- 16) Aluminium profile frame
- 17) Outside panels insulated with glass wool thickness 25 mm.
- 18) Belt stretcher slide for motor
- 19) Driving belts and pulleys

Air heaters 280 - 340 - 420 - 550 - 850

- 1) Air delivery
- 2) Fume box door
- 3) Flame peephole
- 4) Burner plate
- 5) Centrifugal fan
- 6) Air intake
- 7) Front fume box
- 8) Chimney connection
- 9) Rear fume box
- 10) Heat exchanger
- 11) Combustion chamber
- 12) Fan motors
- 13) Fan-Limit-Limit 2
- 14) Electric control panel
- 15) Air deflector
- 16) Aluminium profile frame
- 17) Outside panels insulated with glass wool thickness 25 mm.
- 18) Belt stretcher slides for motor
- 19) Driving belts and pulleys







Des	cription			AS 40	AS 70	AS 90	AS 110	AS 170	AS 230	AS 280	AS 340	AS 420	AS 550	AS 850
		Methane G20 a 20 mbar	m³/h	4,51	8,40	10,50	12,90	19,27	25,85	31,97	38,83	48,37	63,42	96,01
Gas	consumption	Gas Nat. G25 a 25 mbar	m³/h	5,25	9,76	12,20	15,00	22,40	30,06	37,17	45,15	56,24	73,74	111,63
(a 0 °	°C-1.013 mbar)	Propane G31 a 37 mbar	kg/h	3,43	6,38	7,97	9,80	14,63	19,64	24,28	29,50	36,74	48,17	72,92
		Butane G30 a 28 mbar	kg/h	3,48	6,48	8,10	9,95	14,87	19,95	24,67	29,97	37,34	48,95	74,10
Cour	nter pressure in combustior	n chamber	mbar	0,22	0,22	0,23	0,25	0,25	0,35	0,50	0,70	0,70	1	0,90
Volur	me of combustion chamber	r	m ³	0,05	0,17	0,24	0,24	0,33	0,76	0,95	0,95	1,44	1,70	3,27
Volur	me of combustion circuit		m ³	0,08	0,22	0,32	0,32	0,46	0,98	1,20	1,20	1,72	2,20	4,19
Minin	mum volume of uptake air		m³(2)	0,4	1,1	1,6	1,6	2,3	5	6	6	8,60	11	20,95
Avera	age fume temperature with o	combustion air temperature at 20° C	°C	228	229	196	228	241	230	211	234	221	234	195
Gas	Gas operation consumption PCI 10,200 cal/kg			3,8	7,1	8,8	10,8	16,2	20,7	26,9	32,6	40,7	53,3	80,7
Heat	Heating air flow		m³/h a 18°	2.750	5.100	6.300	7.800	11.700	15.600	19.800	23.500	29.200	38.700	55.200
Effec	Effective static pressure air side		Pa	50	90	170	150	220	190	170	200	190	160	260
Fan r	motor power		kW x n°	0,2	0,7	1,1	1,5	2,2	3	2,2x2	3x2	3x2	5,5x2	5,5x3
Abso	orption of motors 400V 3F		А	-	-	2,9	3,6	5,1	7	5,1x2	7,2x2	7x2	12x2	12x3
Abso	orption of motors 230V 1F		А	3,6	7,1	4,8	7,2	9,3	12	9,3x2	12x2	12x2	20x2	20x3
Noise	e level (at 4 m)		db(A)	62	72	71	72	72	73	74	75	75	76	76
Num	ber of fans		n°	1	1	1	1	1	1	2	2	2	2	2
Minin	Minimum air jet in metres			18	32	35	38	46	60	60	62	63	72	89
Maxi	Maximum air jet in metres			18	32	35	38	46	60	74	80	80	94	108
Powe	Power supply			230 V~	-50 Hz				4	00 V 3N-	~50 Hz			
Net v	Net weight AAS			148	220	315	325	490	580	820	850	1.200	1.550	1.626
Net v	weight AS EX		kg	168	248	357	367	537	640	880	910	1.271	2.300	2.426

Radiant tubes TR

The radiant tubes are autonomous gas-fired radiation heat generators. Combustion takes place inside steel tubular chambers and heat transferred by radiation is directed downwards by polished aluminium reflectors located above the tubes. The units are completely sealed off from the environment and the combustion circuit constantly creates a slight vacuum with respect to the surrounding area, thus removing the risk of unburned gas leaks. The control unit monitors all stages of operation as well the presence of the flame, locking the unit out as soon as defective operation is detected. Radiant tubes are suited to heating large areas with poor thermal insulation, partly open rooms and areas where only some sections need to be heated. They are also suitable for those areas where large quantities of air should not be moved due to the presence of powders or adverse working procedures.

The **TR** transfers heat by radiation based on the same principle as the sun heating the earth's surface without heating the air this translates into energy saving and low inertia. The units can be wall-mounted by using either steel cables or chains fixed to the ceiling, or special wall brackets.

Each unit operates autonomously and can be controlled by a clock programmer as well as by the special thermostat that is supplied on request.

Direct radiation makes it possible to use almost all the thermal energy produced by combustion with no reduction in efficiency due to intermediate exchanges.

Radiant tubes permit giving off heat only when and where it is needed without generating upward hot air flows and without dispersing energy through walls, ceilings, and ventilation or extraction systems. Each unit operates autonomously and can be controlled by a clock programmer. A black-bulb control thermostat is the accessory available on request.

If the radiant tubes cannot be ceiling-mounted, they can be wallmounted with inclined units.

In this case the burner will be installed on the lower tube and the unit should be at least 200 mm from the wall.



INSTALLATION HEIG	TR 20	TR 34	TR 34/9		
	200	MIN.	4,0	5,0	5,0
HORIZONTAL		MAX.	5,5	9,0	9,0
INCLINED		MIN.	4,0	4,0	4,0
		MAX.	4,5	5,0	5,0
AFFECTED AREAS	?	MIN.	8 X 6	8 X 10	10 X 10
		MAX.	11 X 13	11 X 15	15 X 15



Modeles		nominal thermal power		thermal power			
		kW	kcal/h	kW	kcal/h		
Electronic TR 20 m 6,65	code 39220000	21,00	18.060	18,60	15.996	1.660,00	
Electronic TR 34 m 6,65	code 39360000	32,00	27.520	28,50	24.510	1.880,00	
Electronic TR 34/9 m 8,65	code 39420000	32,00	27.520	28,50	24.510	2.120,00	



Systems can be set up that let the users benefit from crossed radiation from at least 2 units.



If there are bridge cranes, electrical cables or other heat sensitive appliances, the radiant tubes can be wall-mounted and located at least 1 m away from them. Naturally no cumbersome shelving or machinery should be put in front of the tubes, as they get in the way of the radiant effect. As shown in the figure, the area where the reflection cones from two opposed units meet should not exceed 10 m


Accessories



Technical and manufacturing characteristics

The following are the main components of the radiation heat generator **TR**: burner, combustion chamber, fume exhaust system, reflecting system.

-The combustion circuit is controlled by an electronic device that operates the combustion product extractor, starts the spark needed for ignition, opens the gas valve, checks that the flame is always present after ignition, and stops the gas flow to the burner as soon as defective operation is detected.

- The combustion chamber is made up of a U pipe manufactured with special materials that guarantee maximum radiant effect on all the surface.
- The reflecting system is made up of an anodised and polished 99.85 aluminium screen with high reflecting power that transfers heat downwards on a well-defined affected area. Each unit is checked and tested in the factory before being shipped.

Reflecting surface	Combustion radiant tubes
et al a second a se	
Tube-reflector support brackets	Designed for outside combustion
Combustion product extractor	air operation (air-tightness)
Gas feed line	Power supply connection

Description			TR 20	TR 34	TR 39/9		
Gas flow	Methane	m³/h	2,19	3,33	3,33		
	L.P.G.	kg/h	1,63	2,48	2,48		
Nozzle	Methane	mm	4,10	5,00	5,00		
diameter	L.P.G.	mm	2,40	2,80	2,80		
Gas pressure	Methane	mbar	11,0	11,0	11,0		
at burner	L.P.G.	mbar		28,0÷	-30,0		
	Length	mm		6.650	8.650		
Dimensions	Width	mm		67	0		
	Height	mm	285				
Weight		kg		120	150		
Gas inlet diameter		"	G1/2				
Fume flue diameter		mm	100 female				
Intake diameter		mm		100 fe	emale		
 Electrical absorption		A		0,	5		
Power suplly				Single phase	230 V - 50 Hz		

The GHP range

Thanks to its wide experience in the climate control and cogeneration sectors, Accorroni has put on the market a truly exhaustive range of gas heat pumps able to meet all requirements and suitable for all the most recent applications in terms of energy saving. The gas endothermic engine that operates the refrigeration compressor is the element common to all models. This range works with refrigerating gas that do not damage the ozone layer and has been integrated by particular versions offering technical solutions suitable for a number of system requirements.

GC 60 Split - GHP 60 Split

This version is available in two models: refrigeration unit GC (summer conditioning + simultaneous production of thermal energy from the engine) and heat pump GHP (summer conditioning and winter heating + simultaneous production of thermal energy from the engine). The appliance is made up of two separate elements - the basic unit and the remote unit - for maximum installation flexibility, even in very small areas. Both units have been designed for outside installation and have a protection rating IP44. The basic unit can also be installed inside a heat generating system in compliance with applicable regulations. The refrigerant used is R134a. The basic unit houses the following main components: endothermic engine complete with recovery exchangers, compressor, water/water exchanger, water/R134a exchanger, cycle reversal valve (only model GHP), electric control panel, and electronic management system. The remote unit is made up of the following elements: engine cooling water/air exchanger, air/R134a exchanger, propeller fans. The piping connecting it to the basic unit can be as long as 10 metres maximum and have a difference in height of 5 metres.

GHPA 60 water/water

This is the best model in terms of both efficiency and energy saving. The groundwater it uses as an external source allows for a coefficient of performance of the refrigeration cycle that is higher than the air/water version. Further heat can be recovered from the condenser during the summer.

The appliance comprises one single compact unit that can be installed both outside (protection rating IP44) and inside a heat generating system. It is made up of the following elements: endothermic engine complete with recovery exchangers, compressor, water/water exchanger, two water/R134a exchangers, cycle reversal valve, electric control panel, and electronic management system.

GHP 60 Basic

It is the first of the 7 package models, with extremely easy installation. The refrigeration cycle is of the air/water kind and operates with the refrigerant R407C. The appliance has been designed to be installed outdoor in a specific space or on the roof of the building. It is made up of a single unit very similar to an electric refrigeration assembly.

GHP 60 Idro 1

This model has the same technical and manufacturing characteristics as the Basic model with the addition of a factory-assembled hydraulic kit comprising: a 300-litre tank for hot sanitary water (A.C.S.), a manifold for mixed water from engine cooling hot water and the refrigeration cycle, a 3-way mixing valve, a pump for hot sanitary water, a pump for exchange/manifold water (gas side), a safety valve 3 bar, an air valve, an expansion tank, a water inlet tank.

GHP 60 Idro 2

This model has the same technical and manufacturing characteristics as the Idro 1 model without the tank for hot sanitary water for those situations when hot sanitary water is not needed or vice versa the system needs greater quantities to be specifically dimensioned.

GHP 60 Total Energy Module

An evolution of the Basic model, this appliance alone is able to meet all the most advanced system requirements. This version permits giving priority to hot water production for sanitary use, combining all the advantages typical of the GHP models in one compact readyto-use appliance that is extremely easy to install.

It is supplied standard with a factory-assembled hydraulic kit comprising: a 300-litre tank for hot sanitary water (A.C.S.), a manifold for mixed water from engine cooling hot water and the refrigeration cycle, a 3-way mixing valve, a pump for hot sanitary water, a pump for exchange/manifold water (gas side), a safety valve 3 bar, an air valve, an expansion tank, a water inlet tank.









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GHP 60 FP Idro 1

This model, which has been developed to be used for floor radiant heating systems, testifies to the high versatility of the GHP range. It is a system technology that has been gaining an ever greater share of the market, its supply requirements at low temperatures being thoroughly met by the use of the GHP 60 FP.

During the winter this model makes it possible to manage the set temperature by modifying it according to both changing outside temperature and the heat exchange coefficient of the floor based on specific curves predetermined by a special software integrated into the electronic controls of the appliance.

During the summer time the GHP 60 FP is able to produce refrigerating energy to supply a system with traditional hydronic terminals such as fan coils, unit heaters, air treatment units, etc. Hot sanitary water can be produced according to one's needs in both seasons. The appliance is supplied standard with a factory-assembled hydraulic kit comprising: a 300-litre tank for hot sanitary water (A.C.S.), a manifold for mixed water from engine cooling hot water and the refrigeration cycle, a 3-way mixing valve, a pump for hot sanitary water, a pump for exchange/manifold water (gas side), a safety valve 3 bar, an air valve, an expansion tank, a water inlet tank.

GHP 60 FP Idro 2

This model has the same technical and manufacturing characteristics as the Idro 1 model without the tank for hot sanitary water for those situations when hot sanitary water is not needed or vice versa the system needs greater quantities to be specifically dimensioned.

GHP 60 FP Total Energy Module

This models adds the versatility typical of the Total Energy Module unit to the functionalities dedicated to floor systems. That is why this version too permits giving priority to hot water production for sanitary use, for instance between seasons. The factory-assembled hydraulic kit supplied standard with this model comprises: a 300-litre tank for hot sanitary water (A.C.S.), a manifold for mixed water from engine cooling hot water and the refrigeration cycle, a 3-way mixing valve, a pump for hot sanitary water, a pump for exchange/manifold water (gas side), a safety valve 3 bar, an air valve, an expansion tank, a water inlet tank inside the appliance.

	Summer o	peration	Winter operation	
Models	Cooling power	therm. power	thermal power	
	kW	kW	kW	
GC 60 Split (cooling only) Remote unit Code70500100 Basic unit Code 70500000	32,0	30,0		31.480,00
GHP 60 Split (heat pump) Remote unit code70550100 Basic unit code 70550000	32,0	30,0	62,0	33.540,00
GHPA 60 water/water code 70650000	29,0	30,0 + 37,2	64,6	30.440,00
GHP 60 Basic code 70700000	27,0	28,0	55,0	28.570,00
(a) GHP 60 Idro 1 Hydro sanitary kit and installation included code 70720000	27,0	28,0	55,0	31.490,00
(b) GHP 60 Idro 2 Hydraulic kit for installation included code 70740000	27,0	28,0	55,0	30.140,00
(a) GHP 60 Total Energy Module Hydro sanitary kit and installation included code 70760000	27,0	28,0	55,0	35.540,00
(a) GHP 60 FP Idro 1 per floor installation Hydro sanitary kit included code 70780000	27,0	28,0	55,0	33.100,00
(b) GHP 60 FP Idro 2 per floor installation Hydraulic kit for installation included code 70800000	27,0	28,0	55,0	31.270,00
(a) GHP 60 FP Total Energy Module for floor installation Hydro sanitary kit and installation included code 70820000	27,0	28,0	55,0	36.180,00

(c) Super-silent operation	code 70709000	1.590,00
(d) Remote control	code 70705000	420,00

- (a) Hydraulic kit 1 comprising: 300-litre tank for hot sanitary water (A.C.S.), a manifold for mixed water from engine cooling hot water and the refrigeration cycle, a 3-way mixing valve, a pump for hot sanitary water, a pump for exchange/manifold water (gas side), a safety valve 3 bar, an air valve, an expansion tank, a water inlet tank.
- (b) Hydraulic kit 2 comprising the same elements as the previous kit without the tank for hot sanitary water for those situations when hot sanitary water is not needed or vice versa the system needs greater quantities to be specifically dimensioned.
- (c) The surcharge for super-silent operation is valid for all versions, except for GC 60 Split, GHP 60 Split, GHPA 60 water/water.
- (d) Available for all versions, except for GC 60 Split, GHP 60 Split, GHPA 60 water/water.

Electrical connections

Remote control connection Refrigeration circuit Ø 16 (fluid) 1930 690-Ø 42 (gas) Fume flue Ø 35 1080 855 \$ 8 Water outlet Ø 1/2' ρ 1310 1015 -960 -Water inlet Ø 2" 10 B Water inlet D=2" 550 22 basic unit remote unit Water outlet Ø 2" Water inlet Ø 2"

Dimensions GHPA water/water



Dimensions GHP 60 basic



Thanks to a simple and efficient solution, in the GHP model the mechanical energy needed to operate the compressor is not generated by an electric motor - as happens in traditional heat pumps - but by a gas-fired Otto endothermic engine. The refrigeration cycle principle is not altered, while some important advantages are introduced.



Heating



1) Compressor

- 2) Cycle reversal valve
- 3) Water/refrigerant exchanger

- 4) Thermal expansion valve

5) Fluid receiver

- 6) Water/refrigerant exchanger
- 7) Engine
- 8) Water/water exchanger
 - 9) Pump
- 10) Deflecting valve
- 11) Manifold
- 12) Radiator
- 13) Inertial tank
- Non-return valve

N.B. Several main elements of the "system" section are included in the different GHP versions with a kit

An average primary energy share of approximately 2.74 kWh is required in Italy in order to produce energy in thermoelectric power plants and distribute 1kWh of electric energy.

This means that, starting from the thermoelectric power plants, only 36.4% of fuel primary energy is used in order to actually produce electric energy, while the remaining 63.6% is dispersed as unused heat and the following losses due to its transfer to the final users - amounting to 6.4% according to the Thermoelectric Production data for 2000 (GRTN).

The purpose of cogeneration is to use the heat that would otherwise be lost in the surrounding environment and therefore completely wasted. This should be done though a higher overall yield.

Cogeneration is a system that converts the primary energy of fuel used in the joint production of electric or mechanical energy and thermal energy (heat). It is characterised by operating self-sufficiency, which recovers and is able to use a part of the thermal energy that is given off to the environment in traditional processes of production of electric energy only (Authority for gas and electric energy, 2001). "In particular, the systems based on internal-combustion engines - regardless of whether they are reciprocating engines or gas turbines - whose mechanical efficiency is not altered by cogeneration, can make large quantities of thermal energy available that would otherwise be dispersed into the environment and that can therefore be considered as almost free." (Professor/Engineer R. Lazzarin - Padua University - Refrigeration in Cogeneration - CDA no.2/2000).

In the GHP models this principle translates into the direct use of gas primary energy and its transformation into mechanical energy for refrigeration compressor operation and recovery of most thermal energy produced by the engine. This increases the energy advantage over what can be obtained from an electric heat pump.

Great efficiency and low pollution

How can the efficiency of an electric heat pump be compared with that of a gas heat pump? Machines requiring different types of energy (mechanical/electric/thermal) may be compared by relating the energy input to the primary fuel consumption.

To this end the Fuel Use Coefficient (CUC) is introduced defined as the ratio between useful heat yielded to the users and the primary energy required.

This parameter relates performance to consumption data considering backwards all the energy transformation chain that links incoming energy to energy obtained from a primary energy source.

Based on the same performance as the refrigeration cycles (coefficient of performance), the GHP - thanks to the heat recovered from the engine - makes it possible to save as much primary energy as 25-30% compared to an electric heat pump of the same power.

"Compression refrigeration machines powered by an endothermic engine are the most energy-efficient among today's available gas refrigeration machines." (SNAM S.p.A. - Gas refrigeration machines for air

conditioning ... - 6th National Convention ATIG - 1997).



The better use of the fuel in the GHP translates into a smaller quantity of CO₂ emitted, as less primary energy is needed to obtain the same thermo-refrigerating capacity.

The high efficiency of the GHP models falls within the scope of the energy certification for buildings, to be designed with great accuracy from the quality point of view. Energy-saving performance, environmental protection and comfort standards must be taken into account for the buildings as well as for the systems therein installed.

That is why applicable regulations (D.P.R. 412/93 - Attachment D; proposal for a European Parliament and Council Directive on energy efficiency in the building sector - G.U.C.E. no.213 of 31/07/2001) require designers to evaluate using heat pumps - also internal-combustion engine heat pumps - in large office buildings o similar constructions.

It often happens in the services-producing sector that the considerable electric energy requirements for the climate-control system are responsible for higher costs for contractual power demand or even the need to have a transformer room built. The maximum electric power absorbed by the various models of the GHP series - dedicated only to the operation of fans, pumps and auxiliary circuits - ranges from 300 W to 1.050 W. This makes the installation of these units possible also in existing buildings, with no need to ask the energy supplying body for an increase in electric power. This advantage is enormously higher if the electric heat pumps use additional resistances, when environmental conditions are particularly severe during the winter.

Of course, these positive features are even more evident when the electric-energy distribution network can be developed only with very high costs in poorly serviced areas. GHP units make it possible to transfer a share of the air-conditioning market from traditional electric machines to systems based on the use of gaseous fuels, whose advantages translate into the possible use of alternative energy sources in the summer too - when sales of gaseous fuels are so reduced that distributors apply special prices and incentives.



Simultaneous availability of thermal and refrigerating energy

The special system of patented exchangers permits using the heat contained in the engine exhaust gas, and in the engine cooling and lubrication circuits. This recovery makes it possible to use free additional thermal energy besides energy supplied by the refrigeration cycle, thus allowing for great flexibility.

During the summer air-conditioning requirements and sanitary hot water production needs can be met at the same time. During the winter greater thermal power will be available than that supplied by the refrigeration cycle alone, besides the production of sanitary hot water and without the disadvantages typical of electric systems.

Today those areas that are exposed to the outside - as in widely glazed office buildings - often need cooling, while the other areas - with a different exposure - need heating. Or vice versa, according to the season. The GHP units make it possible to use one appliance to service a whole sophisticated 4-pipe system and guarantee maximum comfort on all



The excellent capacity division of the GHP is due to the possibility of modulating the load in a wide interval of values by regulating the number of revolutions of the engine - both in winter and in summer operation. It must also be mentioned that, if a comparison is made between an electric heat pump and a GHP unit, they give off the same heating power but the latter involves a smaller contribution from the refrigerating section condenser thanks to the recovery from the endothermic engine. Consequently, a smaller power will be required from the evaporator and the outside thermal carrier (air) and the refrigerant will show a smaller difference in temperature based on the same evaporator exchange areas.

It is during the winter that electric heat pumps show their limits, as outside temperature goes down. The thermal recovery from the GHP engine permits overcoming these typical limits and allows for its optimum application at latitudes with more severe weather conditions, when comparing efficiency parameters both in nominal steady conditions and on an average seasonal scale. The GHP can operate in equilibrium conditions with the required heating load - and does not need supplementing boilers or on/off operation - in a wide interval of outside temperature values and users' requirements.

Experimental data derived from on-site tests and scientific research show that GHP units are more efficient and flexible. "The GHP's performance is always better than the other systems'. The

improvement ranges from 20% to 25% with respect to the electric heat pump EHP and is always 50% higher than the boiler." (Dentice d'Accadia, Sasso, Sibilio, Vanoli, Energetics Applications, Liguori Editor, 1999)

WINTER OPERATION OF ELECTRIC HEAT PUMP





These diagrams show that the GHP - by modulating the power obtained by regulating engine revolutions - can meet users' requirements in a wide operating range, while electric heat pumps could meet them only by using the inverter technology. One typical feature of GHP is the ability to guarantee the power required even at very low temperatures as a consequence of heat recovery from the engine, with no need to have boilers or auxiliary resistances.

Efficiency is less dependent on outside temperature

Efficiency can be further improved thanks to the GHPA model, which uses groundwater as its cold source. The use of water as a source for the heat pump is much better than the use of air in that the system is easier and thermal exchanges more efficient. Besides that, groundwater temperature is both higher than outside air temperature - especially in those areas where the weather conditions are severe - and almost steady throughout the year.

This technology has been the object of recent in-depth studies and energy-economic evaluations - one of the most distinguished Italian studies being the project for the energy recovery of Milan metropolitan area groundwater.

"Finally mention must be made of a possible alternative to the electric operation of the heat pumps. The compressor can be operated directly by an internal-combustion engine that would bring about an increase in overall efficiency by recovering the heat dispersed by the engine. That means combining the considerable advantages of heat pumps and those of cogeneration."

(II - Groundwater Heat Pumps for Climate Control in the Building Sector - 1999/2000)



Better performance in defrosting cycles





Especially in severe and humid climates, the operation of the heat pump cycle causes frost to form on the evaporator. Frost must be removed not to hinder the heat exchange process between outside air and the refrigerant.

Compression heat pumps defrost the evaporator by reversing the cycle. During this procedure the traditional electric heat pump not only does not give off any thermal power but acts as a refrigeration assembly, giving rise to severe thermal discomfort. This procedure should be repeated at regular intervals - more often in those areas where outside temperature is low.

In the GHP the defrosting problem plays a minor role and the procedure can be carried out quickly and without bothering its users. Since a part of the thermal power required by users is given off by the engine and not by the refrigeration circuit condenser, evaporation pressure is higher than that of an electric heat pump as a consequence of the modulation of the number of engine revolutions.

In any case, even when the defrosting procedure is needed, it can be carried out in the GHP more quickly and above all without interrupting thermal energy supply through the recovery of heat from the engine.

Winter operation: contribution of heat recovery from the engine and exhaust gas based on outside temperature variation and as a function of engine revolution modulation.

Electronic management system of operation and maintenance

The operation of the GHP is thoroughly managed by a microprocessor system that permits controlling all the main parameters of the refrigeration cycle.

Contrary to electric heat pumps, this software makes it possible to constantly monitor the optimum operation of the endothermic engine by regulating its speed and controlling its temperature, pressure, lubrication level, etc.

All operation stages are therefore monitored. Maintenance intervals are programmed by the system according to use of the appliance. The high reliability of the endothermic engine ensures a long life, provided that simple maintenance actions are carried out such as the replacement of oil, filters and ignitors. As a matter of fact the engine is based on the same technology as the cogeneration applications for the production of electric energy. Its target of 24-hour-a-day operation for approximately 8,000 hours a year is much more challenging than the 2,000 hours a year of operation of a GHP for climate control on an average.



Description			GC 60 Split	GHP 60 Split	GHPA	GHP 60 Basic	GHP 60 M.E.T.	GHP 60 FP	GHP 60 FP M.E.T.
Winter useful power									
Total thermal power	max.	kW		62,0	64,6		55	5,0	
	min.	kW		49,0	51,2		41	.,0	
Refrigeration cycle thermal powe	ermax.	kW		32,0	34,6		27	7,0	
	min.	kW		26,0	28,2		20),0	
Water flow (~T 5 ;C)		kg/h		5.504	4.991		4.	644	
Engine recovery thermal power	max.	kW		30,0	30,0		28	3,0	
	min.	kW		23,0	23,0		21	,0	
Water flow (~T 10 ;C)		kg/h		2.580	2.580		2.	408	
Summer useful power									
Refrigeration power	max.	kW	32,0	32,0	29,0		27	7,0	
	min.	kW	26,0	26,0	23,6		20),0	
Water flow (~T 5 ;C)		kg/h	5.504	5.504	4.991		4.	644	
Engine recovery thermal power	max.	kW	30,0	30,0	30,0		28	3,0	
	min.	kW	23,0	23,0	23,0		21	.,0	
Water flow (~T 10 ;C)		kg/h	2.580	2.580	2.580		2.	408	
Condenser recovery thermal power	max.	kW	/	/	37,2	37,2 /		/	
	min.	kW	/	/	30,2	/			
Water flow (~T 5 ;C)		kg/h	/	/	6.398		/		
Nominal thermal power (Hi)	max.	kW	50,0	50,0	52,0		48	3,0	
-	min.	kW	34,0	34,0	35,0		31	.,0	
Methane flow G20 - p 20 mbar	max.	Nm ³ /h	5,37	5,25	5,47	5,06			
(15 ;C - 1.013,25 mbar)	min.	Nm ³ /h	3,74	3,58	3,74		3,	26	
Propane flow G31 - p 37 mbar	max.	kg/h	4,00	3,85	4,01		3,	72	
(15 ;C - 1.013,25 mbar)	min.	kg/h	2,79	2,63	2,74		2,	39	
Propane flow G30 - p 28-30 mbar	max.	kg/h	3,94	3,91	4,08		3,	77	
(15 ;C - 1.013,25 mbar)	min.	kg/h	2,74	2,67	2,78		2,	43	
Gas inlet diameter					1,	/2"			
No. of compressor cylinders		n;		4			2	2	
Refrigerant type			R 134a R 407C						
Power supply			230 V - / 1 / 50 Hz						
IP protection rating			44						
Protection class			Class I according to CEI - ENA						
Operating climatic class									
Max electric absorbtion		W	1.	050	300	1.050		1.440	
Sound pressure	max.	dB(A)	6	51	58		Ę	59	
(5 metres free field)	min.	dB(A)	5	53	52		Ę	53	
Max weight		kg	430	+196	450	660		850	

The data refers to the following operating conditions:

Summer: outside air temperature: $35^{\circ}C$ dry bulb, $24^{\circ}C$ wet bulb Water temperature: incoming $12^{\circ}C$, outgoing $7^{\circ}C$ Winter:outside air temperature: $7^{\circ}C$ dry bulb, $6^{\circ}C$ wet bulb Water temperature: incoming $45^{\circ}C$, outgoing $50^{\circ}C$

Engine recovery: max temperature of outgoing water 70°C

Refrigeration units **RPE 5÷16** Heat pumps **HPE 5÷16**

To produce hot or cold water and feed fan coils or air treatment units, ACCORRONI has created a full range of appliances designed to meet the requirements of any system. The line of small-sized refrigeration units (RPE 516) and heat pumps (HPE 516) includes models with a nominal yield ranging from 5 to 16 kW. The epoxy powder paint galvanised sheet-metal panelling allows for high resistance to the external environment. The protection rating makes these units suitable for outdoor installation. The low rpm axial fans make these appliances very silent so that they are suitable for use even in noise-sensitive areas. The use of "Scroll" compressors in the entire range of models further reduces the noise produced and saves a great deal of energy. The refrigerant/air exchanger design is based on the large exchange surface of the battery with a copper tube and aluminium fins. That is why these refrigeration units can be used in extremely hot climates. The hydraulic circuit comes equipped with expansion tank, motor pump, loading assembly, differential pressure switch, and insulated storage tank. All models are microprocessor controlled and can be connected to a remote panel for remotely controlling the units.



Models		therma	l power	refrigera	ting capacity		
		kW	kcal/h	kW	frig/h		
RPE 5 Single-compressor	code 36500002			5,8	4.988	3.400,00	
HPE 5 Single-compressor (heat pump)	code 36500003	6,5	5.590	5,8	4.988	3.780,00	
RPE 7,5 Single-compressor	code 36520002			6,9	5.934	3.850,00	
HPE 7,5 Single-compressor (heat pump)	code 36520003	7,8	6.708	6,9	5.934	4.150,00	
RPE 10,5 Single-compressor	code 36540002			10,0	8.600	4.400,00	
HPE 10,5 Single-compressor (heat pump)	code 36540003	11,0	9.460	10,0	8.600	4.850,00	
RPE 14 Single-compressor	code 36560002			14,0	12.040	5.200,00	
HPE 14 Single-compressor (heat pump)	code 36560003	15,5	13.330	14,0	12.040	5.820,00	
RPE 16 Single-compressor	code 36580002			16,0	13.760	5.560,00	
HPE 16 Single-compressor (heat pump)	code 36580003	17,5	15.050	16,0	13.760	6.100,00	

Operating conditions refer to: $35^{\circ}C$ dry bulb and $24^{\circ}C$ wet bulb with $5^{\circ}C$ thermal head and $7^{\circ}C$ outgoing water for summer operation; $7^{\circ}C$ dry bulb and $6^{\circ}C$ wet bulb with $5^{\circ}C$ thermal head and $50^{\circ}C$ outgoing water for winter operation.

Dimensions of models RPE - HPE 5 - 7,5





Model	А	В	С
RPE-HPE 5	1150	460	1050
RPE-HPE 7,5	1150	460	1050



condensate storage tank cod. 36506320



remote control kit and control panel code 36505002

€ 158,00



battery protection grate

€
46,00
51,00

RPE - HPE	
5÷7,5 code 36500007	
10,5÷16 code 36540007	

Technical data table for HPE heat pumps with refrigerating gas R22

Description		_		40.5		40	
Description	1 1	5	7,5	10,5	14	16	
Refrigerating capacity	KW	5,8	6,9	10,0	14,0	16,0	
Thermal power	KW	6,5	7,8	11,0	15,0	17,5	
"Scroll" compressor	n°			1			
Summer operation absorption*	W	2.290	2.720	3.830	5.390	6.080	
Winter operation absorption*	W	2.550	3.070	4.180	5.840	6.640	
Fans	n°	1	1	2	2	2	
Air flow	m³/h	1.600	2.200	3.000	6.200	6.200	
Power supply		200V -	50 Hz		400V - 3N - 50 Hz		
Max. absorbed power	W	2.700	3.270	4.430	6.230	7.090	
Maximum current	A	14,7	17,8	8,0	11,3	12,8	
Breakaway current	A	66	82	49	74	101	
Water flow	l/h	950	1.300	1.800	2.400	2.780	
Flow resistance - water side	kPa	10	17	23	28	37	
Connection diameters		1"+	1/4	1"+1/4			
Incorporated storage capacity	lt	3	5		45		
Useful head with circulation unit	kPa	40	51	43	60	52	
Noise level (at 10 m)	dB(A)	42	42	43	44	44	
Max dimensions: length	mm	1.1	50		1.150		
depth	mm	46	60		460		
height	mm	1.0	50		1.300		
Shipping weight	kg	128	132	160	187	197	

*The values shown include the absorption of the circulation pump mounted on the appliance

Refrigeration units **RPE 20÷130** Heat pumps **HPE 20÷130**

To produce hot or cold water and feed fan coils or air treatment units, ACCORRONI has created a full range of appliances designed to meet the requirements of any system. The line of mid-sized refrigeration units (**RPE 20130**) and heat pumps (**HPE 20130**) includes models with a nominal yield ranging from 20 to 130 kW. All models have AISI 304 stainless steel panelling. The protection rating makes these units suitable for outdoor installation. The low rpm axial fans make these appliances very silent so that they are suitable for use even in noise-sensitive areas.

The use of "Scroll" compressors in the entire range of models further reduces the noise produced and saves a great deal of energy.

Thanks to the decision to divide up the capacity of the larger models over several compressors (up to four), these appliances accurately satisfy the real need for cold production at any given moment, which translates into significant energy saving. The refrigerant/air exchanger design is based on the large exchange surface of the battery with a copper tube and aluminium fins. That is why these refrigeration units can be used in extremely hot climates. The braze-welded AISI-316-stainless-steel plate refrigerant/air exchanger is highly efficient and saves space. In addition, this heat exchanger is insulated with closed-cell insulation material, reducing thermal dispersion to a minimum. All models are microprocessor controlled and can be connected to a remote panel for remotely controlling the units. The careful selection of all the other components - produced by leading manufacturers - keeps these appliances on a par with the high quality standards in the Accorroni tradition.





Refrigeration units loaded with R407C Heat pumps HPE loaded with R22 or - on request - with R407C

Models capacity R407C	code R22	code R 407C	thermal p	ower R 22	refrigerat	ing R 407C		
			kW	kcal/h	kW	frig/h		
RPE 20 Single-compressor	-	36600200			17,9	15.394	6.030,00	
HPE 20 Single-compressor (heat pump)	36600001	36600201	20,0	17.200	17,9	15.394	6.880,00	
RPE 25 Single-compressor	-	36620200			21,5	18.490	7.020,00	
HPE 25 Single-compressor (heat pump)	36620001	36620201	25,2	21.672	21,5	18.490	7.560,00	
RPE 30 Single-compressor	-	36630200			24,5	21.070	8.600,00	
HPE 30 Single-compressor (heat pump)	36630001	36630201	29,8	25.628	24,5	21.070	9.800,00	
RPE 32 Twin-compressor (heat pump)	-	36640200			25,9	22.274	9.950,00	
HPE 32 Twin-compressor bicompressore	36640001	36640201	32,4	27.874	25,9	22.274	11.720,00	
RPE 40 Twin-compressor	-	36660200			35,8	30.788	12.600,00	
HPE 40 Twin-compressor (heat pump)	36660001	36660201	40,0	34.400	35,8	30.788	14.070,00	
RPE 50 Twin-compressor	-	36680200			43,0	36.980	13.800,00	
HPE 50 Twin-compressor (heat pump)	36680001	36680201	50,4	43.344	43,0	36.980	15.400,00	
RPE 60 Twin-compressor	-	36690200			49,0	42.140	16.980,00	
HPE 60 Twin-compressor (heat pump)	36690001	36690201	59,6	51.256	49,0	42.140	19.450,00	
RPE 85 Twin-compressor tandem	-	36700200			78,0	67.080	23.250,00	
HPE 85 Twin-compressor (heat pump) tand.	36700001	36700201	86,2	74.132	78,0	67.080	27.300,00	
RPE 110 Twin-compressor tandem	-	36720200			98,0	84.280	28.500,00	
HPE 110 (pompa di calore) bicom. tandem	36720001	36720201	112,9	97.094	98,0	84.280	31.500,00	
RPE 130 Twin-compressore tandem	-	36740200			131,0	112.660	34.800,00	
HPE 130 Twin-compressor (heat pump) tand.	36740001	36740201	134,0	115.240	131,0	112.660	36.900,00	

Operating conditions refer to: $35^{\circ}C$ dry bulb and $24^{\circ}C$ wet bulb with $5^{\circ}C$ thermal head and $7^{\circ}C$ outgoing water for summer operation; $7^{\circ}C$ dry bulb and $6^{\circ}C$ wet bulb with $5^{\circ}C$ thermal head and $50^{\circ}C$ outgoing water for winter operation.

- Designed to supply fan coils or air treatment units with hot and cold water (version HPE)
- Wide range of models to meet all system requirements
- High resistance to the external environment thanks to AISI 304 steel casing
- Great compactness

Dimensions RPE - HPE 20 - 25 - 30

• Standard condensation control for models 20-25-30 and 40 - 50 - 60

- Standard vibration dampers on models 85 130
- Standard phase sequence controller to avoid errors in electrical connections

Dimensions RPE - HPE 32



Dimensionis RPE - HPE 40 - 50 - 60





Dimensions RPE - HPE 85 - 130









RPE-HPE	weight at full load kg	storage capacity litres	A	В	С
20 ÷ 30	168	108	1207	460	527
32	189	110	2065	460	416
40 ÷ 60	342	216	2435	536	553
85 ÷ 130 1 pump	680	480	2990	600	1276
85 ÷ 130 2 pumps	720	480	2990	600	1276



battery protection grate

RPE - HPE

20÷30 (1 grate each appliance) code 36660007	65,00
40÷60 (2 grates each appliance) code 36660007	65,00
32 (2 griglie per macchina) code 36540007	51,00
85÷110 (4 grates each appliance) code 36660007	51,00
400 (4 motors and see l'anna) as to 00740007	

130 (4 grates each appliance) code 36740007	51,00
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RPE - HPE	
20÷30 code 36606305	951,00
32 code 36646305	1.395,00
40÷60 code 36666305	1.793,00

	the factor	ry-assei	mbled hydrau	lic kit to b	be plac	ed
		I	under the ap	pliance	include	es:
$\langle \rho \rangle$		2 sto	orage tanks, p	biping to	conne	ect
			the storage	tanks to	the ur	hit,
124	N		expansion ta	ank, top-	up coo	ck,
		;	air valve, 0-6	bar ma	nomet	er,
	·	one	pump (plus a	back-u	p pum	p).
			RPE - HPE			
	//				100	00

85 (1 pump) code 36706305	6.198,00
110÷130 (1 pump) code 36746305	6.301,00
85 (2 pumps) code 36706306	7.747,00
110÷130 (2 pumps) code 36746306	7.902,00
*vedi tabella dati tecnici	

water circulation unit suitable for low temperatures, with capacity and head suited for most systems

	RPE - HPE	
20÷30 code	36606000	514,00





condensate drainage tanks

109,00
117,00
137,00

HPE 20-25-30 code 36606320 32 code 36646320 40-50-60 code 36666320

circulation pump suitable for low temperatures, with capacity and head suited for most systems

RPE - HPE 40÷60 code 36666000 865,00







RPE - HPE 20÷110 code 36505002 158,00 130 code 66605002 900,00



Technical data table for HPE heat pumps with refrigerating gas R22

				P P P P P P P P P P							
Description		20	25	30	32	40	50	60	85	110	130
Refrigerating capacity	kW	19,4	24,6	29,20	31,60	38,80	49,20	58,40	84,70	110,6	135,0
Thermal power	kW	20,0	25,20	29,83	32,40	40,80	50,40	59,60	86,20	112,9	139,0
"Scroll" compressor	n°		1			2	2			2 Tandem	I
Summer operation absorption	W	6.700	8.100	10.400	10.500	12.600	15.400	20.800	28.900	37.200	48.900
Winter operation absorption	W	7.200	8.600	11.000	10.700	13.600	16.400	22.000	28.200	36.800	48.100
Fans	n°		1		4			2	2		
Air flow	m³/h	8.500	9.000	10.000	14.400	17.000	19.000	20.000	35.000	39.000	39.000
Power supply			400V - 3N - 50 Hz								
Max. absorbed power	W	7.600	9.200	12.700	12.400	14.400	17.600	25.400	37.570	48.360	60.200
Maximum current	А	13,7	16,6	21,6	22,0	26,0	32	43,2	66	85	99
Breakaway current	А	90	120	167	64	90	120	167	116	127	167
Water flow	l/h	3.500	4.260	5.000	5.680	6.920	8.520	10.000	14.800	19.400	24.000
Flow resistance - water side	kPa	31	27	40	31	32	29	40	19	20	46
Connection diameter	"		1"			2>	(1 "			2x2"	
Useful head with circulation unit	kPa	52	40	30	/	80	75	60	150	150	105
Noise level (at 10 m)	dB(A)	46,6	48	49	46	48,3	48,3	52	53	54	56
Max dimensions:: length	mm		1.340		2.010		2.380			2.990	
depth	mm		720		430		720			1.280	
height	mm		1.310		1.300		1.310			1.680	
Peso di spedizione	kg	210	223	240	366	437	461	488	902	934	985

Technical data table	for RI	PE ref	rigerat	ion uni	ts and I	HPE hea	at pump	os with	refriger	ating g	jas R407C
Descrizione		20	25	30	32	40	50	60	85	110	130
Refrigerating capacity	kW	17,9	21,5	24,5	25,9	35,8	43,0	49,0	78,0	98,0	131,10
Thermal power	kW	18,4	22,0	25,0	26,5	36,8	44,0	50,0	82,00	106,00	134,60
"Scroll" compressor	n°		1			2	2			2 Tar	ndem
Summer operation absorption	W	6.700	8.100	9.646	10.197	12.600	15.400	20.400	27.370	34.380	48.500
Winter operation absorption	W	7.200	8.600	9.843	10.433	13.600	16.400	21.600	28.770	37.190	47.600
Fans	n°		1		4		2	2		2	2
Air flow	m³/h	8.500	9.000	10.000	14.400	17.000	19.000	20.000	35.000	39.000	39.000
Power supply		400V - 3N - 50 Hz									
Max. absorbed power	W	7.600	9.200	12.900	12.400	14.400	17.600	25.400	37.850	48.900	60.840
Maximum current	А	12,3	14,9	20,9	20,9	23,4	28,6	41,2	61,5	79,4	98
Breakaway current	А	90	120	167	64	90	120	167	116	127	167
Water flow	l/h	3.165	3.785	4.300	4.560	6.330	7.570	8.600	14.100	18.232	23.000
Flow resistance - water side	kPa	31	27	40	31	32	29	40	19	20	46
Connection diameters	"		1"			2x	1"		2:	x2"	1x2"
Useful head with circulation unit	kPa	52	40	30	/	80	75	60	150	130	105
Noise level (at 10 m)	dB(A)	46,6	48	49	46	48,3	48,3	52	53	54	56
Max dimensions: length	mm		1.340		2.010		2.380			2.990	
depth	mm		720		430		720			1.280	
height	mm		1.310		1.300		1.310			1.680	
Shipping weight	kg	210	223	240	366	437	461	488	902	934	985

Refrigeration units **RGE 150÷520** Heat pumps **HGE 150÷520**

To produce hot or cold water and feed fan coils or air treatment units, ACCORRONI has created a full range of appliances designed to meet the requirements of any system. The line of large-sized refrigeration units (**RGE 150**÷**520**) and heat pumps (**HGE 150**÷**520**) includes models with a nominal yield ranging from 150 to 520 kW. All models have polyurethane powder paint galvanised sheetmetal steel panelling.

Both the bearing frame and the base frame are made of polyurethane powder paint galvanised sheet-metal. Base section bars have holes that permit lifting and lowering the unit very easily.

All models are microprocessor controlled and can be connected to a remote panel for remotely controlling the units. All appliances are accurately assembled and tested in the factory so that they are supplied ready to be installed.



Models		therm	al power	refrigerat	ing power	
		kW	kcal/h	kW	frig/h	
RGE 150 screw single-compressor	code 66600000			151	129.860	37.900,00
RGE 150 reciprocating twin-compressor	code 66600100			151	129.860	39.900,00
HGE 150 screw single-compressor (heat pump)	code 66600001	176	151.360	151	129.860	43.600,00
HGE 150 reciprocating twin-compressor (heat pump)	code 66600101	173	148.780	151	129.860	46.000,00
RGE 170 screw single-compressor	code 66620000			174	149.640	41.900,00
RGE 170 reciprocating twin-compressor	code 66620100			168	144.480	45.800,00
HGE 170 screw single-compressor (heat pump)	code 66620001	203	174.580	174	149.640	47.800,00
HGE 170 reciprocating twin-compressor (heat pump)	code 66620101	188	161.680	168	144.480	48.800,00
RGE 210 screw single-compressor	code 66640000			215	184.900	47.900,00
RGE 210 reciprocating twin-compressor	code 66640100			210	180.600	48.900,00
HGE 210 screw single-compressor (heat pump)	code 66640001	250	215.000	215	184.900	53.000,00
HGE 210 reciprocating twin-compressor (heat pump)	code 66640101	254	218.440	210	180.600	55.000,00
RGE 250 screw twin-compressor (heat pump)	code 66660000			250	215.000	57.400,00
HGE 250 screw twin-compressor (heat pump)	code 66660001	300	258.000	250	215.000	61.900,00
RGE 300 screw twin-compressor	code 66680000			300	258.000	65.800,00
HGE 300 screw twin-compressor (heat pump)	code 66680001	352	302.720	300	258.000	71.800,00
RGE 350 screw twin-compressor	code 66700000			348	299.280	71.000,00
HGE 350 screw twin-compressor (heat pump)	code 66700001	406	349.160	348	299.280	86.900,00
RGE 420 screw twin-compressor	code 66720000			420	361.200	81.800,00
HGE 420 screw twin-compressor (heat pump)	code 66720001	493	423.980	420	361.200	98.600,00
RGE 520 screw twin-compressor	code 66740000			520	447.200	112.600,00
HGE 520 screw twin-compressor (heat pump)	code 66740001	596	512.560	520	447.200	123.000,00

Operating conditions refer to: $35^{\circ}C$ dry bulb and $24^{\circ}C$ wet bulb with $5^{\circ}C$ thermal head and $7^{\circ}C$ outgoing water for summer operation; $7^{\circ}C$ dry bulb and $6^{\circ}C$ wet bulb with $5^{\circ}C$ thermal head and $0^{\circ}C$ outgoing water for winter operation;

* Surcharge for versions with stainless steel frame = price + 10%. When ordering, add letter A to product code.

• Designed to supply fan coils, air treatment units, air treatment stations or to meet special industrial process requirements

- Version with AISI 304 stainless steel sheet-metal structure available on request
 Great compactness
- High resistance to the external environment thanks to polyurethane powder paint galvanised sheet-metal steel panelling
- The entire range is loaded with R407C

Dimensions of models RGE - HGE 150 - 170 - 210







Dimensions of models RGE - HGE 250 - 300 - 350







Dimensions of models RGE - HGE 420 - 520







Classification and certification

The products described in this manual are defined as: "Air/water enbloc heat pumps and refrigeration units." Water refrigeration units are indicated by **RGE** and heat pumps by **HGE**, with the addition of a numeric code representing the power given off in kW.

Models 150 - 170 - 210

The units are available in 2 versions:

- with no.1 high-efficiency screw compressor equipped standard with no.4 partialization steps;
- with no.2 partially air-tight reciprocating compressors.

Models 250 - 300 - 350 - 420 - 520:

The units are equipped with no.2 screw compressors with no.4 standard partialization steps for each compressor.

Products **RGE - HGE** comply with Directives 97/23/EC, 89/392/EEC, 91/368/ECC, 93/44/EEC, 73/23 and following amendments of 93/68/ECC, besides Directive "Electromagnetic Compatibility" 89/336/ECC.

These EC-marked products have been tested according to all applicable harmonised standards and come complete with the relevant certificate (enclosed).

Models	Desuperheaters	Code	
RGE - HGE 150	recovered thermal power 1 x 26 kW water in-out 40-50 °C	66602801	2.000.00
RGE - HGE 170	recovered thermal power 1 x 34 kW water in-out 40-50 °C	66622801	2 100 00
RGE - HGE 210	recovered thermal power 1 x 40 kW water in-out 40-50 °C	66642801	2 200 00
RGE - HGE 250	recovered thermal power 2 x 26 kW water in-out 40-50 °C	66662801	2,200,00
RGE - HGE 300	recovered thermal power 2 x 34 kW water in out 40.50 °C	66682801	2 400 00
RGE - HGE 350	recovered thermal power 2 x 40 kW water in-out 40-50 °C	66702801	3.400,00
RGE - HGE 420	recovered thermal power 2 x 50 kW water in-out 40-50 °C	66722801	3.000,00
	recovered thermal power 2 x 50 kW water in out 40-50 °C	66742801	3.800,00
KGE - HGE 520	recovered thermal power 2 x 00 kW water in-out 40-50° C	00742001	4.000,00
Models	Total heat regenerators	Code	E (00 00
RGE 150	recovered thermal power kW water in-out 40-45 °C	66602802	5.600,00
RGE 170	recovered thermal power 230 kW water in-out 40-45 °C	66622802	6.100,00
RGE 210	recovered thermal power 285 kW water in-out 40-45 °C	66642802	8.100,00
RGE 250	recovered thermal power 330 kW water in-out 40-45 °C	66662802	9.800,00
RGE 300	recovered thermal power 420 kW water in-out 40-45 °C	66682802	12.200,00
RGE 350	recovered thermal power 460 kW water in-out 40-45 °C	66702802	13.200,00
RGE 420	recovered thermal power 570 kW water in-out 40-45 °C	66722802	16.200,00
RGE 520	recovered thermal power 660 kW water in-out 40-45 °C	66742802	16.900,00
Models	Partialisation steps for twin-compressor model (4 steps)	Code	
RGE - HGE 150÷21	0	66609903	300,00
Models	Compressor insulation	Code	
RGE - HGE 150÷21	0	66600701	2 600 00
RGE - HGE 250÷30	0	66660701	4.000.00
RGE - HGE 350÷52	0	66700701	5.200,00
Models	Antifreeze resistance	Code	
RGE - HGE 150÷52	0	66609902	200,00
Models	Condensation control	Code	
RGE - HGE 150÷21	0	66605001	1.300,00
RGE - HGE 250÷30	0	66665001	1.800,00
RGE - HGE 350÷52	0	66705001	2.500,00
Models	Remote control panel	Code	
RGE - HGE 150÷52	0	66605002	900,00
Models	Remote control panel + clock	Code	
RGE - HGE 150+52	0	66605003	1.200,00
Models	lower protection grates	Code	
PCE - HCE 150.21		66601501	1 800 00
	0	66661501	2 200 00
RGE - HGE 250+50	0	66701501	2.200,00
NGE - HGE 330+32	0	00701301	2.400,00
Models	Rubber vibration dampers	Code	
RGE - HGE 150÷21	0	66609901	400,00
RGE - HGE 250÷30	0	66669901	500,00
RGE - HGE 350÷52	0	66709901	600,00
Models	Hydraulic kit with 1 pump 1,000 L	Code	
RGE - HGE 150÷17	0	66606301	7.500,00
RGE - HGE 210		66646301	7.600,00
Models	Hydraulic kit with 2 pumps 1.000 L	Codice	
RGE - HGE 150÷17	0	66606302	9.100,00
RGE - HGE 210		66646302	9.200,00
Models	Hydraulic kit with 1 pump 1,500 l	Code	
RGE - HGE 250		66666301	9 500 00
RGE - HGE 200-25	0	66686301	9 700 00
RGE - HGE /20-50	0	66726301	
	•	00720001	10.000,00
Models	Hydraulic kit with 2 pumps 1,500 L	Code	
KGE - HGE 250		66666302	11.400,00
KGE - HGE 300÷35	U	66686302	11.700,00
KGE - HGE 420+52	U	66726302	12.400,00

Description		150	170	210	150	170	210	
		Twin compressor	Twin compressor	Twin compressor	Single compressor	Single compressor	Single compressor	
Compressors	n./type	2/	Reciprocating ty	be		1/Screw type		
Standard partialization steps			2 (100-50-0%)		4	(100-75-50-25-09	%)	
On-request partialization steps		4	(100-75-50-25-09	%)		/		
Refrigerating power	KW	151	168	210	151	174	215	
Summer operation absorption	KW	60	68	84	63	75	84	
Summer rated current	А	108	123	152	103	123	138	
RGE refrigerating load	kg	42	44	57	43	46	59	
Thermal power	KW	173	188	254	176	203	250	
Winter operation absorption	KW	57	65	87	62,5	74	80	
Winter rated current	А	94	107	143	103	122	145	
HGE refrigerating load (heat pump)	kg	47	49	63	48	50	65	
Fans	n.			2	1	-		
Air flow	m³/h	64.000	84.000	80.000	64.000	84.000	80.000	
Power supply			•	400V 3N	l - 50 Hz			
Auxiliary circuit voltage				230V 1N - 50 Hz	z/24V 1N - 50 Hz			
Max absorbed power	KW	76,2	80,9	98,8	85,3	95,0	112,0	
Max current	А	128	136	166	140	156	184	
Breakaway current	А	178	185	233	313	355	457	
Type of starting				Part W	/inding			
Water flow	l/h	25.972	28.896	36.120	25.972	28.928	36.980	
Flow resistance - water side	kPa	45	35	37	45	35	37	
Connection diameters	"	3"	114,3 n	nm/BSP	3"	114,3 n	nm/BSP	
Noise level (at 10 metres)	dB(A)	61	65	66	63	64	65	
Max dimensions: length	mm			2.5	50			
width	mm			2.2	00			
height	mm			2.1	70			
Shipping weight	kg	1.850	2.020	2.430	1.700	1.750	1.880	

Compressors	n./type	2/	Reciprocating typ	ре		1/Screw type		
Standard partialization steps			2 (100-50-0%)		4	(100-75-50-25-0	%)	
On-request partialization steps		4	(100-75-50-25-09	%)		/		
Refrigerating power	KW	151	168	210	151	174	215	
Summer operation absorption	KW	60	68	84	63	75	84	
Summer rated current	A	108	123	152	103	123	138	
RGE refrigerating load	kg	42	44	57	43	46	59	
Thermal power	KW	173	188	254	176	203	250	
Winter operation absorption	KW	57	65	87	62,5	74	80	
Winter rated current	A	94	107	143	103	122	145	
HGE refrigerating load (heat pump)	kg	47	49	63	48	50	65	
Fans	n.			1	4			
Air flow	m³/h	64.000	84.000	80.000	64.000	84.000	80.000	
Power supply			1	400V 3N	N - 50 Hz	1	1	
Auxiliary circuit voltage				230V 1N - 50 Hz	z/24V 1N - 50 Hz			
Max absorbed power	KW	76,2	80,9	98,8	85,3	95,0	112,0	
Max current	A	128	136	166	140	156	184	
Breakaway current	A	178	185	233	313	355	457	
Type of starting				Part W	/indina			
Water flow	l/h	25.972	28.896	36.120	25.972	28.928	36.980	
Flow resistance - water side	kPa	45	35	37	45	35	37	
Connection diameters	"	3"	114,3 m	nm/BSP	3"	114,3 r	nm/BSP	
Noise level (at 10 metres)	dB(A)	61	65	66	63	64	65	
Max dimensions: length	mm			25	50			
width	mm			2.2	200			
height	mm			2.1	70			
Shipping weight	ka	1.850	2.020	2.430	1,700	1,750	1.880	
	Ng		2.020	2000				
Description		250	300	350	420	520		
Compressors	n./tipo			2 /Screw type				
Standard partialization steps			8 (100-87,5-	75-62,5-50-37,5-	25-12,5-0%)			
On-request partialization steps				/				
Refrigerating power	KW	250	300	348	420	520		
Summer operation absorption	KW	104	129	147	173	211		
Summer rated current	A	171	212	241	284	346		
RGE refrigerating load	kg	64	84	86	112	130		
Thermal power	KW	300	352	406	493	596		
Winter operation absorption	KW	98	127	144	176	207		
Winter rated current	A	177	229	260	318	374		
HGE refrigerating load (heat pump)	kg	70	92	94	124	135		
Fans	n.		6			8		
Air flow	m³/h	129.000	126.000	130.000	160	0.000		
Power supply			1	400V 3N - 50 Hz	:			
Auxiliary circuit voltage			230V 11	N - 50 Hz/24V 1N	l - 50 Hz			
Max absorbed power	KW	131,5	165,6	185,1	224,1	258,2		
Max current	A	216	272	304	368	424		
Breakaway current	Α	355	313	355	457	563		
Type of starting				Part Winding				
Water flow	l/h	43.000	51.600	59.856	72.240	89.440		
Flow resistance - water side	kPa	26	49	40	33	48		
Connection diameters	"		114,3 mm/BSP	1	168,3 r	nm/BSP		
Noise level (at 10 metres)	dB(A)	66	67	67	69	69		
Max dimensions: length	mm		3.550		4.5	550		
width	mm			2.200	1			
heiaht	mm			2.170				
Shipping weight	ka	2.640	3.100	3.250	4.050	4.250		
	му	2.0.10	5.100	5.200	1.000			

Fan coils Wall-mounted and ceiling-mounted units **F-FR**

The new Accorroni series of fan coils is the state-of-the-art answer to all the users' requirements and latest technical specifications for this typology of products. This wide series includes 6 basic sizes in 4 versions with air flows ranging from 210 to 1,000 m³/h, total refrigerating capacities from 1.15 to 5.14 kW, and thermal powers from 2.83 to 12.33 kW.

The elegant streamlined design of models **F-FR** (either wallmounted or ceiling-mounted) integrates well with all commercial or residential environments such as hotels, residences, offices shops, and homes.

Utmost silence during operation, manufacturing rationality and the wide choice of controls complete the versatility of these units, which have been designed to ensure maximum comfort even in those areas where a low noise level is required.









Models		thermal power	refrigerating capacity		
		W	W		
Wall-mounted fan coil F 100	code 36200000	2.830	1.150	260,00	
Wall-mounted fan coil F 200	code 36220000	4.130	1.630	280,00	
Wall-mounted fan coil F 300	code 36240000	5.640	2.730	310,00	
Wall-mounted fan coil F 400	code 36260000	7.050	3.110	320,00	
Wall-mounted fan coil F 600	code 36280000	9.770	4.660	390,00	
Wall-mounted fan coil F 800	code 36300000	12.330	5.140	420,00	
Ceiling-mounted fan coil FR 100	code 36200100	2.830	1.150	270,00	
Ceiling-mounted fan coil FR 200	code 36220100	4.130	1.630	290,00	
Ceiling-mounted fan coil FR 300	code 36240100	5.640	2.730	330,00	
Ceiling-mounted fan coil FR 400	code 36260100	7.050	3.110	340,00	
Ceiling-mounted fan coil FR 600	code 36280100	9.770	4.660	400,00	
Ceiling-mounted fan coil FR 800	code 36300100	12.330	5.140	440,00	

Models - Vertical version F with cabinet - Horizontal version FR with cabinet





Mod.	100	200	300	400	600	800	
А	760	870	980	1.090	1.310	1.310	
В	440	550	660	770	990	990	

Encased fan coils Wall-mounted and ceiling-mounted units **FC-FCR**





mod. FCR

Encased vertical and horizontal models FC-FCR are very functional and serviceable units equipped with a complete range of accessories that make it possible to solve all system problems and are particularly suitable for those areas where minimum floor or ceiling space is available.

They have been designed to use two-pipe systems. For four-pipe systems with two independent circuits an additional thermal exchange battery is available on request.



mod. FC

600

990

800

1.030

990

Models		Thermal power	Refrigerating capacity		
		W	W		
Wall-mounted encased fan coil FC 100	code 36200200	2.830	1.150	230,00	
Wall-mounted encased fan coil FC 200	code 36220200	4.130	1.630	250,00	
Wall-mounted encased fan coil FC 300	code 36240200	5.640	2.730	280,00	
Wall-mounted encased fan coil FC 400	code 36260200	7.050	3.110	290,00	
Wall-mounted encased fan coil FC 600	code 36280200	9.770	4.660	350,00	
Wall-mounted encased fan coil FC 800	code 36300200	12.330	5.140	380,00	
Ceiling-mounted encased fan coil FCR 100	code 36200300	2.830	1.150	230,00	
Ceiling-mounted encased fan coil FCR 200	code 36220300	4.130	1.630	250,00	
Ceiling-mounted encased fan coil FCR 300	code 36240300	5.640	2.730	280,00	
Ceiling-mounted encased fan coil FCR 400	code 36260300	7.050	3.110	300,00	
Ceiling-mounted encased fan coil FCR 600	code 36280300	9.770	4.660	340,00	
Ceiling-mounted encased fan coil FCR 800	code 36300300	12.330	5.140	370,00	







Control panel

The operation of the fan coils of versions **F** is regulated by a control panel - not included in the standard package of the fan coil. Three different solutions are available for appliance-mounted and remote wall-mounted versions.



Basic control 1

comprising on/off switch, 1-2-3 speed manual selector switch, and ON warning LED



Electronic thermostat 2

comprising on/off switch, 1-2-3 speed manual selector switch, ON warning LED, temperature regulation knob, summer/winter manual switch. Also designed for valve control.



Basic control 2

comprising all Basic Control 1 functions with the addition of summer/winter switch. Also designed for the connection of a cooperating thermostat in winter cycle



Microprocessor thermostat

comprising all Electronic thermostat functions with the addition of automatic function in fan speed selection and summer/winter switching

Models with covering cabinet complete with front air intake grate and air filter

A covering cabinet equipped with front air intake grate and filter is available on request for floor and ceiling installation.



Models		
F 100 G	code 36200001	280,00
F 200 G	code 36220001	300,00
F 300 G	code 36240001	330,00
F 400 G	code 36260001	350,00
F 600 G	code 36280001	420,00
F 800 G	code 36300001	450,00
FR 100 G	code 36200101	290,00
FR 200 G	code 36220101	310,00
FR 300 G	code 36240101	350,00
FR 400 G	code 36260101	360,00
FR 600 G	code 36280101	440,00
FR 800 G	code 36300101	460,00



	model	
appliance-mounted basic control 1	code 36205201	41,00
wall-mounted basic control 1 (complete with 4-m cable)	code 36205202	34,00
appliance-mounted basic control 2	code 36205212	45,00
basic control 2 (complete with 4-m cable)	code 36205213	38,00
appliance-mounted electronic thermostat 2 (with valve control)	code 36205209	75,00
wall-mounted electronic thermostat 2 (with valve control and 4-m cable)	code 36205210	70,00
appliance-mounted microprocessor thermostat	code 36205205	138,00
wall-mounted microprocessor thermostat (complete with 4-m cable)	code 36205206	125,00

additional single-row battery for heating

control panel

	model	
	100 code 36205001	36,00
	200 code 36225001	40,00
	300 code 36245001	44,00
3	400 code 36265001	49,00
	600-800 code 36285001	57.00

aluminium air intake grate with fixed fins with filter for encased versions FC-FCR

	model	
	FC-FCR 100 code 36201502	42,00
	FC-FCR 200 code 36221502	51,00
	FC-FCR 300 code 36241502	56,00
	FC-FCR 400 code 36261502	58,00
FC	-FCR 600-800 code 36281502	68,00

aluminium air delivery grate with adjustable fins for encased versions FC-FCR model

- Incuci	
FC-FCR 100 code 36201501	30,00
FC-FCR 200 code 36221501	35,00
FC-FCR 300 code 36241501	37,00
FC-FCR 400 code 36261501	39,00
EC-ECR 600-800 code 36281501	51 00

-800 code 36281501



lower	air inta	ake panel FCR
		20,00
		23,00
		25,00

27,00

30,00



model
FCR 100 code 36200007
FCR 200 code 36220007
FCR 300 code 36240007
FCR 400 code 36260007
FCR 600-800 code



auxiliary condensate storage tank for vertical versions F-FC code 36200501

cooperating probe for control with

11,00



air filter for end	ased versions FC-FCR
nodel	
05601	8,00
25601	10,00
45601	10,00
65601	11,00
85601	13,00



		modol	
FC-FCR	100 code	36205601	
FC-FCR	200 code	36225601	
FC-FCR	300 code	36245601	
FC-FCR	400 code	36265601	
FC-FCR 600	-800 code	36285601	



	model		
	FC 100 code 36200006	29	,00
	FC 200 code 36220006	32	,00
	FC 300 code 36240006	34	,00
	FC 400 code 36260006	37	,00
FC	600-800 code 36280006	41	,00

front air intake panel

FC

48,00

52,00

55,00

58,00

61,00



A Real Provide A real ProvideA real ProvideA real ProvideA real ProvideA real Pro	for encased versions FC-FCR
model	
FC-FCR 100 code 36202201	31,00
FC-FCR 200 code 36222201	33,00
FC-FCR 300 code 36242201	36,00
FC-FCR 400 code 36262201	38,00
FC-FCR 600-800 code 36282201	41,00

90° air delivery connector



200 code 36222204

300 code 36242204

400 code 36262204

600-800 code 36282204

>	
	straight air delivery connector
	for encased versions
	FC-FCR



FC-FCR 100 code 36202202	26,00
FC-FCR 200 code 36222202	28,00
FC-FCR 300 code 36242202	29,00
FC-FCR 400 code 36262202	33,00
FC-FCR 600-800 code 36282202	36,00



100 code 36200008	10,00
200 code 36220008	11,00
300 code 36240008	12,00
400 code 36260008	12,00
600-800 code 36280008	13,00



	FC-FCR
model	
FC-FCR 100 code 36202203	36,00
FC-FCR 200 code 36222203	38,00
FC-FCR 300 code 36242203	41,00
FC-FCR 400 code 36262203	43,00
FC-FCR 600-800 code 36282203	47,00





valve kit for standard 3-row battery only with pipes and connectors code 36205303
132,00



moulding	complete with	grate
	for versions	F-FR

90° air intake connector for encased versions

models	
F-FR 100 code 36200009	72,00
F-FR 200 code 36220009	75,00
F-FR 300 code 36240009	78,00
F-FR 400 code 36260009	81,00
F-FR 600-800 code 36280009	85,00

Thermal exchange battery

Condensate storage tank

Standard battery connections

Condensate exhaust flue

Centrifugal fans

Air filter

Electric motor

	Description of models F-FR-FC-FCR				100	200	300	400	600	800	
				max.	2.830	4.130	5.640	7.050	9.770	12.330	
	Thermal power (incoming water 70°C)		W	med.	2.530	3.680	5.140	6.290	8.860	11.230	
	(incoming water to c)			min.	2.220	3.210	4.670	5.230	7.480	10.580	
	Max water flow		l/ł	۱	243	355	485	606	825	1.060	
	Flow resistance max water 70°C		kP	а	1,50	3,00	7,30	11,45	23,50	33,00	
				max.	1.620	2.200	3.370	4.050	5.900	6.060	
	Thermal power (incoming water 50°C)(E)	(E)	W	med.	1.450	1.830	3.070	3.640	5.270	5.610	
				min.	1.270	1.680	2.790	3.240	4.620	5.090	
	Flow resistance max water 50°C ((E) k	кРа	max.	1,03	2,27	6,45	9,90	22,25	26,50	
				max.	1.860	2.420	3.380	4.100	5.930	6.530	
	Additional single-row battery		w	med.	1.710	2.240	3.160	3.800	5.510	6.270	
				min.	1.540	2.060	2.970	3.490	4.630	6.070	
	Single-row battery water flow		l/ł	۱	160	208	291	352	516	559	
	Flow resistance max water 1 row		kP	а	4,50	7,60	16,00	26,50	46,00	51,00	
	Overall refrigerating capacity (E)			max.	1.150	1.630	2.730	3.220	4.660	5.140	
		(E)	w	med.	1.030	1.380	2.410	2.880	4.230	4.740	
				min.	880	1.270	2.190	2.630	3.870	4.360	
				max.	930	1.320	2.230	2.580	3.640	4.150	
	Sensitive refrigerating capacity		W	med.	830	1.110	1.940	2.180	3.220	3.670	
				min.	700	995	1.720	1.970	2.850	3.340	
	Water flow max cooling		l/h	max.	192	275	460	552	790	868	
	Flow resistance max water cooling ((E) k	Pa	max.	1,22	2,70	7,65	11,70	26,45	31,00	
				max.	210	340	450	585	760	1.000	
	Air flow ((E) m	n³/h	med.	180	280	400	510	630	890	
				min.	150	240	350	445	540	780	
	Number of fans		n	þ		1			2		
				max.	30,6	39,5	40,7	42,3	44,7	50,0	
	Sound pressure	dE	B(A)	med.	27,7	34,9	37,4	39,4	41,8	48,1	
				min.	22,9	31,9	34,2	36,7	37,1	45,5	
				max.	39,1	48,0	49,2	50,8	53,2	58,5	
	Sound power ((E) dE	B(A)	med.	36,2	43,4	45,9	47,9	50,3	56,6	
				min.	31,4	40,4	42,7	45,2	45,6	54,0	
	Power supply					23	30 V / 1 / 50	Hz			
	Max motor power ((E)	W	/	34	45	58	77	104	123	
	Max absorbed current		A		0,15	0,20	0,25	0,34	0,46	0,59	
	Weight (for version F)		kg	3	17,0	19,0	22,0	24,6	28,8	30,2	

(E)) = Eurovent-certified performance. Data refers to the following operating conditions:



Summer cooling: Winter cooling:

environmental air temperature: 27°C dry bulb, 19°C wet bulb water temperature: incoming water 7°C, outgoing water 12°C at maximum speed environmental air temperature: 20°C water temperature: incoming water 70°C, _T 10°C at maximum speed

(with incoming water temperature at 50° C, same water flow as maximum speed cooling)

Climate control units **AMW**

The Accorroni AMW horizontal projection climate control units are wall mounted and water fed. They are particularly suitable to heating and cooling industrial buildings, artisan workshops, warehouses, laboratories, etc.

The full range includes 13 models with air flows ranging from 1,590 to 9,900 m³/h, heat exchangers with two/four/six rows for thermal efficiencies ranging from 17 to 110 kW and cooling powers ranging from 13 to 48 kW.

The AMW climate control units provide an interesting solution for the low-cost creation of summer air conditioning systems. Air delivery can easily be adjusted thanks to horizontal fins. Models with 4/6-row heat exchangers are supplied standard with an air intake filter. For the other models with 1/2-row heat exchangers the air intake filter is available as an accessory.



HEATING AMW 16/1 ÷ AMW 92/2



NEW PRODUCT

Models		Refrigerating capacity	Termal power	Air flow	
		kW	kW	m³/h	
1-row heat exchanger AMW 16/1 - hot air only	code 30170211	-	15,5	1.590	690,00
2-row heat exchanger AMW 25/2 - hot air only	code 30220412	-	24,2	2.200	846,00
2-row heat exchanger AMW 32/2 - hot air only	code 30220512	-	31,5	3.300	900,00
2-row heat exchanger AMW 47/2 - hot air only	code 30320412	-	47,0	4.400	1.170,00
2-row heat exchanger AMW 60/2 - hot air only	code 30320512	-	60,0	6.600	1.265,00
2-row heat exchanger AMW 72/2 - hot air only	code 30370412	-	72,0	6.600	1.770,00
2-row heat exchanger AMW 92/2 - hot air only	code 30370512	-	92,0	9.900	1.830,00
4-row heat exchanger AMW 35/13/4 - hot and cold air	code 30220414	13,0	35,0	2.300-2.200 (**)	1.098,00
4-row heat exchanger AMW 72/25/4 - hot and cold air	code 30320414	25,0	72,0	4.600-4.400 (**)	1.580,00
4-row heat exchanger AMW 110/37/4 - hot and cold air	code 30370414	37,0	110,0	6.900-6.600 (**)	2.465,00
6-row heat exchanger AMW 15/6 - hot and cold air	code 30220416	15,5	23 (*)	2.200	1.346,00
6-row heat exchanger AMW 32/6 - hot and cold air	code 30320416	32,0	45 (*)	4.400	1.985,00
6-row heat exchanger AMW 48/6 - hot and cold air	code 30370416	48,5	68 (*)	6.600	2.890,00

Air conditioning: Heating: Heating (*):

incoming water 7°C (_T 5°C) - air 27°C dry bulb - 19°C wet bulb incoming water 80°C (_T 10°C) - air 15°C incoming water 50°C - air 15°C

(**) Heating/Cooling



Dimensions of models AMW 72/2 - 92/2 - 110/37/4 -









additional air delivery grate
with vertical adjustable fins

	88,00
	88,00
	88,00
	88,00
1	45,00
1	45,00
1	45,00
1	45,00
1	76,00
1	76,00
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1	76,00

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	models AWW
16/1	cod. 30171500
25/2	cod. 30171500
32/2	cod. 30171500
35/13/4	cod. 30171500
15,6	cod. 30171500
47/2	cod. 30321500
60/2	cod. 30321500
72/25/4	cod. 30321500
32/6	cod. 30321500
72/2	cod. 30371500
92/2	cod. 30371500
110/37/4	cod. 30371500
48/6	cod. 30371500

support shelves model AMW 16/1÷48/6 cod. 30170085

73,00

remote control with room thermostat, summer/winter off switch and 1/2/3 speed switch cod. 50005230



73,00



(*) Each filter is made up of two halves for easy cleaning

37,00
52,00
83,00



models AMW 16/1-25/2-32/2 cod. 30225601 47/2-60/2 cod. 30325601 72/2-92/2 cod. 30375601

Outlet

Inlet

Air delivery grate with adjustable fins

Filter

(models with 4/6-row heat exchangers are supplied standard with the air intake filter. For the other models with 1/2-row heat exchangers it is available on request as an accessory.)

Heat exchanger

Fan designed for 3 operating speeds



Table - Heating-only climate control units

Description		AMW 16/1	AMW 25/2	AMW 32/2	AMW 47/2	AMW 60/2	AMW 72/2	AMW 92/2
Thermal power	kW	15,5	24,2	31,5	47,0	60,0	72,0	92,0
Thermal head	°C	28,9	32,6	28,3	31,7	27,0	32,4	27,6
Flow resistance	kPa	39,1	7,3	11,3	35,2	54,1	23,9	36,8
Air flow (20°C 1013 mbar)	m³/h	1.590	2.200	3.300	4.400	6.600	6.600	9.900
Revolutions per minute	RPM	1.250	1.250	940	1.250	940	1.250	940
Sound pressure (1 m)	dB(A)	61	66	62	69	65	71	67
Power supply voltage	V			230 V-	- 50 Hz			
Absorbed electrical power	W	48	130	160	260	320	390	480
Protection fuse	А	2			4			
Electrical protection class	-	1						
IP code	-			2	20			

Incoming water 80°C ΔT 10 °C) - air 15°

Table - Heating/Cooling climate control units

Description		AMW 3	35/13/4	AMW 7	AMW 72/25/4		AMW 110/37/4 AMW 15/6		AMW 32/6		AMW 48/6		
Operation mode	-	Heating	Cooling	Heating	Cooling	Heating	Cooling	Heating	Cooling	Heating	Cooling	Heating	Cooling
Overall thermal power	kW	35,0	13,0	72,0	25,0	110,0	37,0	23 (*)	15,5	45 (*)	32,5	68 (*)	48,5
Sensitive thermal power	kW	-	9,1	-	17,1	-	25,9	-	10,9	-	22,4	-	34,0
Thermal head	°C	45,1	-	46,4	-	47.3	-	31 (*)	-	30 (*)	-	31 (*)	-
Flow resistance - water side	kPa	17,8	14,6	92,4	72,7	28,9	20,2	6,	7	17	,5	15	5,5
Air flow (20°C 1013 mbar)	m³/h	2.300	2.200	4.600	4.400	6.900	6.600	2.2	00	4.4	00	6.6	600
Revolutions per minute	RPM		1370						1.400				
Sound pressure	dB(A)	6	8	7	1	7	3	69	69 72			74	
Power supply voltage	V		230 V~ 50 Hz										
Absorbed electrical power	W	1:	50	300 450			50	17	175 350		0	525	
Protection fuse	А	2	2	4					6				
Electrical protection class	*		Ι										
IP code	*		20										
		+											

Air conditioning: Heating: Heating (*): incoming water 7°C (ΔT 5°C) - incoming air 27°C dry bulb - 19°C wet bulb incoming water 80°C (ΔT 10°C) - incoming air 15°C incoming water 50°C - incoming air 15°C

Ducted terminal air treatment units MHD

Created for commercial and residential applications, the MHD terminal air treatment units are available in the horizontal ceilingmounted version with galvanised metal-sheet casing. Designed to service several areas with a single unit using rigid or flexible ducts, these small-sized appliances are ideal for installation in false ceilings or service areas.

The full range includes 7 different sizes with air flows ranging from 873 to 9,250 m³/h, cooling powers from 3,455 to 43,653 refrig/h and thermal efficiencies from7,171 to 86,264 Kcal/h. The extractable air intake filter is supplied separately as an accessory.

A wide range of accessories - shown on the next pages - allows for any system configuration.



Model		Refrigerating capacity	Termal power	Air flow	
		kW	kW	m³/h	
MHD 4/3 (3-row battery)	code 52200000	4,00	8,31	837	550,00
MHD 7/3 (3-row battery)	code 52220000	7,04	14,19	1.023	735,00
MHD 9/3 (3-row battery)	code 52240000	9,20	18,71	1.951	835,00
MHD 11/3 (3-row battery)	code 52260000	10,59	21,34	2.131	895,00
MHD 13/3 (3-row battery)	code 52280000	13,09	28,25	3.002	1.315,00
MHD 28/4 (4-row battery)	code 52300000	27,81	53,88	4.678	2.290,00
MHD 51/4 (4-row battery)	code 52320000	50,63	100,06	9.250	4.295,00

Data measured based on the following conditions: **Spout-feed standard unit (outside static pressure = 0 Pa)**

Maximum speed of fans

incoming water temperature 7°C - outgoing water temperature 12°C - incoming air temperature 27°C dry bulb - 19°C wet bulb Cooling:

incoming water temperature 70° C - outgoing water temperature 60° C - incoming air temperature 20° C Heating:

Dimensions MHD





Model	А	В	L	Р	Н	Ø AB
4/3	197	548	650	533	299	1/2"
7/3	197	898	1.000	533	299	1/2"
9/3	222	998	1.100	533	324	3/4"
11/3	222	1.237	1.339	533	324	3/4"
13/3	272	1.237	1.339	533	374	1"
28/4	572	1.239	1.341	853	675	1"1/4
51/4	572	1.926	2.028	853	675	1"1/2



intake and delivery plenum for flexible ducts

4/3 (2xØ200) cod. 52202215	82,00
7/3 (3xØ200) cod. 52222215	97,00
9/3 (3xØ200) cod. 52242215	105,00
11/3 (4xØ200) cod. 52262215	123,00
13/3 (4xØ200) cod. 52282215	141,00
28/4 (2xØ400) cod. 52302215	193,00
51/4 (4xØ400) cod. 52322215	257,00

heating section with electric resistance (380 V)

4/3 (3.000 W) cod. 52202805	397,00
7/3 (6.000 W) cod. 52222805	523,00
9/3 (6.000 W) cod. 52242805	523,00
11/3 (9.000 W) cod. 52262805	619,00
13/3 (9.000 W) cod. 52282805	619,00
28/4 (12.000 W) cod. 52302805	661,00
51/4 (18.000 W) cod. 52322805	709,00



intake	and	deliv	/erv	90°
			plér	านm

4/3 cod. 52202220	82,00
7/3 cod. 52222220	99,00
9/3 cod. 52242220	105,00
11/3 cod. 52262220	112,00
13/3 cod. 52282220	121,00
28/4 cod. 52302220	184,00
51/4 cod. 52322220	246,00

straight intake and delivery plenum

4/3 cod. 52202210	102,00
7/3 cod. 52222210	114,00
9/3 cod. 52242210	126,00
11/3 cod. 52262210	144,00
13/3 cod. 52282210	165,00
28/4 cod. 52302210	234,00
51/4 cod. 52322210	312,00





indoor/outdoor air intake plenum with manual gate	extractable intake filter (metal frame + filtering plate)
4/3 cod. 52202205 233,00 7/3 cod. 52222205 279,00 9/3 cod. 52242205 297,00 11/3 cod. 52262205 365,00 13/3 cod. 52282205 431,00 28/4 cod. 52302205 613,00 51/4 cod. 52322205 937,00	4/3 cod. 52205600 31,00 7/3 cod. 52225600 40,00 9/3 cod. 52245600 41,00 11/3 cod. 52265600 44,00 13/3 cod. 52285600 47,00 28/4 cod. 52305600 78,00 51/4 cod. 52325600 117,00
single-row supplementary battery	
4/3 cod. 52202800135,007/3 cod. 52222800196,009/3 cod. 52242800204,0011/3 cod. 52262800227,0013/3 cod. 52282800263,0028/4 cod. 52302800577,0051/4 cod. 52322800882,00	insulated PVC flexible pipe for ducting Ø 200 in 6-m package cod. 37900001 119,00 only for models 4/3, 7/3, 9/3, 11/3, 13/3
01/4 000. 02022000 002,00	
adjustable-fin delivery opening complete with gate cm 40 x 20 cod. 37900021 68,00	circular cone diffusers adjustable in millimetres and calibration butterfly gate
	diffuser cod. 37900027 62,00
	only for models 4/3. 7/3. 9/3. 11/3. 13/3
Ø 200 flexible duct junction coupling cod. 37900019 83,00 only for models 4/3, 7/3, 9/3, 11/3, 13/3	connection plenum between flexible duct and circular
Ø 200 flexible duct junction coupling cod. 37900051	cone diffuser cod. 37900031 83,00 only for models 4/3, 7/3, 9/3, 11/3, 13/3
Ø 200 cod. 37900051 21,00	
only for models . 4/3 -7/3 -9/3 -11/ remote control with summer/winter off switch and 1/2/3-speed switch cod. 50005225 31,00	3 -13/3 135° Y branch Ø 200 cod. 37900010 114,00 114,00 only for models 4/3, 7/3, 9/3, 11/3, 13/3
remote control with room thermostat, summer/winter	10 clamps Ø 60 - 325 cod. 37900017

42,00 only for models 4/3, 7/3, 9/3, 11/3, 13/3



off switch and 1/2/3-speed switch cod. 50005230



73,00 - 68 -



21,00



under-door passage grate cm 40 x15 cod. 37900015

57,00

	Description			4/3	7/3	9/3	11/3	13/3	28/4	51/4
	Overall refrigerating capacity		kW	4,00	7.04	9,20	10,59	13,09	27,81	50,63
referred to useful static pressure t			frig/h	3.455	6.074	7.930	9.137	11.285	23.976	43.653
	Termal power		kW	8,31	14,19	18,71	21,34	28,25	53,88	100,06
	referred to useful static pressur	re 0 Pa (spout fe kcal/h	ed) 7.171	12.239	16.134	18.404	24.355	46.448	86.264
	Air flow	vel. max	m³/h	837	1.423	1.951	2.131	3.002	4.678	9.250
	referred to useful static pressur 0 Pa (spout feed)	vel. med	m³/h	739	1.149	1.686	1.801	2.282	3.733	7.470
		vel. min	m³/h	644	852	1.278	1.275	1.597	3.066	6.151
	Overall refrigerating capacity		kW	3.51	6,16	8,56	9,86	12.44	25.98	47.30
	referred to useful static pressur 80 Pa (4-7-9-11) 100Pa (13) 150 P	re: a (28-51) frig/h	3.022	5.306	7.361	8.481	10.699	22,347	40,684
	Thermal power		kW	7,03	12,04	17,05	19,43	26,38	49,24	91,48
	referred to useful static pressur 80 Pa (4-7-9-11) 100Pa (13) 150 P	re: 1a (28-51) kcal/h	6.053	10.355	14.699	16.712	22.690	42.353	78.674
	Air flow	vel. max	/ m³/h	598	1.017	1.601	1.749	2.615	3.875	7.662
	referred to useful static pressur 80 Pa (4-7-9-11) 100Pa (13) 150 P	e: avel.218ed1) m³/h	506	786	1.435	1.532	2.014	3.155	6.311
		m³/h	413	448	1.026	959	1.228	2.486	4.988	
	Water flow (cooling)		l/h	604	1.061	1.472	1.696	2.140	4.469	8.137
	Flow resistance- water side (cooling)		kPa	15.2	23,7	29,4	27,6	32.5	29.6	34,8
	Water flow (heating) Flow resistance- water side (heating)			605	1.036	1.467	1.671	2.269	4.235	7.867
				11.9	17,6	22,7	20,9	28,4	20.7	25,3
	Battery rows		n°	3	3	3	3	3	4	4
	Battery connections		"	1/2"	1/2"	3/4"	3/4"	1"	1"1/4	1"1/4
	Useful static pressure		Ра	80	80	80	80	100	150	150
	Minimun counter pressure		Ра	0	0	0	0	0	60	60
	Fans		n°	1	2	2	2	2	1	2
	Power supply			230 V~ 50 Hz						
	Electrical absorbance		W	162	218	322	340	582	1.320	2.600
	Absorbed current		А	0.74	1,00	1,47	1,55	2,65	6.01	12,05
	Noise level	vel. min	dB(A)	63	58	61	58	62	69	71
		vel. med	dB(A)	67	65	68	65	69	73	76
vel. max			dB(A)	68	69	70	69	74	78	81
Net weight		kg	28	36	41	46	57	117	192	
		~					÷ ·			

Data measured based on the following conditions:Cooling:incoming water temperature $7^{\circ}C$ - outgoing water temperature $12^{\circ}C$ - incoming air temperature $27^{\circ}C$ dry bulb - $19^{\circ}C$ wet bulbHeating:incoming water temperature $70^{\circ}C$ - outgoing water temperature $60^{\circ}C$ - incoming air temperature $20^{\circ}C$

Noise levels measured according to ISO 23741 standards

Arianne 1 and 2

These air mixers have been designed to make temperature and humidity uniform over large areas and to reduce the energy required to heat them. Arianne's special helicentrifugal impellers thoroughly mix the air layers thanks to an upward air intake and radial distribution system that immediately restores thermal equilibrium in the area. Arianne uses the same operating principle to solve problems due to summer weather - when high temperatures, high relative humidity and poor ventilation make the conditions unbearable for both people and the facilities. An unquestionable advantage of the Arianne units is that they cover extremely large areas (even larger than 200 sqm) treating enormous volumes of air, and yet do not give rise to the unhealthy drafts commonly caused by traditional blade-operated vertical projection methods. In industrial buildings, churches, swimming pools, etc. these units reduce heat dispersion typical of large areas, thus improving the overall efficiency of the heating system and reducing energy consumption. They are effective even in areas that are 18 metres high. Arianne units make heat uniform over the entire area without creating any unhealthy drafts.





Installation is very easy. Mixers are fixed to the ceiling and connected to the power supply.

Models

Arianne 1	code 39500000	520,00
Arianne 2	code 39600000	550,00



Arianne uses a special helicentrifugal impeller to produce an innovative draft - the "convergent-divergent" system. Air is simultaneously taken up from the bottom (coolest air) and the top (hottest air), mixed inside the impeller and expelled radially through the circular deflectors. This function constantly mixes the layers of air, blending and balancing out temperature, humidity and pressure values without causing unhealthy drafts that could affect people.



If several units are to be installed, the directions of rotation should be alternated in order to blend air more efficiently.





The Figure shows an example of installation of 3 Arianne 1 units (*radius of operation = 7 m*) in a building that is 14×36 metres. The destratifiers are installed in such a way that the radius of operation covers the entire surface of the building with alternating directions of rotation.

The following are some of the advantages of using **Arianne** units during the summer:

- Uniform and thorough ventilation of the area
- · Exchange activation and outside air renewal
- Reduction in odour and fume concentration
- · Reduction in the percentage of relative humidity



Radius of operation of Arianne mixers





Thermal stratigraphy in heated areas



Arianne units bring down the thermal gradient and therefore reduce both heat dispersion from the building and its heat demand. The economic advantage comes from smaller fuel consumption and lower management and maintenance costs for the heating system. As a matter of fact, the heating system is not continuously in full operation and its life will be longer.

Better living conditions can translate into an economic advantage too. People living in a warmer and uniformly heated environment work in better conditions.

And lower relative humidity can improve the preservation of equipment, machinery, materials, as well we the building's structures themselves.



ate taken between 1,5 m. and 9,5 m. from the floor in an industrial area with heating system on.

with Arianne

without Arianne

Accessories

•
single-phase

up	to	2	units	cod.	396	500C)05
up	to	6	units	cod.	396	500C	006
				thr	'ee-	pha	se
up	to	2	units	cod.	396	5000	07
up	to	4	units	cod.	396	5000	08
up	to	6	units	cod.	396	500C)09
si	ng	le	-pha	se a	dap	ter	kit
				cod.	303	332	206

4 speed electrical control panels

439,00 672,00

682,00

796,00

37,00
	Arianne 1	Arianne 2
Ø mm	680	680
height mm	500	500
Kg	16	18
m²	200	250
dB(A)	30	30
W	150	220
m³/h	7.500	10.000
rpm	400	700
	three-phase single-phase	
V	230 - 400	
	black	
	epoxy powder	
	IP 44	
	Ø mm height mm Kg m ² dB(A) W m ³ /h rpm V	Arianne 1 Ø mm 680 height mm 500 Kg 16 m² 200 dB(A) 30 W 150 m³/h 7.500 rpm 400 V 200 Image: All states of the s