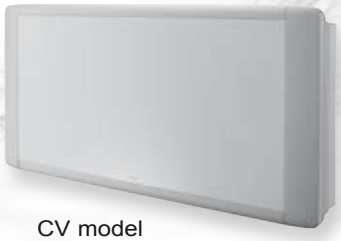
Versatile unit meeting all building-specific constraints
Energy and eco-design performance.
Improved occupant comfort, very low sound level
Innovative design ensuring easy installation and simplified maintenance

NCH model



CV model

MAJOR LINE

Designed for heating and cooling, **MAJOR LINE** is available in 4 models (cased or uncased, horizontal or vertical).

The versatility of MAJOR LINE, thanks to its different assembly options and range of accessories, means it can be adapted to any type of installation.

In Europe, it has become a benchmark solution for renovations of large office blocks and hotel chains and restoration of buildings, etc.

Modern aesthetic lines, excellent sound levels and optimised thermal performance. With MAJOR LINE, CIAT is offering a comfort solution which is both economical and quick to set up.

INNOVATIVE DESIGN

A true stylistic evolution, MAJOR LINE has distinguished lines with a slim and elegant shape. Its attractive and modern design will blend perfectly with all types of interior.

MAJOR LINE

VERSATILITY OF THE MODELS

Two versions:
- Cased (visible)
- Uncased (flush-mounted)

➢ The same product reference for both applications: CV (Cased Vertical)/CH (Cased Horizontal).

➢ The same product reference for both applications: NCV (Uncased Vertical)/NCH (Uncased Horizontal).

Units with **left/right** hydraulic connections available for easier adaptation to refurbished buildings.

Cased or Uncased models available with classic air return (assemblies 1, 41, 1V and 41V) and front mounted air return (assemblies 1D, 41D, 1VD and 41VD).

A large selection of accessories available in:

➢ Fresh air and mixing
➢ Air distribution and return

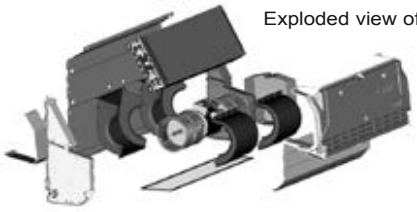
For NCH, the hydraulic and electrical connections can be supplied on the same side making the unit more compact and simplifying installation.

Unit operates with 50 and 60 Hz supply.

INNOVATIVE DESIGN

- New shaped ABS Volute (V0) designed to optimise output and performance.
- 160 mm HEE (High Energy Efficiency) impeller, with CIAT exclusive airfoil blades in self-extinguishable ABS (V0).
- Hydraulic coil with total frontal surface increased from 5 to 15% (according to the size and in relation to the units of previous ranges) for improved performance and output .

Shaped ABS volute



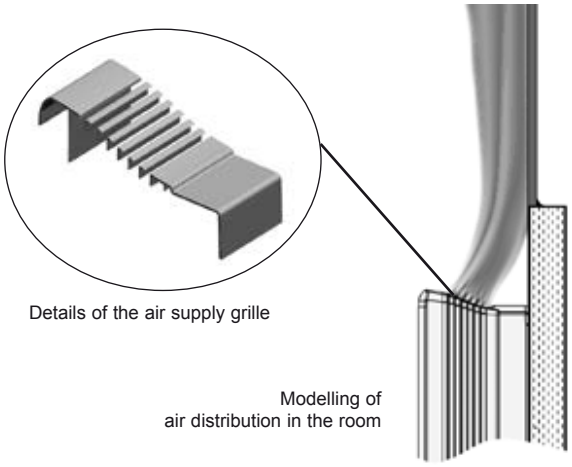
Exploded view of NCV model

SIMPLE TO INSTALL AND MAINTAIN

- Filter easily accessible.
- Single unit casing easily removed with two screws in the lower part of the unit.
- Option of replacing only the faulty component on the fan motor assembly: only the motor or the impeller.
- All the speeds are connected to the electrical terminal of the unit and are easily accessible on site for customised adjustment.
- No plastic moving parts on the casing (hinged access hatch for example) for increased durability of the unit over time..

LATEST GENERATION OF COMFORT

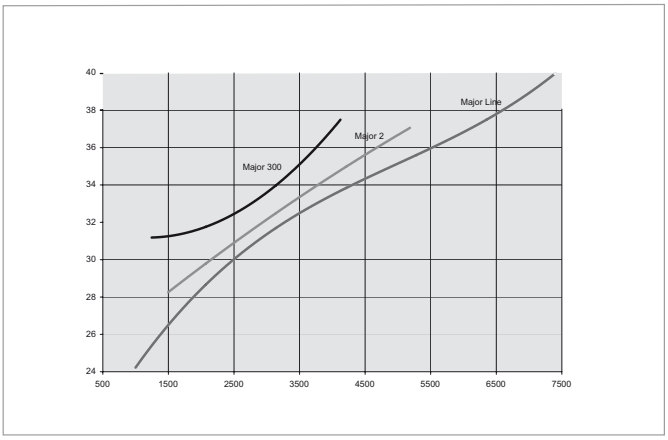
- Improved control of the supply air temperature to reduce discomfort.
- Diffusion grille optimised in our Research & Innovation Centre for increased overall comfort in accordance with the most demanding standards.



Details of the air supply grille

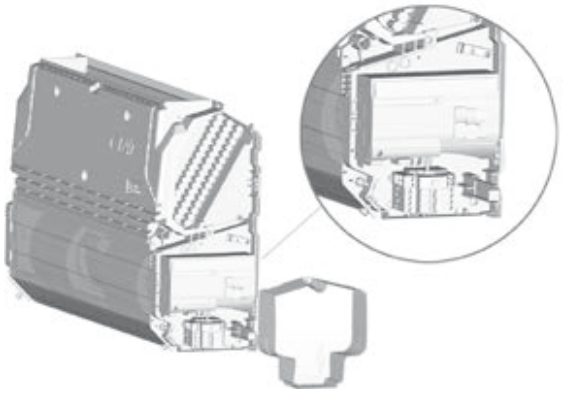
Modelling of
air distribution in the room

Acoustic performance (MV trend line)



MV cooling capacity (W)

INCREASED SAFETY



- The entire electrical connection part is encased in a housing. Access is only possible using a tool.
- No electrical terminals on the motor.
- Large condensate pan to prevent water leaks and any damage to the building.
- Pan in ABS to eliminate the risk of corrosion present with metal pans and limit the creation of biofilm that causes the proliferation of bacteria.
- A tool must be used to access the inside of the unit. This prevents users from modifying the product or rearming the safety limiters contrary to specifications.
- The electrical unit has been sized to enable all types of controls to be fitted.
- For NCH, the condensate outlet has been raised 30 mm to facilitate the gravity drain.

COMPLIANCE WITH ENERGY AND ENVIRONMENTAL REQUIREMENTS

- A small size developed for buildings whose use of energy is optimised..
- Intelligent design of the unit allowing the power input of the standard motor to be reduced by an average of 20%.
- Reduction of the electrical power of the heating (resistors) to better meet the requirements of new buildings.
- HEE motor (very low consumption) also available as an option for this range.

ECO-DESIGN

- The MAJOR LINE comfort unit is **at least 85% recyclable**.
- MAJOR LINE has been designed using **up to 20% fewer raw materials** compared with previous ranges.
- **100%** of the MAJOR LINE parts made from **ABS** are **recyclables** and stamped with the logo below which enables the materials used to be traced and thus facilitates sorting at the end of its life.
- Designed for **easy dismantling** at end of life.
- The three French production sites of the CIAT group are **ISO 14001** certified. This certification is awarded for environmental management, thereby formalising the company's contribution to **sustainable development**.
- Since 2013, CIAT has been working in partnership with Ecologic for the collection and recovery of waste from our appliances at end of life, subject to the WEEE directive.

7
ABS

ECO design CIAT

LLOYD'S REGISTER · LRQA
ISO 9001 · ISO 14001
OHSAS 18001
Certified Management System

MORPHO CODES - MAJOR LINE DESCRIPTION

Range	Size	Model	Installa-tion	Coil type	Connector	Thermal function		Motor	Speeds	Filter
MJL	10 20 30 40 50 60	2A 2B 2C 2D 4X 4Y	CV CH NCV NCH NCH Y NCH H NCH U	1 1D 41 41D 1V 1VD 41V 41VD	2T 2T2F 4T	G D	F C CF	10 20 30 40 50 60	HEE 2-10V HEE ON/OFF AC	depending on selection	G3

HEE 2-10V	energy efficient motor 2-10V control
HEE ON/OFF	energy efficient motor 3-speed control
AC	5-speed asynchronous motor

10	300 W or 600 W
20	500 W or 1000 W
30	800 W or 1600 W
40	1200 W or 2400 W
50	1600 W or 3200 W
60	Not available

F	Cooling
C	Heating
CF	Heating/Cooling

G	Left, facing air supply
D	Right, facing air supply

2T	2 tubes
2T2F	2-tube + wiring
4T	4 tubes

1	Return underneath CV
1D	Front-mounted return CV
41	Rear-mounted return CH
41D	Return underneath CH
1V	Return underneath NCV
1VD	Front-mounted return NCV
41V	Rear-mounted return NCH
41VD	Return underneath NCH

CV	Cased Vertical model
CH	Cased Horizontal model
NCV	Uncased Vertical model
NCH	Uncased Horizontal model
NCH Y	Uncased Horizontal model with supply plenum
NCH H	Horizontal uncased model with supply & return plenum
NCH U	Horizontal uncased model with supply & return plenum

2A	2-tube 1.5-row version (+ possible wiring)
2B	2-tube 2-row version
2C	2-tube 2.5-row version (+ possible wiring)
2D	2-tube 3-row version
4X	4-tube, 2.5-row version (cooling) +0.5 row version (heating)
4Y	4-tube, 1-row version (cooling) + 2 row version (heating)

10 20 30 40 50 60	Size

MJL	Major Line

TECHNICAL DESCRIPTION

Base
- Single unit casing and side members in ABS PC V0
- Front/rear panel in galvanised steel with mounting holes for easy fixing.

Casing for CV/CH model
Bi-material casing in two colours:
- Flange, side member and supply air grille in RAL 7035 grey ABS PC
- Front pressed metal panel painted RAL 9010 white and front mounted return air grille (1D, 41D) in RAL 7035 grey
- Central access point for housing the built-in thermostats

Water coil
- High performance coil concept
- Coil casing in galvanised panels.
- Copper tubes, continuous aluminium fins.
- Water coil tap on the left or right of the unit from the front of the supply air (to be specified when ordering).
- 2 or 4-tube main coil fitted with ½" or ¾" rotary couplings with air purge and drain screw.
- Additional coil for 4 tubes fitted with .½" rotary couplings with 40 mm centre-to-centre distance.
- Nominal pressure of 16 bar (at 20°C)
- Test pressure 24 bar.
- Maximum hot water inlet temperature:
  - 4-tube application: 90°C
  - 2-tube application: 90°C
  - 2-tube/2-wire application: 55°C (min. air flow: 200 m^3/h)

Electric heater
- Single tube 230V single phase 50/60 Hz electrical elements inserted into the aluminium housing.
- Two capillary tube temperature limiters with manual and automatic reset inserted in the aluminium housing.

Condensate drain pan
- Pan in ABS V0 with M1 class reinforced EPS insulation (20 mm thick).
- Reinforced insulation for all climates, M1 class EPS panel (20 mm thick).
- ABS V0 auxiliary pan.
- 22 mm Ø external raised condensate outlet.

Fan motor assembly

■ Fan(s)
Impeller(s) in ABS V0 in split units for total accessibility of the different parts of the fan motor assembly.
160 mm HEE impeller(s), with CIAT exclusive airfoil blades in self-extinguishable ABS (V0).

■ HEE motor
High energy efficiency motor enabling a reduction of up to 85% in electricity consumption.
- BLAC (Brushless Alternating Current) brushless technology offering more linear torque progression and a lower operating sound level than BLDC (Brushless Direct Current) technology.
- Sealed type, tropicalised with protected shaft.
- 3-speed gradual operation by 0-10V or on/off control signal, without expansion board.
- Internal normally closed series automatic thermal protection on the windings.
- "DFS" motor fault output using a photocoupler for potential alarm feedback via a Konnex protocol communication bus (via the V3000 controller).
- Mounted on silentbloc bushes.
- 230V±10%/1-Ph/50-60 Hz supply.

Note: The minimum voltage to start up the motor is 2V.

■ Asynchronous motor
- 5 factory-fitted wired speeds (connected and available at the terminal) for customised adjustment.
- Sealed, tropicalised type, class F with protected shaft.
- Permanent capacitor.
- Roller bearings.
- Automatic overload protection as standard on winding.
- Elastic bushings.
- 230V single-phase 50/60 Hz power supply, **reduced consumption.**

Electrical box
- Box incorporated on the side of the base opposite the hydraulics.
- Completely enclosed by an ABS/V0 cover.
- Electrical connection terminal on DIN rail in compliance with EN 50022, 7.5 mm deep.
- Wire clamps for customer connection.

Air filter
- Flexible filter medium made of regenerative polyester fibre, on rigid frame.
- Efficiency class **EN 779**: G3.
- Fire rating: M1.
- Mounted on pivoting runners for easy maintenance

Packaging
- Delivered in individual boxes on pallets protected by stretch wrap film.

Control
- RTR-E electromechanical thermostat range.
- V30 electronic range.
- V300 electronic range.
- Networked electronic range (KNX): V3000.
- Networked electronic range (LON): V-LON2.

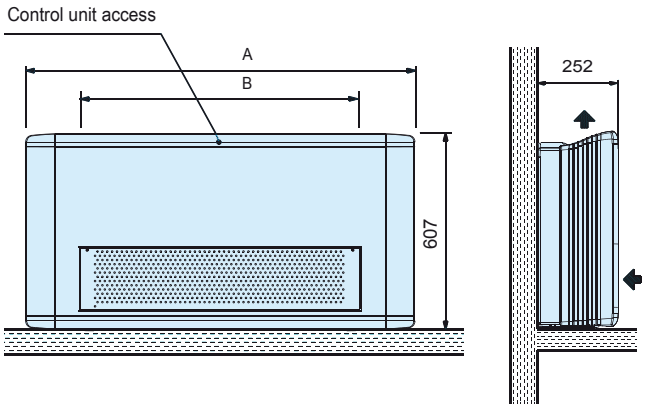
Factory-fitted options
- Condensate drain pump.
- Rectangular supply air sleeve for direct distribution in soffit.
- Supply and return air plenum for H and U assembly (contact us) for sizes 1 to 4.
- Electrical box on hydraulic side for NCH models only.
- Hydraulic coil with blades protected for use in harmful/corrosive atmospheres (coastal locations, or areas close to chemical industries).

Accessories supplied separately
- Support feet or base
- Return air grille between feet
- Rear skirting support and rear painted panel
- Internal/external air recovery unit
- Single- or dual-deflection diffusion grille
- Diffusion kit with round duct
- Supply air plenum kit for sizes 1 to 6
- Condensate drain pump kit
- Elastic bushings
- Smooth sleeve or Ø 100 mm MR Module
- Hose or tube kit with or without insulation
- 2-way or 3-way valve kit with 230V on/off bypass

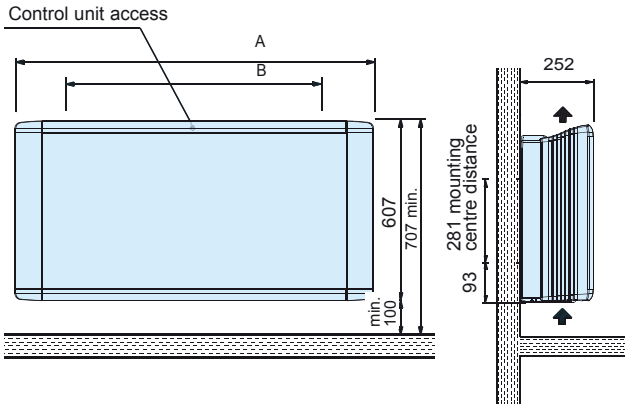
Note: refer to the technical manual and the instruction manual for more information.

ASSEMBLY AND DIMENSIONS – CV MODEL (CASED VERTICAL)

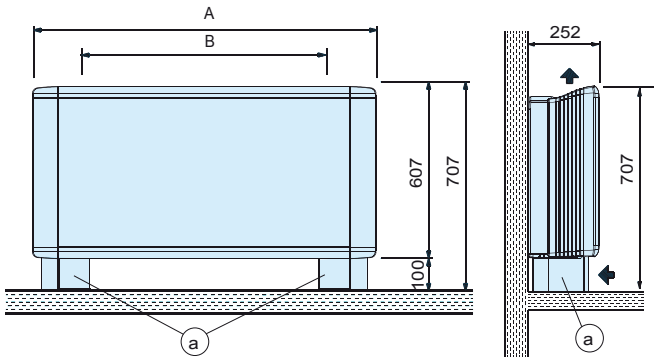
Assembly 1D: Unit with return on front



Assembly 1: Basic unit with return underneath

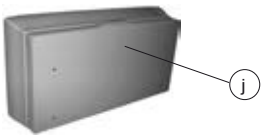


Assembly 2: Basic unit with feet

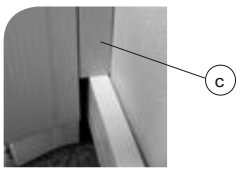


Options available with assembly 2:

- Base mounted grille
- Rear painted panel



- Rear skirting support



Accessories for assembly configuration (supplied separately)

a: Support feet
b: Aluminium return air grille between feet
c: Painted rear skirting support
j: Rear painted panel RAL 7035

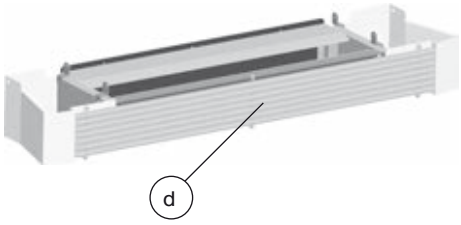
Sizes MAJOR LINE	A	B mounting centre distance	Weight (kg) *	
			Assembly 1/ 1D	Assembly 2
10	840	505	20	21
20	1000	665	23	24
30	1200	865	28	29
40	1400	1065	34	35
50	1600	1265	39	40
60	1800	1465	44	45

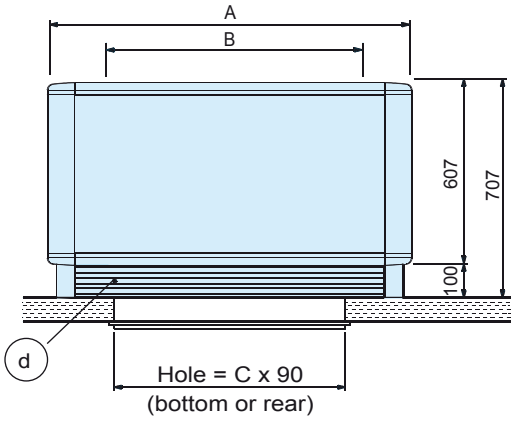
* Weight of the unit in 4-tube version (without valves)

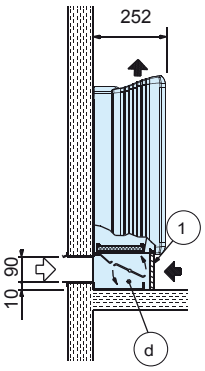
ASSEMBLY AND DIMENSIONS – CV MODEL (CASED VERTICAL)

Assemblies 5 and 6:

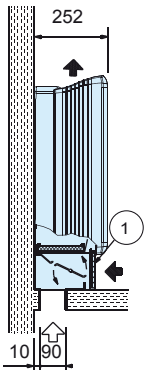
Basic unit equipped with a manual pretreated air/recycled air mixing unit with a return air grille and a damper regulating the pretreated air intake.







Assembly 5



Assembly 6

⇨ Air pretreated by an air handling unit

Accessories for assembly configurations (supplied separately)

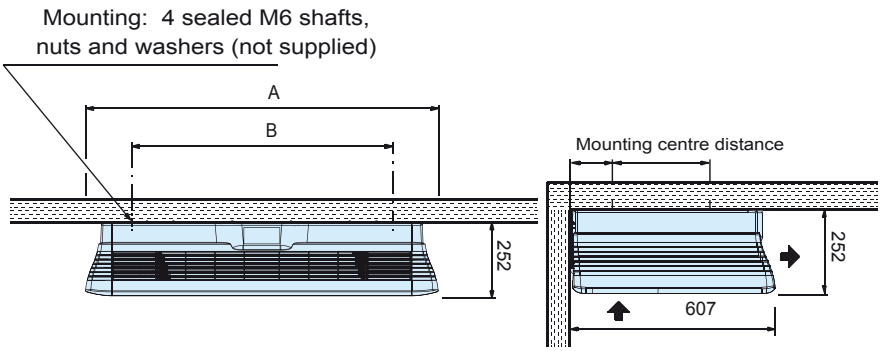
d: Manually controlled int./ext. air recovery unit with return air grille 1 for filter removal

Sizes MAJOR LINE	A	B mounting centre distance	C hole space	Weight (kg) *
10	840	505	430	24
20	1000	665	430	28
30	1200	865	780	32
40	1400	1065	780	40
50	1600	1265	1180	45
60	1800	1465	1180	50

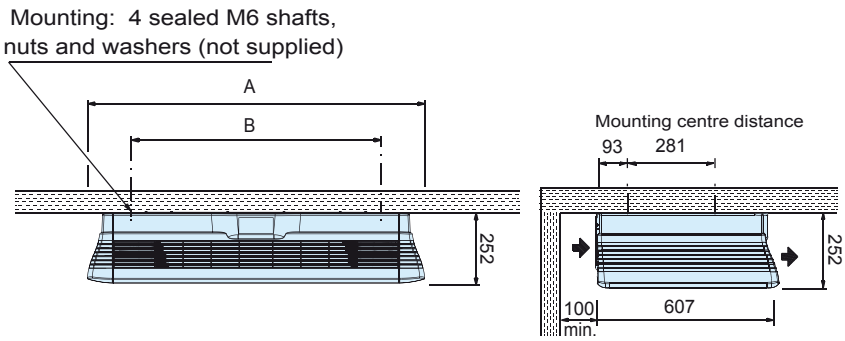
* Weight of the unit in 4-tube version (without valves)

ASSEMBLY AND DIMENSIONS – CH MODEL (CASED HORIZONTAL)

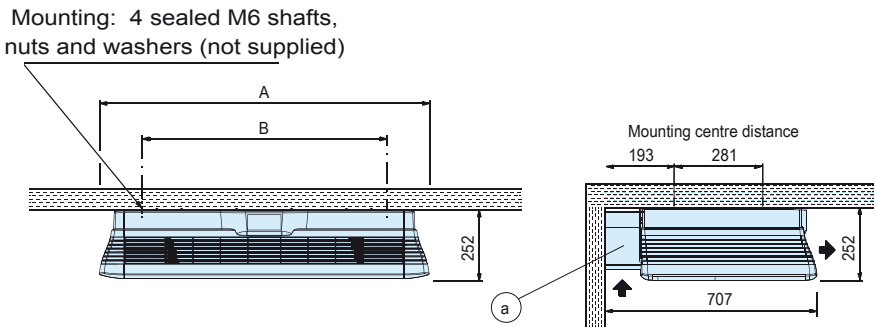
Assembly 41D: Unit with return on front



Assembly 41: Basic unit

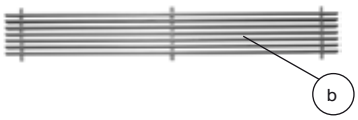


Assembly 42: Basic unit with feet



Option available on assembly 42:

- Base mounted grille



Accessories for assembly configurations (supplied separately)

a: Support feet

b: Aluminium internal return air grille between feet

Note: For assembly 42 the condensate drain pump must be used.

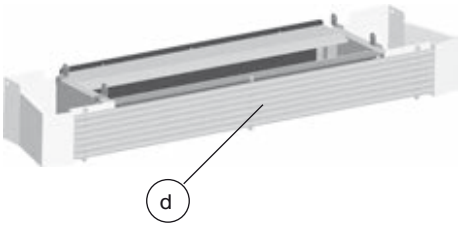
Sizes MAJOR LINE	A	B mounting centre distance	Weight (kg) *	
			Assembly 41D/ 41	Assembly 42
10	840	505	20	21
20	1000	665	23	24
30	1200	865	28	29
40	1400	1065	34	35
50	1600	1265	39	40
60	1800	1465	44	45

* Weight of heaviest unit in 4-tube configuration

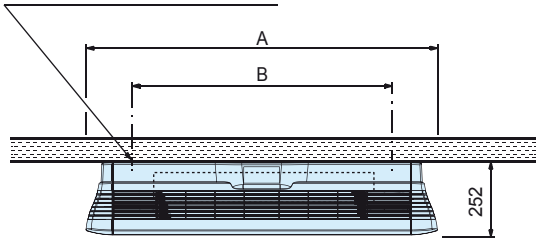
ASSEMBLY AND DIMENSIONS – CH MODEL (CASED HORIZONTAL)

Assemblies 45 and 46:

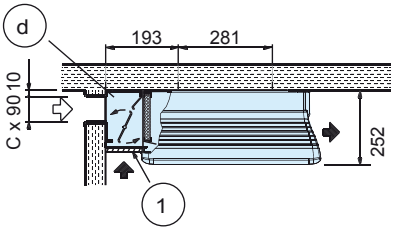
Basic unit equipped with a manual pretreated air/ recycled air mixing unit with a return air grille and a damper regulating the pretreated air intake.



Mounting: 4 sealed M6 shafts, nuts and washers (not supplied)



Mounting centre distance



Assembly 46

Assembly 45:
identical with ceiling mounted pretreated air intake

⇨ Air pretreated by an air handling unit

Accessories for assembly configurations (supplied separately)

d Manually controlled int./ext. air recovery unit with return air grille 1 for filter removal

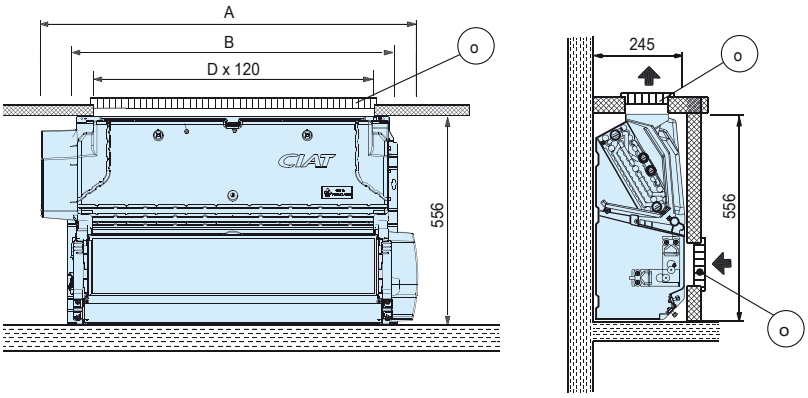
For assemblies 45-46 the condensate drain pump must be used.

Size MAJOR LINE	A	B mounting centre distance	C hole space	Weight (kg) *
10	840	505	430	24
20	1000	665	430	28
30	1200	865	780	32
40	1400	1065	780	40
50	1600	1265	1180	45
60	1800	1465	1180	50

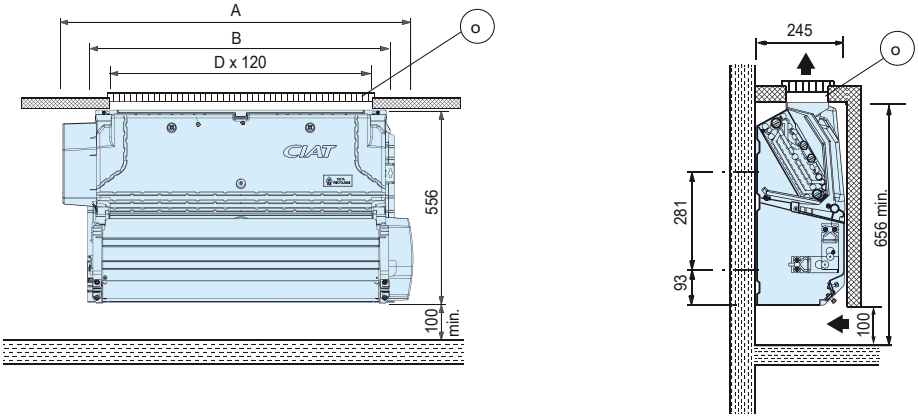
* Weight of the unit in 4-tube version (without valves)

ASSEMBLY AND DIMENSIONS – NCV MODEL (UNCASED VERTICAL)

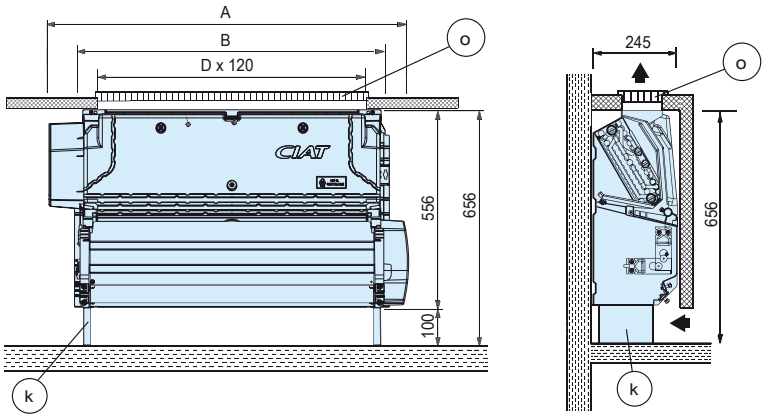
Assembly 1VD: Unit with return on front



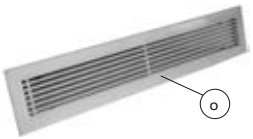
Assembly 1V: Basic unit with bottom-mounted return



Assembly 2V: Basic unit with support base



Accessories for assembly configurations (supplied separately)



k Support base

o Aluminium single deflection diffusion or return air grille with sealing frame (without hatch).

Note: this grille can be used for both return and supply air.

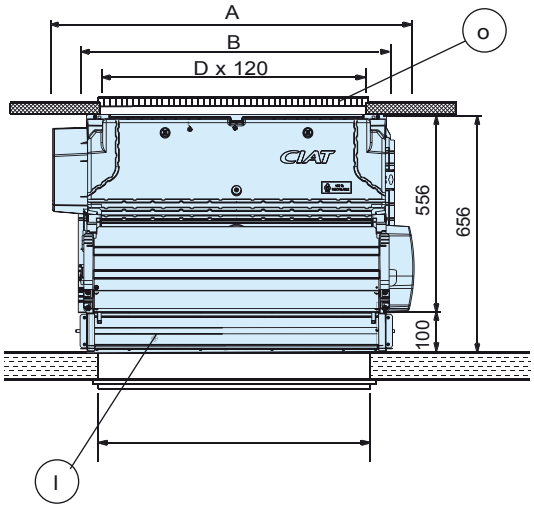
Sizes MAJOR LINE	A	B mounting centre distance	D grille space	Weight (kg) *
10	652	505	355	15
20	812	665	515	18
30	1012	865	715	22
40	1212	1065	915	28
50	1412	1265	1115	32
60	1612	1465	1315	36

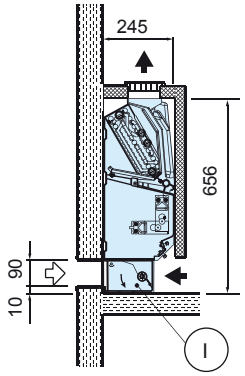
* Weight of the unit in 4-tube version (without valves)

ASSEMBLY AND DIMENSIONS – NCV MODEL (UNCASED VERTICAL)

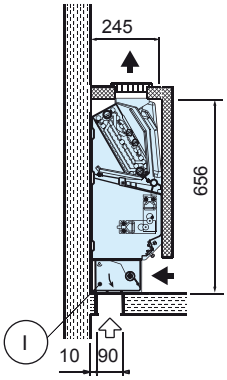
Assemblies 5V and 6V:

Basic unit equipped with a manual pre-treated air/ recycled air mixing unit with a damper regulating the pre-treated air intake.





Assembly 5V



Assembly 6V

⇨ Air pretreated by an air handling unit

Accessories for assembly configurations (supplied separately)

I: Internal/external manually controlled air return unit

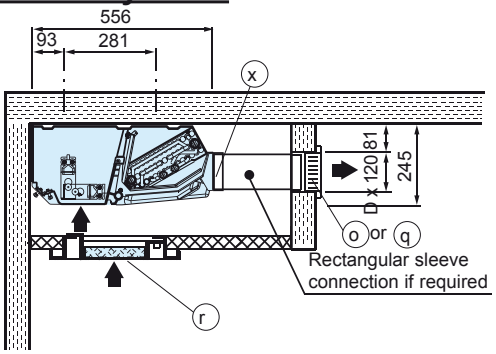
o: Aluminium single deflection diffusion or return air grille with sealing frame (without hatch).
For other applications, please consult us.

Size MAJOR LINE	A	B mounting centre distance	C hole space	D grille space	Weight (kg) *
10	652	505	430	355	16,5
20	812	665	430	515	20
30	1012	865	780	715	25
40	1212	1065	780	915	32
50	1412	1265	1180	1115	37
60	1612	1465	1180	1315	42

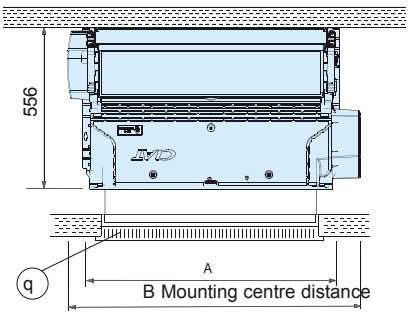
* Weight of heaviest unit in 4-tube configuration

ASSEMBLY AND DIMENSIONS – NCH MODEL (UNCASED HORIZONTAL)

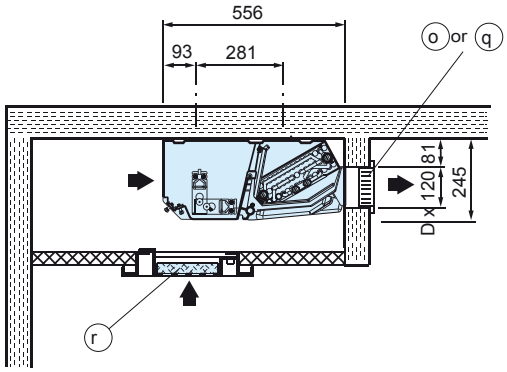
Assembly 41VD: Unit with return on front



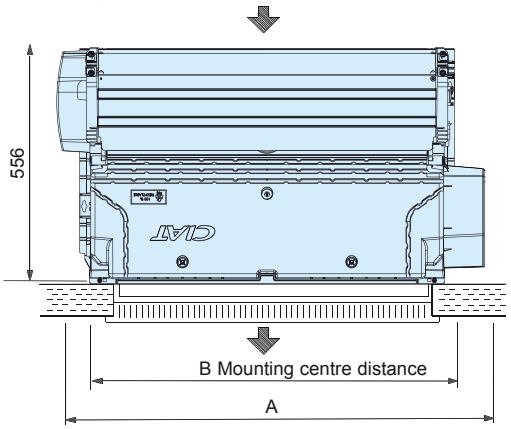
View from beneath



Assembly 41V: Basic unit with rear-mounted return

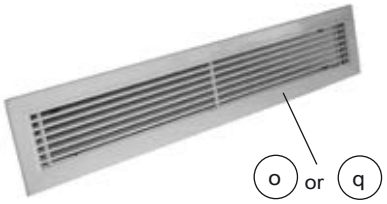


View from beneath



Option available on assemblies 41VD, 41V and 42V:

- Aluminium single (o) or double (q) deflection diffusion grille with sealing frame



- Metal sleeve for connection to air discharge

Accessories for assembly configurations (supplied separately)

o: Aluminium single deflection diffusion or return air grille with sealing frame (without hatch). For other applications, please consult us.

q: Aluminium double deflection diffusion grille with sealing frame

r: 600 x 600 microperforated return air grille

x: Metal sleeve connecting rectangular sleeve to supply air

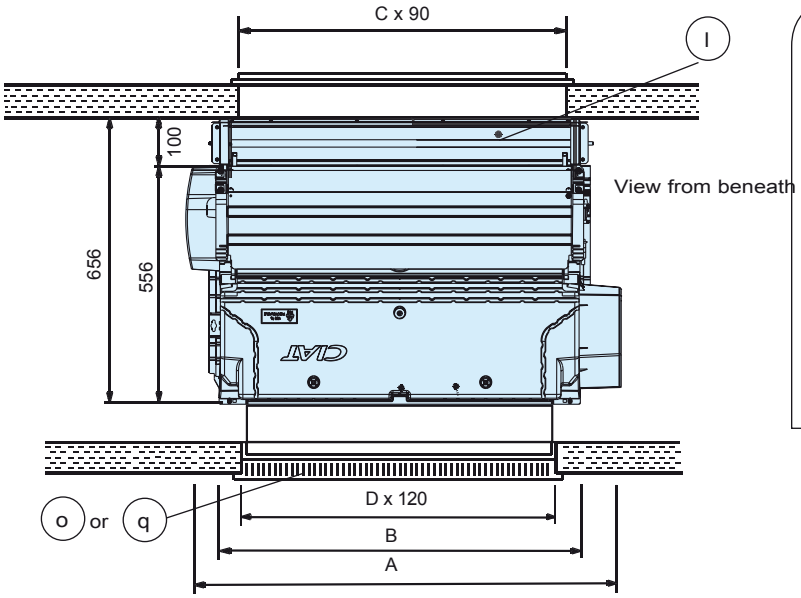
Size MAJOR LINE	A	B mounting centre distance	D grille space	Weight (kg) *
10	652	505	355	15
20	812	665	515	18
30	1012	865	715	22
40	1212	1065	915	28
50	1412	1265	1115	32
60	1612	1465	1315	36

* Weight of the unit in 4-tube version (without valves)

ASSEMBLY AND DIMENSIONS – NCH MODEL (UNCASED HORIZONTAL)

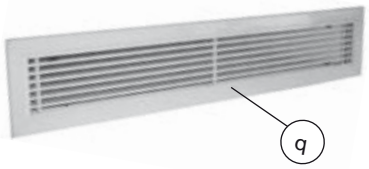
Assemblies 45V and 46V:

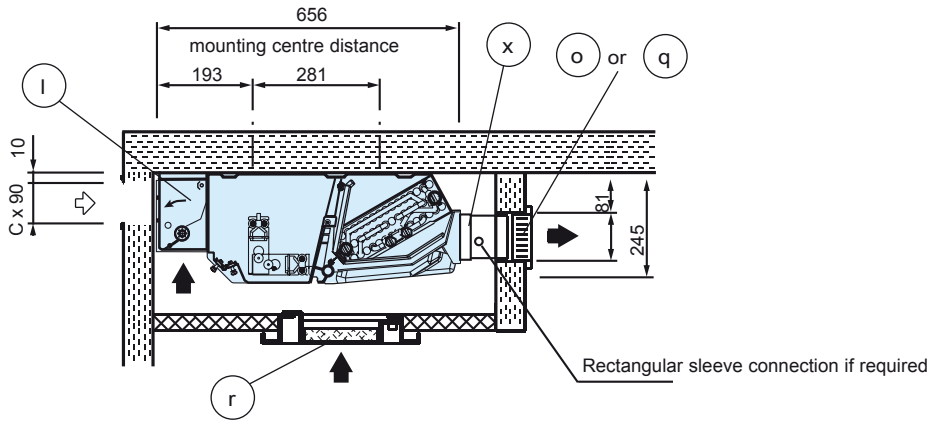
Basic unit equipped with a manual fresh air/recycled air mixing unit with a damper regulating the pre-treated air intake.



Option available on assemblies 45V, 46V:

- Aluminium single or double deflection diffusion grille with sealing frame





⇨ Air pretreated by an air handling unit

Accessories for assembly configurations (supplied separately)

l: Internal/external manually controlled air return unit

o: Aluminium single deflection diffusion grille with sealing frame

q: Aluminium double deflection diffusion grille with sealing frame

r: 600 x 600 microperforated return air grille

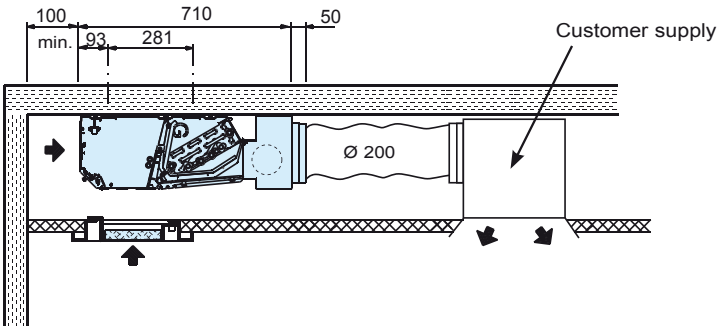
x: Metal sleeve connecting rectangular sleeve to supply air

Size MAJOR LINE	A	B Mounting centre distance	C hole space	D grille space	Weight (kg) *
10	652	505	430	355	16,5
20	812	665	430	515	20
30	1012	865	780	715	25
40	1212	1065	780	915	32
50	1412	1265	1180	1115	37
60	1612	1465	1180	1315	42

* Weight of heaviest unit in 4-tube configuration

ASSEMBLY AND DIMENSIONS – NCH MODEL (UNCASED HORIZONTAL)

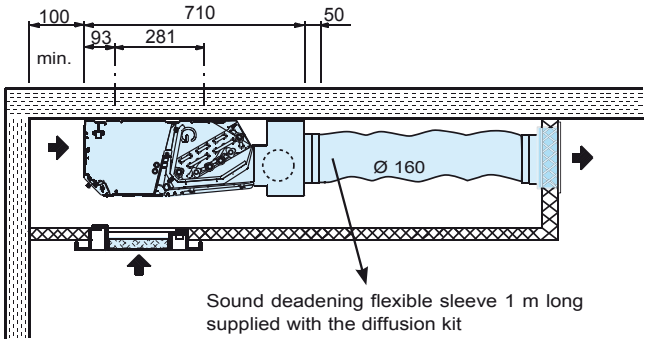
Y assembly:



Supply air plenum delivered not fitted. Available for sizes 1 to 6

Size	Number of collars	Ø of collars
T1	1	200
T2	1	200
T3	2	200
T4	3	200
T5	3	200
T6	3	200

YK assembly:

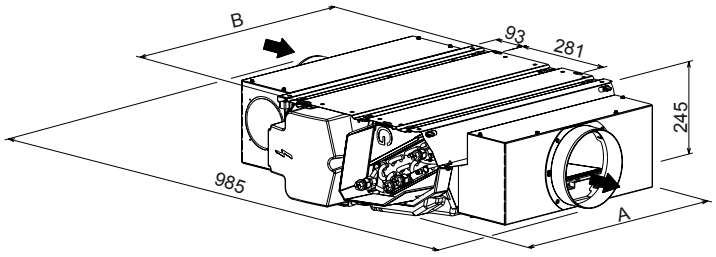


Supply air plenum delivered not fitted. Available for sizes 1 to 5

Size	Number of collars	Ø of collars
T1	1	160
T2	1	160
T3	2	160
T4	3	160
T5	3	160

Assembly H:

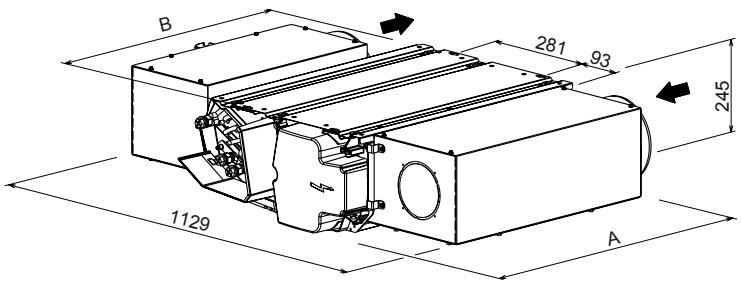
Supply and return air plenum factory fitted with Ø 160 mm or 200 mm collars available for sizes 1 to 4



Size	A	B	Number of collars
T1	600	505	1
T2	760	665	1
T3	960	865	2
T4	1160	1065	3

Assembly U:

Supply and return air plenum factory fitted with Ø 160 mm or 200 mm collars available for sizes 1 to 4



Size	A	B	Number of collars
T1	610	505	1
T2	770	665	1
T3	970	865	1
T4	1170	1065	1

PERFORMANCE – 2-TUBE SYSTEM

Cooling operation: water temperature: 7/12°C, inlet air temperature: 27°C - 19°C (WB)

Heating operation: water temperature: 45/40°C, inlet air temperature: 20°C

Major Line	AC motor Motor reference	HEE motor Voltage (V)	Air flow in m^3/h	Cooling cap. W		Heating capacity W	AC motor power input W	HEE motor power input W	Sound power LW dB(A)	Comfort level ISO or NR	Average air temperature rise in K Auxiliary electric heater 230/1/50			
											1 Resistor		2 Resistors	
				Total	Sensible						W	(°C)	W	(°C)
102A/ 102A HEE	V5	5,1	300	1 211	1 058	1 535	33	12	49	34	300	3,0	600	5,9
	V4	4,5	255	1 055	914	1 374	31	10	46	30		3,5		7,0
	V3	3,7	220	926	796	1 193	29	7	42	25		4,1		8,1
	V2	3,3	190	805	688	1 023	27	6	39	22		4,7		9,4
	V1	2,9	165	710	605	924	26	4	36	18		5,4		10,8
102C/ 102C HEE	V5	5,1	280	1 536	1 223	1 678	33	11	49	33	300	3,2	600	6,4
	V4	4,5	245	1 360	1 075	1 498	31	10	46	30		3,6		7,3
	V3	3,7	200	1 139	892	1 224	29	6	42	26		4,5		8,9
	V2	3,3	180	1 029	803	1 097	27	5	40	23		5,0		9,9
	V1	2,9	145	861	669	927	26	4	37	20		6,1		12,3
202A/ 202A HEE	V5	6,2	520	2 018	1 822	2 575	59	27	54	38	500	2,9	1000	5,7
	V4	5	430	1 801	1 593	2 261	42	17	49	33		3,5		6,9
	V3	4,5	385	1 641	1 438	2 077	37	12	46	29		3,9		7,7
	V2	3,8	320	1 453	1 254	1 809	32	8	42	25		4,6		9,3
	V1	3,1	255	1 249	1 057	1 511	27	5	37	19		5,8		11,6
202C/ 202C HEE	V5	6,2	495	2 604	2 164	3 065	58	25	55	39	500	3,0	1000	6,0
	V4	5	405	2 218	1 818	2 595	41	15	50	33		3,7		7,3
	V3	4,5	355	1 993	1 617	2 307	36	11	46	29		4,2		8,4
	V2	3,8	300	1 704	1 368	1 953	31	8	43	27		5,0		9,9
	V1	3,1	240	1 416	1 128	1 609	27	5	38	22		6,2		12,4
202D/ 202D HEE	V5	6,2	495	2 854	2 257	3 181	58	25	55	39				
	V4	5	405	2 471	1 929	2 729	41	15	50	33				
	V3	4,5	355	2 213	1 714	2 350	36	11	46	29				
	V2	3,8	300	1 874	1 436	1 907	31	8	43	27				
	V1	3,1	240	1 570	1 182	1 581	27	5	38	22				
302A/ 302A HEE	V5	6,7	840	2 928	2 836	4 283	88	35	56	40	800	2,8	1600	5,7
	V4	5,8	710	2 688	2 558	3 692	67	24	53	37		3,3		6,7
	V3	4,7	565	2 338	2 171	3 021	52	14	47	30		4,2		8,4
	V2	3,5	405	1 728	1 545	2 201	43	6	39	22		5,9		11,7
	V1	2,2	250	1 142	983	1 390	36	4	29	<15		9,5		19,0
302B/ 302B HEE	V5	6,7	840	3 646	3 127	4 376	88	35	56	40				
	V4	5,8	710	3 280	2 763	3 898	67	24	53	37				
	V3	4,7	565	2 874	2 267	3 180	52	14	47	30				
	V2	3,5	405	2 080	1 636	2 417	43	6	39	22				
	V1	2,2	250	1 285	965	1 003	36	4	29	<15				
302C/ 302C HEE	V5	6,7	785	4 173	3 398	4 940	88	32	56	41	800	3,0	1600	6,1
	V4	5,8	675	3 739	2 995	4 330	67	22	53	37		3,5		7,0
	V3	4,7	550	3 168	2 479	3 627	52	13	47	30		4,3		8,6
	V2	3,5	385	2 356	1 786	2 593	42	6	40	23		6,2		12,3
	V1	2,2	210	1 409	991	1 478	35	4	29	<15		11,3		22,6
402C/ 402C HEE	V5	7,6	1105	5 529	4 647	6 688	106	77	61	44	1200	3,2	2400	6,5
	V4	7,1	1025	5 298	4 425	6 302	93	63	59	43		3,5		7,0
	V3	5,8	825	4 608	3 737	5 278	80	36	54	36		4,3		8,6
	V2	4,9	655	3 912	3 085	4 363	72	21	49	30		5,4		10,9
	V1	3,6	475	3 058	2 306	3 288	63	11	41	22		7,5		15,0
502C/ 502C HEE	V5	7,6	1230	6 558	5 365	7 539	108	48	62	45	1600	3,9	3200	7,7
	V4	7,1	1125	6 163	4 974	7 002	94	39	60	43		4,2		8,4
	V3	5,9	920	5 312	4 181	5 900	79	24	55	37		5,2		10,3
	V2	5,1	760	4 596	3 546	5 006	72	16	50	31		6,3		12,5
	V1	3,7	530	3 457	2 587	3 636	63	8	42	23		9,0		17,9
602D/ 602D HEE	V5	8	1420	8 512	6 614	9 241	135	49	64	46				
	V4	7,5	1300	8 000	6 157	9 627	114	47	62	44				
	V3	6,7	1150	7 301	5 553	7 798	99	35	59	40				
	V2	5,6	935	6 231	4 657	6 534	88	21	54	34				
	V1	4,3	675	4 804	3 511	4 902	77	11	48	28				

Eurovent certified values

EUROVENT CERTIFIED PERFORMANCE www.eurovent-certification.com

Table with hypothetical acoustic attenuation of the room and installation for 2-tube system from previous page:

CV/CH/NCV models:
12dB: Sizes 102A, 102C, 202A, 202C, 202D, 302A, 302B, 302C
14dB: Sizes 402C, 502C
15dB: Size 602D
NCH models:
14dB: Sizes 102A, 102C, 202A, 202C, 202D, 302A, 302B, 302C
16dB: Sizes 402C, 502C, 602D

(1) Important: the air supply temperature should not exceed 65°C (CIAT recommendation).

PERFORMANCE – 4 TUBE SYSTEM

Cooling operation: water temperature: 7/12°C, inlet air temperature: 27°C - 19°C (WB)
Heating operation: water temperature: 65/55°C, inlet air temperature: 20°C

Major Line	AC motor Motor reference	HEE motor Voltage (V)	Air flow in m^3/h	Cooling cap. W		Heating capacity W	AC motor power input W	HEE motor power input W	Sound power LW dB(A)	Comfort level ISO or NR
				Total	Sensible					
104X/ 10X HEE	V5	5,1	280	1 534	1 221	1 260	33	11	49	33
	V4	4,5	245	1 358	1 074	1 170	31	10	46	30
	V3	3,7	200	1 137	891	1 044	29	6	42	26
	V2	3,3	180	1 028	802	978	27	5	40	23
	V1	2,9	145	860	668	867	26	4	37	20
204X/ 204X HEE	V5	6,2	495	2 604	2 147	2 133	59	27	55	39
	V4	5	405	2 218	1 803	1 948	42	17	50	33
	V3	4,5	355	1 993	1 605	1 823	37	12	46	29
	V2	3,8	300	1 704	1 359	1651	32	8	43	27
	V1	3,1	240	1 416	1 121	1 465	27	5	38	22
304X/ 304X HEE	V5	6,7	785	4 173	3 398	3 296	88	32	56	41
	V4	5,8	675	3 738	3 033	3 075	67	22	53	37
	V3	4,7	550	3 168	2 514	2 789	52	13	47	30
	V2	3,5	385	2 356	1 786	2285	42	6	40	23
	V1	2,2	210	1 409	991	1 565	35	4	29	<15
404X/ 404X HEE	V5	7,6	1105	5 529	4 690	4 480	106	77	61	44
	V4	7,1	1025	5 298	4 382	4 337	93	63	59	43
	V3	5,8	825	4 608	3 708	3 932	80	36	54	36
	V2	4,9	655	3 912	3 085	3518	72	21	49	30
	V1	3,6	475	3 058	2 337	2 947	63	11	41	22
504X/ 504X HEE	V5	7,6	1230	6 558	5 365	5 341	108	48	62	45
	V4	7,1	1125	6 163	4 974	5 127	94	39	60	43
	V3	5,9	920	5 312	4 181	4 659	79	24	55	37
	V2	5,1	760	4 596	3 546	4226	72	16	50	31
	V1	3,7	530	3 457	2 587	3 447	63	8	42	23
604X/ 604X HEE	V5	8	1420	7 705	6 149	6 375	135	49	64	46
	V4	7,5	1300	7 245	5 725	6 129	114	47	62	44
	V3	6,7	1150	6 631	5 174	5 779	99	35	59	40
	V2	5,6	935	5 688	4 355	5195	88	21	54	34
	V1	4,3	675	4 415	3 300	4 320	77	11	48	28

Eurovent certified values

EUROVENT CERTIFIED PERFORMANCE www.eurovent-certification.com

Table with hypothetical acoustic attenuation of the room and the installation:

CV/CH/NCV models
12dB: Sizes 104X, 204X, 304X
14dB: Sizes 404X, 504X
15dB: Sizes 604X
NCH models:
14dB: Sizes 104X, 204X, 304X
16dB: Sizes 404X, 504X, 604X

CIAT - MAJOR LINE CONTROL RANGE

V3000 KNX

PID "communicating" control

The excellence of networked systems

→ Networked system based on the KNX communications protocol (international standard).
→ Modulating control of valve(s) and electric heater (2-tube/2-wire version).
→ Automatic or manual control.
→ Selection of ergonomic and highly intuitive controllers.
→ Radiofrequency remote control.
→ Modulating control of the ventilation with HEE motor (optional).

Option for control by communicating PID also available with LON protocol (contact us).


Wall-mounted terminal with potentiometer


Radiofrequency remote control


Wall-mounted terminal with display


Factory-fitted flush-mounted terminal

V300

PI Control


Wall-mounted terminal (also available in factory flush-mounted version)

Simplified performance

→ Technology that makes it possible to control several units with a single terminal (suites, conference rooms, open-plan offices, etc.).

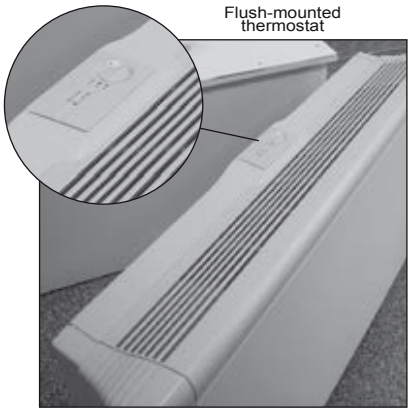
V30

Electronic On/Off control

Individualised performance

→ A single electronic terminal that meets all individual control needs.
→ The accuracy of electronic control programmable on-site with switches.
→ Management of a window switch for energy savings.
→3 manually selected ventilation speeds.
→ Control of ventilation or valve(s).


Wall-mounted thermostat with potentiometer


Flush-mounted thermostat

RTR - E

Electromechanical On-Off control

Absolute simplicity

→ The robustness of an electromechanical thermostat with three manual ventilation speeds.

Valves

Valve kits supplied separately

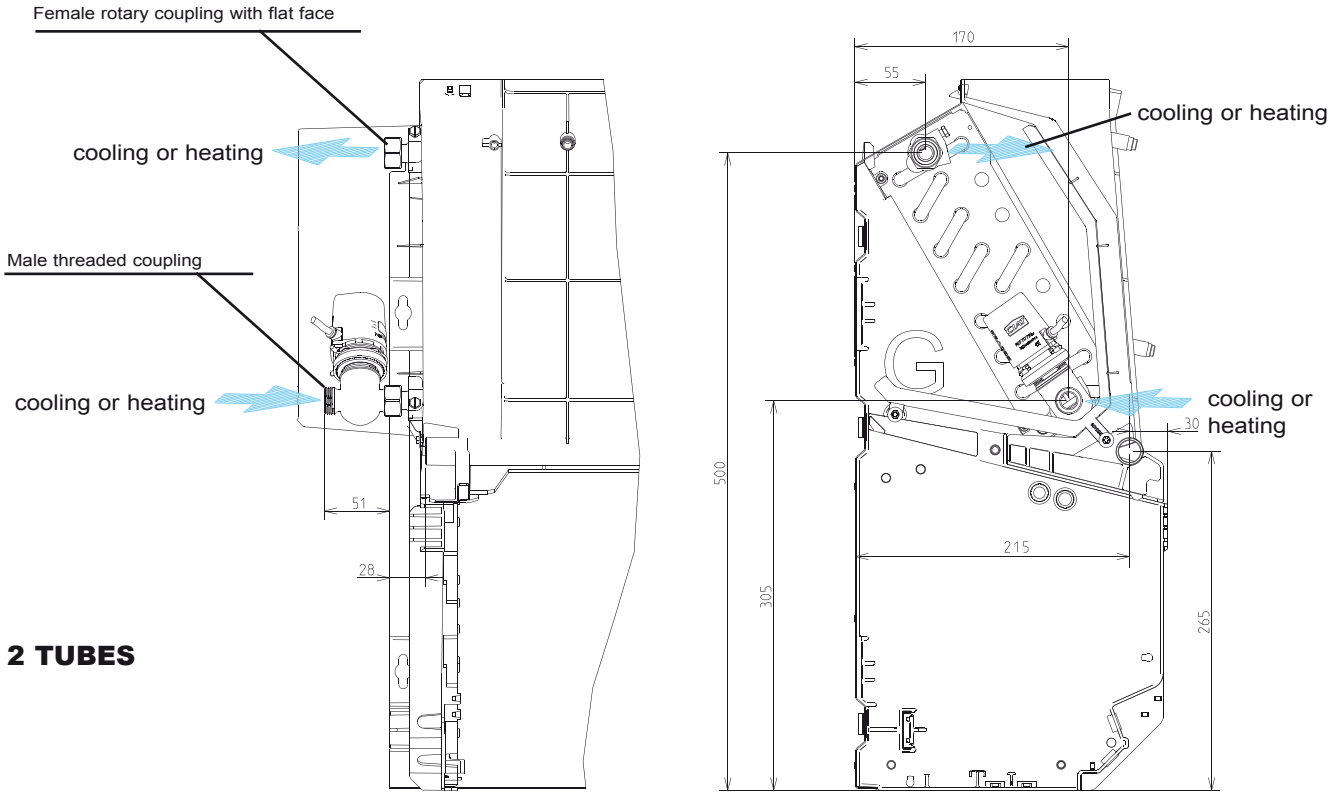
Quick on-site installation

→ Valve kits for each application (2- or 4-tube coils and thermal on/off 230V 2- or 3-way valves) available in stock.

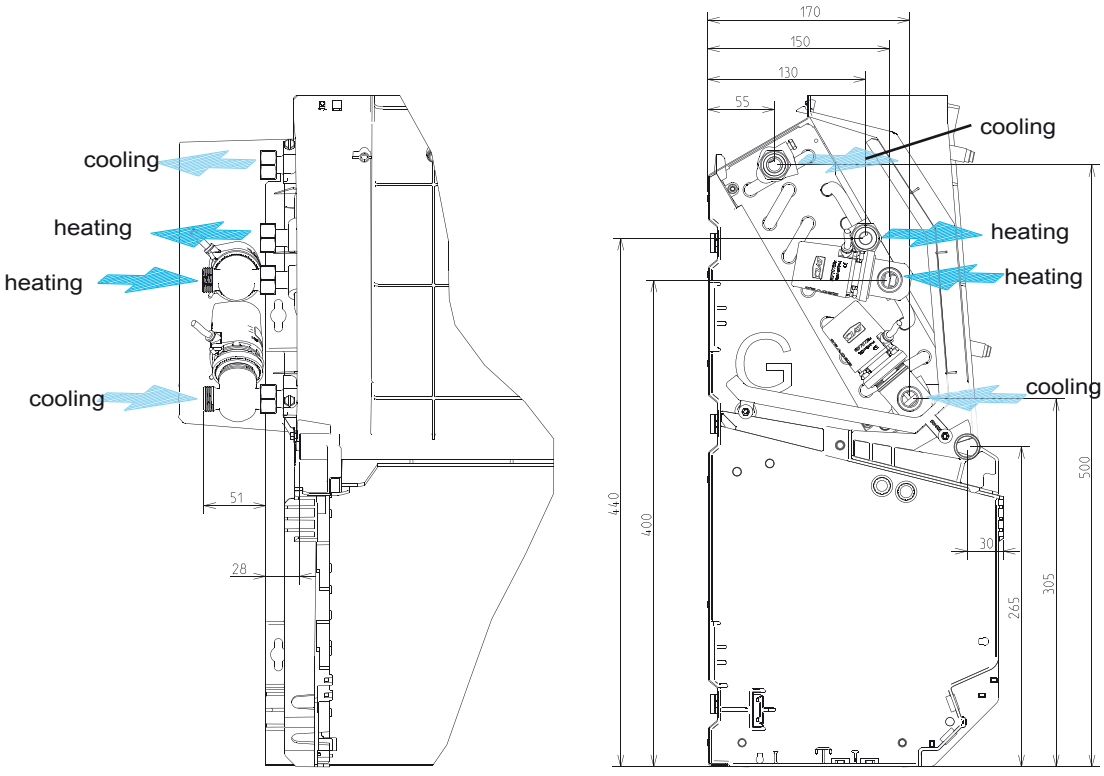
HYDRAULIC CONNECTIONS WITH FITTED VALVES

With assembly of 2-way valves

2 TUBES



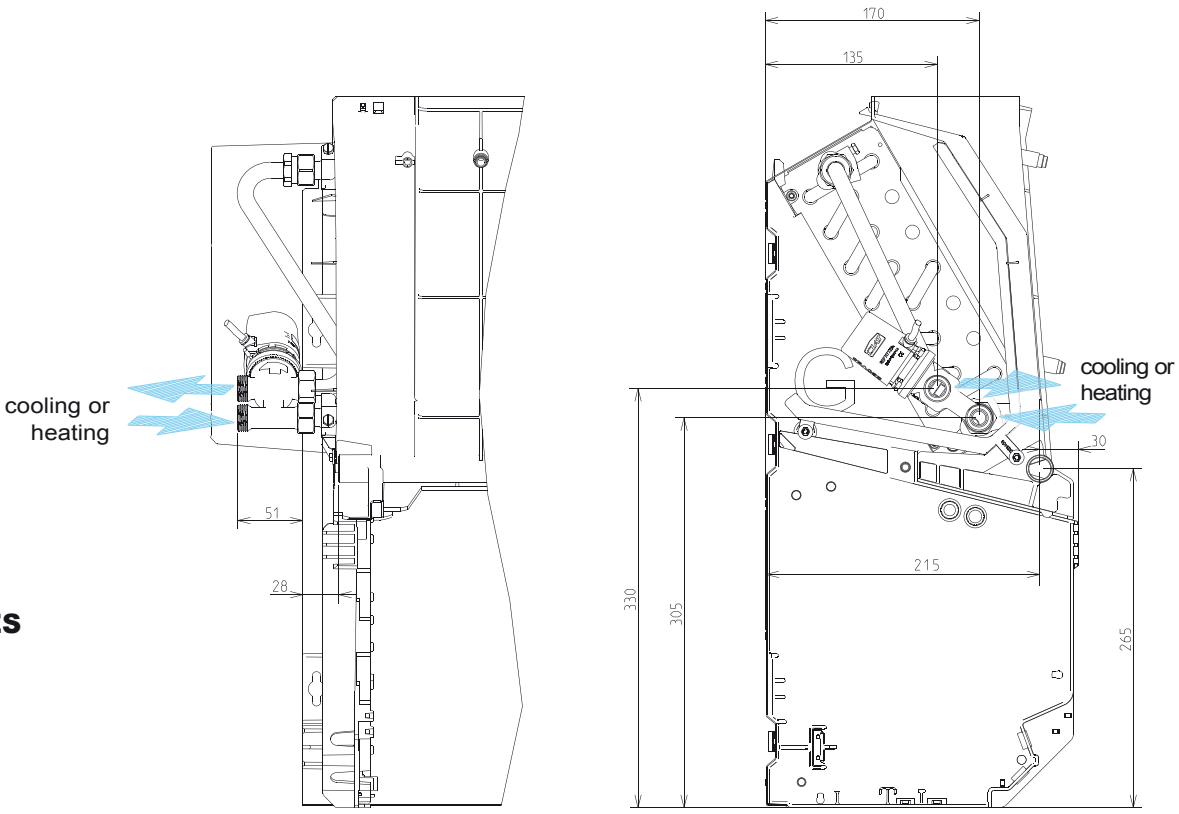
4 TUBES



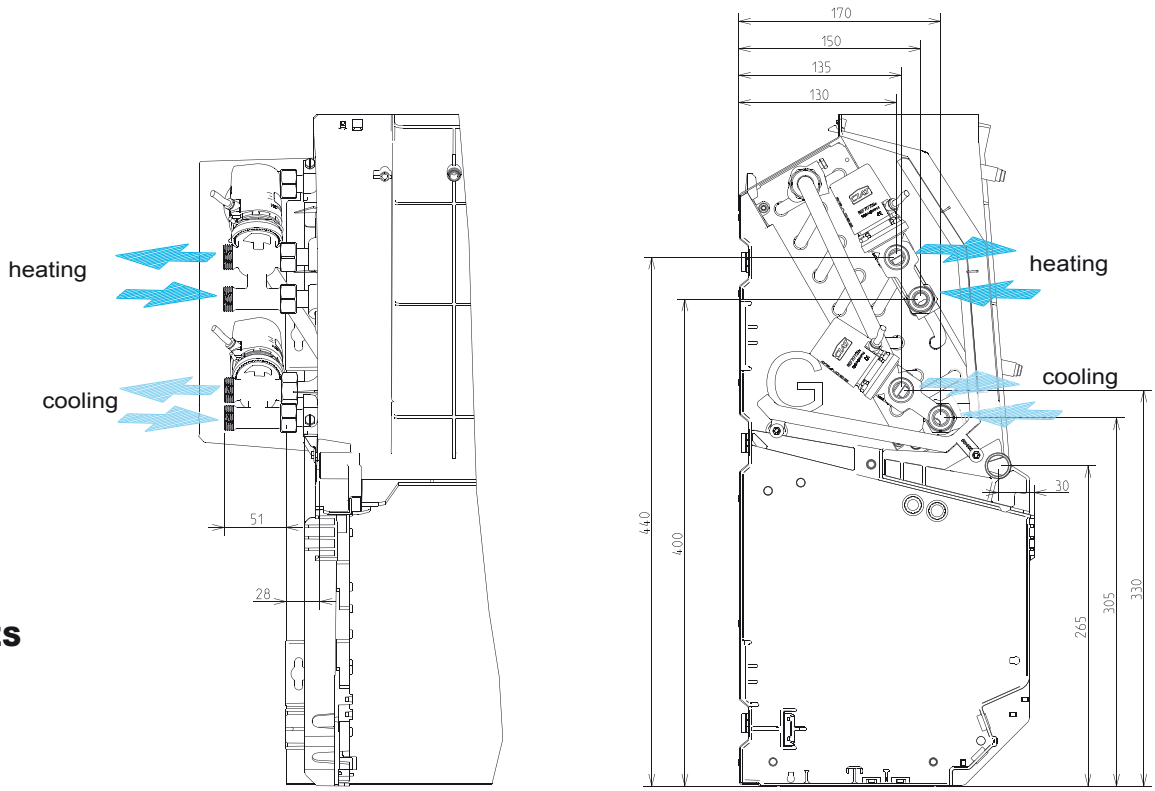
HYDRAULIC CONNECTIONS WITH FITTED VALVES

With 3-way valves + bypass fitted (centre to centre distance 40 mm)

2 TUBES



4 TUBES



TECHNICAL SPECIFICATIONS

Coil capacity (litres)

MAJOR LINE		102A	102C	202A	202C	202D	302A	302B	302C	402C	502C	602D
2-tube system	Hot or cold water coil	0,358	0,592	0,478	0,792	0,95	0,628	0,835	1,042	1,292	1,542	3,846
MAJOR LINE		104X		204X			304X			404X	504X	604X
4-tube system	Cold water coil	0,592		0,792			1,042			1,292	1,542	3,206
	Hot water coil	0,123		0,163			0,213			0,263	0,313	0,646

Coil connection diameters

- Coil connection type: rotary couplings with flat face;
- Valve connection type: install flush fit male threaded unions.

MAJOR LINE		102A	102C	202A	202C	202D	302A	302B	302C	402C	502C	602D
2-tube system	Hot or cold water coil	G1/2"	G1/2"	G1/2"	G1/2"	G1/2"	G1/2"	G1/2"	G1/2"	G1/2"	G3/4"	G3/4"
MAJOR LINE		104X		204X			304X			404X	504X	604X
4-tube system	Cold water coil	G1/2"		G1/2"			G1/2"			G1/2"	G3/4"	G3/4"
	Hot water coil	G1/2"		G1/2"			G1/2"			G1/2"	G1/2"	G1/2"

Electrical specifications of the motors

		AC Asynchronous Motor						HEE brushless motor					
MAJOR LINE	Motor speed	102/104	202/204	302/304	402/404	502/504	602/604	102/104	202/204	302/304	402/404	502/504	602/604
Absorbed power during operation (W)	V5	33	58	88	106	108	135	11	25	32	77	90	100
	V4	31	41	67	93	94	114	9	15	22	63	80	75
	V3	29	36	52	80	79	99	6	11	13	36	42	55
	V2	27	31	42	72	72	88	5	8	7	21	26	32
	V1	26	27	35	63	63	77	4	5	3	11	13	16
Max. absorbed current (A)	V5	0,14	0,25	0,38	0,46	0,47	0,59	0,11	0,20	0,29	0,62	0,71	0,74
	V4	0,13	0,18	0,29	0,40	0,41	0,50	0,09	0,13	0,20	0,50	0,62	0,67
	V3	0,13	0,16	0,23	0,35	0,34	0,43	0,07	0,11	0,13	0,30	0,35	0,44
	V2	0,12	0,13	0,18	0,31	0,31	0,38	0,06	0,09	0,08	0,19	0,21	0,27
	V1	0,11	0,12	0,15	0,27	0,27	0,33	0,06	0,06	0,06	0,11	0,13	0,16

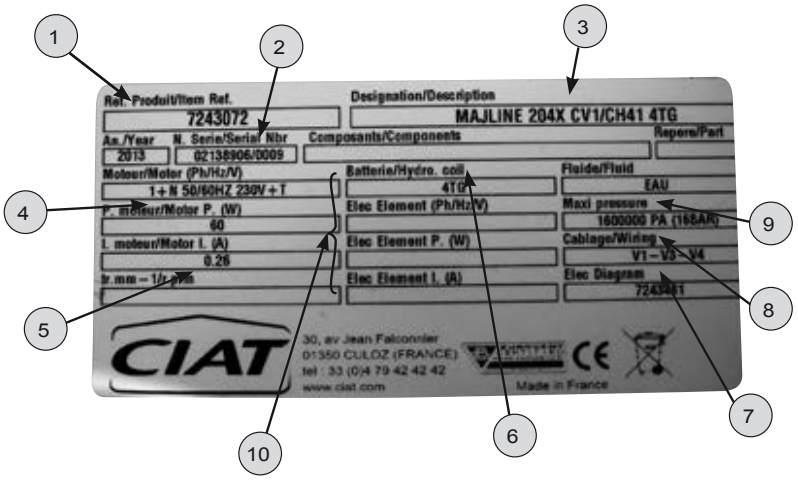
Note: Specifications determined with outlet open for 230V +/-10% - 50Hz supply.
For operation at 60Hz, the power input and rotation speed values are generally higher.

Motor operating range:
minimum return T°C: 0°C,
maximum return T°: 40°C

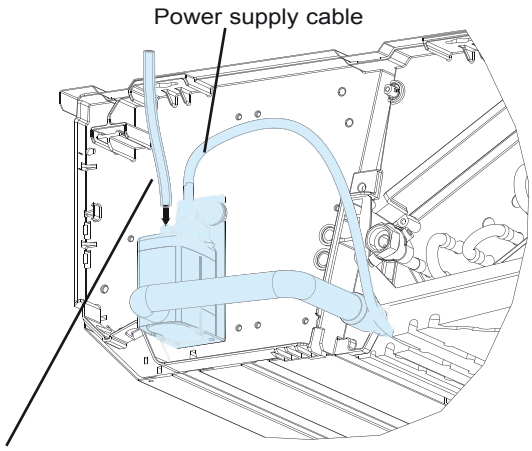
Unit information plate

The information plate shows all the information needed to identify the unit and its configuration. This plate is located on the condensate pan, on the electrical connection side.

① Code
② Serial number
③ Unit name
④ Motor nominal power
⑤ Rotation speed of the motor
⑥ Coil type
⑦ Electrical diagram reference
⑧ Motor speed wiring
⑨ Maximum operating pressure
⑩ Electric heater specifications if applicable



Condensate drain pump



The pump outlet must be connected to the water pipe by a flexible tube of 6 mm internal diameter **not supplied.**

Technical specifications

Maximum flow rate	20 l/h
Max. discharge height	10 m (flow rate = 4l/h)
Maximum pressure	14 m (flow rate = 0l/h)
Sound level at 1 m in accordance with EN ISO 3744 (measurements taken at LNE, pump in water, outside of application)	23 dBA
Noise level in application at 1 m: (Measurements made in the Sauermann acoustic lab, pump in water)	< or = 28 dBA
Power supply	230 V - 50/60 Hz - 14 W
Insulation class	Double insulation
Detection level	ON: 18 mm, OFF: 12 mm, AL: 21 mm
Safety switch	NF 8 A resistance - 250 V
Thermal protection (overheating)	90°C (automatic restart)
Operating cycle	30%: 3s ON - 7s OFF
Protection	IP54
Safety standard	CE
RoHS directive	Compliant
WEEE directive	Compliant
Packaging	0.390 kg - L 112 x W 91 x H 91 mm
Masterpack	25 pieces

ACTUAL FLOW RATES (l/h)

	Total pipe length (internal Ø 6mm)			
Discharge height	**5 m (l/h)**	**10 m (l/h)**	**20 m (l/h)**	**30 m (l/h)**
0 m	20	19	18	17
2 m	16	15	14	13,5
4 m	11,5	11	10,5	10
6 m		8,5	7,5	6,5
8 m		6	5	4
10 m		4	3,5	2,5

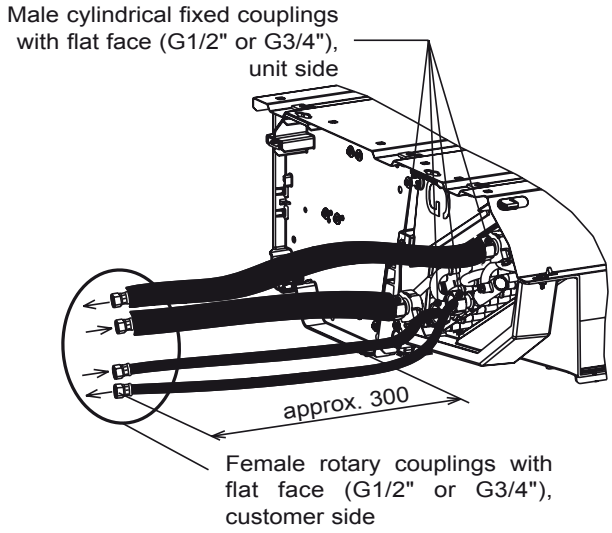
Operating limit:

Draining: Ø 6 mm int. flexible tube, Ø 8 mm end piece. This accessory must be paired with a valve control to allow the upper safety limit to control the valve's closure (stop condensate).

$$\text{Condensate flow rate (l/h)} = \frac{\text{Total capacity - Sensible capacity (W)}}{680}$$

ASSEMBLING FLEXIBLE HOSES (ACCESSORIES SUPPLIED IN KIT) WITH OR WITHOUT VALVES - NCH/NCV

ASSEMBLY WITHOUT VALVE



TECHNICAL DESCRIPTION OF FLEXIBLE HOSES

- Machined brass coupling unless otherwise specified

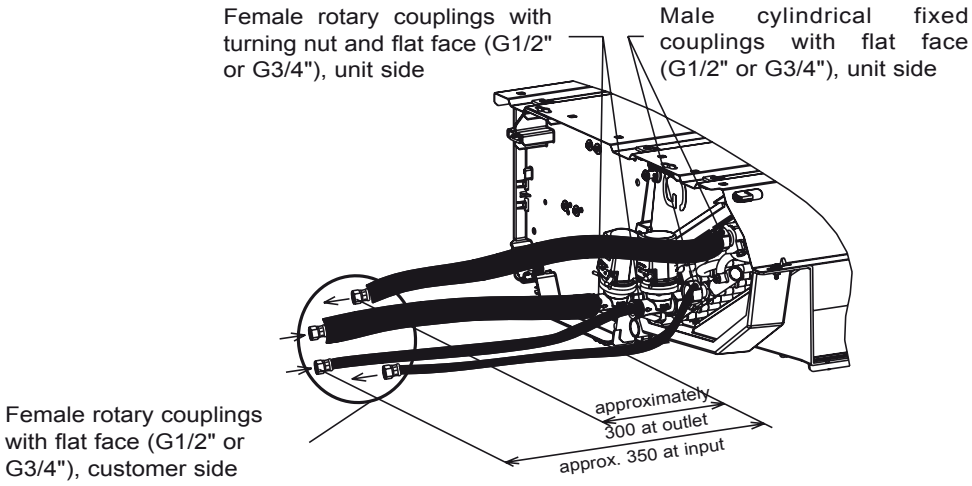
Thread and internal thread in line with standards NFE 03-004 and NFE 03-005

- Pipe in EPDM elastomer in line with EN 684-1 and AISI 304 stainless steel sheath
- Stainless steel crimped bush between coupling and tube + sheath

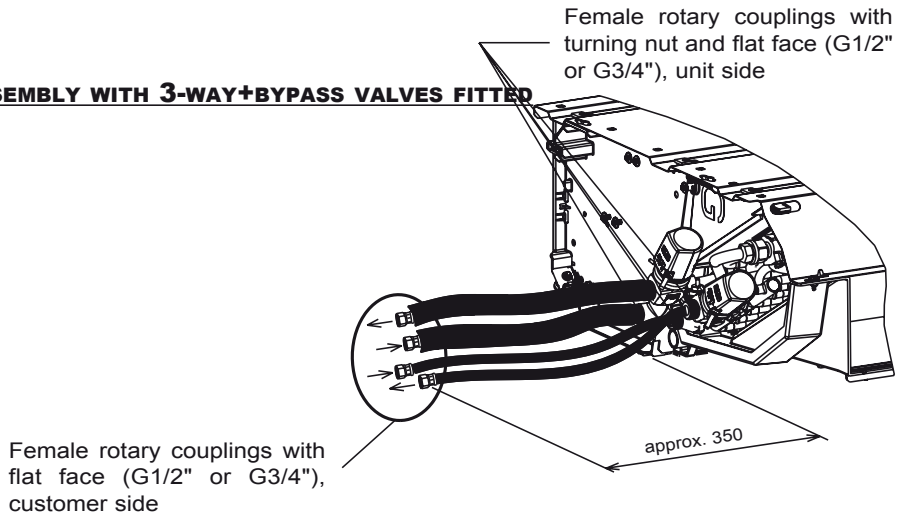
Only on insulated cooling hoses:
- Heat insulating sheath in M1 cellular foam (9 mm thick) glued at each end to the crimping bush
- Protective end-piece glued at each end to the heat insulating sheath

- DN corresponds to the pipe's internal diameter
- Min./max. operating temperature = 6°C to 110°C
- Max. operating pressure at 110°C: 10 bar

ASSEMBLY WITH 2-WAY VALVES

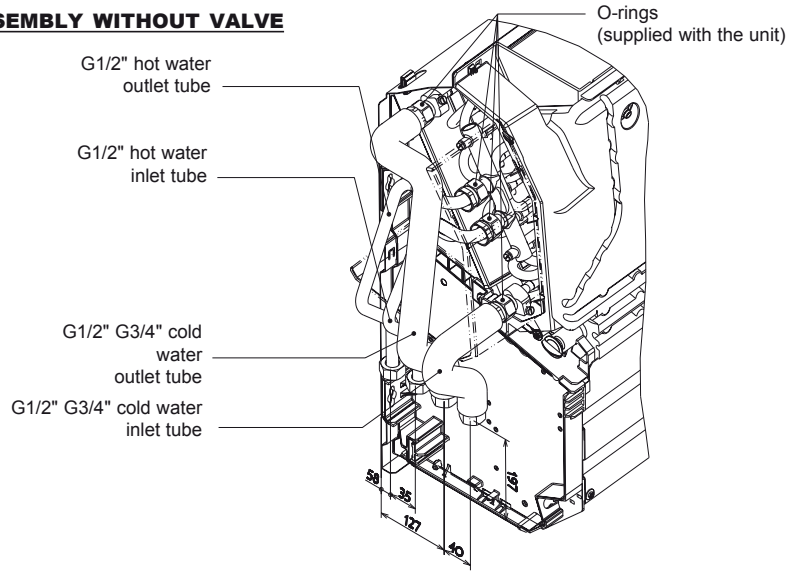


ASSEMBLY WITH 3-WAY+BYPASS VALVES FITTED

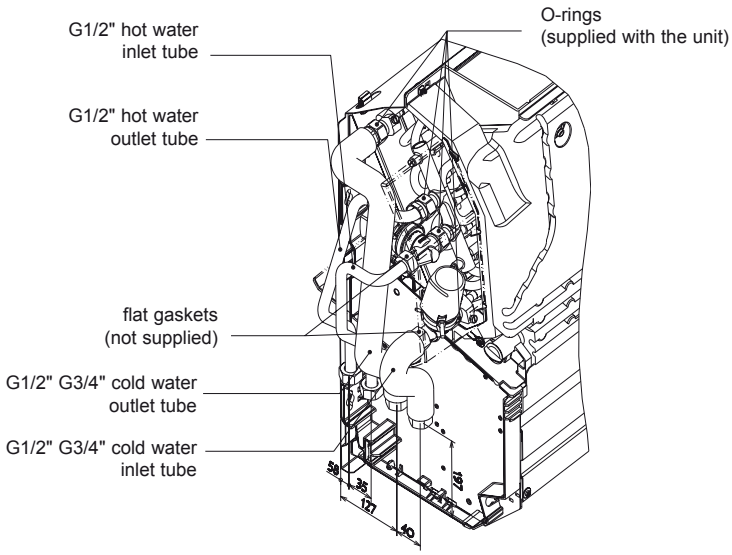


CONNECTING THE TUBES (ACCESSORIES SUPPLIED IN KIT) WITH OR WITHOUT VALVES

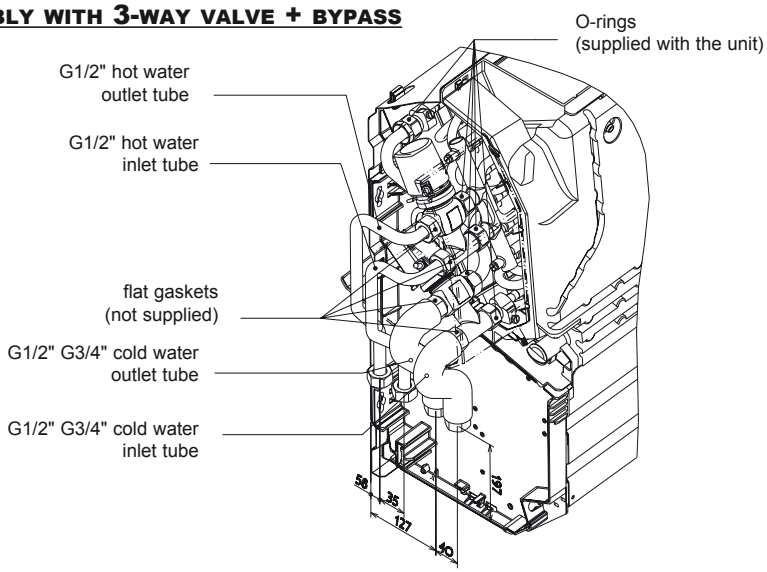
ASSEMBLY WITHOUT VALVE



ASSEMBLY WITH 2-WAY VALVES



ASSEMBLY WITH 3-WAY VALVE + BYPASS



CODING – 2-TUBE SYSTEM

MAJOR LINE		WATER COIL ONLY							
		2-TUBE SYSTEM							
		CV Assembly 1		CV Assembly 1D		NCV Assembly 1V		NCV Assembly 1VD	
		CH Assembly 41		CH Assembly 41D		NCH Assembly 41V		NCH Assembly 41D	
Size		Connection on left	Connection on right	Connection on left	Connection on right	Connection on left	Connection on right	Connection on left	Connection on right
102A	Code	7243000	7243002	7243001	7243003	7243250	7243252	7243251	7243253
102C	Code	7243016	7243018	7243017	7243019	7243266	7243268	7243267	7243269
202A	Code	7243040	7243042	7243041	7243043	7243290	7243292	7243291	7243293
202C	Code	7243056	7243058	7243057	7243059	7243306	7243308	7243307	7243309
202D	Code	7243068	7243070	7243069	7243071	7243318	7243320	7243319	7243321
302A	Code	7243080	7243082	7243081	7243083	7243330	7243332	7243331	7243333
302B	Code	7243092	7243094	7243093	7243095	7243342	7243344	7243343	7243345
302C	Code	7243096	7243098	7243097	7243099	7243346	7243348	7243347	7243349
402C	Code	7243136	7243138	7243137	7243139	7243386	7243388	7243387	7243389
502C	Code	7243176	7243178	7243177	7243179	7243426	7243428	7243427	7243429
602D	Code	7243216	7243218	7243217	7243219	7243466	7243468	7243467	7243469

CODING – 4-TUBE SYSTEM

MAJOR LINE		WATER COIL ONLY							
		4-TUBE SYSTEM							
		CV Assembly 1		CV Assembly 1D		NCV Assembly 1V		NCV Assembly 1VD	
		CH Assembly 41		CH Assembly 41D		NCH Assembly 41V		NCH Assembly 41D	
Size		Connection on left	Connection on right	Connection on left	Connection on right	Connection on left	Connection on right	Connection on left	Connection on right
104X	Code	7243032	7243034	7243033	7243035	7243282	7243284	7243283	7243285
204X	Code	7243072	7243074	7243073	7243075	7243322	7243324	7243323	7243325
304X	Code	7243112	7243114	7243113	7243115	7243362	7243364	7243363	7243365
404X	Code	7243152	7243154	7243153	7243155	7243402	7243404	7243403	7243405
504X	Code	7243192	7243194	7243193	7243195	7243442	7243444	7243443	7243445
604X	Code	7243220	7243222	7243221	7243223	7243470	7243472	7243471	7243473

CODING 2-TUBE + 2-WIRE

MAJOR LINE		WATER COIL + ELECTRIC							
		2-TUBE + 2-WIRE SYSTEM							
		CV Assembly 1		CV Assembly 1D		NCV Assembly 1V		NCV Assembly 1VD	
		CH Assembly 41		CH Assembly 41D		NCH Assembly 41V		NCH Assembly 41D	
Size		Connection on left	Connection on right	Connection on left	Connection on right	Connection on left	Connection on right	Connection on left	Connection on right
102A		1 Resistor/300W							
	Code	7243004	7243006	7243005	7243007	7243254	7243256	7243255	7243257
		2 Resistors/600W							
	Code	7243008	7243010	7243009	7243011	7243258	7243260	7243259	7243261
102C		1 Resistor/300W							
	Code	7243020	7243022	7243021	7243023	7243270	7243272	7243271	7243273
		2 Resistors/600W							
	Code	7243024	7243026	7243025	7243027	7243274	7243276	7243275	7243277
202A		1 Resistor/500W							
	Code	7243044	7243046	7243045	7243047	7243294	7243296	7243295	7243297
		2 Resistors/1000W							
	Code	7243048	7243050	7243049	7243051	7243298	7243300	7243299	7243301
202C		1 Resistor/500W							
	Code	7243060	7243062	7243061	7243063	7243310	7243312	7243311	7243313
		2 Resistors/1000W							
	Code	7243064	7243066	7243065	7243067	7243314	7243316	7243315	7243317
302A		1 Resistor/800W							
	Code	7243084	7243086	7243085	7243087	7243334	7243336	7243335	7243337
		2 Resistors/1600W							
	Code	7243088	7243090	7243089	7243091	7243338	7243340	7243339	7243341
302C		1 Resistor/800W							
	Code	7243100	7243102	7243101	7243103	7243350	7243352	7243351	7243353
		2 Resistors/1600W							
	Code	7243104	7243106	7243105	7243107	7243354	7243356	7243355	7243357
402C		1 Resistor/1200W							
	Code	7243140	7243142	7243141	7243143	7243390	7243392	7243391	7243393
		2 Resistors/2400W							
	Code	7243144	7243146	7243145	7243147	7243394	7243396	7243395	7243397
502C		1 Resistor/1600W							
	Code	7243180	7243182	7243181	7243183	7243430	7243432	7243431	7243433
		2 Resistors/3200W							
	Code	7243184	7243186	7243185	7243187	7243434	7243436	7243435	7243437

OPTIONS (MOUNTED ON THE UNIT)

CV/CH	NCV/ NCH	Installation	Figures	Assembly markings and dimensions	Description
●	●	All			Condensate drain pump fitted to unit with high safety device.
	●	All		x	Metal sleeve for connection to air discharge
	●	NCH only			Plenum for sizes 2 and 3, supply and/or return air
	●	NCH only			Hydraulic and electrical connections on same side

ACCESSORIES (SUPPLIED SEPARATELY)

CV/ CH	NCV/ NCH	Assem-blies	Figures	Assembly markings and dimen-sions	Description		102-104	202-204	302-304	402-404	502-504	602-604
●		2, 42		a	Support feet for cased model	**Code**	*7242933*					
●		2, 42		b	Internal return air grille between feet	**Code**	*7242935*	*7242936*	*7242937*	*7242938*	*7242939*	*7242940*
●		2		c	Rear skirting support in RAL7035 light grey, 55 mm thick (for 70 mm skirting)	**Code**	*7242926*	*7242927*	*7242928*	*7242929*	*7242930*	*7242931*
●		2		j	Rear painted panel in RAL7035 light grey for posi-tioning the unit by a window	**Code**	*7262703*	*7262704*	*7262705*	*7262706*	*7262707*	*7262708*
●		5/6, 45/46		d	Manual internal/external air recovery unit with return air grille	**Code**	*7242949*	*7242950*	*7242951*	*7242952*	*7242953*	*7242954*
	●	2V		k	Support base for uncased unit	**Code**	*7242932*					

ACCESSORIES (SUPPLIED SEPARATELY)

CV/ CH	NCV/ NCH	Assem-blies	Figures	Assembly markings and dimen-sions	Description			102-104	202-204	302-304	402-404	502-504	602-604
	●	5V/6V, 45V/46V		I	Manual internal/external air recovery unit		**Code**	*7242956*	*7242957*	*7242958*	*7242959*	*7242960*	*7242961*
	●	All		o	Single deflection diffusion grille with sealing frame for vertical and horizontal models		**Code**	*7256897*	*7256898*	*7256899*	*7256900*	*7256901*	*7256902*
	●	NCH		q	Double deflection diffusion grille with sealing frame for horizontal models		**Code**	*7242942*	*7242943*	*7242944*	*7242945*	*7242946*	*7242947*
	●	Y		v	Supply air plenum with Ø 200 mm collars for T5 and T6		**Code**	*7242991*	*7242992*	*7242993*	*7242994*	*7242995*	*7242996*
	●	YK		w	Supply air plenum with Ø 160 mm collars + air diffusion grille + 1 m sheath		**Code**	*7243486 E046175*	*7243487 E046175*	*7243488 E046183*	*7243489 E046191*	*7243490 E046191*	
●	●	All			Condensate drain pump kit to be fitted to unit with high safety device		**Code**	*7203415*					
	●	All			Elastic bushings supplied separately (4 per unit)		**Code**	*0219453*					
	●	Y		M01	Smooth sleeve alone (external Ø 100 mm), screws and bolts supplied separately		**Code**	*7013442*					
	●	Y		M07	Assembly comprising Ø100 external diameter collar* with self-adjustable module fitted with a seal. Packaged with screws, bolts and plan. The flow regulator is designed to supply the determined flow** with a pressure difference of between 50 and 100 Pa.	15/30/45 m^3/h	**Code**	*7013440*					

ACCESSORIES (SUPPLIED SEPARATELY)

Flexible connections for Horizontal/Vertical chassis models

Installation	Figures	Description		102A-102C-202A-202C-202D-302A-302B-302C-402C	502C-602D
For 2-tube coils				G1/2" customer side coupling	G3/4" customer side coupling
All Without Valve		2 M1 9 mm thick insulated flexible connections EPDM pipe+PN10 stainless steel braid length 300 mm Male flat face/female rotary coupling on customer side	Code	*2 x 5202288*	*2 x 7247867*
All 3-way valve + by-pass		2 M1 9 mm thick insulated flexible connections EPDM pipe+PN10 stainless steel braid length 300 mm Female rotary couplings	Code	*2 x 5202289*	*2 x 5202298*
All 2-way valve		2 M1 9 mm thick insulated flexible connections EPDM pipe+PN10 stainless steel braid length 300 mm, including: 1 male flat face/female rotary coupling on customer side 1 female rotary coupling	Code	*5202288 + 5202289*	*7247867 + 5202298*
Installation	**Figures**	**Description**		**104X-204X-304X-404X**	**504X-604X**
For 4-tube coils				Customer side coupling Heating G1/2" Cooling G1/2"	Customer side coupling Heating G1/2" Cooling G3/4"
All Without Valve		4 EPDM pipe+PN10 stainless steel braid length 300 mm flexible connections male coupling with flat face/female rotary coupling on customer side HEATING: 2 non-insulated COOLING: 2 M1 9 mm thick insulated	Code	HEATING: *2 x 7247868* COOLING: *2 x 5202288*	HEATING: *2 x 7247868* COOLING: *2 x 7247867*
All 3-way valve + by-pass		4 EPDM pipe+PN10 stainless steel braid length 300 mm flexible connections female rotary couplings HEATING: 2 non-insulated COOLING: 2 M1 9 mm thick insulated	Code	HEATING: *2 x 7247837* COOLING: *2 x 5202289*	HEATING: *2 x 7247837* COOLING: *2 x 5202298*
All 2-way valve		4 EPDM pipe+PN10 stainless steel braid length 300 mm flexible connections, including: 1 male flat face/female rotary coupling on customer side 1 female rotary coupling HEATING: 2 non-insulated COOLING: 2 M1 9 mm thick insulated	Code	HEATING: *7247868 + 7247837* COOLING: *5202288 + 5202289*	HEATING: *7247868 + 7247837* COOLING: *7247867 + 5202298*

Tubes for Horizontal/Vertical cased models

Installation	Figures	Description		102A to 102D - 202A to 202D - 302A to 302D - 402A and 402C	402B and 402D - 502A to 502D - 602B to 602D
For 2-tube coils				G1/2" customer side coupling	G3/4" customer side coupling
All without valve		2 M1 9 mm thick insulated tubes Copper tube Ø 12.7 - PN 16 Male coupling with flat face/Female rotary coupling on customer side	Code	*7299040 (L/R)** *7299041 (L) + 7299064 (R)*	*7299059 (L/R)** *7299061 (L) + 7299071 (R)*
All 3-way valve + bypass		2 M1 9 mm thick insulated tubes Copper tube Ø 12.7 - PN 16 Female rotary couplings	Code	*7299049 (L/R)* *7299050 (L/R)*	*7299063 (L/R)* *7299062 (L/R)"*
All 2-way valve		2 M1 9 mm thick insulated tubes Copper tube Ø 12.7 - PN 16 - including: 1 male flat face/female rotary coupling on customer side 1 female rotary coupling	Code	*7299049 (L/R)* *7299041 (L) + 7299064 (R)*	*7299062 (L/R)* *7299061 (L) + 7299071 (R)*
Installation	**Figures**	**Description**		**204X - 304X - 404X**	**504X - 604X**
For 4-tube coils				Customer side coupling Heating G1/2" - Cooling G1/2"	Customer side coupling Heating G1/2" - Cooling G3/4"
All Without Valve		4 copper tubes Ø 12.7 - PN 16 male flat face/female rotary coupling on customer side HEATING: 2 non-insulated COOLING: 2 M1 9 mm thick insulated	Code	HEATING: *7299048 (L) + 7299046 (L)* *7299066 (R) + 7299065 (R)* COOLING: *7299040 (L/R)* *7299041 (L) + 7299064 (R)*	HEATING: *7299048 (L) + 7299046 (L)* *7299066 (R) + 7299065 (R)* COOLING: *7299059 (L/R)* *7299061 (L) + 7299071 (R)*
All 3-way valve + by-pass		4 copper tubes Ø 12.7 - PN 16 Female rotary couplings HEATING: 2 non-insulated COOLING: 2 M1 9 mm thick insulated	Code	HEATING: *7299054 (L) + 7299051 (L)* *7299070 (R) + 7299068 (R)* COOLING: *7299049 (L/R)* *7299050 (L/R)*	HEATING: *7299054 (L) + 7299051 (L)* *7299070 (R) + 7299068 (R)* COOLING: *299063 (L/R)* *7299062 (L/R)*
All 2-way valve		4 copper tubes Ø 12.7 - PN 16 - including: 1 male flat face/female rotary coupling on customer side 1 female rotary coupling HEATING: 2 non-insulated COOLING: 2 M1 9 mm thick insulated	Code	HEATING: *7299051 (L) + 7299048 (L)* *7299068 (R) + 7299066 (R)* COOLING: *7299049 (L/R)* *7299041 (L) + 7299064 (R)*	HEATING: *7299051 (L) + 7299048 (L)* *7299068 (R) + 7299066 (R)* COOLING: *7299062 (L/R)* *7299061 (L) + 7299071 (R)*

* (L): Left/(R): Right

SPECIFICATION

Comfort units will conform to the standards and regulations in force. They will be manufactured under ISO 9001 quality assurance and in compliance with environmental certification ISO 14001. All comfort units, as well as being Eurovent certified, must bear the CE mark.

The **bi-material and two-colour casing** will be of a modern and refined design to blend in with all types of interior. Its robust packaged design must enable it to be dismantled easily and quickly. No plastic cover or moving parts will weaken the robustness of the unit.

The base will have mounting holes on the metal rear panel to facilitate fixing to walls and ceilings. Under no circumstances will it be constructed using materials liable to wear out.

The air filter, minimum G3 type in accordance with EN 779, with M1 fire resistance and fitted on removable runners, must be easily accessible and removable.

Air supply will be via a COANDA effect grille in order to ensure compliance with comfort standard ISO 7730. The fins must not under any circumstances be directed or able to be directed towards the occupied space.

The water coil will be made of copper tubes and continuous fins in seamed aluminium. To ensure the best energy efficiency possible, different variants will be available thus limiting surplus power. the hydraulic connections will be fitted with female rotary couplings with flat faces to facilitate the fitting of regulation valves. The PN16 coils will be equipped with air bleed and draining valves. They must be tested with a minimum test pressure of 24 bar.

The main condensate pan, in class V0 non-corrodible smooth ABS-type material, will as standard have reinforced insulation of at least 20 mm for use in all climates. An auxiliary pan will be available to collect condensate from the regulation valves. All metal trays will be prohibited. Condensate draining must be of the raised type, raised by at least 30 mm to facilitate the gravity drain.

The fan motor assembly is equipped with an asynchronous motor or an HEE motor with a 230V (50/60 Hz) closed and tropicalised power supply, with a protected shaft and internal automatic overload protection as standard on the winding. The impellers will be HEE type in ABS, class V0 with a diameter of 160 mm to ensure high acoustic and air flow performance. The fan motor assembly will be sized to meet the requirements of installations needing up to 50 Pa of operating pressure.
The impellers of the unit will be in ABS, class V0 and designed for optimum performance. They will be split unit type, therefore easily removed, enabling the maintenance operator to replace only the
defective part if necessary (motor or impeller).

- **The asynchronous motor** has 5 speeds connected to the electrics box of the unit for optimised selection on site.
- **The HEE motor** is a high energy efficiency motor enabling a reduction of up to 80% in electricity consumption, which uses BLAC (Brushless Alternate Current) brushless technology offering more linear torque progression and a lower operating sound level than BLDC (Brushless Direct Current) technology. It has 3-speed gradual operation by 0-10V or on/off control signal.

An electrics box that is enclosed and of large dimensions, fitted with a DIN rail, will be able to accommodate and protect all the control components from dust. A cable clamp will ensure the electrical wires are secure. The electrics box will be large enough to contain all the components of a complete regulation loop. **Parallel control of 2 motors is prohibited.**

The technical design of the unit should allow it to be installed horizontally or vertically without modification.

The **control** will be factory-fitted to the units to ensure correct operation. With vertically cased units, the control unit will be flush-mounted to the top of the casing. The flush-mounted control terminals will integrate perfectly with the exterior design of the casing by using the same RAL colours.

Eco-design should be a permanent consideration at every stage of the unit's conception process. Recyclable parts must be stamped with the current logo to facilitate sorting and identification at end of life. The unit as a whole must be at least 85% recyclable. The unit must be easy to dismantle at end of life.

Guarantees
The manufacturer guarantees the equipment's performance, and will provide the documents attesting to the equipment's compliance with the attached specifications and with the STANDARDS, in particular the heating and cooling capacity (total and sensible), the air flow, the motor power input, the efficiency of the filters and the sound power spectrum. Using a simulation tool, the manufacturer of the comfort units must be able to give the relevant comfort indices or the values in compliance with the standard EN ISO 7730. The unit's instruction manual must be in the language used in the country of installation. The manufacturer's technical specifications and the equipment's sound pressure must be given in **the documents to be appended to the submission.**

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