



Air handling units for swimming pools



Dehumidification capacity: 3,9 to 15,2 kg/h

Heating and **dehumidification**
for covered swimming pools

Low consumption

Electromechanical **control**

DESCRIPTION

The **Junior BCP Series** equipment is comprised of dehumidification units using a cooling circuit with total condensation heat recovery specially designed for conventional covered swimming pools and other dehumidification applications.

These units have been designed for indoor assembly.

Consult in the case of special applications (marine environments, high concentrations of salts or chemical products, high temperatures, etc.).

RANGE

Junior BCP Series: 1 cooling circuit, 1 compressor, 8 models:

- 20 / 30 / 40 / 50 / 60 / 70 / 80 / 90.

OPERATION LIMITS

Air inlet dry temperature

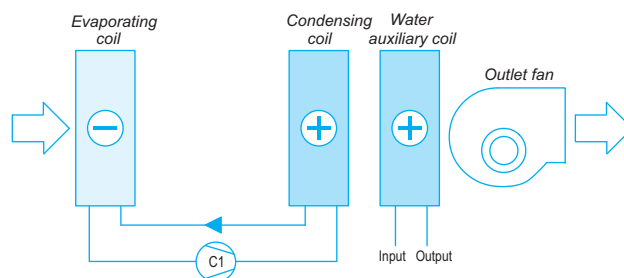
- Maximum: 35°C (65% RH - 29°C WB)
- Minimum: 18°C (90% RH - 17°C WB)

Water inlet temperature to the condenser

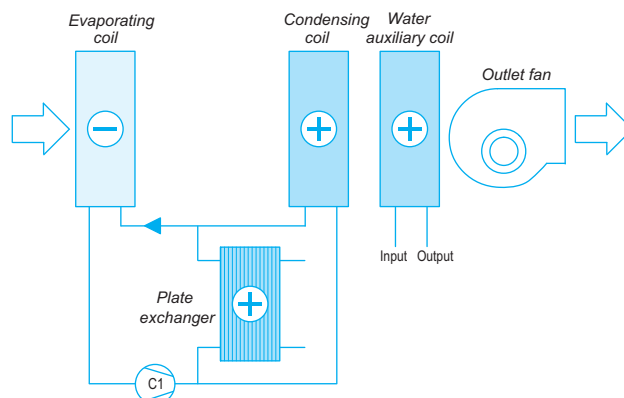
- Maximum: 35°C
- Minimum: 20°C

BASIC DIAGRAMS

■ Junior BCP 20 / 30 / 40 / 50 / 60



■ Junior BCP 70 / 80 / 90 (40 / 50 / 60 optional)



UNIT COMPONENTS

Casing

- Sandwich panel casing made of galvanised steel metal 1 mm thick with polyester paint on the outside and inside and 25 mm glass fibre insulation.
- Self-supporting frame and removable access panels. Door with hinges to access the electric panel.
- Panels with rubber gasket closures to ensure tightness.
- Dimensions adapted for fitting doors with a width of > 680 mm (removable supports in models 40, 50 and 60).

Air circuit

- Reusable G3 filter with access for cleaning.
- Direct expansion cooling coil with copper pipes and aluminium fins, with polyurethane protection.
- Condensates drain pan in stainless steel with outlet hole. This pan is tilted towards the drain to ensure that no water is trapped inside thus preventing health problems.
- Condensing coil with copper pipes and aluminium fins, with polyurethane protection.
- Centrifugal fan in galvanised steel metal with direct coupling to the outdoor rotor motor with low sound level.
- Speed variation in the fan due to voltage adjustment using a manual potentiometer.
- Manually adjusted air bypass damper.

Cooling circuit

- Scroll-type compressor with sound insulation, assembled over shock absorbers. It includes an integral protection module which ensures the combined protection of the motor temperature and the outlet temperature.
- Plate exchanger made of special steel SMO-254 with nickel welding positioned in parallel with the condensing coil. Standard in models 70, 80, 90 and optional in models 40, 50, 60.
- Anti-acid dehydrator filter.

Protections

- High and low pressure pressostats.
- Main door switch.
- Magnetothermic protection switches for the compressor power line and fan motor.
- Automatic switch in the control circuit.
- Inlet limit temperature thermostat to the dehumidification coil.
- Anti-short-cycle compressor timer.

Electric panel

- Complete and fully wired electrical panel.
- Main ground connection.
- Compressor contactors and motorised fans.

Control

- For relative humidity: humidity probe and digital controller for one stage which acts on the compressor operation.

- For the temperature (optional): temperature probe and a digital controller which acts on the auxiliary hot water or electric coil, proportional three-way valve for hot water coil.

Options

- DUAL remote aerocondenser: makes it possible to select, based on needs for comfort, for the condensation to be done in the indoor air circuit or in the remote outdoor condenser.
- Copper pipe coils and copper fins.
- Antifreeze thermostat.
- Auxiliary electrical heaters in 1 or 2 stages with built-in control.
- Hot water auxiliary coil in two rows with proportional three-way valve with polyurethane or copper-copper coating.
- Water condenser made of special steel SMO-254 with nickel welding (models 40 to 60).
- Flexible connections for the water condenser and for the hot water auxiliary coil.
- G4 filters.
- Differential pressostat for clogged filters.
- Supply plenum (models 70 to 90).
- Mixing boxes for free-cooling, with motorised dampers and centrifugal return fan in an independent module (for the free-cooling control CIATpool electronic control is required).
- Shock absorbers made of rubber.

CIATpool electronic control

CIATpool control is basically composed of a µPC MEDIUM control board, a pGD1 graphical terminal, a TCO user terminal (optional) and sensors.

The control can connect to a centralised technical management system through a BMS communication card

The control also manages a local connection between units through a pLAN (µPC MEDIUM Local Area Network), thus allowing for a maximum of 15 units to communicate data and information.

The electronic control CIATpool is supplied separate from the BCP unit in an airtight box (remote control panel).

Main functions:

- Dehumidification control during operating modes: COOLING / HEATING / AUTO and selection of setpoints.
- Permanent control of the operating parameters.
- View of the values measured by the sensors.
- Daily and weekly programming.
- Anti-fire safety device.
- Operating fault diagnosis and main alarm.

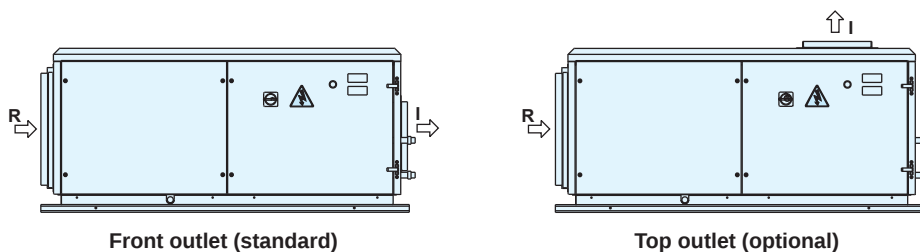
Optional functions:

This control allows controlling optional elements such as:

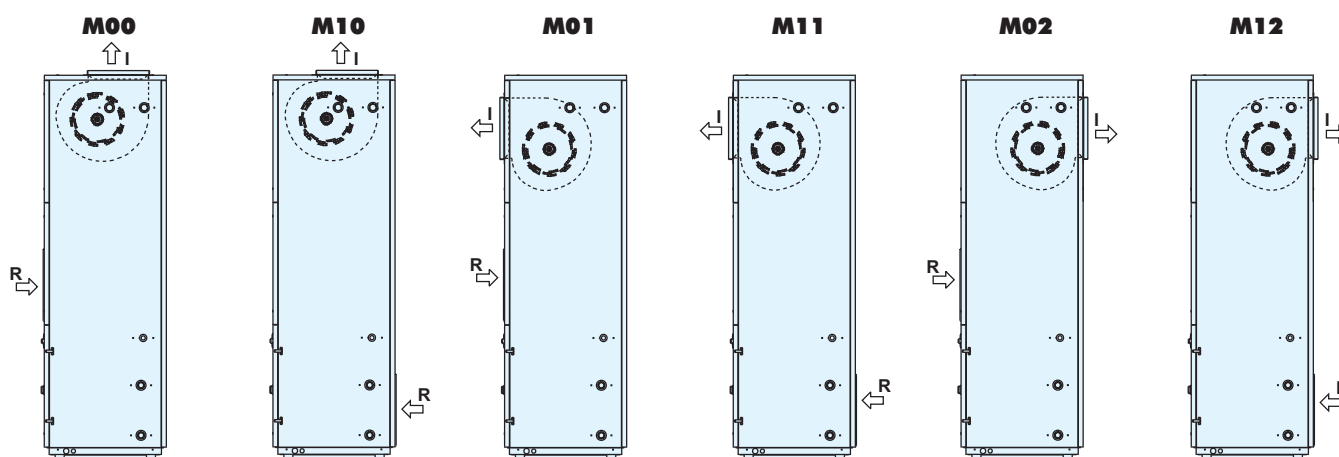
- Outdoor air damper for refreshing air.
- Mixing box for thermal or thermoenthalpic free-cooling.
- Auxiliary electrical heaters.
- Hot water auxiliary coil.
- Air-cooled condenser for DUAL operation.
- Clogged filter detector.

AVAILABLE ASSEMBLIES

Junior BCP - 20 / 30 / 40 / 50 / 60



Junior BCP - 70 / 80 / 90



Note: in models BCP 70 to 90 with assemblies M00, M01 and M02, the electric panel is supplied in an airtight box for remote installation (remote control panel).

SOUND LEVELS dB(A)

■ Sound power level

Sound power level in the supply fan outlet and in the return (optional) fan aspiration to be taken into account for the silencer calculation:

Junior BCP		20	30	40M	40	50	60	70	80	90
Supply fan	dB(A)	63	64	71	71	72	77,5	72	73,5	74,2
Return fan (optional)	dB(A)	70	71	66,6	66,6	67,3	73,7	77	67,8	68,2

■ Sound pressure level

Measurement conditions: in free field, measured at a distance of 5 metres, directivity 2 and at 1,5 metres from the ground.

Junior BCP		20	30	40M	40	50	60	70	80	90
Standard unit	dB(A)	45,4	46,1	50,7	50,2	51,4	56,3	52,9	54,0	56,6

Note: The sound pressure level depends on the installation conditions and, as such, is only indicated as a guide.

TECHNICAL CHARACTERISTICS

Junior BCP		20	30	40	50	60	70	80	90
Air circuit	Dehumidification capacity ① (kg/h)	3,9	5,1	7,1	8,7	10,7	12,6	14,3	15,2
	Heating capacity (kW)	7,2	9,4	13	16	19,8	11,3	12,8	13,9
	Cooling capacity ② (kW)	5,6	7,3	10,2	12,6	15,5	18,2	20,7	22
	Power input (kW)	2	2,5	3,4	4	4,9	6	6,7	7,3
	Nominal air flow (m³/h)	1.200	1.500	2.100	2.600	3.200	3.700	4.300	4.600
	Maximum air flow (m³/h)	1.440	1.800	2.520	3.120	3.840	4.440	5.160	5.520
	Available static pressure (mm.w.c)	15	15	15	15	15	17	15	13
	Fan type / number	Centrifugal / 1							
	Output (kW)	0,4	0,4	0,6	0,6	0,6	1,3	1,3	1,3
Water condenser	Availability	No	Optional				Standard		
	Heating capacity ③ (kW)	--	--	6,6	8,2	10,1	11,8	13,5	14,3
	Nominal water flow (m³/h)	--	--	1,2	1,4	1,8	2,1	2,4	2,7
	Pressure drop (m.w.c)	--	--	1	1,3	1,9	1,1	1,4	1,7
	Hydraulic connections	--	--	1"	1"	1"	1 1/4"	1 1/4"	1 1/4"
Hot water auxiliary coil (optional)	Availability	Optional							
	Heating capacity ④ (kW)	15,4	16,5	18,5	21	23,6	35	39,7	41,1
	Nominal water flow (m³/h)	0,8	0,9	1	1,1	1,2	1,8	2,1	2,1
	Pressure drop (m.w.c)	1,7	2,4	0,6	0,7	0,9	1,6	1,9	2
	Hydraulic connections	3/4"	3/4"	1"	1"	1"	1 1/4"	1 1/4"	1 1/4"
Compressor	Type	Scroll							
	Number / number of circuits	1 / 1							
	Volume of oil (l)	1	1	1,1	1,4	1,7	1,7	1,7	3,3
Electric power supply	230 V / I ph / 50 Hz	2 Wires + Ground			--				
	400 V / III ph / 50 Hz	--		3 Wires + Ground + Neutral					
Maximum absorbed current	230 V / I ph / 50 Hz (±10%) (A)	17,1	21,6	30,8	--	--	--	--	--
	400 V / III ph / 50 Hz (±10%) (A)	--	--	15,8	17,8	20,8	17,4	20,4	20,4
Refrigerant	Type	R-407C							
	Global warming potential (GWP) ⑤	1.744							
	Charge (kg)	2,3	2,2	2,8	3,4	3	4,8	4,9	5,7
	Environment impact (tCO2eq)	4,0	3,8	4,9	5,9	5,2	8,4	8,5	9,9
Dimensions	Length (mm)	1.430	1.430	1.530	1.530	1.530	1.082	1.082	1.082
	Width (mm)	658	658	838	838	838	680	680	680
	Height (mm)	636	636	700	700	700	2.143	2.143	2.143
Weight	(kg)	168	172	208	212	222	300	302	329
Condensate outlet Ø		3/4" adaptor							

① Cooling dehumidification capacity of the unit. When selecting the unit it is recommendable to take into account the dehumidification provided by outdoor ventilation air (UNE 100011).

② Cooling capacity for air inlet temperature conditions of 28°C and 65% RH

③ Heating capacity for recovery circuit water 28 / 33°C. Recovery of 50% of the condensation capacity.

④ Boiler water for the hot water auxiliary coil 82 / 65°C and air inlet at 20°C.

⑤ Climatic warming potential of a kilogram of fluorinated greenhouse gas in relation to a kilogram of carbon dioxide over a period of 100 years.

TECHNICAL CHARACTERISTICS OF THE INDEPENDENT RETURN MODULE (OPTIONAL)

Junior BCP		20	30	40	50	60	70	80	90
Return fan (optional)	Available static pressure (mm.w.c)	11	10	11	10	10	10	10	10
	Fan type / number	Centrifugal / 1							
	Fan capacity (kW)	0,1	0,1	0,7	0,7	0,7	0,7	0,7	0,7
Dimensions	Length (mm)	1.417	1.417	1.500	1.500	1.500	1.500	1.500	1.500
	Width (mm)	660	660	840	840	840	840	840	840
	Height (mm)	636	636	700	700	700	700	700	700
Weight	(kg)	90	90	139	139	139	139	140	140

MAXIMUM INTENSITIES (A)

Junior BCP		20	30	40	50	60	70	80	90
Compressor	230 V / I ph / 50 Hz (±10%)	13,5	18	24	--	--	--	--	--
	400 V / III ph / 50 Hz (±10%)	--	--	9	11	14	14	17	17
Supply fan	230 V / I ph / 50 Hz (±10%)	3,6	3,6	6,8	6,8	6,8	--	--	--
	400 V / III ph / 50 Hz (±10%)	--	--	--	--	--	3,4	3,4	3,4
Return fan (optional)	230 V / I ph / 50 Hz (±10%)	1,4	1,4	7,2	7,2	7,2	7,2	7,2	7,2

ELECTRICAL HEATER (OPTIONAL)

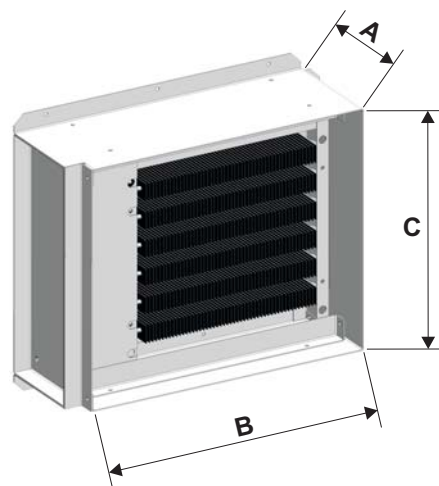
Available capacities

Junior BCP	Voltage	230 V / I ph / 50Hz			
	Output (kW)	3	4	5	6
20 / 30 / 40M	Intensity (A)	13	17,4	21,7	26,1

Junior BCP	Voltage	400 V / III ph / 50 Hz					
	Output (kW)	3	6	9	12	15	18
40	Intensity (A)	4,3	8,7	13	unavailable		
50	Intensity (A)	4,3	8,7	13	17,3	unavailable	
60	Intensity (A)	4,3	8,7	13	17,3	21,7	unavailable
70 / 80 / 90	Intensity (A)	4,3	8,7	13	17,3	21,7	26,0

Frame for assembly of the auxiliary electrical heater in the supply fan

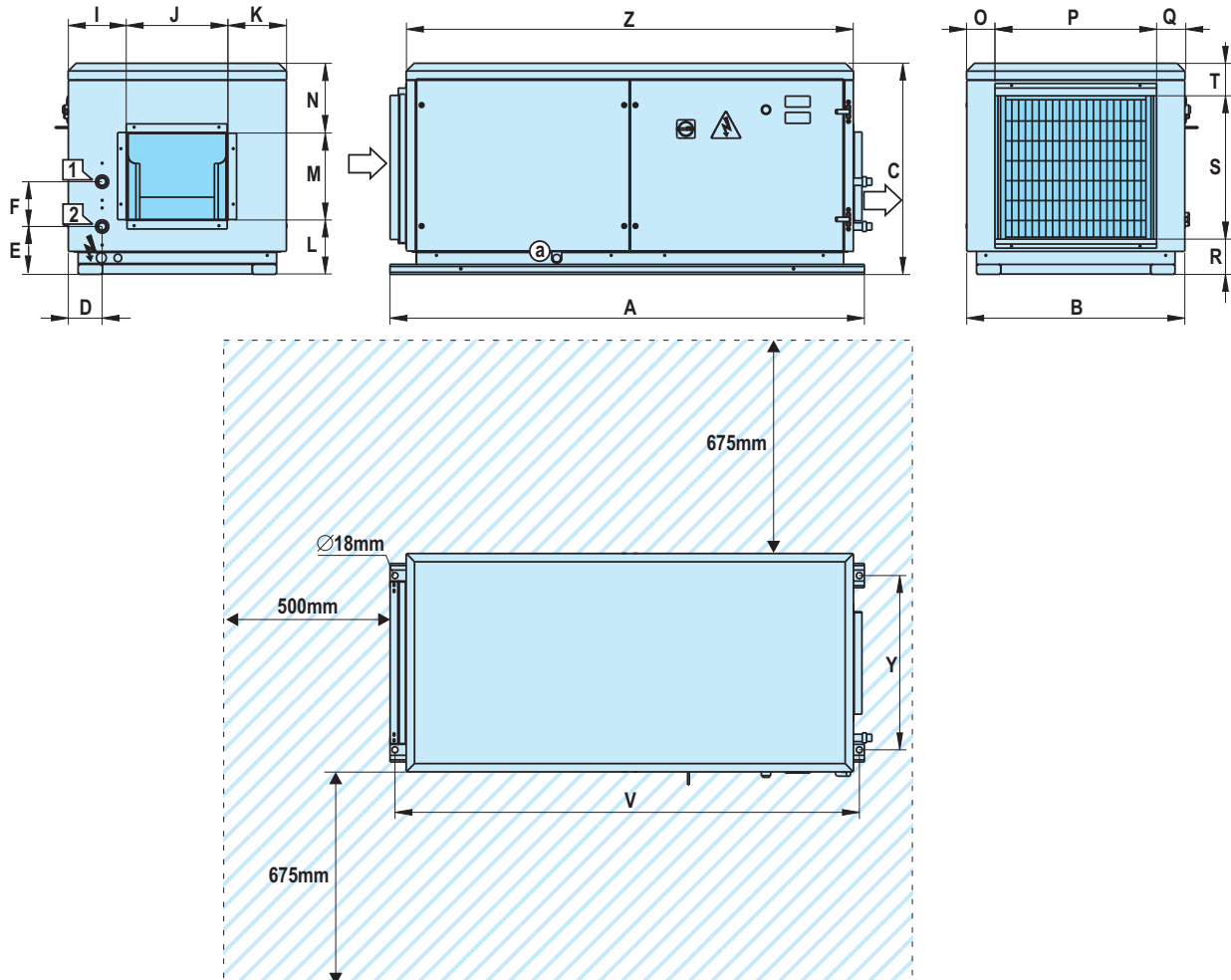
Junior BCP	Output	Dimensions (mm)		
		A	B	C
20 / 30 / 40M	3 to 6 kW	150	432	341
40	3 to 6 kW	150	432	341
	9 kW	262	432	341
50	3 to 6 kW	150	432	341
	9 to 12 kW	262	432	341
60	3 to 6 kW	150	432	341
	9 to 12 kW	262	432	341
	15 kW	262	482	443
70 / 80 / 90	3 to 9 kW	150	482	443
	12 to 18 kW	262	482	443



Note: This frame is designed with side access for maintenance purposes.

DIMENSIONS SCHEMES

Junior BCP - 20 / 30 horizontal outlet (mm)

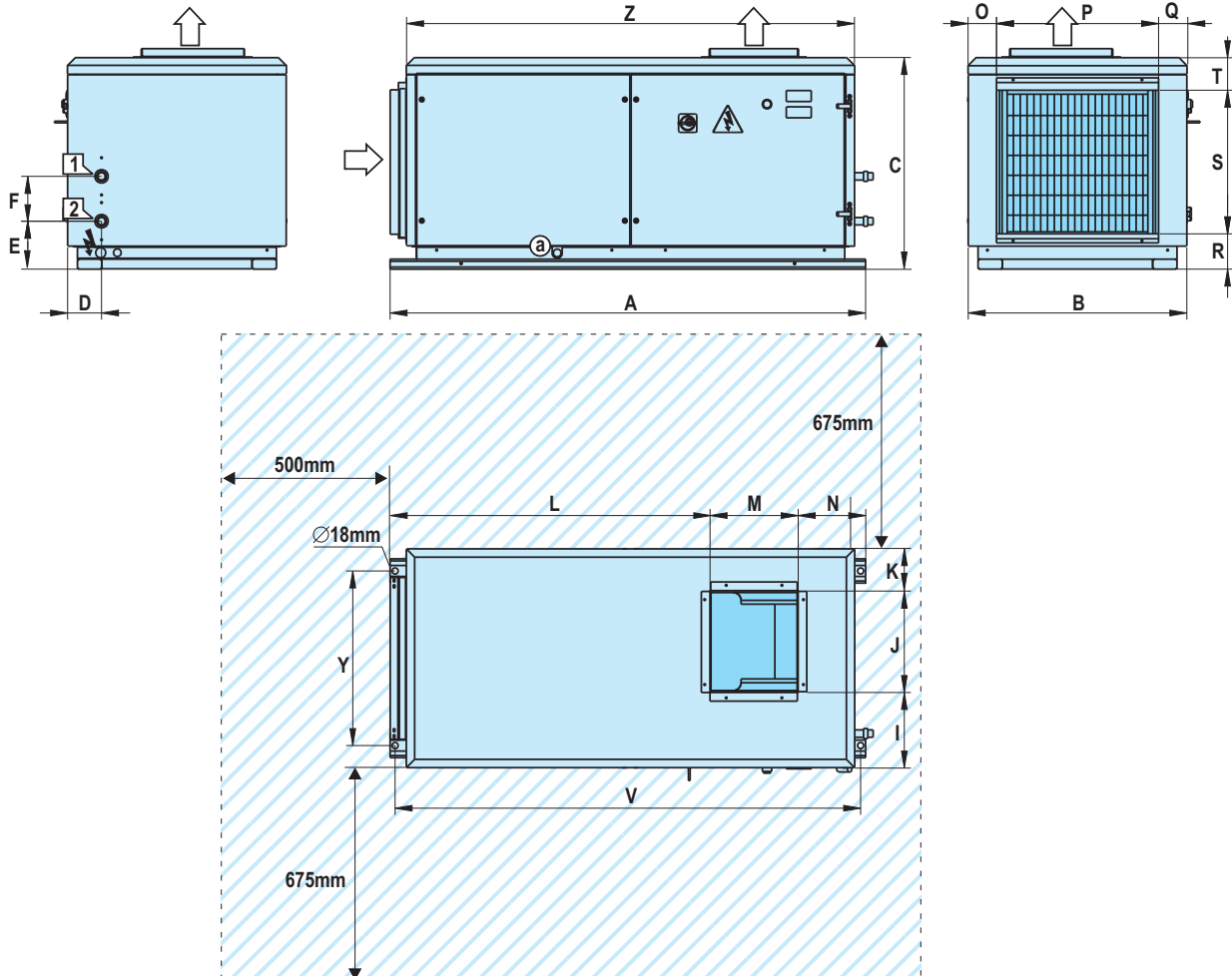


Junior BCP	A	B	C	D	E	F	I	J	K	L	M	N	O	P	Q	R	S	T	V	Y	Z
20 / 30	1.430	658	636	102	144	135	176	306	176	163	265	208	85	488	85	106	432	98	1.400	525	1.347

LEGEND

- Air circulation
- Electric panel
- Electric power supply
- Door switch
- Condensate outlet
- Auxiliary coil water inlet
- Auxiliary coil water outlet
- Clear space to be observed for maintenance operations and unit start-up

Junior BCP - 20 / 30 vertical outlet (optional) (mm)

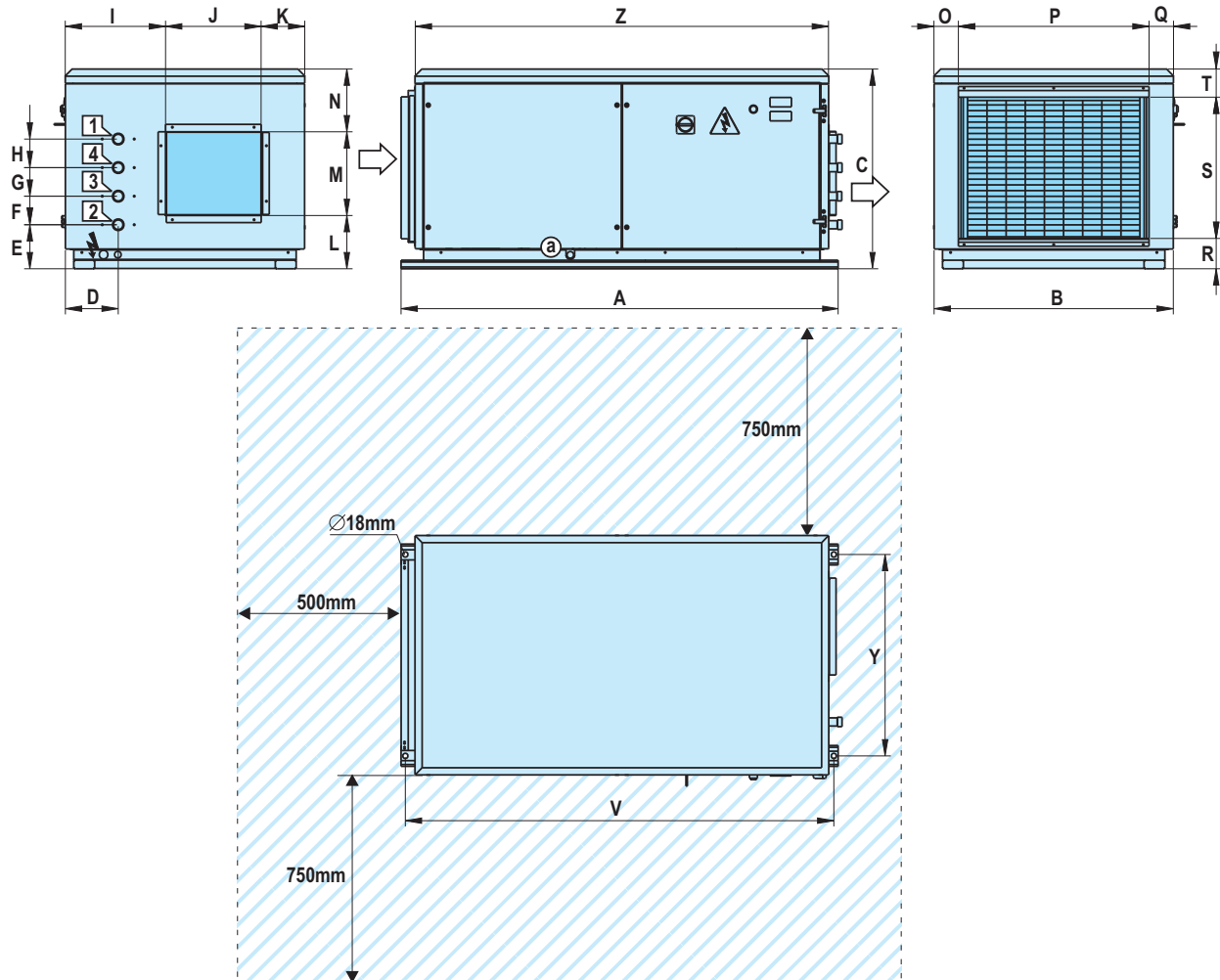


Junior BCP	A	B	C	D	E	F	I	J	K	L	M	N	O	P	Q	R	S	T	V	Y	Z
20 / 30	1.430	658	636	102	144	135	226	306	126	960	265	205	85	488	85	106	432	98	1.400	525	1.347

LEGEND

- Air circulation
- Electric panel
- Electric power supply
- Door switch
- Condensate outlet
- Auxiliary coil water inlet
- Auxiliary coil water outlet
- Clear space to be observed for maintenance operations and unit start-up

Junior BCP - 40 / 50 / 60 horizontal outlet (mm)

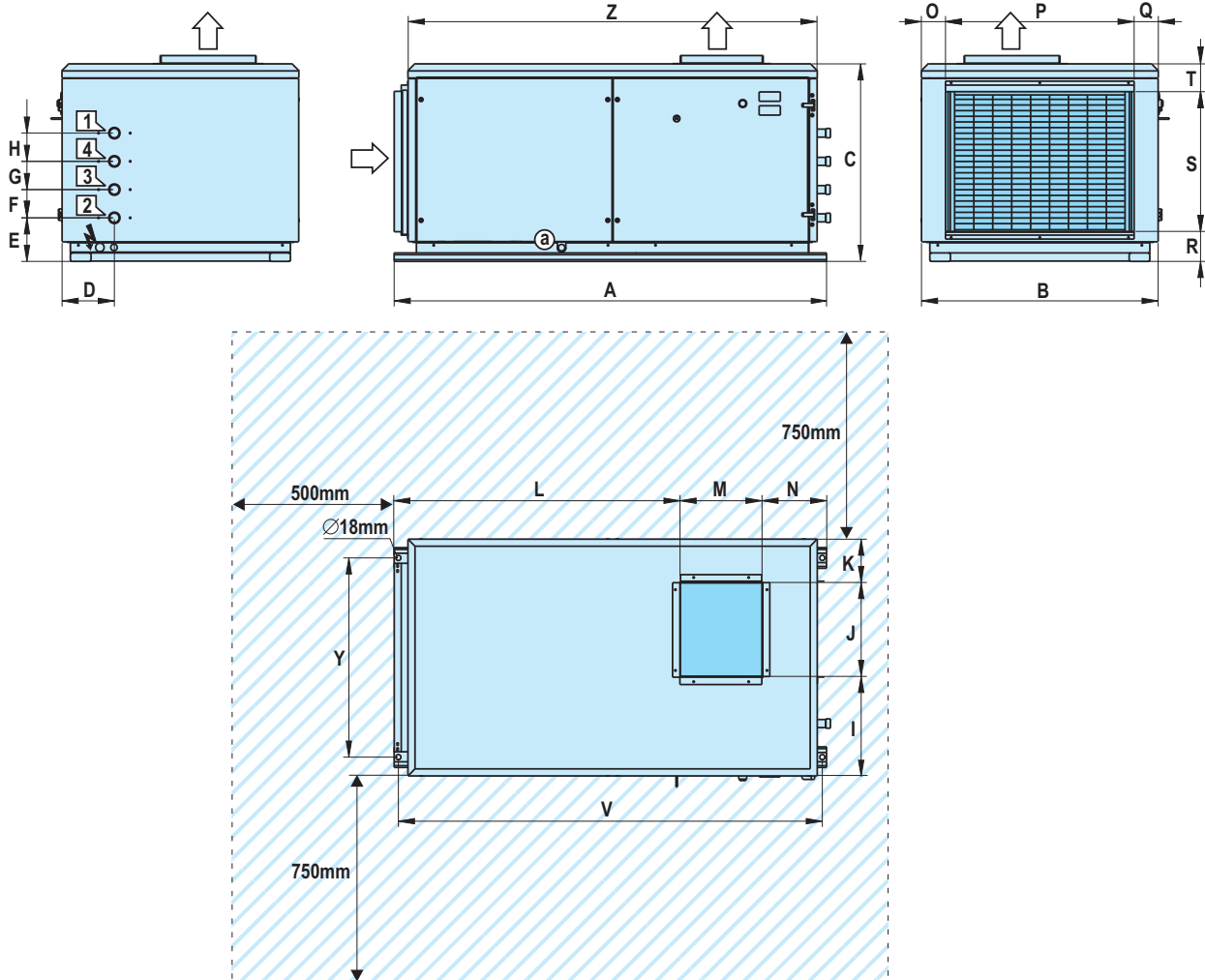


Junior BCP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	V	Y	Z
40 / 50 / 60	1.530	838	700	185	154	100	100	100	351	334	153	186	293	221	85	668	85	106	495	99	1.500	705	1.447

LEGEND

- Air circulation
- Electric panel
- Electric power supply
- Door switch
- Condensate outlet
- Auxiliary coil water inlet
- Auxiliary coil water outlet
- Water inlet to the recovery circuit
- Water outlet from the recovery circuit
- Clear space to be observed for maintenance operations and unit start-up

Junior BCP - 40 / 50 / 60 vertical outlet (optional) (mm)

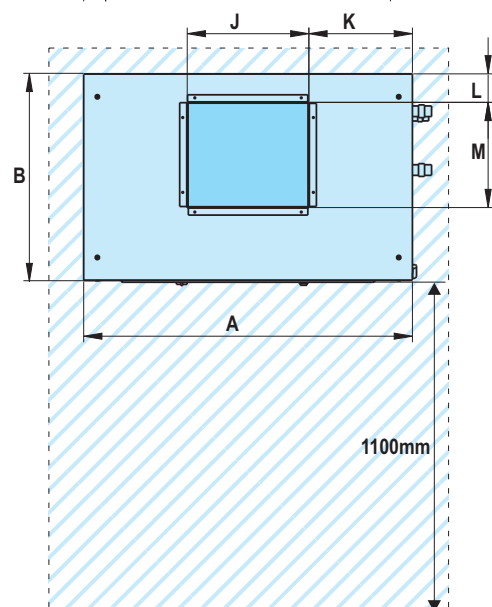
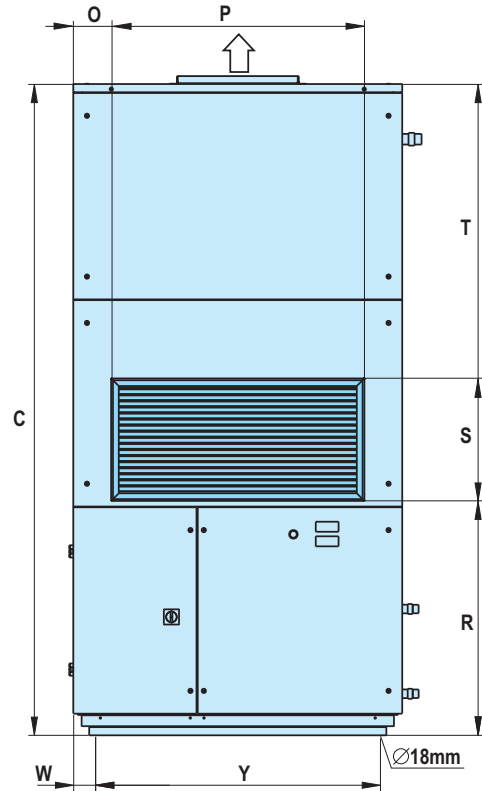
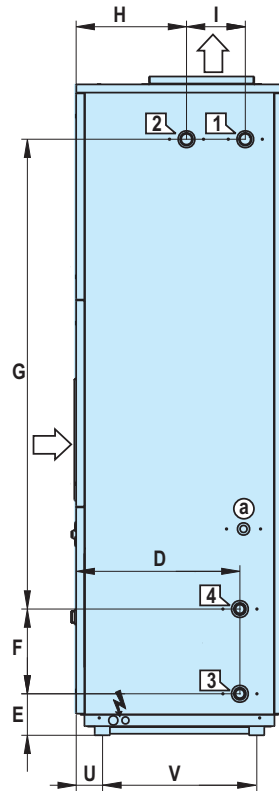


Junior BCP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	V	Y	Z
40 / 50 / 60	1.530	838	700	185	154	100	100	100	351	334	153	1.032	293	205	85	668	85	106	495	99	1.500	705	1.447

LEGEND

- Air circulation
- Electric panel
- Electric power supply
- Door switch
- Condensate outlet
- Auxiliary coil water inlet
- Auxiliary coil water outlet
- Water inlet to the recovery circuit
- Water outlet from the recovery circuit
- Clear space to be observed for maintenance operations and unit start-up

Junior BCP - 70 / 80 / 90 (assembly M00) (mm)



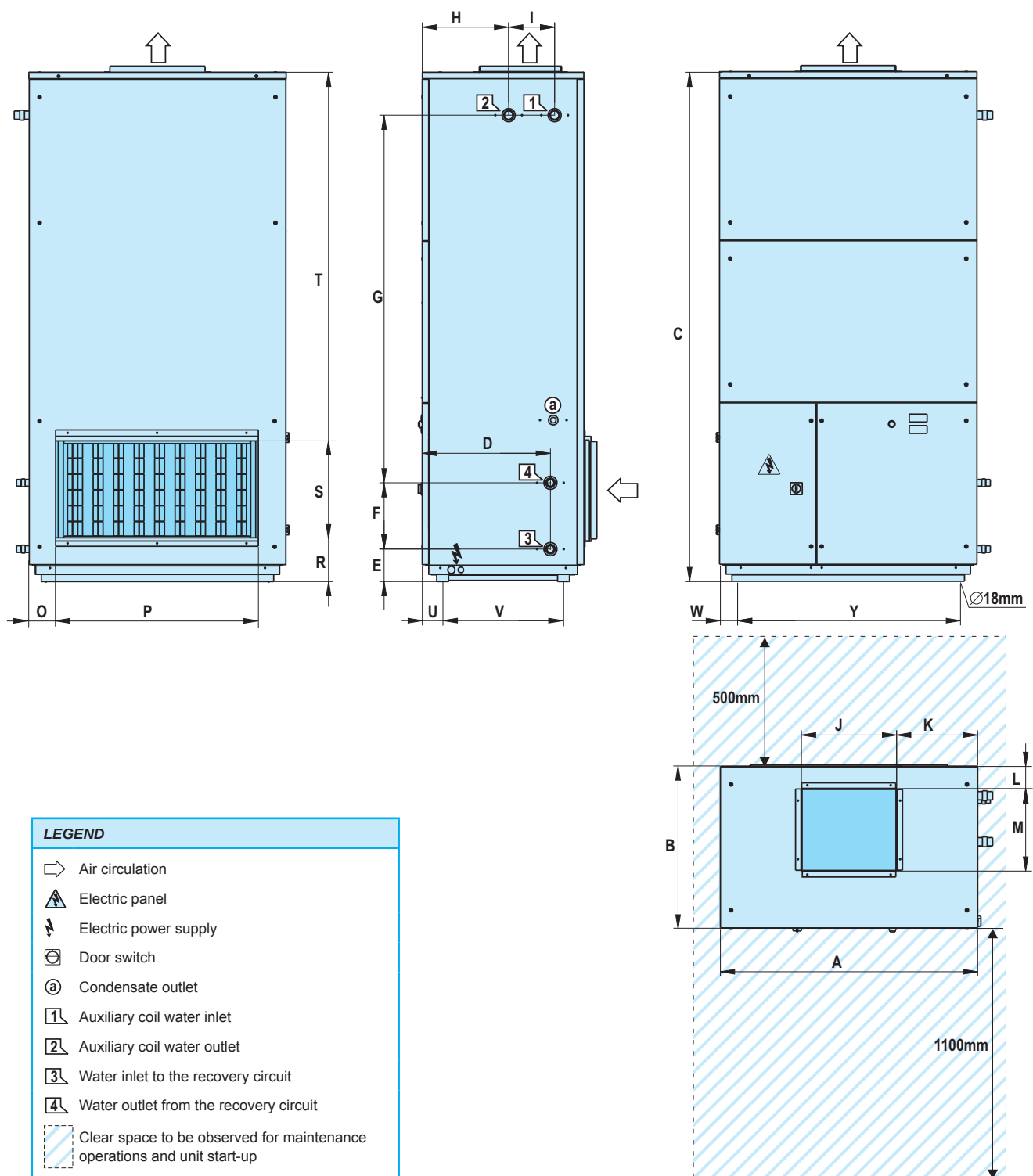
LEGEND

- Air circulation
- Electric power supply
- Door switch
- Condensate outlet
- Auxiliary coil water inlet
- Auxiliary coil water outlet
- Water inlet to the recovery circuit
- Water outlet from the recovery circuit
- Clear space to be observed for maintenance operations and unit start-up

Junior BCP	A	B	C	D	E	F	G	H	I	J	K	L	M	O	P	R	S	T	U	V	W	Y
70 / 80 / 90	1.082	680	2143	539	137	481	1.345	364	193,5	400	341	94	346	124,5	833	771	403	969	86	508	72,5	937

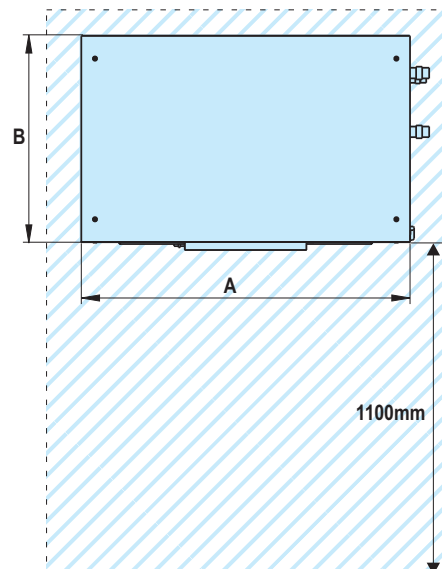
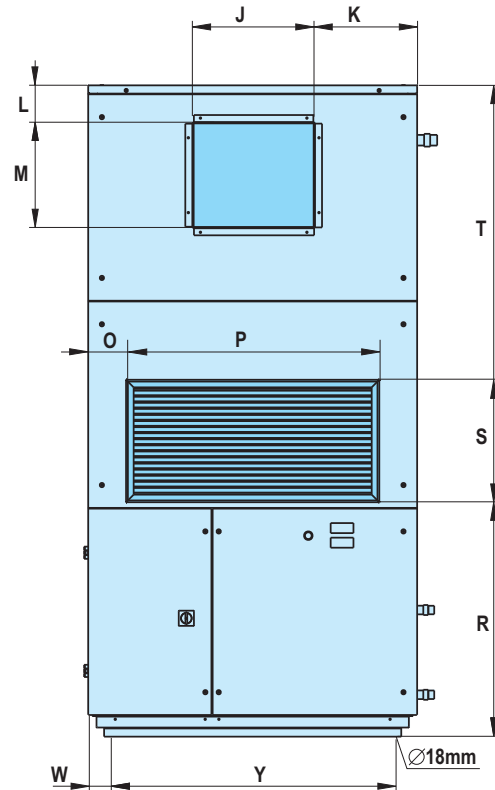
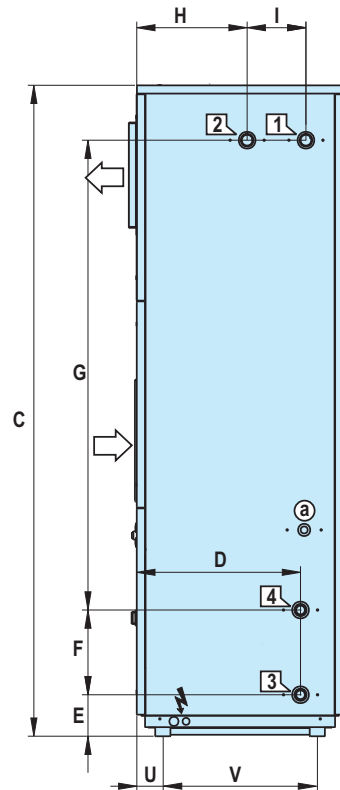
Note: in models BCP 70 to 90 with assembly M00, the electric panel is supplied in an airtight box for remote installation (remote control panel).

Junior BCP - 70 / 80 / 90 (assembly M10) (mm)



Junior BCP	A	B	C	D	E	F	G	H	I	J	K	L	M	O	P	R	S	T	U	V	W	Y
70 / 80 / 90	1.082	680	2143	539	137	481	1.345	364	193,5	400	341	94	346	115,5	851	186	410	1.547	86	508	72,5	937

Junior BCP - 70 / 80 / 90 (assembly M01) (mm)



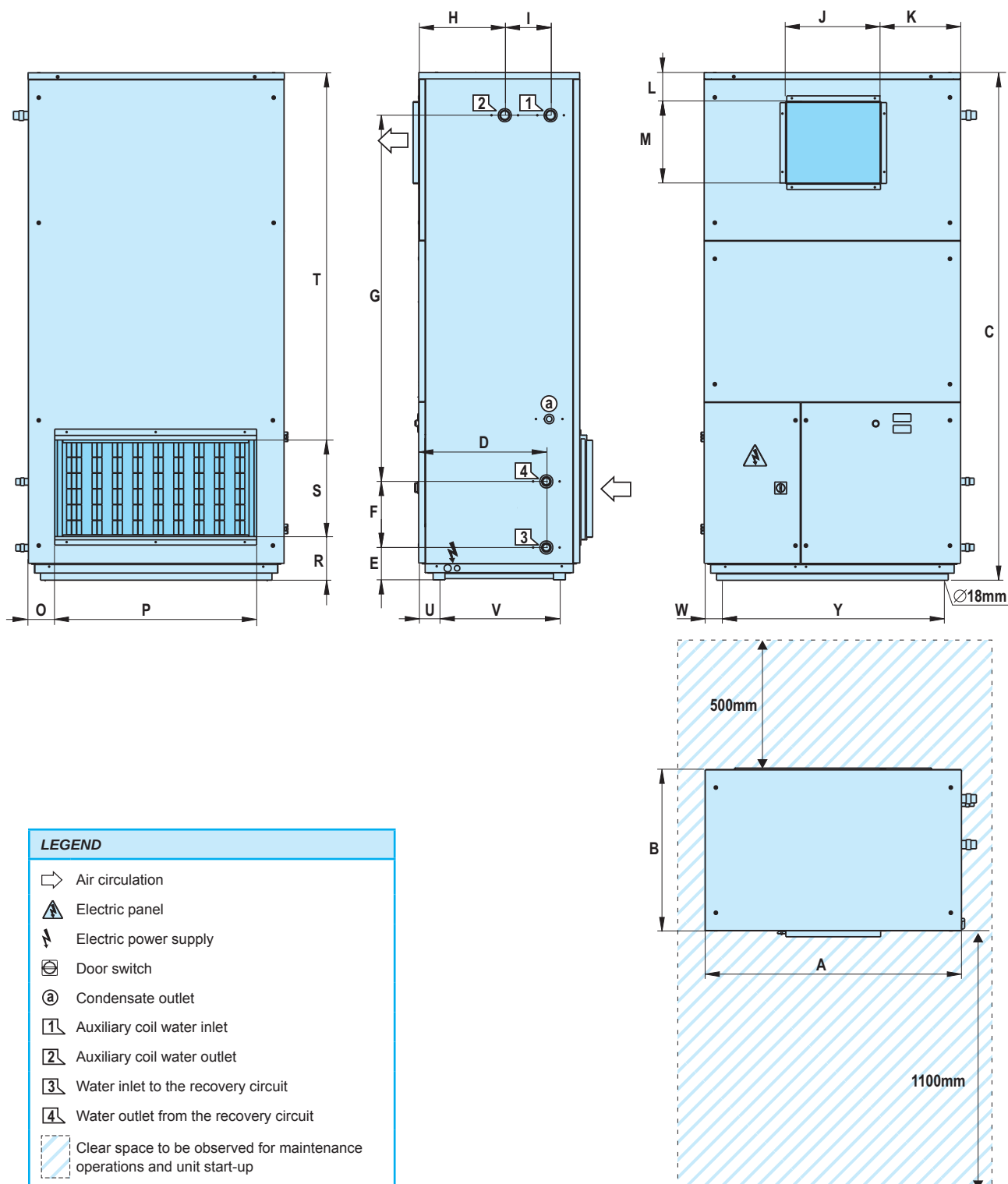
LEGEND

- Air circulation
- Electric power supply
- Door switch
- Condensate outlet
- Auxiliary coil water inlet
- Auxiliary coil water outlet
- Water inlet to the recovery circuit
- Water outlet from the recovery circuit
- Clear space to be observed for maintenance operations and unit start-up

Junior BCP	A	B	C	D	E	F	G	H	I	J	K	L	M	O	P	R	S	T	U	V	W	Y
70 / 80 / 90	1.082	680	2143	539	137	481	1.345	364	193,5	400	341	123	346	124,5	833	771	403	969	86	508	72,5	937

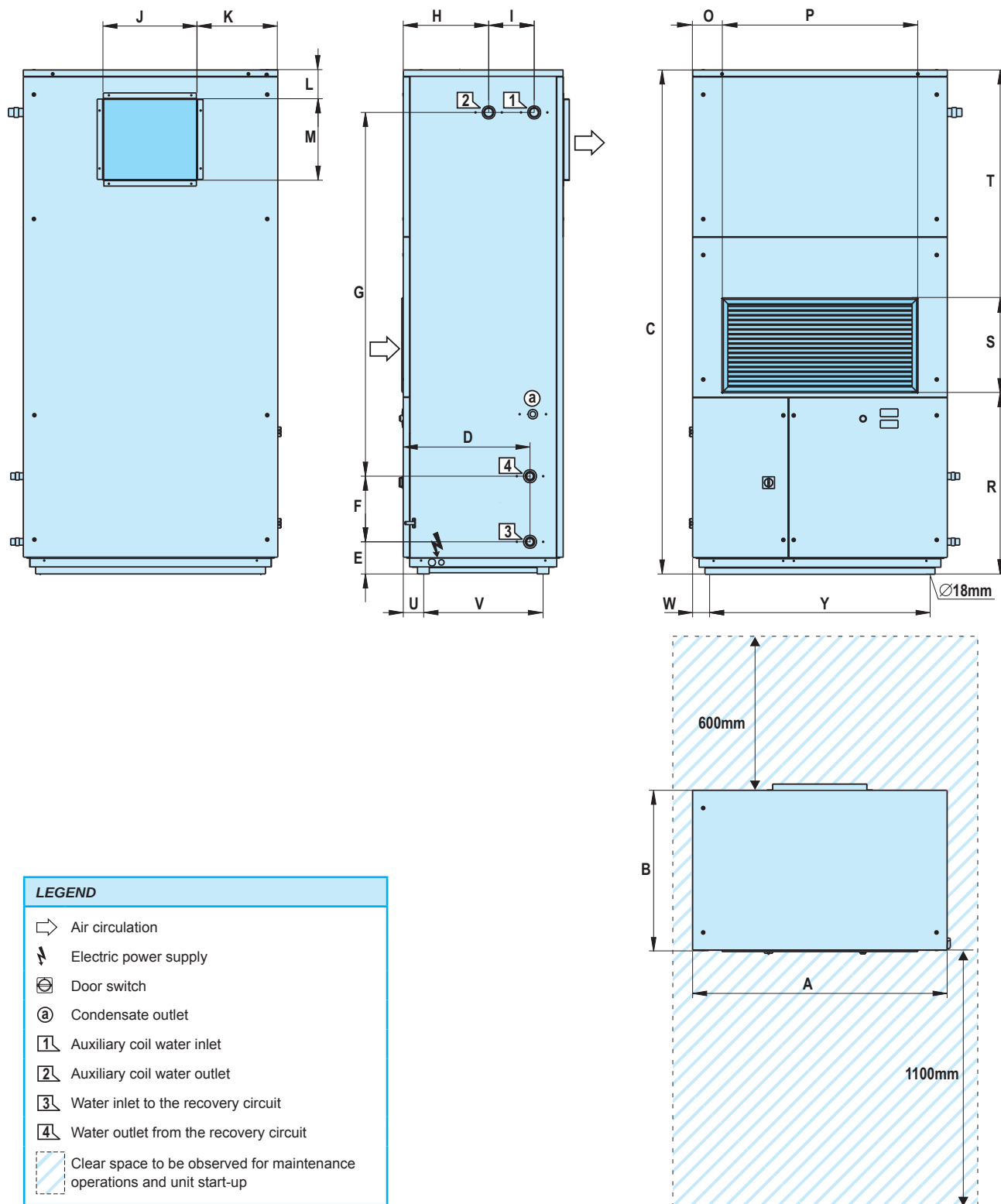
Note: in models BCP 70 to 90 with assembly M01, the electric panel is supplied in an airtight box for remote installation (remote control panel).

Junior BCP - 70 / 80 / 90 (assembly M11) (mm)



Junior BCP	A	B	C	D	E	F	G	H	I	J	K	L	M	O	P	R	S	T	U	V	W	Y
70 / 80 / 90	1.082	680	2143	539	137	481	1.345	364	193,5	400	341	123	346	115,5	851	186	410	1.547	86	508	72,5	937

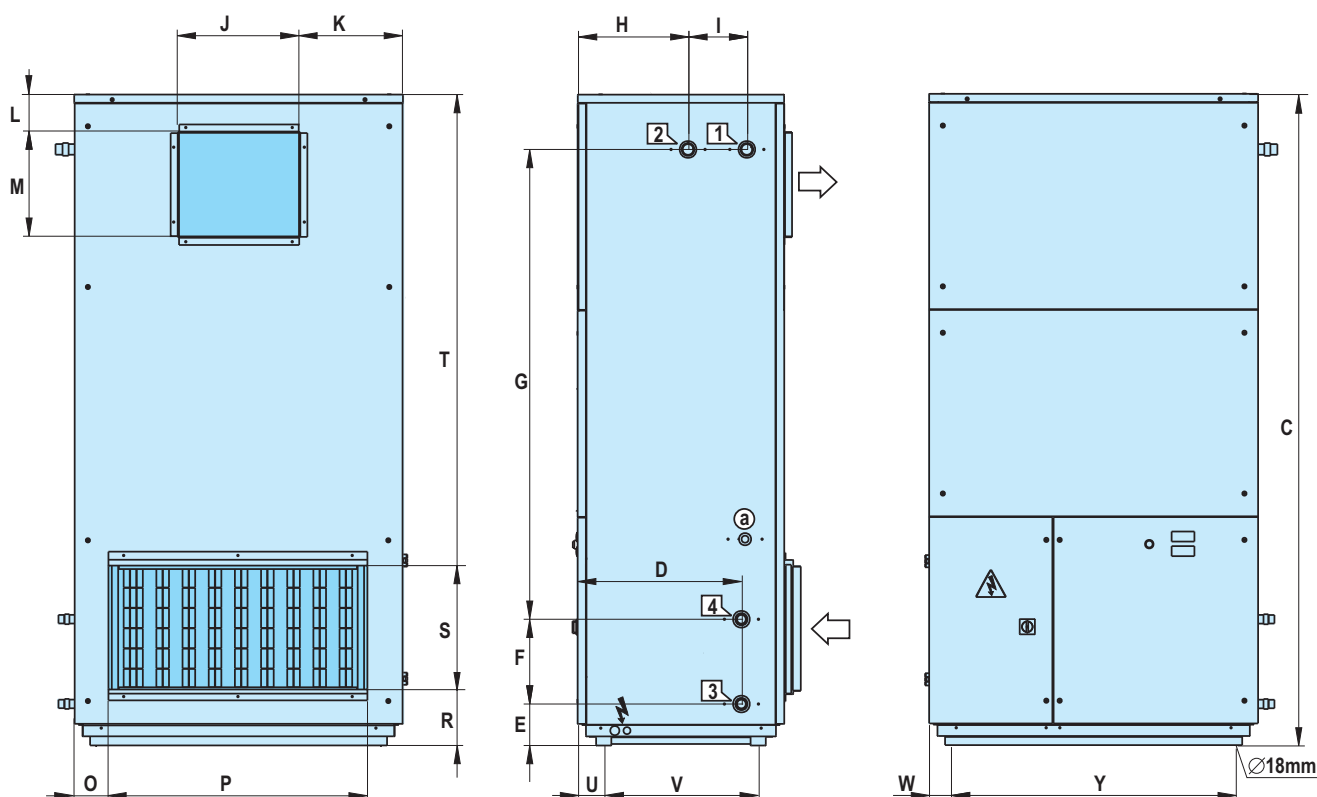
Junior BCP - 70 / 80 / 90 (assembly M02) (mm)



Junior BCP	A	B	C	D	E	F	G	H	I	J	K	L	M	O	P	R	S	T	U	V	W	Y
70 / 80 / 90	1.082	680	2143	539	137	481	1.345	364	193,5	400	341	123	346	124,5	833	771	403	969	86	508	72,5	937

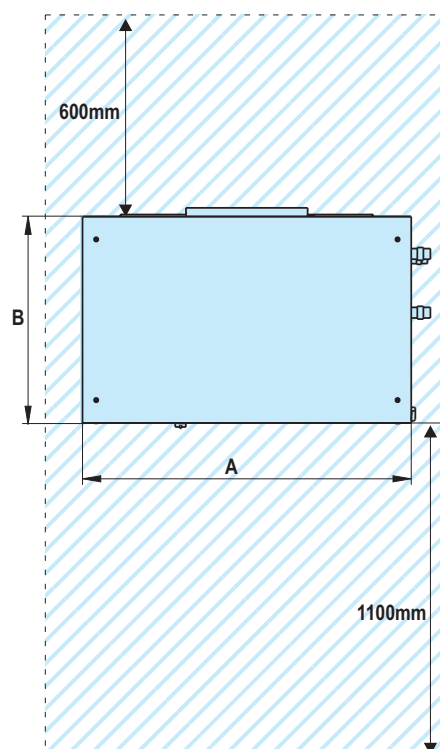
Note: in models BCP 70 to 90 with assembly M02, the electric panel is supplied in an airtight box for remote installation (remote control panel).

Junior BCP - 70 / 80 / 90 (assembly M12) (mm)



LEGEND

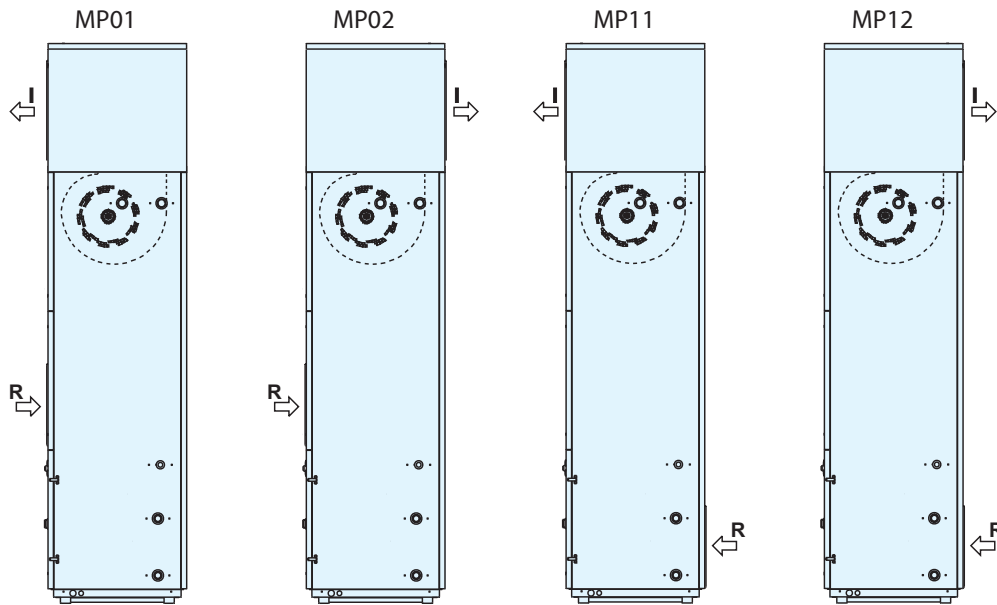
- Air circulation
- Electric panel
- Electric power supply
- Door switch
- Condensate outlet
- Auxiliary coil water inlet
- Auxiliary coil water outlet
- Water inlet to the recovery circuit
- Water outlet from the recovery circuit
- Clear space to be observed for maintenance operations and unit start-up



Junior BCP	A	B	C	D	E	F	G	H	I	J	K	L	M	O	P	R	S	T	U	V	W	Y
70 / 80 / 90	1.082	680	2.143	539	137	481	1.345	364	193,5	400	341	123	346	115,5	851	186	410	1.547	86	508	72,5	937

SUPPLY PLENUM

Optional for models 70 to 90

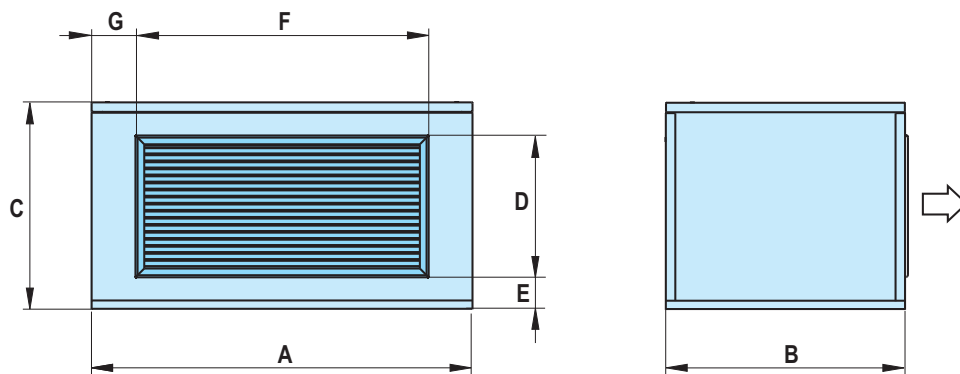


Air Inlet / Outlet

I = Outlet

R = Return

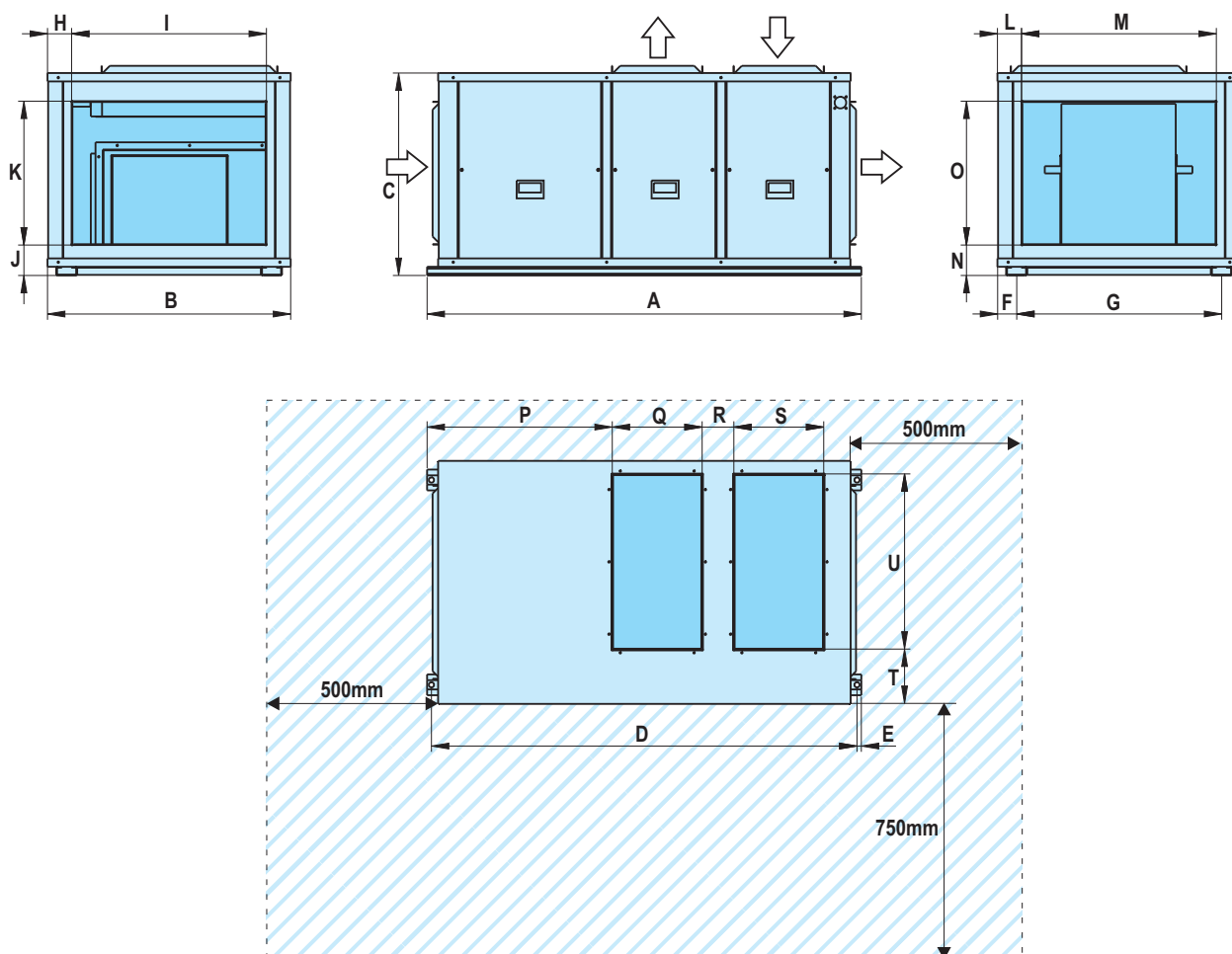
Dimensions (mm)



Junior BCP	A	B	C	D	E	F	Y
70 / 80 / 90	1.082	680	500	403	40,5	833	124,5

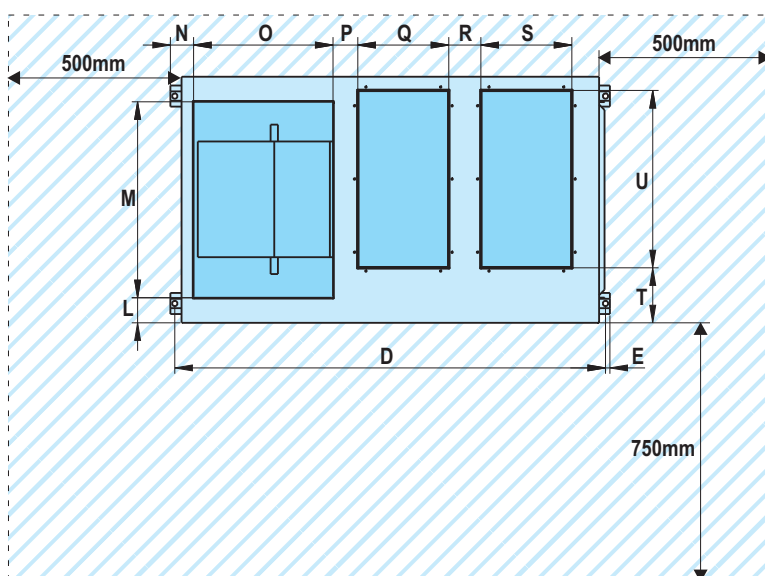
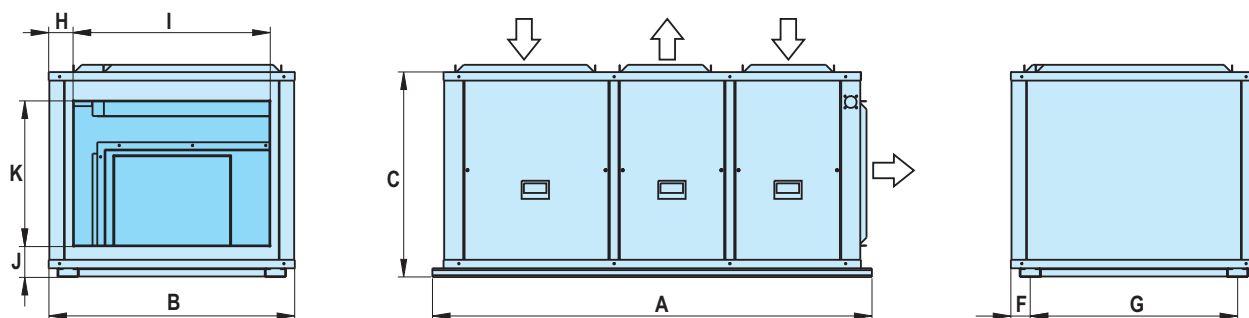
DIMENSIONS OF THE INDEPENDENT RETURN MODULE

Independent module with mixing box with 3 dampers and rear return fan (M0) for Junior BCP (mm).



Junior BCP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
20 / 30	1.417	660	636	1387	15	66	528	83,5	493	105	432	83,5	493	105	432	686	257	110	257	178	305
40 / 50 / 60 / 70 / 80 / 90	1.500	840	700	1470	15	66	708	85	670	108	492	85	670	108	492	640	310	110	310	188	605

Independent module with mixing box with 3 dampers and top return fan (M1) for Junior BCP (mm)



Junior BCP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
20 / 30	1.417	660	636	1.387	15	66	528	83,5	493	105	432	83,5	493	80	432	98	257	110	257	178	305
40 / 50 / 60 / 70 / 80 / 90	1.500	840	700	1.470	15	66	708	85	670	108	492	85	670	80	475	85	310	110	310	188	605

