

AARIA MULTI R32

SERIES R32

EN INSTALLATION AND TECHNICAL SERVICE INSTRUCTIONS

RIELLO

Dear Technician,
We would like to congratulate you on having recommended a **RIELLO** unit: a modern product that is capable of ensuring maximum comfort at length, with a high degree of reliability, efficiency, quality and safety.
While your technical skills and knowledge will certainly be more than sufficient, this booklet contains all the information that we have deemed necessary for the device's correct and easy installation.

Thank you again, and keep up the good work.

RIELLO

COMPLIANCE

RIELLO AARIA MULTI R32 heat pumps are compliant with the following European Directives:

- Low Voltage Directive 2014/35/EU
- Electromagnetic Compatibility Directive 2014/30/EU
- RoHS Directive 2011/65/EU
- ErP Directive 2009/125/EC and Regulation 2012/206/EC
- WEEE Directive 2012/19/EU
- F-Gas Regulation 2014/517/EU
- Pressure equipment directive (with the exception of AARIA MULTI 250 P model)



RANGE

Model	Code
AARIA MULTI 250 P	20171566
AARIA MULTI 355 P	20175226
AARIA MULTI 370 P	20175227
AARIA MULTI 475 P	20175228
AARIA MULTI 485 P	20175229
AARIA MULTI 590 P	20175230

ACCESSORIES

For the complete list of accessories and the information relating to their usage combinations, please refer to the catalogue.

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The following symbols are used on the product:



Avoid proximity to sources of ignition in continuous operation (open flames, gas household appliances, electric stoves, lit cigarettes, etc).



For more information, see the installation and technical service instructions.



Before performing maintenance and service tasks, read the installation and technical service instructions.



Before the installation, read the installation and technical service instructions.

The following symbols are used in this publication:



WARNING = actions requiring special care and appropriate training.



DO NOT = actions that MUST ON NO ACCOUNT be carried out.

This booklet cod. Doc-0097487 rev. 0 (02/2020) consists of 52 pages.

1 GENERAL INFORMATION

1.1 General Notices

⚠ When you get the product, check immediately that the contents are all present and undamaged. Contact the dealer **RIELLO** if you notice any problems.

⚠ The product's installation must be carried out by an authorised company that will issue a declaration of the installation's conformity to the product's owner once the work has been completed, indicating that the work has been carried out in accordance with the standards of good practice, current National and Local regulations, and the indications provided by **RIELLO** in the instruction booklet accompanying the device.

⚠ The R32 refrigerant gas is slightly inflammable and odourless. Carefully read the safety data sheet available from the dealer and see table "Minimum floor area" p. 9 inside the technical data paragraph and the installation manual of the indoor unit installed.

⚠ The product must be used for its intended purpose, as stated by **RIELLO** for which it has been expressly manufactured. **RIELLO** shall bear no responsibility, whether of a contractual or non-contractual nature, for any damage caused to people, animals, or property due to incorrect installation, adjustments, or maintenance, or improper use.

⚠ Suitable clothing, instrumentation, and accident-prevention devices must be utilized during the installation and/or maintenance operations. **RIELLO** shall bear no responsibility for any failure to comply with current safety and accident-prevention regulations.

⚠ During installation and/or service operations, keep the area around the unit tidy and clean.

⚠ Comply with the legislation in force on the country of deployment with regard to the use and disposal of packaging, of cleaning and maintenance products and for the management of the unit's decommissioning.

⚠ Any repair and maintenance interventions must be carried out by **RIELLO** Technical Support Service, in accordance with the provisions contained in this publication. Do not modify or tamper with the unit as dangerous situations may arise and the unit manufacturer will not be liable for any damage caused.

⚠ In the event of any functional anomalies or fluid leaks, set the system's main switch to its "off" position. Promptly contact your local **RIELLO** Technical Support Service, and do not perform any interventions upon the device on your own.

⚠ The units contain refrigerant gas: operate carefully so as to avoid damaging the gas circuit and the fin bank.

⚠ Do not place any inflammable object (spray cans) within a 1 metre radius from the air expulsion.

⚠ According to EU Regulation no. 517/2014 regarding certain fluorinated greenhouse gases, the total amount of refrigerant contained within the installed system must be indicated. This information can be found on the unit technical data plate.

⚠ This unit contains fluorinated greenhouse gases covered by the Kyoto protocol. Maintenance and disposal activities must be carried out exclusively by skilled personnel.

⚠ This booklet is an integral part of the device, and must therefore be carefully preserved, and must ALWAYS accompany it, even in the event that it is sold to another Owner or User, or is transferred to another system. If it is damaged or lost, another copy can be requested to **RIELLO** Technical Support Service in your Area.

⚠ All precautions concerning handling of refrigerant must be observed in accordance with local regulations.

⚠ Any technician carrying out work on the electrical or refrigerating section must be authorised, with the relevant qualifications and certifications, including for soldering operations and for handling of the shut-off valve. He/she must have been trained and be familiar with the equipment and the installation.

⚠ The ducts can break under the weight and release refrigerant, causing injuries.

Personal protection equipment (PPE) (1)	Actions		
	Handling	Maintenance, service	Welding or brazing (2)
Protective gloves, eye protection, safety shoe, protective clothing.	.	.	.
Ear protection.	.	.	.
Filtering respirator.	.	.	.

(1) We recommend to follow the instructions in EN 378-3.

(2) Performed in the presence of A1 refrigerant according to EN 378-1.

⚠ Before opening a refrigerating circuit, purge and read the pressure indicators.

1.2 Safety precautions

It should be noted that the use of products that utilize electric energy requires certain essential safety regulations to be respected, including the following:

- ⊖** Do not allow children or unassisted disabled people to use the unit.
- ⊖** Do not touch the unit while barefoot and/or partially wet.
- ⊖** Do not spray or throw water directly on the unit.
- ⊖** It is forbidden to place weights on the device.
- ⊖** It is strictly forbidden to touch the coil fins, the moving parts, to place any body parts between them, or to insert pointy objects into the grilles.

- It is forbidden to perform any technical interventions or cleaning operations before having disconnected the device from its electrical power supply, by setting the system's main switch to its "OFF" position.
- It is forbidden to modify the safety or regulation devices without the authorisation of the manufacturer.
- Do not pull, detach or twist the electrical wires coming out of the unit, even when the unit is disconnected from the power grid.
- The packing material must not be disposed of in the surrounding environment and must be kept out of children reach, as it can be dangerous. It must be disposed of according to the regulations in force.

1.3 Unit description

RIELLO ARIA MULTI R32 is a heat pump outdoor unit that can be coupled to indoor units of the same series for the air-conditioning of small/middle-sized rooms. Designed for outdoor installation, it is suitable for use in residential and small business premises.

The rotary-type compressor is controlled via DC-Inverter control with continuous modulation from 20% to 110%, thus ensuring high energy standards. The fan DC motor improves performance and sound comfort. The expansion valve electronically optimises the flow of refrigerant within the circuit.

The R32 refrigerant allows high yields, thus placing **RIELLO ARIA MULTI R32** among the most efficient devices on the market.

1.4 Safety and adjustment devices

The device safety and setting are achieved thanks to

All model

- compressor motor thermal protection, which is triggered in case the current consumed by the compressor is excessive
- gas delivery temperature sensor, which transmits the detected value to the electronic board that is triggered in case of overtemperature (116°C)
- anti-freeze sensor, which transmits the temperature value as detected by the heat exchanger to the electronic board that is triggered when the heat exchanger is clogged by frost formations
- suction temperature sensor, which transmits the detected value to the electronic board that is triggered in order to adjust the flow of refrigerant gas or to stop the unit in case of overtemperature (40°C)
- outdoor air temperature sensor, which transmits the detected value to the electronic board that is triggered in order to adjust the operation of the unit indoor components to the variation of weather conditions

• Model 355 P – 370 P – 475 P – 485 P – 590 P only

- high pressure switch, which transmits the detected value to the electronic board that is triggered in case of pressure too high or malfunction of the pressure switch, stop of the unit; it automatically resets up to 3 times in 60 minutes, then the restart needs recovery by removing and restoring the power supply
- low pressure switch, which transmits the detected value to the electronic board that is triggered in case of pressure too low or malfunction of the pressure switch, stop the unit; it automatically resets up to 3 times in 60 minutes, then the restart needs recovery by removing and restoring

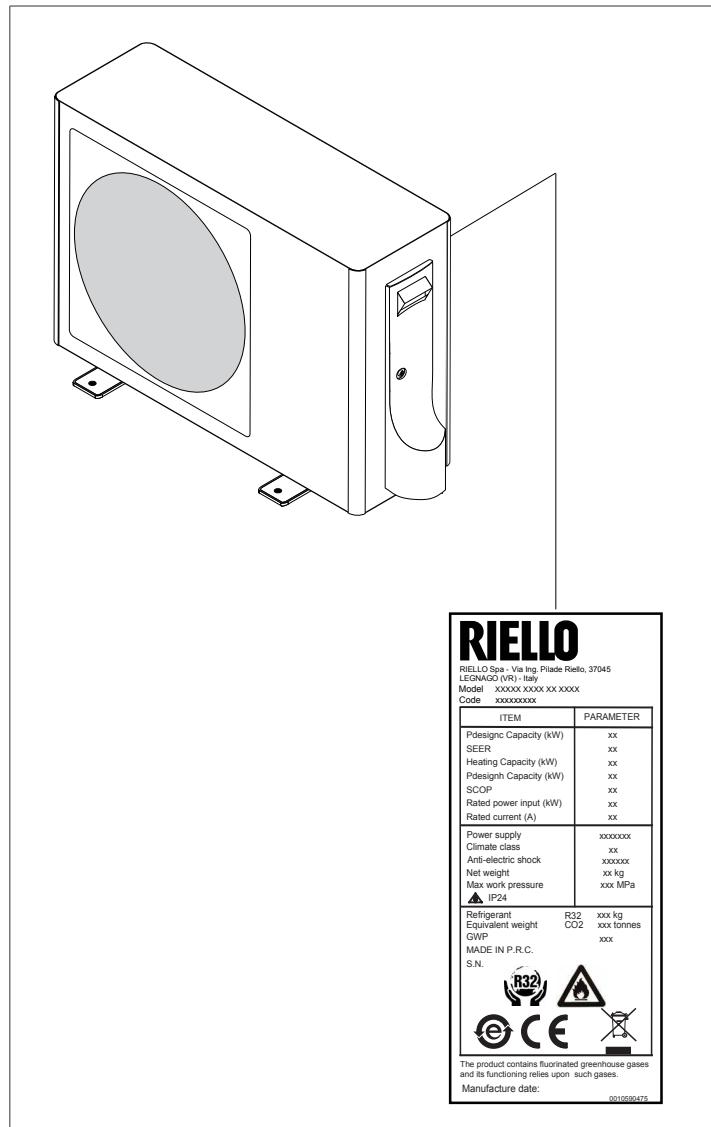
the power supply

- !** Safety device replacement must be carried out by **RIELLO** Technical Support Service, using only original components. Please refer to the spare parts catalogue.

- IT IS FORBIDDEN to operate the device with faulty safety systems.

1.5 Identification

The unit can be identified through the technical data plate:



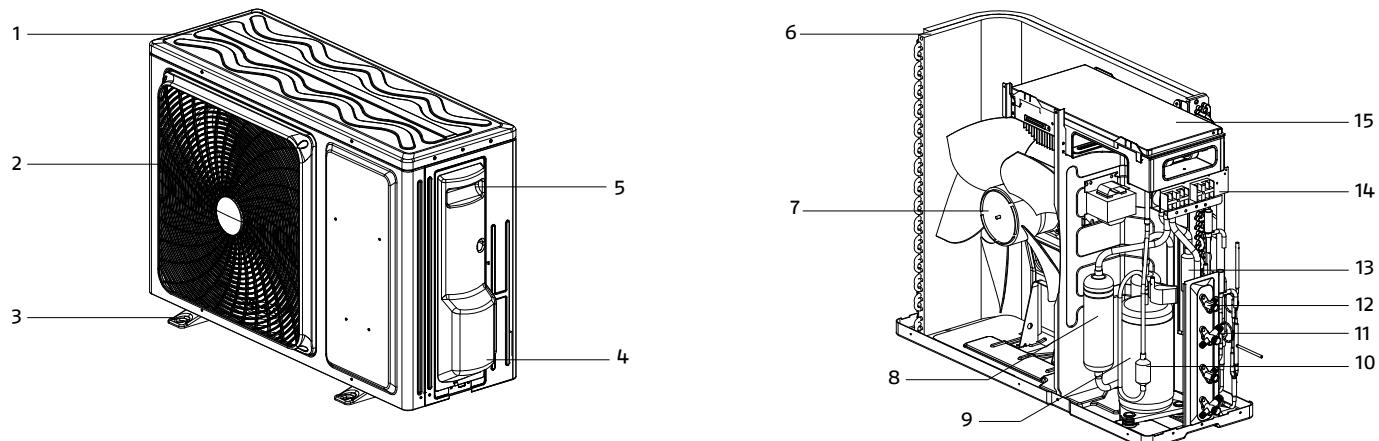
Technical data plate

Contains the device's technical and performance data.

- !** The tampering, removal, or absence of the identification plates will not allow the product to be properly identified by its serial number.

1.6 Layout

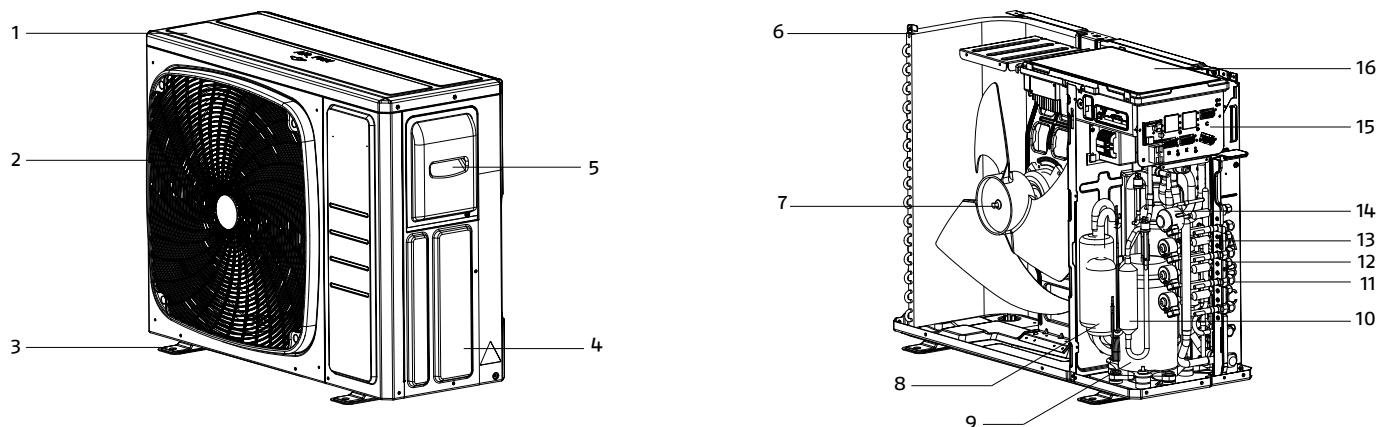
MODEL 250 P



- 1** Upper panel
- 2** Fan protection grille
- 3** Support bracket
- 4** Connections cover
- 5** Handle for handling
- 6** Heat exchanger
- 7** Electric fan
- 8** Intake separator

- 9** Rotary compressor
- 10** Muffler
- 11** Gas line connection
- 12** Liquid line connection
- 13** Filter
- 14** Terminal board for electric connections
- 15** Electric panel cover

MODEL 355 P – 370 P – 475 P – 485 P – 590 P



- 1** Upper panel
- 2** Fan protection grille
- 3** Support bracket
- 4** Connections cover
- 5** Handle for handling
- 6** Heat exchanger
- 7** Electric fan
- 8** Intake separator

- 9** Rotary compressor
- 10** Muffler
- 11** Gas line connection
- 12** Liquid line connection
- 13** Filter
- 14** Electronic expansion valve
- 15** Terminal board for electric connections
- 16** Electric panel cover

1.7 Technical specifications

Performance combined with AMW P

Model	250 P	355 P	370 P	475 P	485 P	590 P	
Model compatibility							
Indoor unit	2 x AMW 35 P	3 x AMW 25 P	3 x AMW 25 P	4 x AMW 25 P	4 x AMW 25 P	2 x AMW 25P + AMW 35 P + AMW 50 P	
Indoor unit max. number	2	3	3	4	4	5	
Cooling performance [A35 / A27]⁽¹⁾							
Nominal capacity	5,00	5,50	7,00	7,50	8,50	9,00	kW
Minimum capacity	1,30	2,10	2,40	2,40	3,20	3,20	kW
Maximum capacity	6,00	7,00	7,60	8,70	9,50	11,00	kW
Nominal power input	1,45	1,38	1,75	2,00	2,50	2,85	kW
Minimum power input	0,35	0,55	0,55	0,55	0,55	0,55	kW
Maximum power input	2,55	2,5	2,7	3,4	3,5	4,1	kW
Cooling energy data⁽²⁾							
Pdesign at 35 °C	5,00	5,50	7,00	7,50	8,50	9,00	kW
SEER	6,50	7,50	7,50	7,00	7,00	7,00	kW/kW
Energy class	A++	A++	A++	A++	A++	A++	
Annual energy cons.	269	258	332	379	456	457	kWh/annum
Heating performance [A7 / A20]⁽³⁾							
Nominal capacity	5,20	6,80	7,60	8,60	9,60	10,40	kW
Minimum capacity	1,80	1,70	2,90	3,10	4,40	4,40	kW
Maximum capacity	6,60	7,60	8,50	10,00	10,50	11,50	kW
Nominal power input	1,40	1,55	1,80	2,15	2,40	2,75	kW
Minimum power input	0,55	0,55	0,55	0,55	0,55	0,55	kW
Maximum power input	2,8	2,2	2,3	3,1	3,4	3,4	kW
Energy data for Average climatic profile⁽⁴⁾							
Annual energy cons.	1645	1679	2012	2179	2503	2441	kWh/annum
Pdesign at -10 °C	4,70	4,70	6,00	6,30	7,00	7,20	kW
SCOP	4,00	4,00	4,20	4,00	4,00	4,00	kW/kW
Energy class	A+	A+	A+	A+	A+	A+	
Energy data for Warm climatic profile⁽⁴⁾							
Pdesign at +2 °C	4,40	2,80	3,20	3,40	3,70	4,30	kW
SCOP	5,10	4,80	5,30	5,00	4,60	5,40	kW/kW
Annual energy cons.	1208	801	845	977	1123	1092	kWh/annum

(1) Outdoor air: 35 °C D.B., Indoor air: 27 °C D.B. / 19 °W.B.

(2) In compliance with 626/2011 regulation

(3) Outdoor air: 7 °C D.B. / 6 °C W.B., Indoor air: 20 °C D.B.

(4) In compliance with EU 206/2012 regulation

GENERAL INFORMATION

Outdoor unit data

Model	250 P	355 P	370 P	475 P	485 P	590 P	
Cooling performance [A35 / A27] (1)							
Nominal capacity	5,00	5,50	7,00	7,50	8,50	9,00	kW
Nominal power input	1,45	1,38	1,75	2,00	2,50	2,85	kW
Rated frequency	64	63	79	55	64	68	Hz
Maximum frequency	100	100	100	90	90	90	Hz
Minimum frequency	15	20	20	20	20	20	Hz
Nominal current consumption	6,50	6,40	8,30	9,10	12,00	12,50	A
Max. current input	11,50	10,80	11,90	14,60	15,50	17,80	A
Minimum current consumption	1,60	2,40	2,40	2,40	2,40	2,40	A
Heating performance [A7 / A20] (2)							
Nominal capacity	5,20	6,80	7,60	8,60	9,60	10,40	kW
Nominal power input	1,40	1,55	1,80	2,15	2,40	2,75	kW
Rated frequency	78	87	93	71	77	86	Hz
Maximum frequency	118	110	110	95	95	95	Hz
Minimum frequency	20	20	20	20	20	20	Hz
Nominal current consumption	6,30	7,10	8,30	9,50	11,20	12,10	A
Max. current input	12,50	9,50	9,70	13,50	14,60	14,60	A
Minimum current consumption	2,50	2,40	2,40	2,40	2,40	2,40	A
Electrical characteristics							
Power supply				220-240/1/50			V/Ph/Hz
Compressor							
Compressor				Twin Rotary (DC Inverter)			Type
Oil				FW68S			Type
Oil charge	0,48	0,50	0,50	0,87	0,87	0,87	l
Refrigerant				R32			Type
Refrigerant charge	1,40	1,60	1,60	2,20	2,20	2,40	kg
Fan							
Fan				Axial			Type
Quantity	1	1	1	1	1	1	no.
Maximum air flow	2400	3000	3000	4000	4000	4200	m³/h
Minimum speed	500	250	250	300	300	300	rpm
Maximum speed	900	700	700	770	770	800	rpm
Nominal power input	0,04	0,13	0,13	0,13	0,13	0,13	kW
Cooling sound levels							
Sound power level	62	64	66	68	68	71	dB(A)
Sound pressure level (3)	55	51	53	55	55	55	dB(A)
Heating sound levels							
Sound power level	63	65	67	69	69	72	dB(A)
Sound pressure level (3)	56	52	54	56	56	56	dB(A)

(1) Outdoor air: 35 °C D.B., Indoor air: 27 °C D.B. / 19 °W.B.

(2) Outdoor air: 7 °C D.B. / 6 °C W.B., Indoor air: 20 °C D.B.

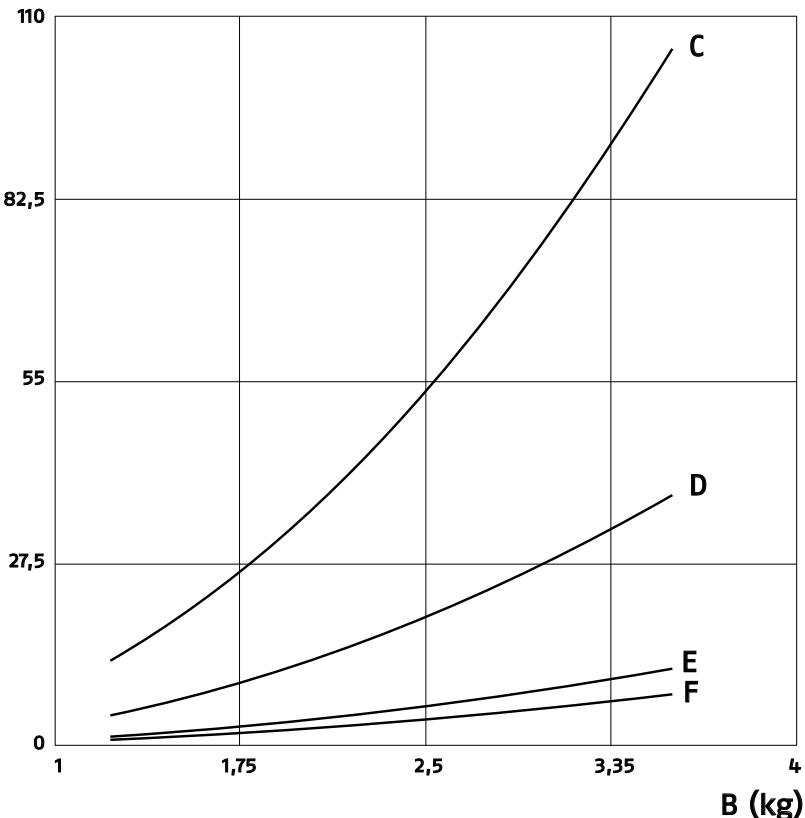
(3) Sound pressure level measured at 1 m free field

Minimum floor area

Minimum floor area for indoor unit (m^2)

Gas charge kg	Indoor unit installation				
	Floor	Window	Wall	Ceiling	
1,10					
1,224		No requirements			
1,225	12,88	4,64	1,43	0,96	
1,30	14,50	5,22	1,61	1,08	
1,90	30,98	11,15	3,44	2,30	
2,00	34,32	12,36	3,81	2,55	
2,30	45,39	16,34	5,04	3,38	
2,60	58,00	20,88	6,44	4,31	
3,00	77,22	27,80	8,58	5,74	
3,50	105,11	37,84	11,68	7,82	

A (m^2)



- A Minimum floor area
- B Refrigerant charge
- C Floor

- D Window
- E Wall
- F Ceiling

1.8 Model compatibility

AARIA MULTI 250 P

Cooling

Combinations		Single nominal capacity		Total nominal capacity			Total power input			Total current input			EER	SEER	Energy class	Annual energy cons.	
Indoor units		Indoor units		Min	Nom	Max	Min	Nom	Max	Min	Nom	Max					
A	B	Unit A	Unit B	kW	kW		kW		A				W/W	W/W		kWh/ annum	
		20	20	2,45	2,45	1,30	4,90	5,60	0,33	1,35	2,36	1,6	6,00	10,60	3,63	6,50	A++
1:2	20	25	2,20	2,70	1,30	4,90	5,60	0,33	1,36	2,37	1,6	6,10	10,60	3,60	6,50	A++	279
	20	35	2,00	3,00	1,30	5,00	5,80	0,35	1,43	2,51	1,7	6,30	11,30	3,50	6,50	A++	274
	25	25	2,50	2,50	1,30	5,00	5,80	0,35	1,43	2,51	1,6	6,30	11,30	3,50	6,50	A++	276
	25	35	2,20	2,80	1,30	5,00	5,80	0,35	1,39	2,52	1,6	6,20	11,30	3,60	6,50	A++	273
	35	35	2,50	2,50	1,30	5,00	6,00	0,35	1,43	2,55	1,6	6,30	11,50	3,60	6,50	A++	269

Heating

Combinations		Single nominal capacity		Total nominal capacity			Total power input			Total current input			COP	SCOP	Energy class	Annual energy cons.	
Indoor units		Indoor units		Min	Nom	Max	Min	Nom	Max	Min	Nom	Max					
A	B	Unit A	Unit B	kW	kW		kW		A				W/W	W/W		kWh/ annum	
		20	20	2,50	2,50	1,50	5,00	6,30	0,49	1,35	2,71	2,20	6,70	12,10	3,71	4,00	A+
1:2	20	25	2,40	2,60	1,50	5,00	6,30	0,49	1,35	2,72	2,20	6,80	12,20	3,71	4,00	A+	1850
	20	35	2,50	2,70	1,60	5,20	6,40	0,52	1,40	2,73	2,30	7,00	12,20	3,71	4,00	A+	1844
	25	25	2,60	2,60	1,60	5,20	6,50	0,52	1,40	2,76	2,30	6,90	12,40	3,71	4,00	A+	1839
	25	35	2,50	2,70	1,70	5,20	6,60	0,53	1,40	2,77	2,40	6,90	12,40	3,71	4,00	A+	1828
	35	35	2,60	2,60	1,80	5,20	6,60	0,55	1,40	2,80	2,50	6,80	12,50	3,71	4,00	A+	1820

AARIA MULTI 355 P**Cooling**

Combinations			Single nominal capacity			Total nominal capacity			Total power input			Total current input			EER	SEER	Energy class	Annual energy cons.	
Indoor units			Indoor units			Unit A	Unit B	Unit C	Min	Nom	Max	Min	Nom	Max	Min	Nom	Max		
	A	B	C																kWh/ annum
1:2	25	25	—	2,60	2,60	—	2,00	5,20	7,00	0,55	1,49	2,50	2,44	6,61	11,09	3,49	6,80	A++	270
	25	35	—	2,18	3,02	—	2,10	5,20	7,00	0,55	1,53	2,50	2,44	6,79	11,09	3,40	6,30	A++	275
	25	42	—	2,04	3,46	—	2,10	5,50	7,00	0,55	1,52	2,50	2,44	6,74	11,09	3,62	6,80	A++	270
	25	50	—	1,83	3,67	—	2,10	5,50	7,00	0,55	1,50	2,50	2,44	6,65	11,09	3,67	6,80	A++	270
	35	35	—	2,75	2,75	—	2,10	5,50	7,00	0,55	1,50	2,50	2,44	6,65	11,09	3,67	6,80	A++	270
1:3	20	20	20	1,83	1,83	1,83	2,10	5,50	7,00	0,55	1,45	2,50	2,44	6,43	11,09	3,79	7,20	A++	265
	20	20	25	1,67	1,67	2,17	2,10	5,50	7,00	0,55	1,45	2,50	2,44	6,43	11,09	3,79	7,20	A++	265
	20	20	35	1,45	1,45	2,61	2,10	5,50	7,00	0,55	1,43	2,50	2,44	6,34	11,09	3,85	7,30	A++	265
	20	25	25	1,53	1,99	1,99	2,10	5,50	7,00	0,55	1,43	2,50	2,44	6,34	11,09	3,85	7,40	A++	260
	20	25	35	1,34	1,74	2,41	2,10	5,50	7,00	0,55	1,42	2,50	2,44	6,30	11,09	3,87	7,40	A++	260
	25	25	25	1,83	1,83	1,83	2,10	5,50	7,00	0,55	1,37	2,50	2,44	6,08	11,09	4,01	7,50	A++	258
	25	25	35	1,62	1,62	2,25	2,10	5,50	7,00	0,55	1,37	2,50	2,44	6,08	11,09	4,01	7,50	A++	258

Heating

Combinations			Single nominal capacity			Total nominal capacity			Total power input			Total current input			COP	SCOP	Energy class	Annual energy cons.	
Indoor units			Indoor units			Unit A	Unit B	Unit C	Min	Nom	Max	Min	Nom	Max	Min	Nom	Max		
	A	B	C																kWh/ annum
1:2	25	25	—	3,40	3,40	—	1,70	6,80	7,60	0,55	1,68	2,20	2,44	7,45	9,76	4,05	3,80	A	1695
	25	35	—	2,89	3,61	—	1,70	6,50	7,60	0,55	1,68	2,20	2,44	7,45	9,75	3,87	3,80	A	1695
	25	42	—	2,72	4,08	—	1,70	6,80	7,60	0,55	1,66	2,20	2,44	7,36	9,76	4,10	3,80	A	1695
	25	50	—	2,55	4,25	—	1,70	6,80	7,60	0,55	1,66	2,20	2,44	7,36	9,76	4,10	3,85	A	1695
	35	35	—	3,40	3,40	—	1,70	6,80	7,60	0,55	1,66	2,20	2,44	7,36	9,76	4,10	3,85	A	1695
1:3	20	20	20	2,27	2,27	2,27	1,70	6,80	7,60	0,55	1,64	2,20	2,44	7,28	9,76	4,15	3,90	A	1690
	20	20	25	1,91	1,91	2,99	1,70	6,80	7,60	0,55	1,63	2,20	2,44	7,23	9,75	4,17	3,90	A	1690
	20	20	35	1,72	1,72	3,36	1,70	6,80	7,60	0,55	1,63	2,20	2,44	7,23	9,76	4,17	3,90	A	1690
	20	25	25	1,65	2,58	2,58	1,70	6,80	7,60	0,55	1,62	2,20	2,44	7,19	9,76	4,20	3,95	A	1685
	20	25	35	1,50	2,35	2,94	1,70	6,80	7,60	0,55	1,62	2,20	2,44	7,19	9,76	4,20	3,95	A	1685
	25	25	25	2,27	2,27	2,27	1,70	6,80	7,60	0,55	1,55	2,20	2,44	6,88	9,76	4,39	4,00	A+	1679
	25	25	35	2,09	2,09	2,62	1,70	6,80	7,60	0,55	1,55	2,20	2,44	6,88	9,76	4,39	4,00	A+	1679

AARIA MULTI 370 P**Cooling**

Combinations			Single nominal capacity			Total nominal capacity			Total power input			Total current input			EER	SEER	Energy class	Annual energy cons.	
Indoor units			Indoor units																
	A	B	C	Unit A	Unit B	Unit C	Min	Nom	Max	Min	Nom	Max	Min	Nom	Max				kWh/ annum
						kW			kW			kW			A				
1:2	20	20	-	2,00	2,00	-	1,80	4,00	5,60	0,55	1,21	2,60	2,44	5,37	11,54	3,31	6,60	A++	355
	20	25	-	2,00	2,60	-	1,80	4,60	6,70	0,55	1,35	2,64	2,44	5,99	11,71	3,41	6,60	A++	355
	20	35	-	2,00	3,60	-	1,80	5,60	7,50	0,55	1,65	2,95	2,44	7,32	13,09	3,39	6,60	A++	355
	20	42	-	2,00	4,40	-	1,80	6,40	7,60	0,55	1,89	3,00	2,44	8,39	13,31	3,39	6,70	A++	350
	20	50	-	1,94	5,06	-	2,40	7,00	7,60	0,55	2,02	3,00	2,44	8,96	13,31	3,47	6,70	A++	350
	25	25	-	2,60	2,60	-	2,00	5,20	7,40	0,55	1,52	2,68	2,44	6,74	11,89	3,42	6,70	A++	350
	25	35	-	2,60	3,60	-	2,00	6,20	7,60	0,55	1,79	2,99	2,44	7,94	13,27	3,46	6,70	A++	350
	25	42	-	2,60	4,40	-	2,40	7,00	7,60	0,55	2,02	3,00	2,44	8,96	13,31	3,47	6,70	A++	350
	25	50	-	2,33	4,67	-	2,40	7,00	7,60	0,55	2,00	3,00	2,44	8,87	13,31	3,50	6,70	A++	350
	35	35	-	3,40	3,40	-	2,40	6,80	7,60	0,55	2,00	3,20	2,44	8,87	14,20	3,40	6,20	A++	360
1:3	35	42	-	3,15	3,85	-	2,40	7,00	7,60	0,55	1,82	3,20	2,44	8,07	14,20	3,85	6,80	A++	350
	35	50	-	2,86	4,14	-	2,40	7,00	7,60	0,55	1,82	3,20	2,44	8,07	14,20	3,85	6,80	A++	350
	42	42	-	3,50	3,50	-	2,40	7,00	7,60	0,55	1,82	3,20	2,44	8,07	14,20	3,85	6,80	A++	350
	20	20	20	2,00	2,00	2,00	2,40	6,00	7,60	0,55	1,75	2,70	2,44	7,76	11,98	3,43	7,20	A++	343
	20	20	25	2,00	2,00	2,60	2,40	6,60	7,60	0,55	1,75	2,70	2,44	7,76	11,98	3,77	7,20	A++	343
	20	20	35	1,84	1,84	3,32	2,40	7,00	7,60	0,55	1,80	2,70	2,44	7,99	11,98	3,89	7,20	A++	343
	20	20	42	1,67	1,67	3,67	2,40	7,00	7,60	0,55	1,80	2,70	2,44	7,99	11,98	3,89	7,20	A++	343
	20	20	50	1,52	1,52	3,96	2,40	7,00	7,60	0,55	1,80	2,70	2,44	7,99	11,98	3,89	7,20	A++	343
	20	25	25	1,94	2,53	2,53	2,40	7,00	7,60	0,55	1,80	2,70	2,44	7,99	11,98	3,89	7,30	A++	343
	20	25	35	1,71	2,22	3,07	2,40	7,00	7,60	0,55	1,80	2,70	2,44	7,99	11,98	3,89	7,30	A++	338
2:3	20	25	42	1,56	2,02	3,42	2,40	7,00	7,60	0,55	1,80	2,70	2,44	7,99	11,98	3,89	7,30	A++	335
	20	25	50	1,43	1,86	3,71	2,40	7,00	7,60	0,55	1,82	2,70	2,44	8,07	11,98	3,85	7,30	A++	335
	20	35	35	1,52	2,74	2,74	2,40	7,00	7,60	0,55	1,82	2,70	2,44	8,07	11,98	3,85	7,40	A++	335
	20	35	42	1,40	2,52	3,08	2,40	7,00	7,60	0,55	1,80	2,70	2,44	7,99	11,98	3,89	7,40	A++	332
	25	25	25	2,33	2,33	2,33	2,40	7,00	7,60	0,55	1,76	2,70	2,44	7,81	11,98	3,98	7,50	A++	332
	25	25	35	2,07	2,07	2,86	2,40	7,00	7,60	0,55	1,78	2,70	2,44	7,90	11,98	3,93	7,50	A++	332
	25	25	42	1,90	1,90	3,21	2,40	7,00	7,60	0,55	1,78	2,70	2,44	7,90	11,98	3,93	7,50	A++	332
	25	35	35	1,86	2,57	2,57	2,40	7,00	7,60	0,55	1,78	2,70	2,44	7,90	11,98	3,93	7,50	A++	332

Heating

Combinations			Single nominal capacity			Total nominal capacity			Total power input			Total current input			COP	SCOP	Energy class	Annual energy cons.				
Indoor units			Indoor units																			
A	B	C	Unit A	Unit B	Unit C	Min	Nom	Max	Min	Nom	Max	Min	Nom	Max								
			kW			kW			kW			A			W/W		W/W					
1:2	20	20	-	2,30	2,30	-	2,60	4,60	8,00	0,55	1,25	2,00	2,44	5,55	8,87	3,68	3,80	A	2035			
	20	25	-	2,30	3,60	-	2,70	5,90	8,50	0,55	1,60	2,00	2,44	7,10	8,87	3,69	3,80	A	2035			
	20	35	-	2,30	4,50	-	2,70	6,80	8,50	0,55	1,82	2,10	2,44	8,07	9,32	3,74	3,80	A	2035			
	20	42	-	2,27	5,33	-	2,90	7,60	8,50	0,55	2,06	2,10	2,44	9,14	9,32	3,69	3,90	A	2028			
	20	50	-	2,11	5,49	-	2,90	7,60	8,50	0,55	2,05	2,10	2,44	9,09	9,32	3,71	3,90	A	2028			
	25	25	-	3,60	3,60	-	2,90	7,20	8,50	0,55	1,93	2,10	2,44	8,56	9,32	3,73	3,90	A	2028			
	25	35	-	3,38	4,22	-	2,90	7,60	8,50	0,55	2,05	2,10	2,44	9,09	9,32	3,71	3,90	A	2028			
	25	42	-	3,04	4,56	-	2,90	7,60	8,50	0,55	2,06	2,10	2,44	9,14	9,32	3,69	3,95	A	2025			
	25	50	-	2,85	4,75	-	2,90	7,60	8,50	0,55	2,05	2,10	2,44	9,09	9,32	3,71	3,95	A	2025			
	35	35	-	3,75	3,75	-	2,90	7,50	8,50	0,55	1,92	2,20	2,44	8,54	9,76	3,90	3,80	A	2030			
1:3	35	42	-	3,45	4,15	-	2,90	7,60	8,50	0,55	2,02	2,20	2,44	8,96	9,76	3,76	4,00	A+	2025			
	35	50	-	3,26	4,34	-	2,90	7,60	8,50	0,55	2,00	2,20	2,44	8,87	9,76	3,80	4,00	A+	2025			
	42	42	-	3,80	3,80	-	2,90	7,60	8,50	0,55	2,00	2,20	2,44	8,87	9,76	3,80	4,00	A+	2020			
	20	20	20	2,30	2,30	2,30	2,90	6,90	8,50	0,55	1,85	2,30	2,44	8,21	10,20	3,73	4,05	A+	2020			
	20	20	25	2,13	2,13	3,34	2,90	7,60	8,50	0,55	1,98	2,30	2,44	8,78	10,20	3,84	4,05	A+	2020			
	20	20	35	1,92	1,92	3,76	2,90	7,60	8,50	0,55	1,96	2,30	2,44	8,70	10,20	3,88	4,05	A+	2020			
	20	20	42	1,75	1,75	4,10	2,90	7,60	8,50	0,55	1,95	2,30	2,44	8,65	10,20	3,90	4,05	A+	2020			
	20	20	50	1,65	1,65	4,30	2,90	7,60	8,50	0,55	1,95	2,30	2,44	8,65	10,20	3,90	4,05	A+	2020			
	20	25	25	1,84	2,88	2,88	2,90	7,60	8,50	0,55	1,90	2,30	2,44	8,43	10,20	4,00	4,08	A+	2020			
	20	25	35	1,68	2,63	3,29	2,90	7,60	8,50	0,55	1,85	2,30	2,44	8,21	10,20	4,11	4,08	A+	2020			
	20	25	42	1,55	2,42	3,63	2,90	7,60	8,50	0,55	1,85	2,30	2,44	8,21	10,20	4,11	4,08	A+	2015			
	20	25	50	1,47	2,30	3,83	2,90	7,60	8,50	0,55	1,86	2,30	2,44	8,25	10,20	4,09	4,08	A+	2015			
	20	35	35	1,55	3,03	3,03	2,90	7,60	8,50	0,55	1,88	2,30	2,44	8,34	10,20	4,04	4,10	A+	2015			
	20	35	42	1,43	2,80	3,36	2,90	7,60	8,50	0,55	1,85	2,30	2,44	8,21	10,20	4,11	4,10	A+	2012			
	25	25	25	2,53	2,53	2,53	2,90	7,60	8,50	0,55	1,81	2,30	2,44	8,03	10,20	4,20	4,20	A+	2012			
	25	25	35	2,34	2,34	2,92	2,90	7,60	8,50	0,55	1,84	2,30	2,44	8,16	10,20	4,13	4,20	A+	2012			
	25	25	42	2,17	2,17	3,26	2,90	7,60	8,50	0,55	1,84	2,30	2,44	8,16	10,20	4,13	4,20	A+	2012			
	25	35	35	2,17	2,71	2,71	2,90	7,60	8,50	0,55	1,84	2,30	2,44	8,16	10,20	4,13	4,20	A+	2012			

Combinations				Single nominal capacity				Total nominal capacity			Total power input			Total current input			EER	SEER	Energy class	Annual energy cons.	
Indoor units				Indoor units				Min	Nom	Max	Min	Nom	Max	Min	Nom	Max	W/W	W/W		kWh/annum	
A	B	C	D	Unit A	Unit B	Unit C	Unit D														
				kW				kW			kW			A							
20	20	20	20	1,88	1,88	1,88	1,88	2,40	7,50	8,70	0,55	2,12	3,40	2,44	9,41	15,08	3,54	6,80	A++	385	
20	20	20	25	1,74	1,74	1,74	2,27	2,40	7,50	8,70	0,55	2,12	3,40	2,44	9,41	15,08	3,54	6,80	A++	385	
20	20	20	35	1,56	1,56	1,56	2,81	2,40	7,50	8,70	0,55	2,12	3,40	2,44	9,41	15,08	3,54	6,80	A++	385	
20	20	20	42	1,44	1,44	1,44	3,17	2,40	7,50	8,70	0,55	2,12	3,40	2,44	9,41	15,08	3,54	6,80	A++	385	
20	20	20	50	1,34	1,34	1,34	3,48	2,40	7,50	8,70	0,55	2,02	3,40	2,44	8,96	15,08	3,71	6,80	A++	385	
20	20	20	70	1,20	1,20	1,20	3,90	2,40	7,50	8,70	0,55	2,02	3,40	2,44	8,96	15,08	3,71	6,70	A++	385	
20	20	25	25	1,63	1,63	2,12	2,12	2,40	7,50	8,70	0,55	2,02	3,40	2,44	8,96	15,08	3,71	6,80	A++	385	
20	20	25	35	1,47	1,47	1,91	2,65	2,40	7,50	8,70	0,55	2,02	3,40	2,44	8,96	15,08	3,71	6,80	A++	385	
20	20	25	42	1,36	1,36	1,77	3,00	2,40	7,50	8,70	0,55	2,02	3,40	2,44	8,96	15,08	3,71	6,80	A++	385	
20	20	25	50	1,27	1,27	1,65	3,31	2,40	7,50	8,70	0,55	2,02	3,40	2,44	8,96	15,08	3,71	6,80	A++	385	
20	20	25	70	1,15	1,15	1,49	3,72	2,40	7,50	8,70	0,55	2,02	3,40	2,44	8,96	15,08	3,71	6,70	A++	385	
20	20	35	35	1,34	1,34	2,41	2,41	2,40	7,50	8,70	0,55	2,02	3,40	2,44	8,96	15,08	3,71	6,80	A++	385	
20	20	35	42	1,25	1,25	2,25	2,75	2,40	7,50	8,70	0,55	2,02	3,40	2,44	8,96	15,08	3,71	6,70	A++	385	
20	20	35	50	1,17	1,17	2,11	3,05	2,40	7,50	8,70	0,55	2,02	3,40	2,44	8,96	15,08	3,71	6,70	A++	385	
20	20	42	42	1,17	1,17	2,58	2,58	2,40	7,50	8,70	0,55	2,02	3,40	2,44	8,96	15,08	3,71	7,00	A++	385	
1:4	20	20	42	50	1,10	1,10	2,43	2,87	2,40	7,50	8,70	0,55	2,00	3,40	2,44	8,87	15,08	3,75	7,00	A++	385
	20	25	25	25	1,53	1,99	1,99	1,99	2,40	7,50	8,70	0,55	2,00	3,40	2,44	8,87	15,08	3,75	7,00	A++	379
	20	25	25	35	1,39	1,81	1,81	2,50	2,40	7,50	8,70	0,55	2,00	3,40	2,44	8,87	15,08	3,75	7,00	A++	379
	20	25	25	42	1,29	1,68	1,68	2,84	2,40	7,50	8,70	0,55	2,00	3,40	2,44	8,87	15,08	3,75	7,00	A++	379
	20	25	25	50	1,21	1,57	1,57	3,15	2,40	7,50	8,70	0,55	2,00	3,40	2,44	8,87	15,08	3,75	7,00	A++	379
	20	25	35	35	1,27	1,65	2,29	2,29	2,40	7,50	8,70	0,55	2,00	3,40	2,44	8,87	15,08	3,75	7,00	A++	379
	20	25	35	42	1,19	1,55	2,14	2,62	2,40	7,50	8,70	0,55	2,00	3,40	2,44	8,87	15,08	3,75	7,00	A++	379
	20	25	35	50	1,12	1,46	2,01	2,91	2,40	7,50	8,70	0,55	2,00	3,40	2,44	8,87	15,08	3,75	7,00	A++	379
	20	25	42	42	1,12	1,46	2,46	2,46	2,40	7,50	8,70	0,55	2,00	3,40	2,44	8,87	15,08	3,75	7,00	A++	379
	20	25	42	50	1,06	1,37	2,32	2,75	2,40	7,50	8,70	0,55	2,00	3,40	2,44	8,87	15,08	3,75	7,00	A++	379
	20	35	35	35	1,17	2,11	2,11	2,11	2,40	7,50	8,70	0,55	2,00	3,40	2,44	8,87	15,08	3,75	7,00	A++	379
	20	35	35	42	1,10	1,99	1,99	2,43	2,40	7,50	8,70	0,55	2,00	3,40	2,44	8,87	15,08	3,75	7,00	A++	379
	25	25	25	25	1,88	1,88	1,88	1,88	2,40	7,50	8,70	0,55	2,00	3,40	2,44	8,87	15,08	3,75	7,00	A++	379
	25	25	25	35	1,71	1,71	1,71	2,37	2,40	7,50	8,70	0,55	1,97	3,40	2,44	8,74	15,08	3,81	7,00	A++	379
	25	25	25	42	1,60	1,60	1,60	2,70	2,40	7,50	8,70	0,55	1,97	3,40	2,44	8,74	15,08	3,81	7,00	A++	379
	25	25	35	35	1,57	1,57	2,18	2,18	2,40	7,50	8,70	0,55	1,97	3,40	2,44	8,74	15,08	3,81	7,00	A++	379

AARIA MULTI 590 P**Cooling**

Combinations		Single nominal capacity					Total nominal capacity			Total power input			Total current input			EER	SEER	Energy class	Annual energy cons.					
		Indoor units																						
		A	B	C	D	E	Unit A	Unit B	Unit C	Unit D	Unit E	Min	Nom	Max	Min	Nom	Max	Min	Nom	Max				
							kW		kW		kW		A		W/W		W/W							
1:2	20	42	—	—	—	—	2,00	4,40	—	—	—	2,50	6,40	7,80	0,55	2,30	3,60	2,44	10,20	15,97	2,78	6,20	A++	475
	20	50	—	—	—	—	2,00	5,20	—	—	—	2,50	7,20	9,30	0,55	2,58	3,60	2,44	11,45	15,97	2,79	6,20	A++	475
	20	70	—	—	—	—	2,00	6,50	—	—	—	2,50	8,50	9,30	0,55	2,95	3,60	2,44	13,09	15,97	2,88	6,20	A++	475
	25	25	—	—	—	—	2,60	2,60	—	—	—	2,50	5,20	7,80	0,55	1,89	3,60	2,44	8,39	15,97	2,75	6,20	A++	475
	25	35	—	—	—	—	2,60	3,60	—	—	—	2,50	6,20	9,10	0,55	2,23	3,60	2,44	9,89	15,97	2,78	6,20	A++	475
	25	42	—	—	—	—	2,60	4,40	—	—	—	2,50	7,00	9,30	0,55	2,51	3,60	2,44	11,14	15,97	2,79	6,20	A++	475
	25	50	—	—	—	—	2,60	5,20	—	—	—	2,50	7,80	9,30	0,55	2,79	3,60	2,44	12,38	15,97	2,80	6,20	A++	475
	25	70	—	—	—	—	2,57	6,43	—	—	—	2,50	9,00	9,30	0,55	2,99	3,60	2,44	13,27	15,97	3,01	6,20	A++	475
	35	35	—	—	—	—	3,60	3,60	—	—	—	2,50	7,20	9,30	0,55	2,41	3,60	2,44	10,69	15,97	2,99	6,20	A++	475
	35	42	—	—	—	—	3,60	4,40	—	—	—	2,50	8,00	9,30	0,55	2,68	3,60	2,44	11,89	15,97	2,99	6,20	A++	475
	35	50	—	—	—	—	3,60	5,20	—	—	—	2,50	8,80	10,00	0,55	2,91	3,60	2,44	12,91	15,97	3,02	6,20	A++	475
	35	70	—	—	—	—	3,21	5,79	—	—	—	2,50	9,00	11,00	0,55	3,02	3,60	2,44	13,40	15,97	2,98	6,20	A++	475
	42	42	—	—	—	—	4,40	4,40	—	—	—	2,50	8,80	10,00	0,55	2,83	3,60	2,44	12,56	15,97	3,11	6,20	A++	475
	42	50	—	—	—	—	4,12	4,88	—	—	—	2,50	9,00	10,50	0,55	2,89	3,60	2,44	12,82	15,97	3,11	6,20	A++	475
	42	70	—	—	—	—	3,63	5,37	—	—	—	2,50	9,00	11,00	0,55	2,96	3,60	2,44	13,13	15,97	3,04	6,20	A++	475
	50	50	—	—	—	—	4,50	4,50	—	—	—	2,50	9,00	11,00	0,55	3,01	3,60	2,44	13,35	15,97	2,99	6,20	A++	475
	50	70	—	—	—	—	4,00	5,00	—	—	—	2,50	9,00	11,00	0,55	3,15	3,60	2,44	13,98	15,97	2,86	6,20	A++	475
	70	70	—	—	—	—	4,50	4,50	—	—	—	2,50	9,00	11,00	0,55	3,15	3,60	2,44	13,98	15,97	2,86	6,20	A++	475

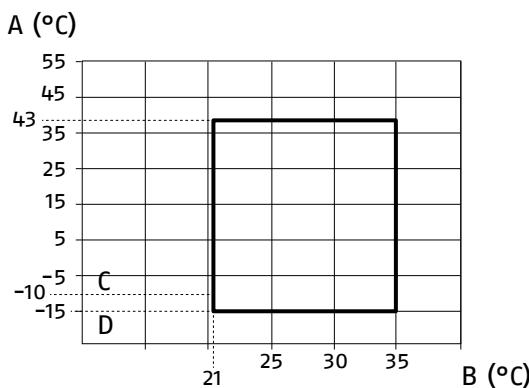
GENERAL INFORMATION

Combinations		Single nominal capacity					Total nominal capacity			Total power input			Total current input			EER	SEER	Energy class	Annual energy cons.				
		Indoor units																					
		A	B	C	D	E	Unit A	Unit B	Unit C	Unit D	Unit E	Min	Nom	Max	Min	Nom	Max	Min	Nom	Max			
		kW					kW					kW					A			W/W	W/W	kWh/ annum	
1:5	20	20	20	20	20	1,80	1,80	1,80	1,80	1,80	3,20	9,00	11,00	0,55	2,79	4,10	2,44	12,38	18,19	3,23	7,00	A++	457
	20	20	20	20	25	1,70	1,70	1,70	1,70	2,21	3,20	9,00	11,00	0,55	2,79	4,10	2,44	12,38	18,19	3,23	7,00	A++	457
	20	20	20	20	35	1,55	1,55	1,55	1,55	2,79	3,20	9,00	11,00	0,55	2,79	4,10	2,44	12,38	18,19	3,23	7,00	A++	457
	20	20	20	20	42	1,45	1,45	1,45	1,45	3,19	3,20	9,00	11,00	0,55	2,79	4,10	2,44	12,38	18,19	3,23	7,00	A++	457
	20	20	20	20	50	1,36	1,36	1,36	1,36	3,55	3,20	9,00	11,00	0,55	2,79	4,10	2,44	12,38	18,19	3,23	7,00	A++	457
	20	20	20	25	25	1,61	1,61	1,61	2,09	2,09	3,20	9,00	11,00	0,55	2,79	4,10	2,44	12,38	18,19	3,23	7,00	A++	457
	20	20	20	25	35	1,48	1,48	1,48	1,92	2,66	3,20	9,00	11,00	0,55	2,79	4,10	2,44	12,38	18,19	3,23	7,00	A++	457
	20	20	20	25	42	1,38	1,38	1,38	1,80	3,05	3,20	9,00	11,00	0,55	2,79	4,10	2,44	12,38	18,19	3,23	7,00	A++	457
	20	20	20	25	50	1,30	1,30	1,30	1,70	3,39	3,20	9,00	11,00	0,55	2,79	4,10	2,44	12,38	18,19	3,23	7,00	A++	457
	20	20	20	35	35	1,36	1,36	1,36	2,45	2,45	3,20	9,00	11,00	0,55	2,79	4,10	2,44	12,38	18,19	3,23	7,00	A++	457
	20	20	20	35	42	1,29	1,29	1,29	2,31	2,83	3,20	9,00	11,00	0,55	2,79	4,10	2,44	12,38	18,19	3,23	7,00	A++	457
	20	20	25	25	25	1,53	1,53	1,98	1,98	1,98	3,20	9,00	11,00	0,55	2,79	4,10	2,44	12,38	18,19	3,23	7,00	A++	457
	20	20	25	25	35	1,41	1,41	1,83	1,83	2,53	3,20	9,00	11,00	0,55	2,79	4,10	2,44	12,38	18,19	3,23	7,00	A++	457
	20	20	25	25	42	1,32	1,32	1,72	1,72	2,91	3,20	9,00	11,00	0,55	2,79	4,10	2,44	12,38	18,19	3,23	7,00	A++	457
	20	20	25	25	50	1,25	1,25	1,62	1,62	3,25	3,20	9,00	11,00	0,55	2,79	4,10	2,44	12,38	18,19	3,23	7,00	A++	457
	20	20	25	35	35	1,30	1,30	1,70	2,35	2,35	3,20	9,00	11,00	0,55	2,79	4,10	2,44	12,38	18,19	3,23	7,00	A++	457
	20	25	25	25	25	1,45	1,89	1,89	1,89	1,89	3,20	9,00	11,00	0,55	2,79	4,10	2,44	12,38	18,19	3,23	7,00	A++	457
	20	25	25	25	35	1,34	1,75	1,75	1,75	2,42	3,20	9,00	11,00	0,55	2,79	4,10	2,44	12,38	18,19	3,23	7,00	A++	457
	20	25	25	25	42	1,27	1,65	1,65	1,65	2,79	3,20	9,00	11,00	0,55	2,79	4,10	2,44	12,38	18,19	3,23	7,00	A++	457
	25	25	25	25	25	1,80	1,80	1,80	1,80	3,20	9,00	11,00	0,55	2,79	4,10	2,44	12,38	18,19	3,23	7,00	A++	457	
	25	25	25	25	35	1,67	1,67	1,67	1,67	2,31	3,20	9,00	11,00	0,55	2,79	4,10	2,44	12,38	18,19	3,23	7,00	A++	457

	Combinations					Single nominal capacity				Total nominal capacity			Total power input			Total current input			COP	SCOP	Energy class	Annual energy cons.	
	Indoor units					Indoor units				Min	Nom	Max	Min	Nom	Max	Min	Nom	Max					
	A	B	C	D	E	Unit A	Unit B	Unit C	Unit D	Unit E	kW	kW	kW	kW	kW	kW	A	W/W	W/W				
																							KWh/a
1:5	20	20	20	20	20	2,08	2,08	2,08	2,08	2,08	4,20	10,40	11,50	0,55	2,79	3,40	2,44	12,38	15,08	3,73	4,00	A+	2441
	20	20	20	20	25	1,87	1,87	1,87	1,87	2,93	4,20	10,40	11,50	0,55	2,79	3,40	2,44	12,38	15,08	3,73	4,00	A+	2441
	20	20	20	20	35	1,75	1,75	1,75	1,75	3,42	4,20	10,40	11,50	0,55	2,79	3,40	2,44	12,38	15,08	3,73	4,00	A+	2441
	20	20	20	20	42	1,64	1,64	1,64	1,64	3,85	4,20	10,40	11,50	0,55	2,79	3,40	2,44	12,38	15,08	3,73	4,00	A+	2441
	20	20	20	20	50	1,57	1,57	1,57	1,57	4,11	4,20	10,40	11,50	0,55	2,79	3,40	2,44	12,38	15,08	3,73	4,00	A+	2441
	20	20	20	25	25	1,70	1,70	1,70	2,66	2,66	4,20	10,40	11,50	0,55	2,79	3,40	2,44	12,38	15,08	3,73	4,00	A+	2441
	20	20	20	25	35	1,59	1,59	1,59	2,50	3,12	4,20	10,40	11,50	0,55	2,79	3,40	2,44	12,38	15,08	3,73	4,00	A+	2441
	20	20	20	25	42	1,50	1,50	1,50	2,35	3,53	4,20	10,40	11,50	0,55	2,79	3,40	2,44	12,38	15,08	3,73	4,00	A+	2441
	20	20	20	25	50	1,45	1,45	1,45	2,27	3,78	4,20	10,40	11,50	0,55	2,79	3,40	2,44	12,38	15,08	3,73	4,00	A+	2441
	20	20	20	35	35	1,50	1,50	1,50	2,94	2,94	4,40	10,40	11,50	0,55	2,79	3,40	2,44	12,38	15,08	3,73	4,00	A+	2441
	20	20	20	35	42	1,42	1,42	1,42	2,79	3,34	4,40	10,40	11,50	0,55	2,79	3,40	2,44	12,38	15,08	3,73	4,00	A+	2441
	20	20	25	25	25	1,55	1,55	2,43	2,43	2,43	4,40	10,40	11,50	0,55	2,79	3,40	2,44	12,38	15,08	3,73	4,00	A+	2441
	20	20	25	25	35	1,47	1,47	2,30	2,30	2,87	4,40	10,40	11,50	0,55	2,79	3,40	2,44	12,38	15,08	3,73	4,00	A+	2441
	20	20	25	25	42	1,39	1,39	2,18	2,18	3,27	4,40	10,40	11,50	0,55	2,79	3,40	2,44	12,38	15,08	3,73	4,00	A+	2441
	20	20	25	25	50	1,34	1,34	2,10	2,10	3,51	4,40	10,40	11,50	0,55	2,79	3,40	2,44	12,38	15,08	3,73	4,00	A+	2441
	20	20	25	35	35	1,39	1,39	2,18	2,72	2,72	4,40	10,40	11,50	0,55	2,79	3,40	2,44	12,38	15,08	3,73	4,00	A+	2441
	20	25	25	25	25	1,43	2,24	2,24	2,24	4,40	10,40	11,50	0,55	2,79	3,40	2,44	12,38	15,08	3,73	4,00	A+	2441	
	20	25	25	25	35	1,36	2,13	2,13	2,13	2,66	4,40	10,40	11,50	0,55	2,79	3,40	2,44	12,38	15,08	3,73	4,00	A+	2441
	20	25	25	25	42	1,29	2,02	2,02	2,02	3,04	4,40	10,40	11,50	0,55	2,79	3,40	2,44	12,38	15,08	3,73	4,00	A+	2441
	25	25	25	25	25	2,08	2,08	2,08	2,08	2,08	4,40	10,40	11,50	0,55	2,79	3,40	2,44	12,38	15,08	3,73	4,00	A+	2441
	25	25	25	25	35	1,98	1,98	1,98	1,98	2,48	4,40	10,40	11,50	0,55	2,79	3,40	2,44	12,38	15,08	3,73	4,00	A+	2441

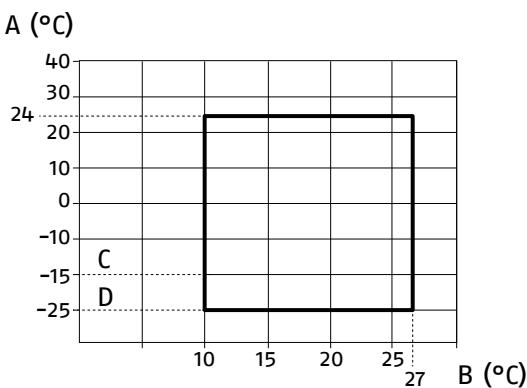
1.9 Operating limits

COOLING



- A Outdoor air temperature
- B Internal air temperature
- C Model 250 P
- D Model 355 P – 370 P – 475 P – 485 P – 590 P

HEATING



- A Outdoor air temperature
- B Internal air temperature
- C Model 250 P
- D Model 355 P – 370 P – 475 P – 485 P – 590 P

The graphs are based on the following condition:

- pipe length: 5 m
- difference in height: 0 m
- air flow: maximum

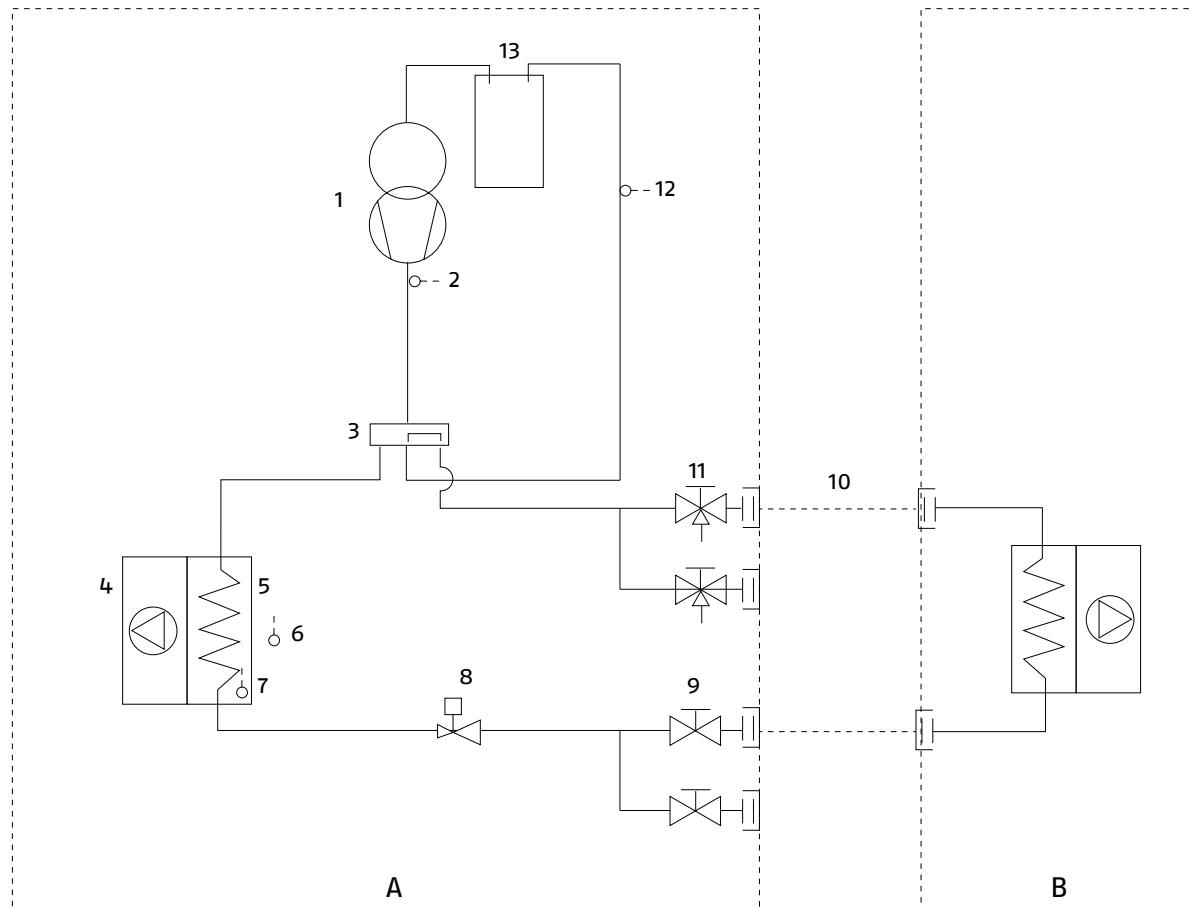
1.10 Cooling circuit

The cooling circuit is of the heat pump type with a refrigerant gas reversal cycle. The source fluid utilised is the outdoor air, while the utility-side fluid is the air inside the rooms.

During the wintertime, the heat pump extracts the thermal en-

ergy from the outdoor air and delivers it to the room air, thereby heating it. During the summertime the cycle is reversed, and the thermal energy is extracted from the room air, which is cooled, and is delivered to the outdoor air.

MODEL 250 P



A Outdoor unit

B Indoor unit

1 Compressor

2 Discharge temperature sensor

3 Cycle reversal valve

4 Electric fan

5 Heat exchanger

6 External air probe

7 Defrost temperature sensor

8 Electronic expansion valve

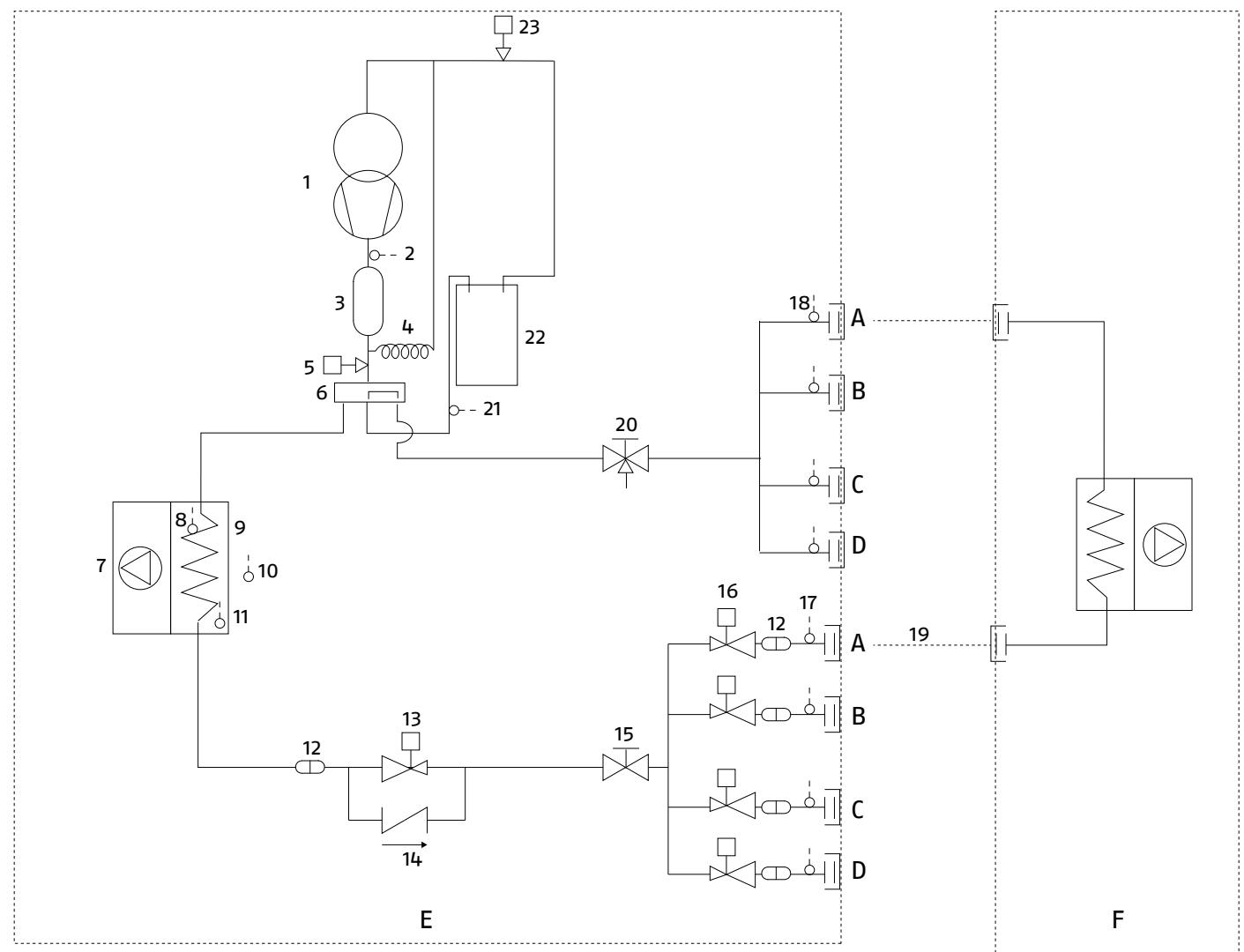
9 Two-way shut-off valve

10 Connection pipes

11 Three-way shut-off valve

12 Intake sensor

13 Intake separator

MODEL 355 P - 370 P - 475 P - 485 P - 590 P

- | | | |
|---|--|--|
| A Circuit A | 5 High pressure switch | 15 Two-way shut-off valve |
| B Circuit B | 6 Cycle reversal valve | 16 Secondary electronic expansion valve |
| C Circuit C | 7 Electric fan | 17 Liquid probe |
| D Circuit D (model 475 - 485 only) | 8 Heat exchanger probe | 18 Gas probe |
| E Outdoor unit | 9 Heat exchanger | 19 Connection pipes |
| F Indoor unit | 10 External air probe | 20 Three-way shut-off valve |
| 1 Compressor | 11 Defrost temperature sensor | 21 Intake sensor |
| 2 Discharge temperature sensor | 12 Filter | 22 Intake separator |
| 3 Oil separator | 13 Primary electronic expansion valve | 23 Low pressure switch |
| 4 Capillary tube | 14 Check valve | |

2 INSTALLATION

! Ensure that the installation and operation sites are properly ventilated in order to disperse any gas leaks that could cause flames during activities with intense heat generation and high temperature.

! Avoid proximity to sources of ignition in continuous operation (open flames, gas household appliances, electric stoves, lit cigarettes, etc.).

! Use equipment suitable for the system refrigerant.

! Use an electronic leak finder properly calibrated for the system refrigerant.

- It is forbidden to use leak finders with halogen lamps.

2.1 Receiving the product

RIELLO ARIA MULTI R32 is supplied in a single pack, protected by a cardboard box and by polystyrene elements.

The following material is placed inside the packaging, below the unit

Document envelope:

- Instruction's book for the installer and for the Technical Service in Italian
- Instruction's book for the installer and for the Technical Service in English
- Warranty/Spare parts labels.
- energy label
- etichetta gas refrigerante

It is also supplied as kit:

All model

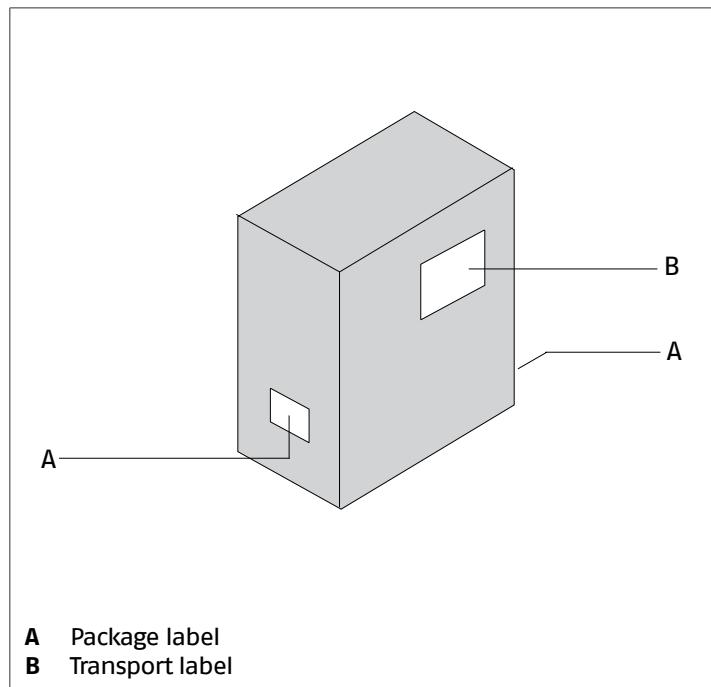
- 4 x vibration dampers
- **Model 250 P**
 - Condensate outlet hose.
 - 2 screws
 - hexagonal key
- **Model 355 P - 370 P - 475 P - 485 P - 590 P**
 - 2 condensate discharge connector
 - 2 screws
 - refrigerant line adapter connector

! When you get the product, check immediately that the contents are all present and undamaged. Contact the dealer **RIELLO** if you notice any problems.

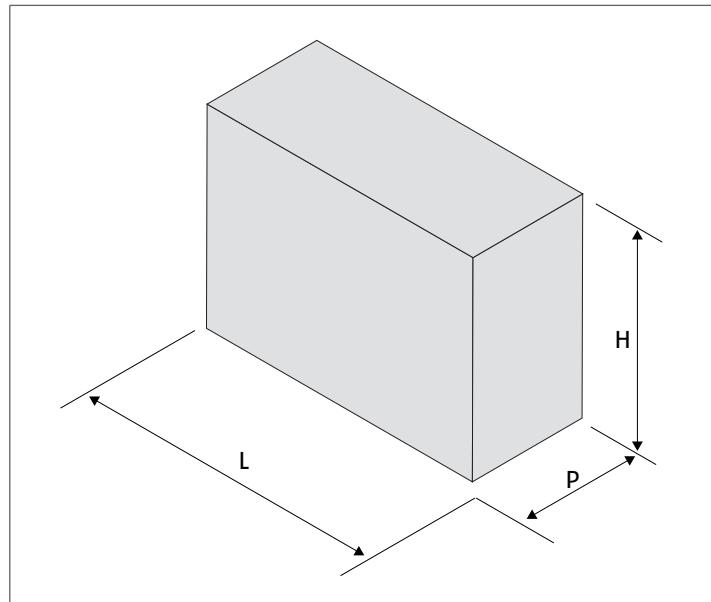
! The Instruction book comes with the equipment and it should be taken, read and kept carefully.

! The document envelope must be kept in a safe place. Any duplicate must be requested from Riello S.p.A. which reserves to charge the cost.

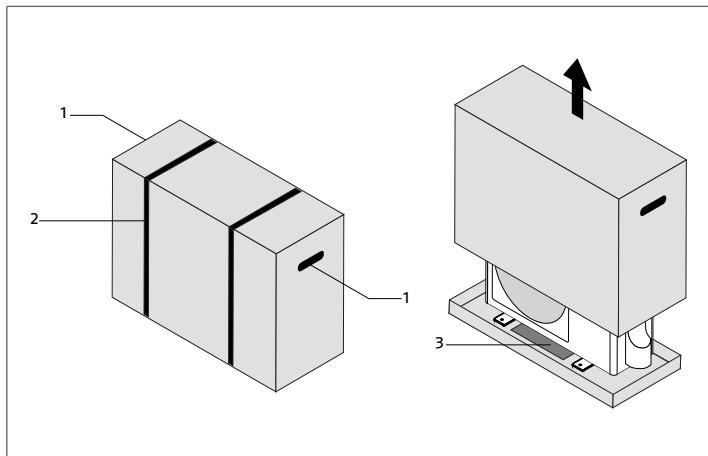
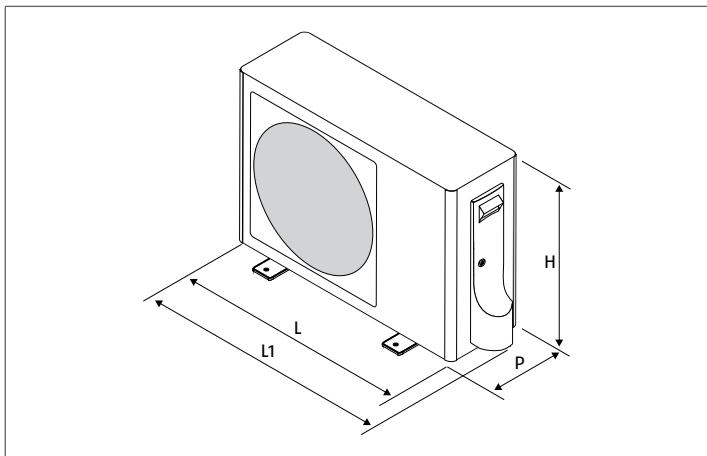
2.2 Labels positioning



2.3 Dimensions and weight



Model	250 P	355 P	370 P	475 P	485 P	590 P	
Packaging dimensions							
H	625	770	770	770	770	820	mm
L	954	998	998	998	998	1036	mm
P	409	443	443	443	443	478	mm
Weight	39,0	55,0	58,0	65,0	65,0	71,0	kg



Model	250 P	355 P	370 P	475 P	485 P	590 P	
Product dimensions							
H	553	700	700	700	700	760	mm
L	800	890	890	890	890	920	mm
L1	860	915	915	915	915	945	mm
P	275	340	340	340	340	372	mm
Weight	36,0	51,0	54,0	61,0	61,0	66,0	kg

2.4 Storage

If the product is stored in a room before installation check:

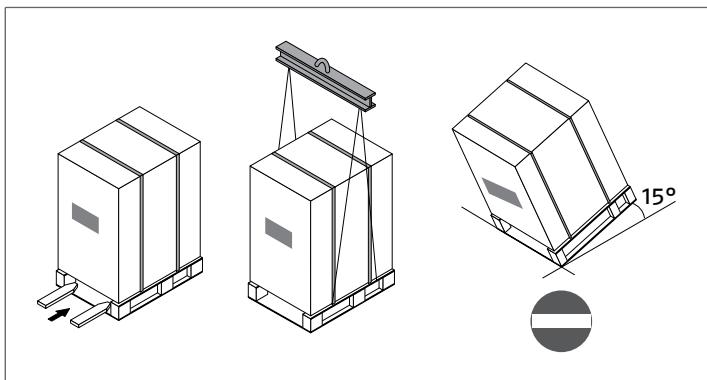
- there aren't continuously operating ignition sources (open flames, gas appliances, electric heaters,..) within a radius of 2.5 m.
- there is adequate ventilation

! The product must be stored of according to the regulations in force.

2.5 Handling and removal of the packing

! Before unpacking, personal protective clothing should be worn and used transport means and tools suitable for the size and weight of the unit.

! Check refrigerant leak inside the packaging with a leak detector suitable for the refrigerant used in the system. If a gas leak is detected, probably the refrigerant circuit is damaged and the product can't be installed; finally call Technical Service RIELLO.



Product handling can also be done manually by grasping the handles provided on the packaging.

Follow the below instructions for packing removal and product handling:

- transport the equipment in the installation place
- cut strapping bands
- lift and remove the cardboard pack
- remove the unit with suitable handling equipment or with handles if the weights of the appliance allows it.
- remove the document envelope

! In manual operation it is compulsory to respect always the maximum weight per person provided for by the national laws and standards.

! Handle with care

! The equipment must always be handled vertically

! Do not tilt the equipment over 15°

! The unit's weight is concentrated on the compressors side (connection covering side).

- The packing material must not be disposed of in the surrounding environment and must be kept out of children reach, as it can be dangerous. It must be disposed of according to the regulations in force.

2.6 Place of installation

The location of **RIELLO ARIA MULTI R32** devices must be determined by the system's designer or by another competent person, and must take into account the technical requirements, as well as any current local regulations that require specific permits to be obtained. (e.g.: zoning, architectural, environmental protection, etc.).

It is therefore recommended to obtain all the necessary permits before installing the device.

RIELLO ARIA MULTI R32 is designed for outdoor installation.

Avoid:

- positioning the unit in air shafts and/or basement window wells
- any obstacles or barriers that will cause the expelled air to recirculate
- locations with aggressive or explosive atmospheres or with inflammable fluids
- confined locations in which the device's sound levels might be compounded by reverberations or resonances
- proximity to bedrooms and rooms for resting

- positioning in corners where dust, leaves, or any other materials typically accumulate, which could compromise the device efficiency by obstructing the airflow
- situations in which the air expelled from the device might enter the habitation through doors or windows, thus creating an inconvenience for the people inside
- situations in which the air expelled from the device will encounter resistance from opposing winds
- direct exposure to sunlight and proximity to heat sources

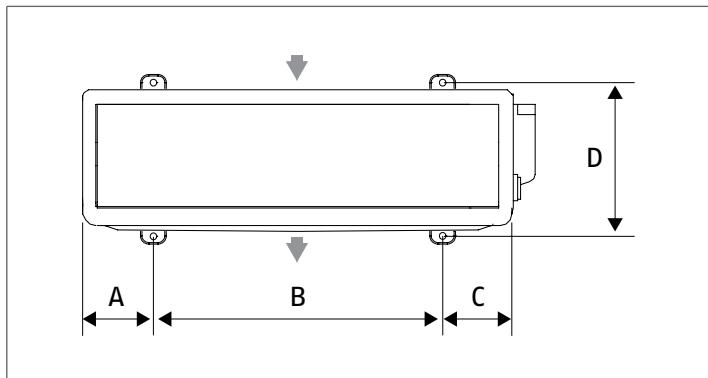
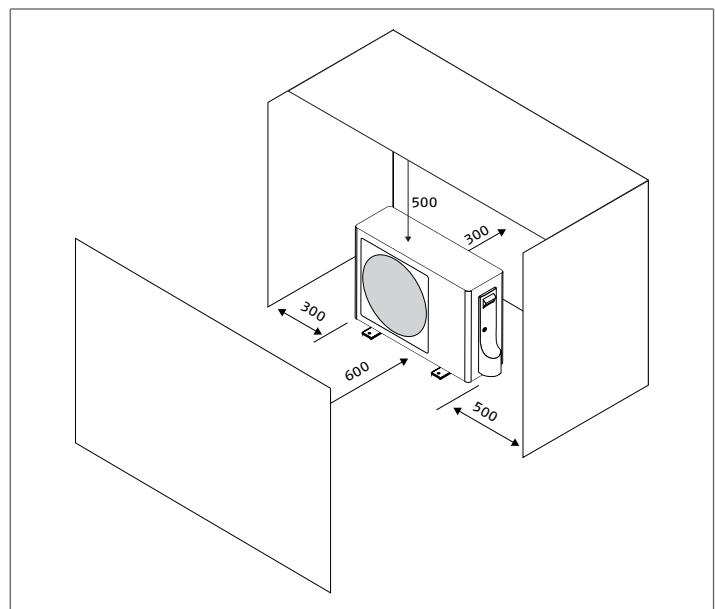
! Avoid placing the unit less than 1 metre away from radio and video systems.

! If the unit is installed in a windy location, fit an anti-wind grille to protect the fan and check the correct functioning of the unit.

! Decide where to place the unit considering the length of cooling lines and the maximum difference of height allowed between the devices.

2.7 Recommended distances

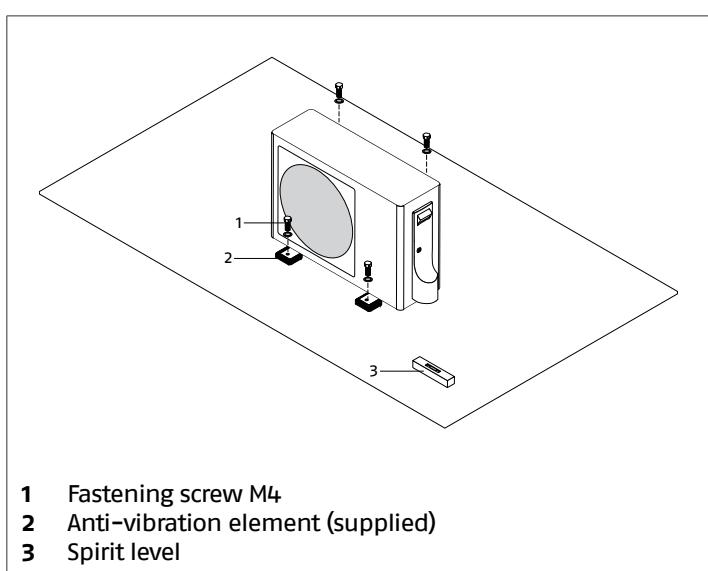
The distances for the device installation and maintenance are shown in the figure. The indicated spaces are necessary in order to prevent the airflow from being blocked, as well as to allow normal cleaning and maintenance operations to be carried out.



Model	250 P	355 P	370 P	475 P	485 P	590 P
Foot print dimensions						
A	130	130	130	130	130	130
B	510	630	630	630	630	660
C	160	130	130	130	130	130
D	313	368	368	368	368	372
	mm	mm	mm	mm	mm	mm

They can be placed on the floor or suspended on supporting brackets.

Positioning on floor



- 1 Fastening screw M4
- 2 Anti-vibration element (supplied)
- 3 Spirit level

- screw the unit to the ground
- tighten using a torque wrench
- apply a tightening torque of 3.5 Nm

Provide for lifting of the unit from the floor:

- 20 mm without conveying of the condensate outlet
- 90 - 100 mm to allow for the condensate discharge

! If the device is installed in an area that is subject to heavy snowfalls, place the unit in a raised position so as to prevent the air flow from being blocked or install a roofing to protect it.

! Adequate anti-freeze systems should be used for installations in extremely cold areas, where there is a possibility of freezing.

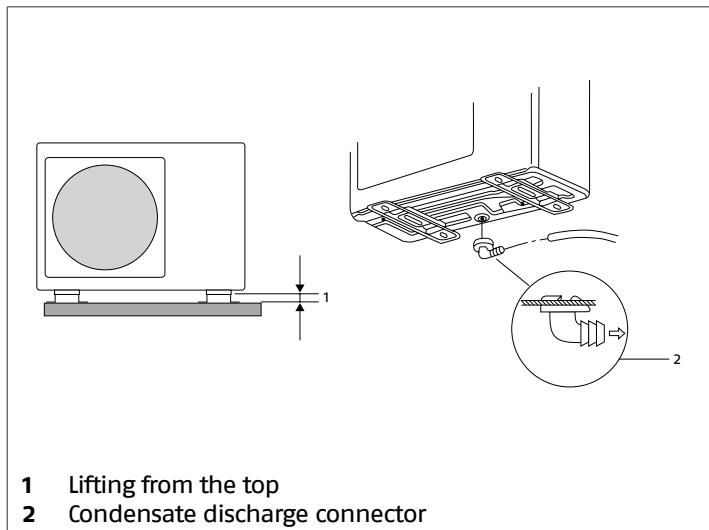
2.8 Positioning

RIELLO ARIA MULTI R32 devices must:

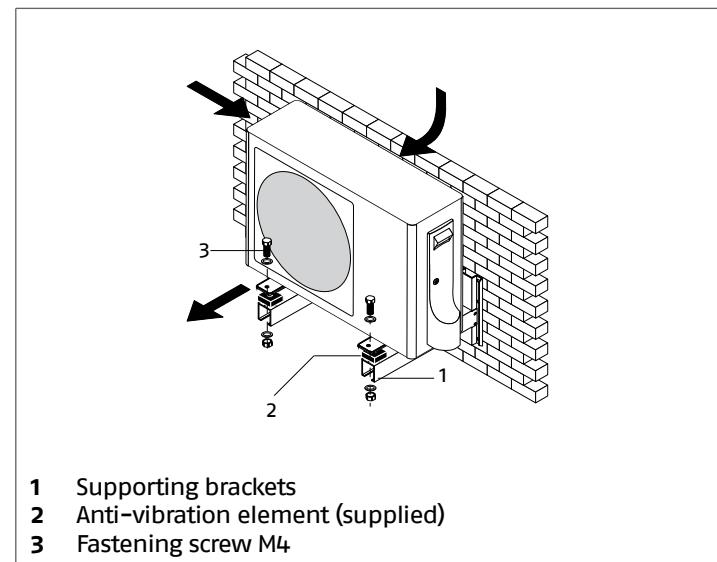
- be positioned on a level surface that is capable of supporting their weight
- be positioned on a sufficiently rigid surface that will not transmit any vibrations to the underlying or adjacent rooms

! Use the anti-vibration supports supplied with the device.

⚠ While operating in heating mode, the unit generates condensate, which will deposit on the support surface if there is not discharge. This could freeze if the outdoor temperatures are below zero, thus creating a hazard. In this case, appropriate barriers should be installed in order to prevent people from approaching the unit.



- 1 Lifting from the top
- 2 Condensate discharge connector



2.9 Installation on old systems or systems in need of upgrading

When **RIELLO ARIA MULTI R32** is installed on old systems or systems in need of upgrading, it is recommended to ensure that:

— the electrical system is compliant with the applicable regulations and has been installed by qualified professionals

⚠ In the event of a replacement, the system must be inspected by the designer or by another competent person, and must be compliant with the technical requirements, as well as the current legislations and regulations.

⚠ The manufacturer shall bear no responsibility for any damages caused by incorrect system installation.

2.10 Refrigerating connection

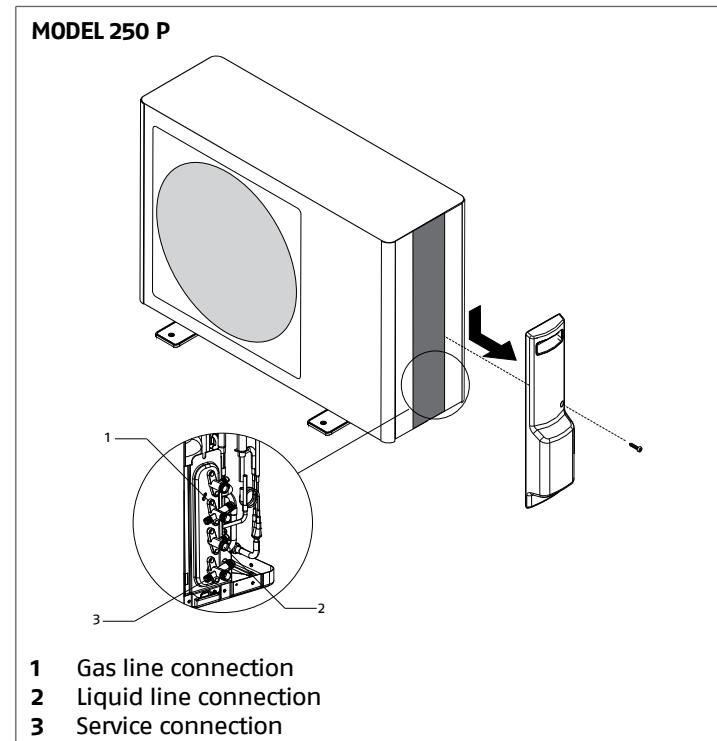
The dimensions and positions of **RIELLO ARIA MULTI R32** cooling connections are shown hereunder.

Model	250 P	355 P	370 P	475 P	485 P	590 P	
Refrigeration characteristics							
Condensate discharge attachment Ø	16		2 x 16			mm	

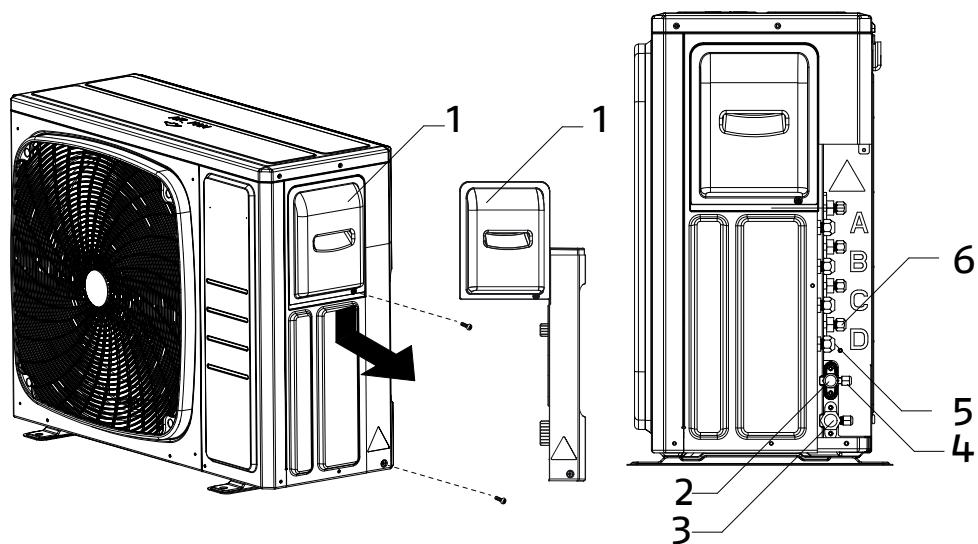
Hanging position

⚠ Properly sized supporting brackets must be used if the device is installed in suspension.

⚠ Ensure that the wall section does not include bearing elements, pipes or electric lines.



- 1 Gas line connection
- 2 Liquid line connection
- 3 Service connection

MODEL 355 P - 370 P - 475 P - 485 P - 590 P

- 1** Terminal board panel and pipes cover panel
2 Liquid valve
3 Gas valve

- 4** Service connection
5 Gas line connection
6 Liquid line connection

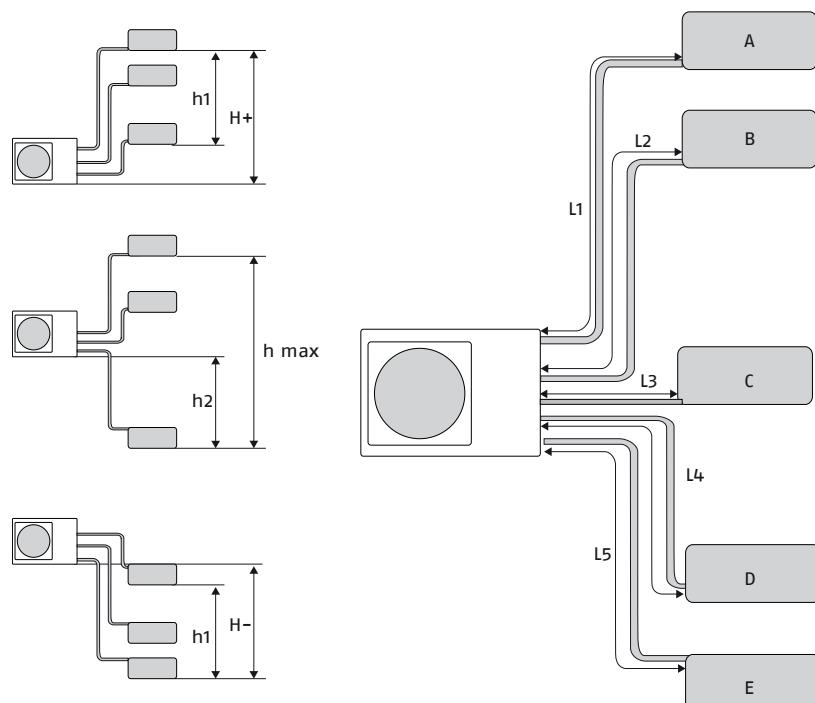
Model	250 P	355 P	370 P	475 P	485 P	590 P
Refrigerant connections						
Liquid line connection	2 x 1/4	3 x 1/4		4 x 1/4	5 x 1/4	Inches
Gas line connection	2 x 3/8	3 x 3/8		3 x 3/8 + 1 x 1/2	3 x 3/8 + 2 x 1/2	Inches
Liquid line connection	2 x 6,35	3 x 6,35		4 x 6,35	5 x 6,35	mm
Gas line connection	2 x 9,52	3 x 9,52		3 x 9,52 + 1 x 12,7	3 x 9,52 + 2 x 12,7	mm

To access the cooling connections:

- unscrew the fastening screw
- push down the connection covering panel

— remove the connection covering panel

The cooling pipes must respect the lengths and differences in height as indicated in the following table.

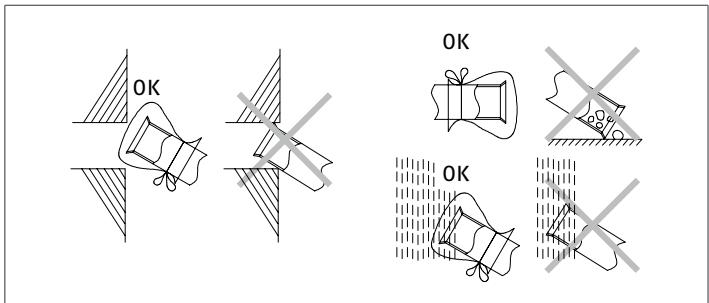


Model	250 P	355 P	370 P	475 P	485 P	590 P	
h1				7,5			m
h2				7,5			m
h max				15,0			m
H-				15,0			m
H+				15,0			m
L1, L2, L3, L4, L5	20,0						m
L1+L2+L3+L4+L5	30,0	50,0	60,0		70,0	80,0	m
Maximum length with standard charge	20	30	20		40		m
Additional charge				20			g/m

⚠ The R32 refrigerant gas is slightly inflammable and odourless. Carefully read the safety data sheet available from the dealer and see table "Minimum floor area" p. 9 inside the technical data paragraph and the installation manual of the indoor unit installed.

Use pipes with the thickness indicated in the following table:

Pipe Ø		Thickness
mm	inches	mm
6,35	1/4	0,8
9,52	3/8	0,8
12,70	1/2	0,8
15,88	5/8	1,0



Maximum operating pressure 4,3 Mpa.

⚠ In case of a drop in excess of 5 m, a siphon must be installed every 5-7 metres.

⚠ The given measures are the maximum permitted values.

⚠ Cooling connections featuring shut-off valves are preconfigured for flare connections.

⚠ Cooling lines must be as straight as possible and any necessary bends must have a radius greater than 40 mm.

⚠ Use clean hoses. Make sure the inside is free of dust, residues, water.

⚠ Avoid the entry of uncondensable gases (air) in the circuit, otherwise, with the unit in operation, high pressures with the risk of damages might ensue.

⚠ Use copper pipes for cooling systems.

⚠ Use connecting pipes and tools appropriate for the system's refrigerant.

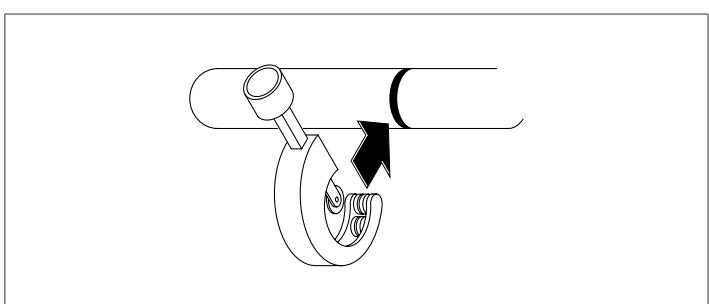
- It is forbidden to use second-hand cooling lines since their flare connection seal is not guaranteed.

- It is forbidden to use pre-charged cooling lines.

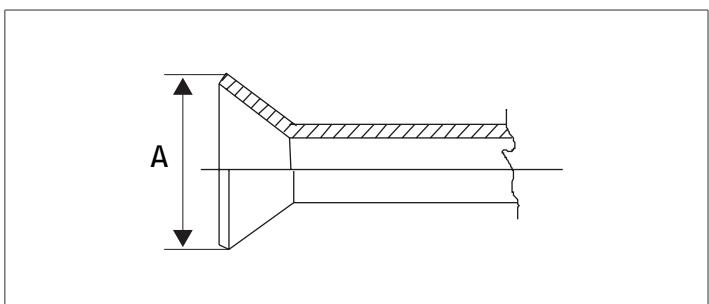
- It is forbidden to carry out welding operations with refrigerant inside the cooling circuit. If necessary, the refrigerant must be recovered and the circuit must be cleaned with nitrogen without oxygen.

⚠ Plug the pipe ends in order to prevent water or debris from flowing in.

⚠ Before threading the lines through the hole in the wall, close the lines ends.



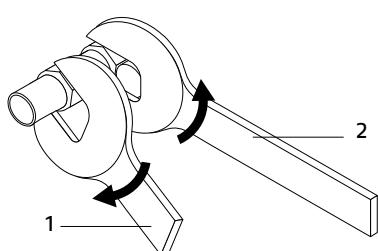
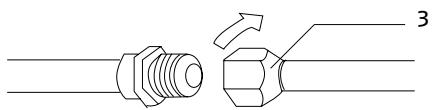
- cut the pipe end square using a pipe cutter
- remove burrs keeping the cut edge facing down
- remove the flare nut on the unit connection
- insert it into the connection pipe
- flare the tube



Pipe Ø		A
mm	inches	mm
6,35	1/4	9,1
9,52	3/8	13,2
12,70	1/2	16,6
15,88	5/8	19,7

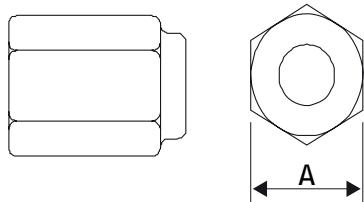
Connections

- position the connecting pipes



- 1** Key
2 Torque wrench
3 Flare nut

Pipe Ø		Tightening torque
mm	inches	Nm
6,35	1/4	18
9,52	3/8	42
12,70	1/2	55
15,88	5/8	60



Pipe Ø		A
mm	inches	mm
6,35	1/4	17
9,52	3/8	22
12,70	1/2	26
15,88	5/8	29

- bring line ends with flare connection close to their coupling on the unit
- manually rotate the flare nuts by 3 – 4 turns
- tighten the connections using a spanner and a counter spanner

⚠ Use a torque wrench to tighten so as to prevent damage to flare nuts and gas leaks.

⚠ During the connection, keep the leak finder on and close to the unit so that it signals any refrigerant leak.

⚠ Avoid using the refrigerant oil on the external part of the flaring.

⚠ Models 475 – 485: if necessary use the adapter coupling 1/2" at 3/8" supplied as a kit.

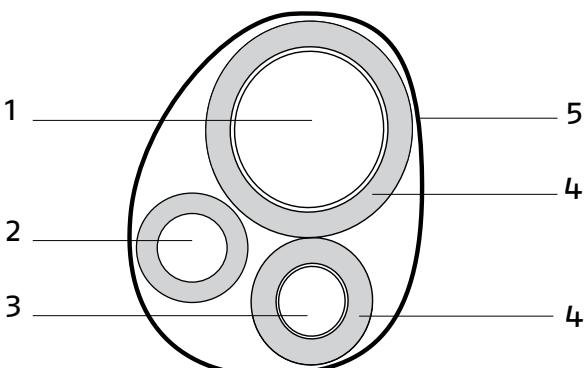
After connecting the cooling pipes:

- create a vacuum inside the pipes

- check for refrigerant leaks
- apply thermal insulating material on the joints

Pipe insulation

Connection pipes must be thermally insulated to prevent dispersions of heat or formation of condensate.



- 1** Gas pipe
2 Condensation discharge
3 Liquid pipe
4 Heat insulation
5 Adhesive tape

- insulate the liquid and gas pipes separately
- use insulating material that is thicker than 15 mm
- ensure that the insulating material adheres to the pipe without gaps
- fix using adhesive tape

⚠ Do not tighten the adhesive tape too much, so as to avoid damaging the insulation.

⚠ Avoid partial insulation of the pipes.

⚠ In case of use with outdoor temperature above 30 °C and relative humidity above 80%, increase wall thickness up to 20 mm.

For gas pipes:

- ensure that the material used resists to temperatures up to 120°C

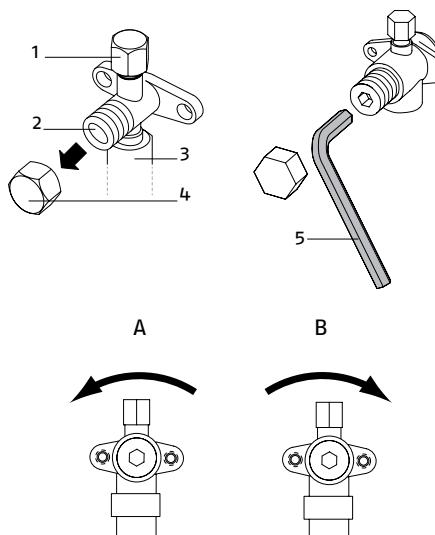
For liquid pipes:

- ensure that the material used resists to temperatures up to 70°C

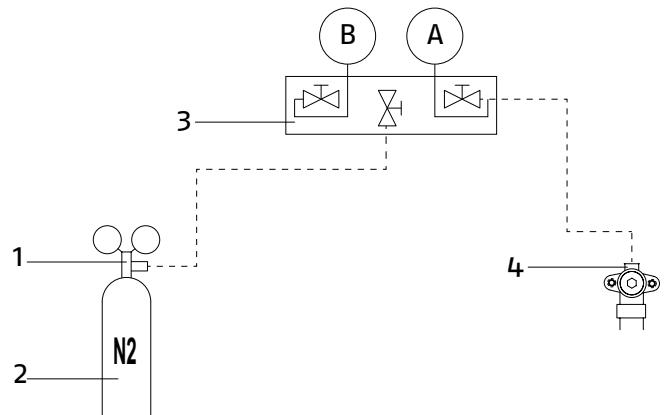
Stop valves

Cooling connections feature shut-off valves.

During operations on the cooling circuit, start-up and service, it may be required to open and close the valves.



- A** Opening
B Closing
1 Service connection blanking plug
2 On-off valve shaft
3 Refrigerating pipe attachment
4 On-off valve cover plug
5 Hex wrench



- A** High pressure
B Low pressure
1 Pressure regulator
2 Nitrogen cylinder
3 Pressure gauge unit
4 3-way valve service connection

If required:

- remove the valve covering plug
- operate on the valve shaft with an hex wrench
- open or close according to what is needed
- immediately stop as soon as the valve shaft has reached the stop point
- use a torque wrench calibrated on the valve diameter

Pipe Ø		Hex wrench	Valve tightening torque	Plug tightening torque
mm	inches	mm	Nm	Nm
6,35	1/4	5	6	25
9,52	3/8	5	6	25
12,70	1/2	5	8	30
15,88	5/8	5	10	35

! Do not force beyond the stop point to prevent damaging the shaft and causing leakage as a consequence.

At the end of the operations:

- refit the valve covering plug

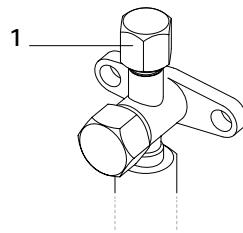
! Carefully check for absence of leakages from the closing point of the plug.

Circuit tightness check

The appliance is tested at the factory and the indoor refrigerating circuit tightness does not usually need to be checked. The refrigerating circuit built on site needs to be checked instead.

To check tightness:

- keep the outdoor unit shut-off valves closed



1 3-way valve service connection

— charge the circuit with nitrogen through the service connection on the 3-way shut-off valve

E Do not use oxygen or acetylene or other flammable or poisonous gases in the refrigerating circuit, as they can cause explosions.

- reach a pressure equal to 0.3 Mpa
- wait 3 minutes.
- check that the pressure has not dropped
- reach a pressure equal to 1.5 Mpa
- wait 3 minutes.
- check that the pressure has not dropped
- reach a pressure equal to 3 Mpa
- adjust the reached pressure and room temperature
- leave the circuit pressurised for 1 day
- check that the pressure has not dropped

! If the temperature has changed with respect to the noted value consider that the pressure varied by 0.01 Mpa for 1 °C.

! If pressure has dropped, detect the leak, fix it and repeat the test.

! To detect the leak, use a solution of water and soap and check all the joints and welds, if any.

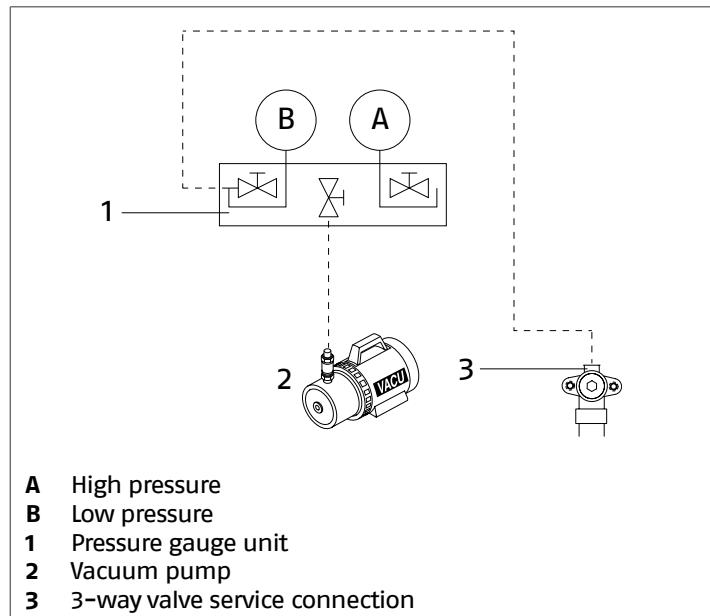
Having verified the absence of leakages:

- create a pneumatic vacuum inside the circuit

Pneumatic vacuum

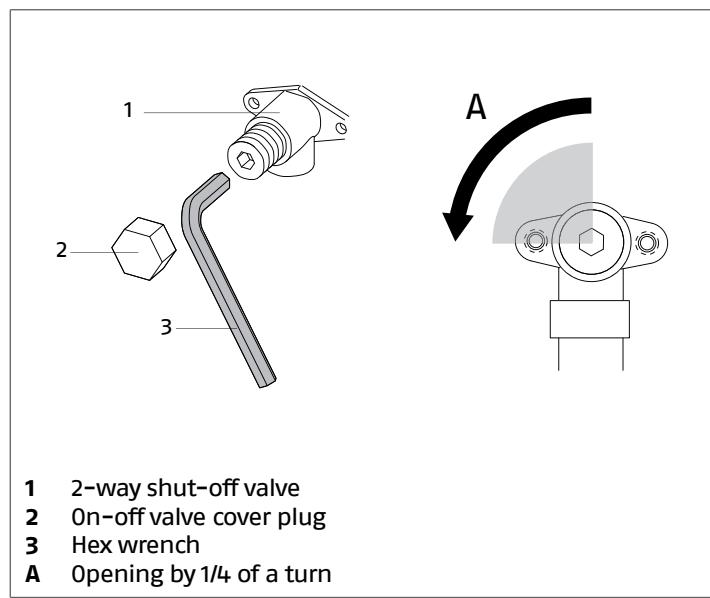
To create vacuum in the circuit:

- keep the outdoor unit shut-off valves closed



- connect the vacuum pump to the pressure gauge unit
- connect the pressure gauge unit to the service connection on the 3-way shut-off valve
- completely close the pressure reducing valve of the pressure gauge
- fully open the low pressure valve of the pressure gauge unit
- let the vacuum pump work for at least 15 minutes
- reach a pressure that is close to -0.1 Mpa
- close the low pressure valve of the pressure gauge unit
- switch off the vacuum pump
- wait 5 minutes
- check that the pressure has not risen again

If the pressure has risen again:



- open the 2-way shut-off valve by a quarter of a turn
- close it after 6 seconds so as to allow a small quantity of refrigerant into the circuit
- detect the leak using a solution of water and soap

- fix the leak
- recreate the pneumatic vacuum

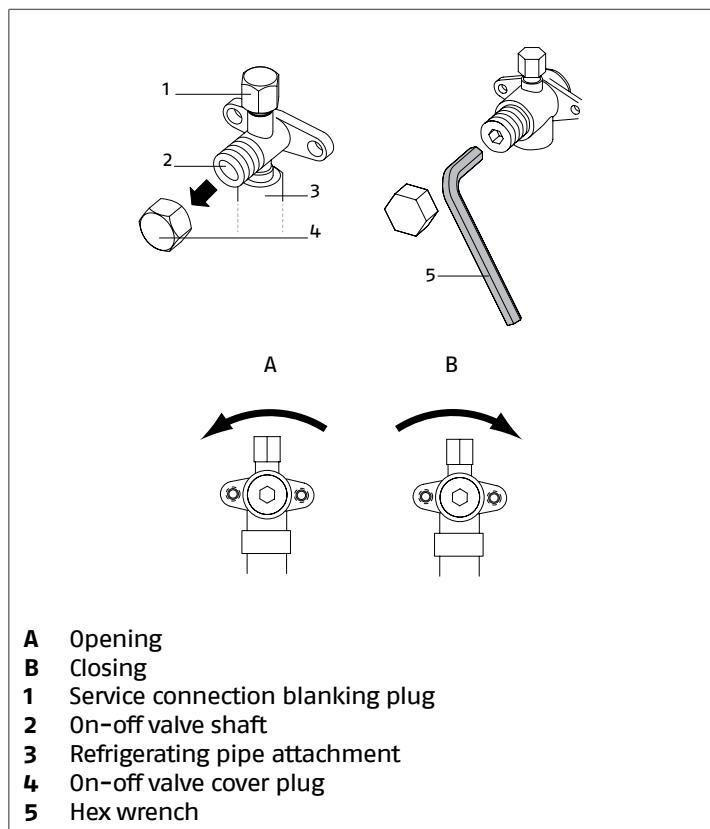
! Take the necessary safety precautions for the system refrigerant.

! It is forbidden to carry out welding operations with refrigerant inside the cooling circuit. If necessary, the refrigerant must be recovered and the circuit must be cleaned with nitrogen without oxygen.

! It is forbidden to use detergents containing chlorine because it could react with the refrigerant and corrode the copper pipes.

If the pressure has not risen again:

- remove the tube of the pressure gauge unit from the service connection on the 3-way shut-off valve



- fully open the unit shut-off valves
- refit the valve covering plug

! Carefully check for absence of leakages from the closing point of the plug.

! Do not force beyond the stop point to prevent damaging the shaft and causing leakage as a consequence.

! Once the check has been completed, remove any residues of the water-soap solution.

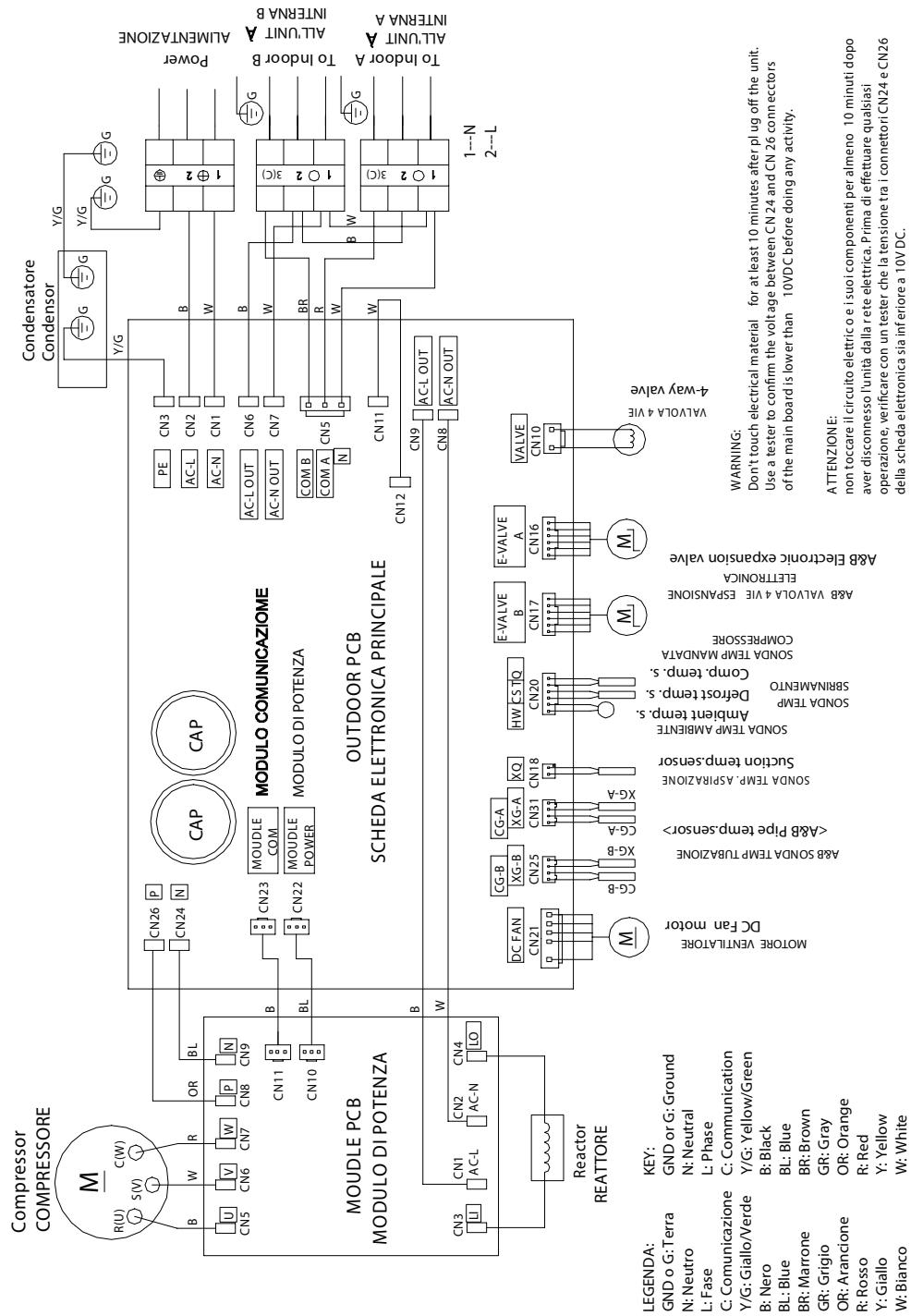
! Do not use the same vacuum pump with different refrigerants.

! The vacuum pump requires regular maintenance and the oil's clarity must also be checked.

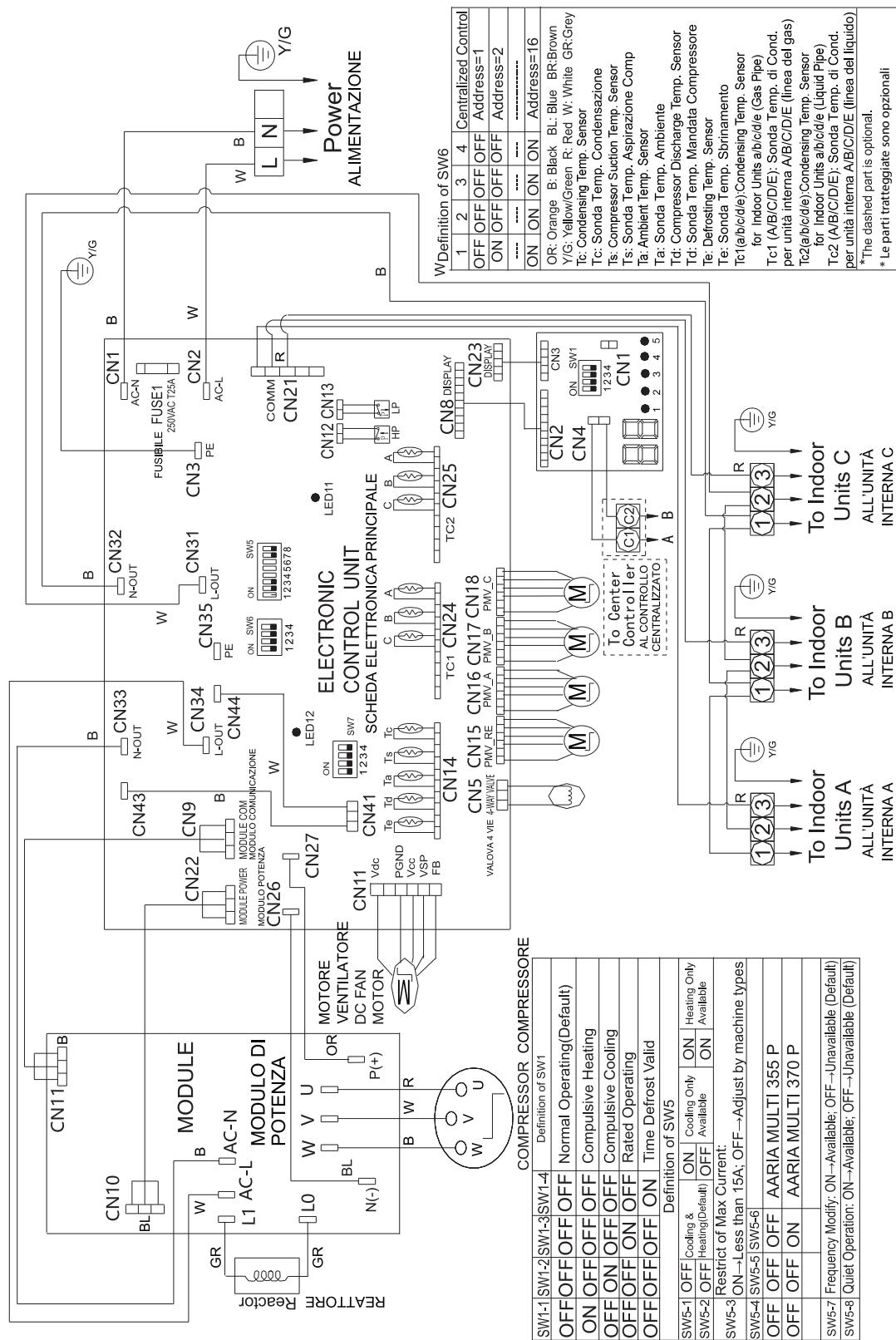
! After having created the vacuum and established the electric connections, proceed with the additional refrigerant charge (see chapter "Additional refrigerant charge" p. 46).

2.11 Wiring diagram

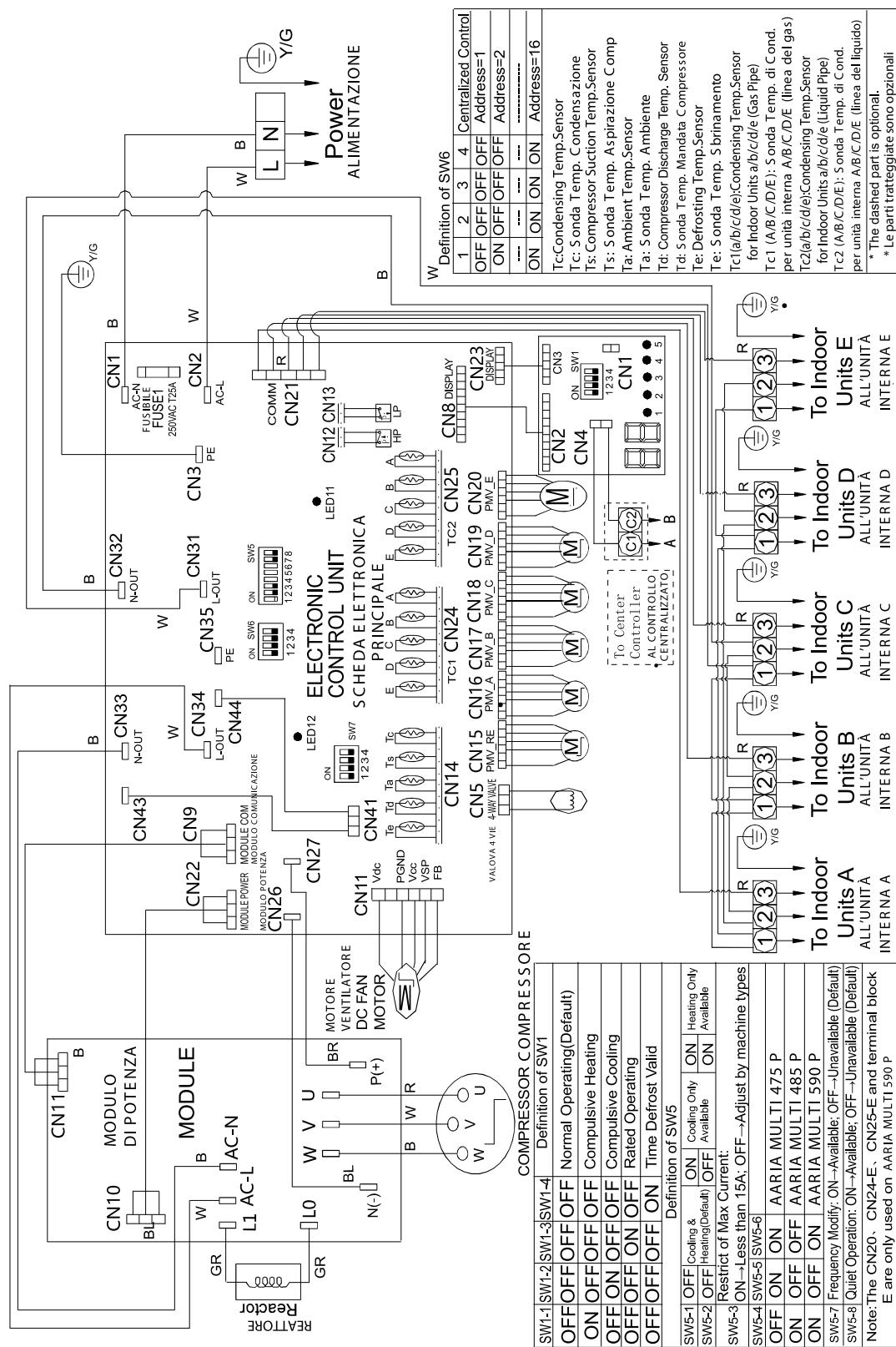
MODEL 250 P



MODEL 355 P - 370 P



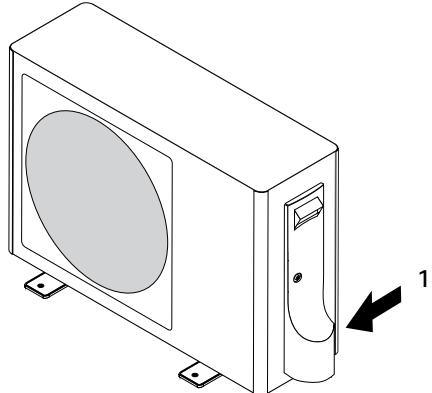
MODEL 475 P - 485 P - 590 P



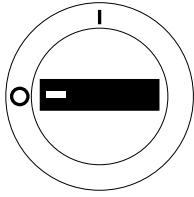
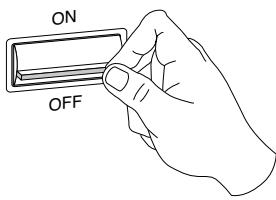
2.12 Electrical connection

AARIA MULTI R32 It leaves the factory completely wired, and only requires a connection to the electrical power grid, the installation of a padlockable disconnecting switch, and a connection to the indoor unit.

! The unit must be powered with a separate electric circuit.



1 Electric connection input



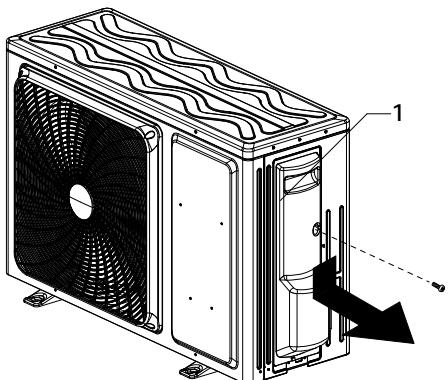
— position the system's main switch in the "OFF" position.

! Wait 10 minutes before touching the device electric components.

! Check with a tester that the voltage between the power supply connectors of the main electronic board is lower than 10 Vdc.

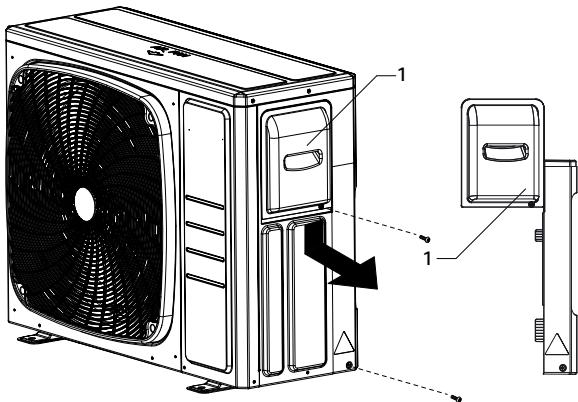
To access the terminal board:

MODEL 250 P



1 Terminal board cover panel

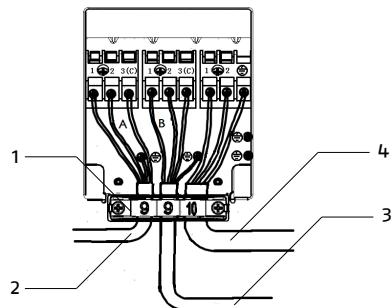
MODEL 355 P – 370 P – 475 P – 485 P – 590 P



1 Terminal board panel and pipes cover panel

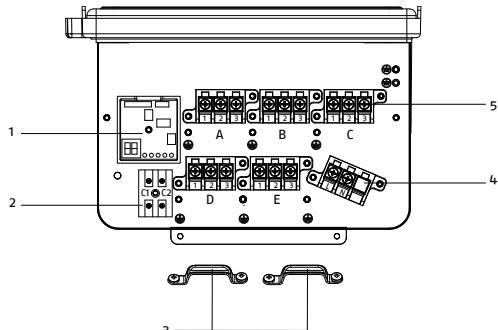
- unscrew the fastening screw
- push down the connection covering panel
- remove the connection covering panel

MODEL 250 P



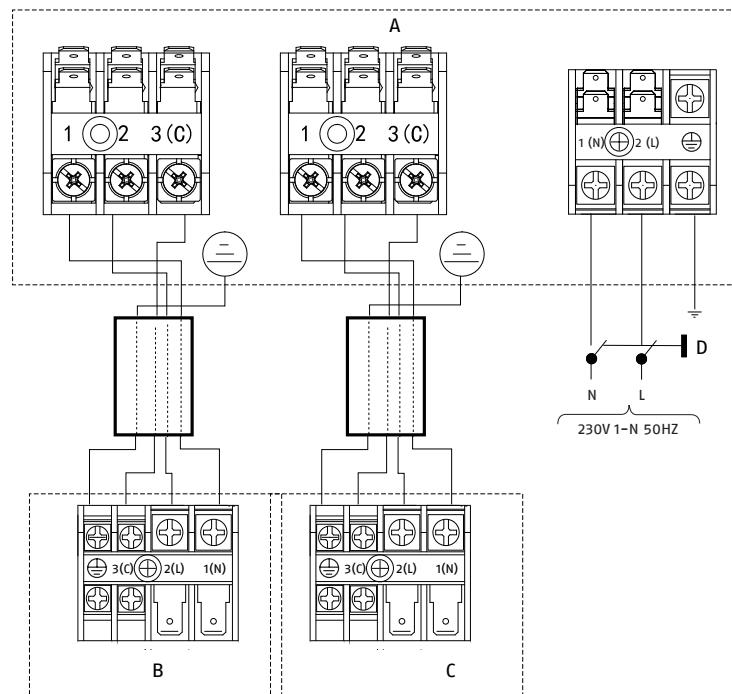
- 1** Wire retainer
- 2** Connection with indoor unit A
- 3** Connection with indoor unit B
- 4** Power supply

MODEL 355 P – 370 P – 475 P – 485 P – 590 P

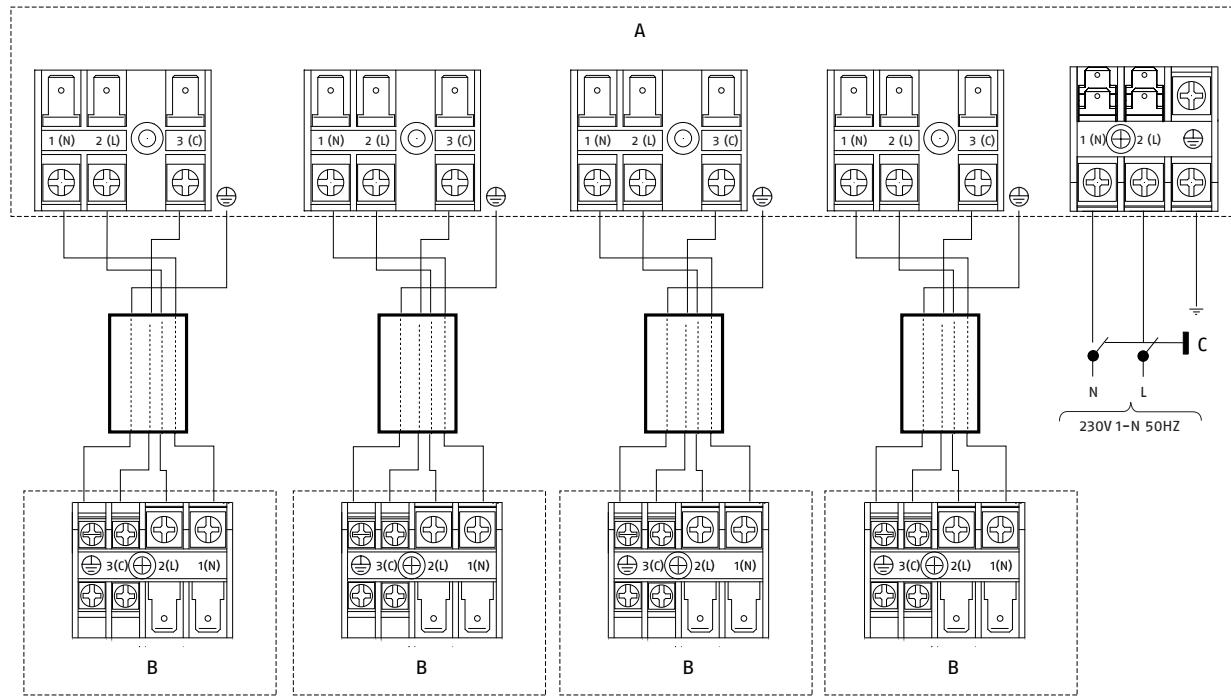


- 1** Signal panel
- 2** Terminal board for centralized control (accessory)
- 3** Wire retainer
- 4** Power supply connection terminal board
- 5** Connection terminal board with indoor unit

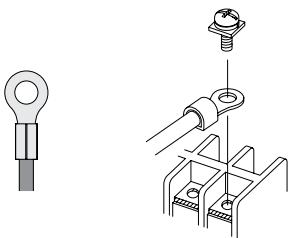
- remove the wire retainer
- make electrical connections according to the diagrams below

MODEL 250 P

- A** Outdoor unit
- B** Indoor unit A
- C** Indoor unit B
- D** System main switch

MODEL 355 P - 370 P - 475 P - 485 P - 590 P

- A** Outdoor unit
- B** Indoor unit
- C** System main switch



It is compulsory to use ring crimp terminals to connect to the terminal board.

For the sizing of the electrical power cables and safety devices, use the following table:

Model	250 P	355 P	370 P	475 P	485 P	590 P	
Electrical characteristics							
Power supply			220-240/1/50				V/Ph/Hz
Protection factor	IPX4			IP24			IP
Protection against short circuit			25				A
Protection against overcurrent	15	11		15		17	A
Ground protection			-				A
Residual current	3,00	5,00		8,00			mA
Starting current			1,00			5,00	A
Power cable			H07RN-F			H05RN-F3G	Type
Power cable	3 x 2,5			3 x 4,0			n. x mm ²
Signal cable	4 x 1,0			4 x 2,5			n. x mm ²

⚠ The cable sections specified in the table are minimum requirements. The correct size must be calculated taking into account the actual length, the type of routing and other conditions set by the existing regulations.

- fasten the wires with the wire retainer
- complete the electric connections and refit all components by performing the described operations in reverse order

Check that:

- the characteristics of the power network are suitable for the device usage values
- the power supply voltage corresponds to the nominal value +/- 10%, with a maximum phase imbalance of 3%
- all of the power network disconnect devices must be equipped with contact openings (3 mm) in order to allow for complete disconnection, in accordance with the conditions required

Mandatory items:

- have an omnipolar magneto-thermal circuit breaker and a padlockable disconnecting switch compliant with the IEC-EN Standards (contact opening of at least 3 mm), with adequate breaking power and differential protection, installed near the equipment
- connect the device to a properly functioning earthing system
- make sure that the electrical power supply system is compliant with the current national safety standards
- make sure that the power supply line impedance is consistent with the unit's power consumption, as indicated on the unit's data plate
- for any electrical intervention, always refer to the wiring diagrams contained within this booklet
- take anti-static precautions in case of weather conditions where humidity is less than 40%

⚠ Avoid using mobile phones.

⊖ It is forbidden to earth the device together with pipes, lightning conductors or the earthing system of a telephone line. Using an improper earthing system can cause electric shocks.

⊖ It is forbidden to connect other devices in parallel to the unit.

⚠ Electric connections shall be made in compliance with national regulations.

⚠ Avoid placing the connection cables less than 1 metre away from radio and video systems.

3 COMMISSIONING AND MAINTENANCE

3.1 Preparation for first commissioning

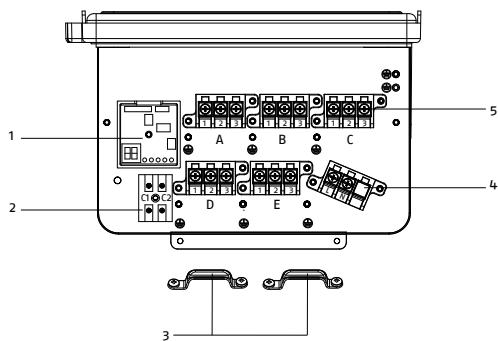
Prior to commissioning, it is necessary to check that:

- all the safety conditions have been met
- installation distances and gaps have been respected
- the indoor units have been connected to the respective refrigerant and electric circuit
- the electrical connections have been properly completed
- power supply values are correct.
- the earthing has been carried out correctly
- all the connections have been properly tightened
- the shut-off valves are open

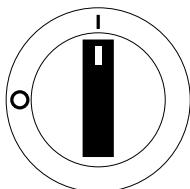
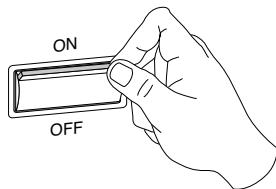
⚠ The device must always be powered electrically in order to allow for the compressor's oil to be properly pre-heated.

If the device is installed in very cold areas, the device should be under voltage for at least 12 hours before starting it up for the first time.

MODEL 355 P – 370 P – 475 P – 485 P – 590 P



- 1 Signal panel
- 2 Terminal board for centralized control (accessory)
- 3 Wire retainer
- 4 Power supply connection terminal board
- 5 Connection terminal board with indoor unit

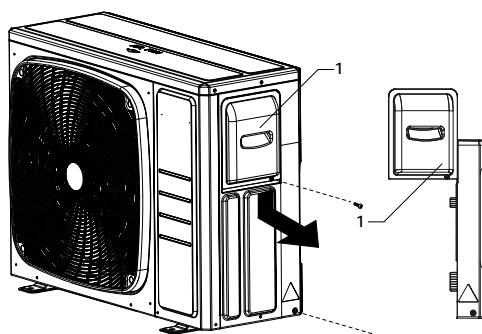


- position the system's main switch in the "ON" position.
- carry out the verification procedure of the electrical connections

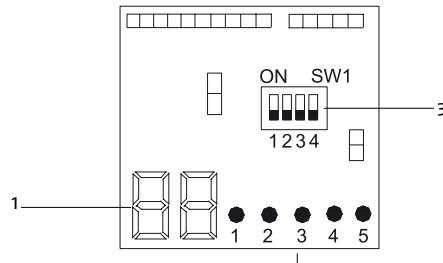
Verification procedure of the electrical connections

The device can perform an automatic procedure to check the correct electrical connection between the outdoor unit and the internal units. The procedure is activated by the signal panel.

MODEL 355 P – 370 P – 475 P – 485 P – 590 P



1 Terminal board panel and pipes cover panel



- 1 Display
- 2 Signal led
- 3 Microswitch

To verify:

- access to the terminal panel
- check chapter "Electrical connection" p. 42
- operate on the signal panel
- set the microswitch "ON"
- position the system's main switch in the "OFF" position.
- wait few second
- position the system's main switch in the "ON" position.

After 3 minutes, the system enter into verification mode.
After 30 to 50 minutes, the verification ends and the result is displayed through the signal LEDs:

Led off: connection missing

Flashing LED: incorrect connection

Led on: correct connection

⚠ If there is a wrong connection, will flash the LEDs of the units involved. In this case, check carefully connections and reverse the wrong ones.

⚠ If only one LED flashes, there may be a malfunction of the signal panel.

3.2 Putting into service

After having completed all the operations required to prepare

for first commissioning, do the following to activate the device:

- follow the instructions given in the manual of the indoor unit that you are installing

⚠ Keep the leak finder on and close to the unit so that it signals any refrigerant leak.

⚠ Use an electronic leak finder properly calibrated for the system refrigerant.

⊖ It is forbidden to use leak finders with halogen lamps.

Checks during and after the first commissioning

After starting the device, check that:

- the current consumed by the compressor is less than the maximum permitted
- the device is operating under the recommended operating conditions
- the unit is able to stop and start up again

⚠ Should any of the above-listed controls have problems: turn the device off and call the Technical Service immediately.

⚠ Do not touch the device pipes to prevent potential burns.

⚠ Take anti-static precautions in case of weather conditions where humidity is less than 40%.

⚠ Avoid using mobile phones.

Additional refrigerant charge

The units are supplied with a sufficient amount of refrigerant gas for a pre-set length of the connection pipes.

An additional refrigerant charge is needed if such length is exceeded.

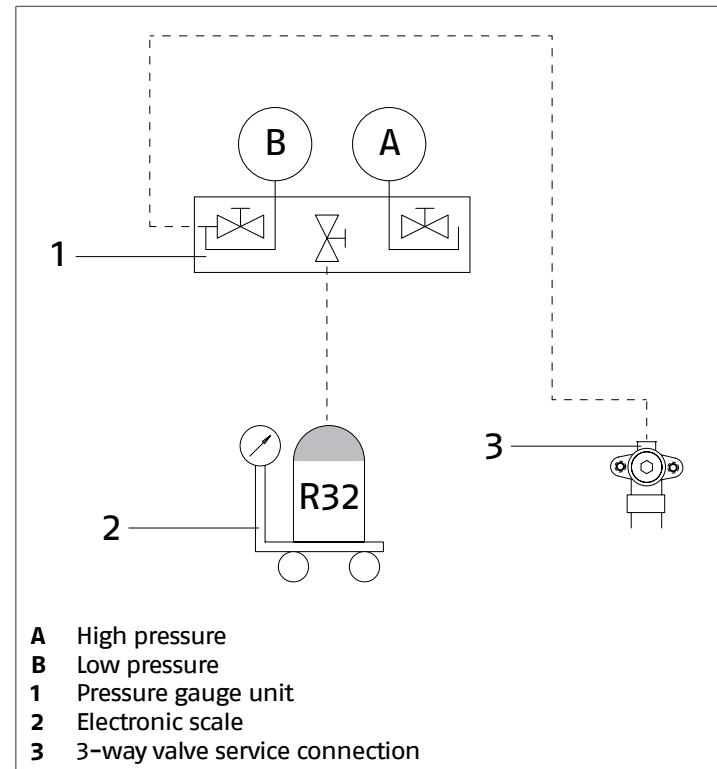
The pre-set values are detailed in the following table:

Model	250 P	355 P	370 P	475 P	485 P	590 P	
Maximum length with standard charge	20	30	30	40	40	40	m
Additional charge	20	20	20	20	20	20	g/m

⚠ The device must be earthed before performing the additional charge.

⚠ The R32 refrigerant gas is slightly inflammable and odourless. Carefully read the safety data sheet available from the dealer and see table "Minimum floor area" p. 9.

To perform the additional charge:



- connect the refrigerant cylinder to the pressure gauge unit
- connect the charging tube to the service connection on the 3-way shut-off valve
- remove the air from the charging tube
- charge the refrigerant with an electronic scale
- disconnect the charging tube from the service valve
- refit the three-way valve closing plug

⚠ Carefully check for absence of leakages from the closing point of the plug.

⚠ Do not force beyond the stop point to prevent damaging the shaft and causing leakage as a consequence.

⚠ Use equipment suitable for the system refrigerant.

⚠ Use only the system refrigerant.

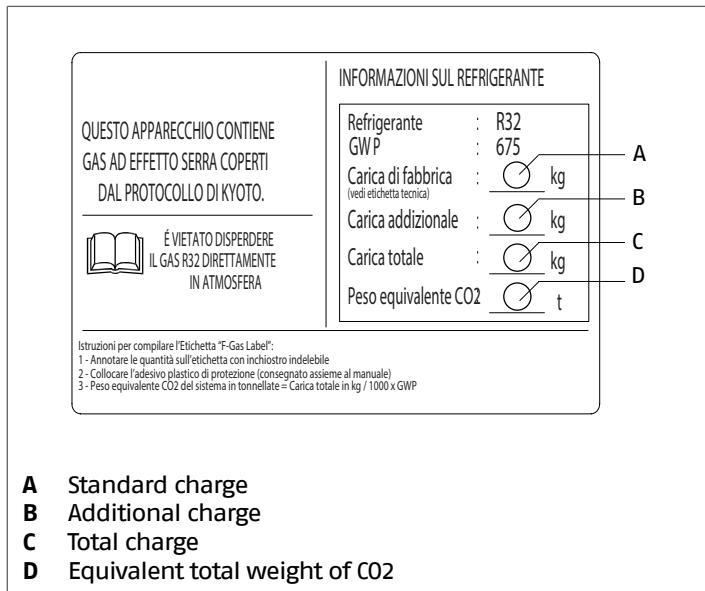
⚠ Any gas leaks indoors can generate toxic gases if they come into contact with naked flames or high temperature bodies, in case of leaks, please air the rooms thoroughly.

⚠ Take anti-static precautions in case of weather conditions where humidity is less than 40%.

⚠ Avoid using mobile phones.

3.2.1 Refrigerant label

In base alla Normativa CE n. 517/2014 su determinati gas fluorati ad effetto serra, è obbligatorio indicare la quantità totale di refrigerante presente sistema installato. Tale informazione è presente nella targhetta tecnica presente nell'unità esterna.



To write the tag:

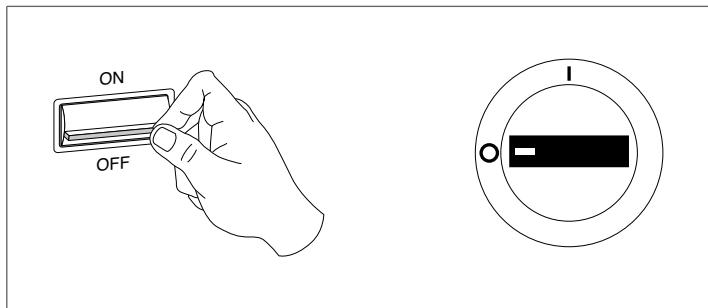
- note the quantity onto the label with indelible ink
- place the refrigerant gas label on the outdoor unit

- !** This unit contains fluorinated greenhouse gases covered by the Kyoto protocol. Maintenance and disposal activities must be carried out exclusively by skilled personnel.
- !** Global warming potential of the R32 refrigerant gas: GWP=675
- !** If necessary, the refrigerant must be recovered and not dispersed into the environment.
- !** It is forbidden to disperse the refrigerant into the environment.

3.3 Ordinary maintenance

Routine maintenance is fundamental for keeping the equipment efficient, safe and reliable. It can be performed periodically by the Technical Support Service, whose staff is technically qualified and can use genuine spare parts, if necessary.

- !** For units installed in a seaside environment, the maintenance intervals shall be halved.
- !** Original conditions must be restored after performing the required maintenance operations.
- !** All described operations MUST be carried out under the following conditions:
 - cold device
 - device NOT supplied with electric power
 - suitable personal protection equipment
- !** Do not open the access covers and carry out technical or cleaning activities before disconnecting the unit from the power grid by positioning the system's main switch in the "OFF" position.



— position the system's main switch in the "OFF" position.

- !** Wait 10 minutes before touching the device electric components.
- !** Check with a tester that the voltage between the power supply connectors of the main electronic board is lower than 10 Vdc.

Yearly operations

The annual maintenance plan includes the following checks:

- power supply voltage
- electric connection tightening
- status of cooling and hydraulic joint
- finned coil cleaning
- electric absorption
- fan grille cleaning

Cleaning the heat exchanger fins

The thermal exchange bank must be cleaned with compressed air.

Cleaning must be carried out at least once a year, according to the location of the unit, as dirt accumulating between the fins narrows the passage section and reduces the exchange capability.

- check the alignment of the bank's aluminium fins and, if necessary, straighten them with the appropriate comb
- check that the condensate discharge pipe is clean

- !** Do not use any means to accelerate the defrosting.
- !** Do not use systems different from the ones indicated in this manual.

Emptying of the evaporator

This operation may be necessary to perform reparations on the low pressure side (evaporator), the device reallocation or the replacement of the indoor unit without losing the whole refrigerant charge.

Proceed as follows:

- remove the covering plug from the shut-off valve
- check that the three-way shut-off valve is fully open
- let the device operate in cooling mode for 10 - 15 minutes
- stop the device for about 3 minutes
- connect the charging tube of the pressure gauge unit to the three-way valve service connection on gas side
- vent the air from the charging tube
- close the two-way shut-off valve on liquid side
- operate the equipment in cooling mode until pressure gauge reads a suction pressure of approx. -1 MPa
- close the three-way shut-off valve on gas side
- stop the unit

- disconnect the pressure gauge unit
- refit the valve covering plug

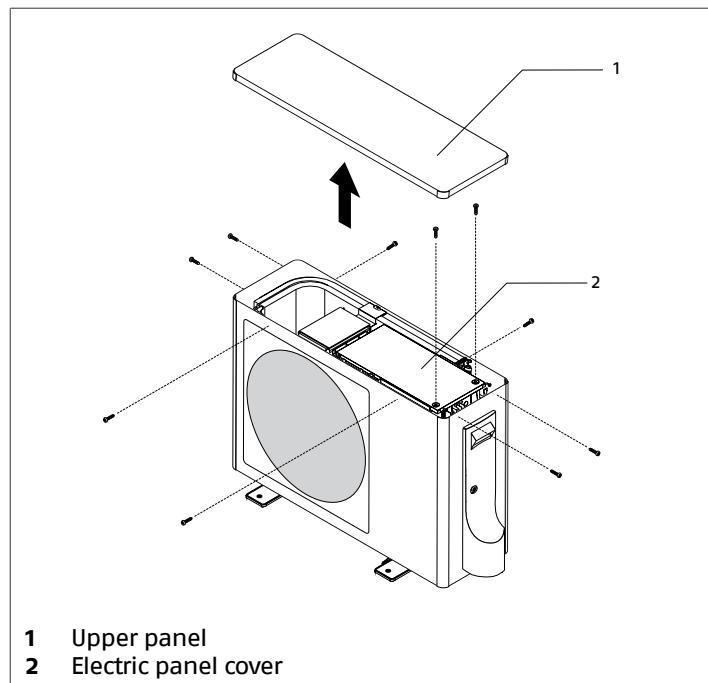
⚠ Carefully check for absence of leakages from the closing point of the plug.

3.4 Operation signal and alarms

Model 250 P

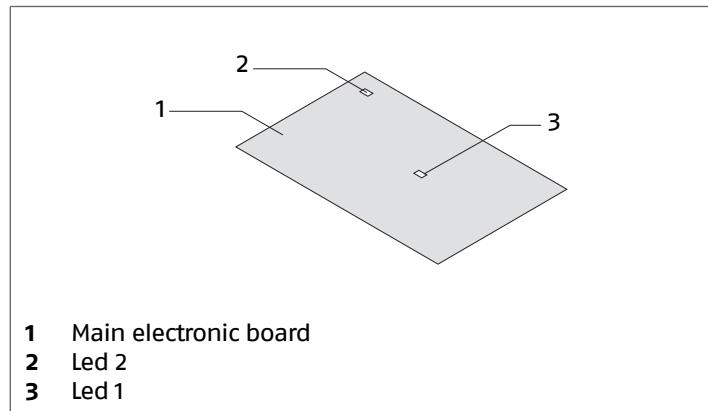
Signals are displayed by means of LEDs on the unit main electronic board.

Proceed as follows to access the filters:



- 1 Upper panel
- 2 Electric panel cover

- unscrew the fastening screws
- remove the top panel
- unscrew the fastening screws
- remove the electric panel cover



- 1 Main electronic board
- 2 Led 2
- 3 Led 1

The unit operation is signalled with LED 2.

Led 2	Description
On	Indicates that the unit is supplied with electricity
Off	Indicates that the unit is not supplied with electricity

After the LED switches off:

⚠ Wait 10 minutes before touching the device electric components.

⚠ Check with a tester that the voltage between the power supply connectors of the main electronic board is lower than 10 Vdc.

Faults are signalled by means of LED 1 blinking.

Led 1	Description
1	External unit microprocessor fault
2	Power module fault (IPM)
3	Main electronic board protection against overcurrent
4	Communication error between main board (PCB) and power module (IPM)
5	High pressure protection
6	Wrong power supply voltage
7	Compressor lockout
8	Overheat protection for compressor discharge
9	Fan motor malfunction
10	Defrost temperature sensor failure
11	Suction probe fault
12	External air probe fault
13	Discharge temperature sensor failure
14	Compressor suction overtemperature
15	Communication error between outdoor and indoor unit
16	Lack of refrigerant
17	4-way valve malfunction
18	Deviate from the normal for the compressor
19	Power module malfunction
20	Outdoor unit terminal block overheat protection
21	Internal unit overload
22	Internal unit anti-freeze protection
23	Main electronic board overheating
24	Compressor motor overcurrent
25	Overcurrent protection for single- phase of the compressor
27	CT disconnection
28	Liquid probe circuit A fault
29	Liquid probe circuit B fault
32	Gas probe circuit B fault
33	Gas probe circuit B fault
37	Heat exchanger protection
38	Power supply modul fault
46	Wrong combination with indoor unit

In the presence of operating abnormalities, the unit is secured and blocked.

⚠ Safety block can occur randomly.

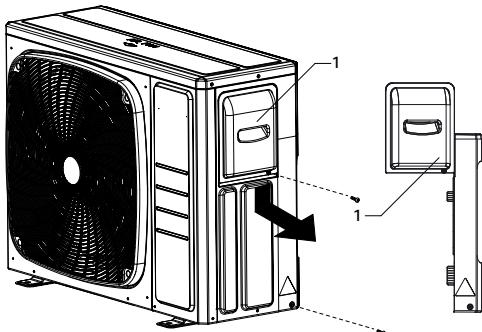
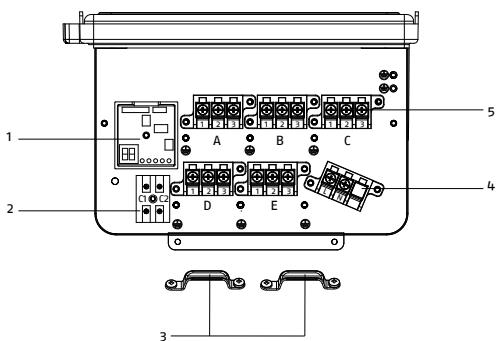
⚠ Wait for at least 10 minutes before restarting the unit.

⚠ If the fault occurs again, an accurate check of the device components is required. Contact **RIELLO** Technical Support Service.

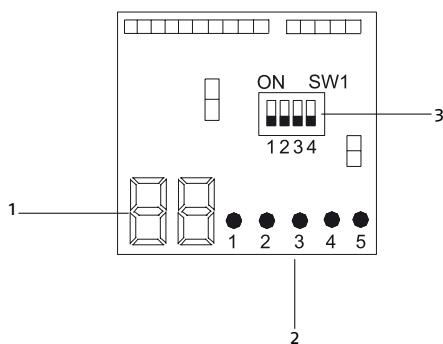
⚠ Indoor units with display signal faults with an alphanumeric code. Consult the matching outdoor unit instruction booklet for the installer.

Model 355 P – 370 P – 475 P – 485 P – 590 P

The signals will be shown through LEDs and a display on the signal panel.

MODEL 355 P - 370 P - 475 P - 485 P - 590 P**1 Terminal board panel and pipes cover panel****MODEL 355 P - 370 P - 475 P - 485 P - 590 P**

1 Signal panel
2 Terminal board for centralized control (accessory)
3 Wire retainer
4 Power supply connection terminal board
5 Connection terminal board with indoor unit



1 Display
2 Signal led
3 Microswitch

- **Proceed as follows to access the filters:**

— check chapter "Electrical connection" p. 42

The operation of the unit is signed through the LEDs:

On: correct operation

Off: lack of communication with the indoor unit

Faults are indicated by a flashing code displayed on the display:

! During normal operation, the display indicates the frequency work of the compressor.

Code	Description
1	External unit microprocessor fault
2	Power module fault
4	Communication error between main board and power module
5	Overload power module
6	Wrong supply voltage of the power module
8	Overheat protection for compressor discharge Refrigerant loss Outdoor temperature too high
9	Fan motor malfunction
10	Defrost temperature sensor failure
11	Suction probe fault
12	External air probe fault
13	Discharge temperature sensor failure
15	Communication error between outdoor and indoor unit
16	Lack of refrigerant
17	4-way valve malfunction
18	Deviate from the normal for the compressor
20	Internal unit anti-freeze protection
21	Internal unit overload
23	Overload power module
24	Compressor start error
25	Protection against overcurrent
26	Reset MCU
27	Power supply modul fault
28	Liquid probe circuit A fault
29	Liquid probe circuit B fault
30	Liquid probe circuit C fault
31	Liquid probe circuit D fault
32	Gas probe circuit A fault
33	Gas probe circuit B fault
34	Gas probe circuit C fault
35	Gas probe circuit D fault
36	Gas probe circuit E fault
38	Temperature probe module malfunction Power failure
39	Heat exchanger probe fault
40	Liquid probe circuit E fault
42	High pressure switch operation
43	Low pressure switch operation
44	High pressure protection Refrigerant overload Fan motor malfunction
45	Low pressure protection Lack of refrigerant Heat exchanger freezing Fan motor malfunction

In the presence of operating abnormalities, the unit is secured and blocked.

! Safety block can occur randomly.

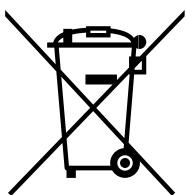
! Wait for at least 10 minutes before restarting the unit.

! If the fault occurs again, an accurate check of the device components is required. Contact **RIELLO** Technical Support Service.

! Indoor units with display signal faults with an alphanumeric code. Consult the matching outdoor unit instruction booklet for the installer.

4 DISPOSAL

Packaging materials shall be disposed of separately so as to recover and recycle them. Refrigerant and oil must be recovered and not dispersed into the environment. At the end of its service life, the device shall be disposed of according to the existing legislation.



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As the manufacturer is constantly improving its products, the aesthetic or dimensional features, the technical data, the equipment and accessories indicated could be subject to variations.