Listen to the silence... Appreciate the performance

Mitsubishi Power Inverter (MPI)

HEAT PUMP

For You and Planet Blue.

BWT
BEST WATER TECHNOLOGY

The combined industrial strength of BWT and Mitsubishi Electric

BWT, a leading manufacturer of pool and spa equipment in France, have partnered with Mitsubishi Electric, a world leader in the field of HVAC systems.

Mitsubishi Electric and BWT decided to pool their core expertise to create a whole new range of swimming pool heat pumps using Mitsubishi "Power Inverter" technology to achieve exceptional performance levels, both in terms of noise levels and improved coefficient of performance.

Comprehensive Range

The BWT Mitsubishi Power Inverter range offers a broad selection of models to equip pools of every type and size.

Power Inverter System

On the contrary to a conventional On/Off heat pump that run at a constant speed, the Inverter heat pump compressor can run at between 11 and 100 Hz to adapt to the machine's operating conditions and the outdoor temperature.

In fact, while the outside temperature is low, or while the heating demand is high, the compressor will run at high speed (between 50Hz and 100Hz).

Inversely, while the heating demand is low, notably around the set point, the Inverter compressor will run at low speeds (between 11Hz and 50Hz).

BWT M.P.I. heat pumps automatically adjust their compressor speed to adapt to the operating mode and outdoor temperature. There is no need for any intervention by the user.

Running at low speeds, inverter compressors are almost noiseless, provide optimal yield and enjoy a longer service.

Reversible heat pumps

All BWT Mitsubishi Power Inverter heat pumps are reversible as standard

BWT M.P.I. heat pumps can be used to heat or cool pool water.

This feature is particularly appreciated in very hot regions where it can be used to hold swimming pool water at a comfortable temperature or even to lower or maintain the water temperature in aquaculture tanks used to rear and store fish.

Silence

Conventional On/Off heat pumps generate a constant sound power, even when water temperature is around the set point.

On the other hand, BWT Power Inverter heat pump compressors slow significantly around the set point so that they run much more quietly than a conventional On/Off machine.

This is particularly important when the heat pump must be installed close to neighbouring properties.

Installers should take regulations governing neighbourhood noise abatement in effect in the country of installation into consideration

Fully automated

BWT Power Inverter heat pumps are designed to be easy to install and simple to maintain.

Systematic quality control

To guarantee complete reliability, all Power Inverter heat pumps are tested before being shipped.

ACOUSTIC COMFORT

The acoustic power of an On/Off heat pump remains constant even while the machine is running at water temperatures around the set point. On the contrary, a BWT M.P.I. heat pump adapts the operating regimes of its compressor and its fan(s) to match the actual heating demand of the pool, notably as the water temperature approaches the set point.

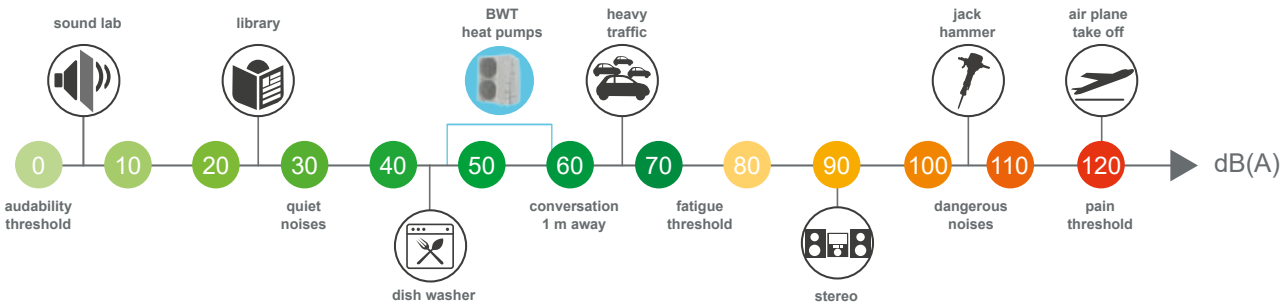
The evaporator in a BWT M.P.I. heat pump has a very large surface area: air can circulate more freely, more slowly thus reducing whistling. All BWT M.P.I. heat pumps (except for the M.P.I. 100M and 160 M models) are fitted with Mitsubishi Scroll Inverter compressors, the recognised reference in terms of acoustic performance. Mitsubishi Electric Power Inverter® compressors are acoustically isolated

To hear a BWT M.P.I. heat pump, you really have to listen carefully. This feature is particularly appreciated in situations where the heat pump must be installed near your residence or that of your neighbours.

Power Invert er heat pumps slow considerably when running at temperatures around the set point and so are a lot quieter than traditional On/Off machines.

In order to appreciate the acoustic performance of BWT M.P.I. heat pumps, a scale is provided below that allows you to compare the tolerance limits of various devices and everyday events.

It may be seen that, even running at 100% capacity, BWT M.P.I. heat pumps fall well within common, acceptable tolerance limits.



Le Silence

OPERATING PRINCIPLE

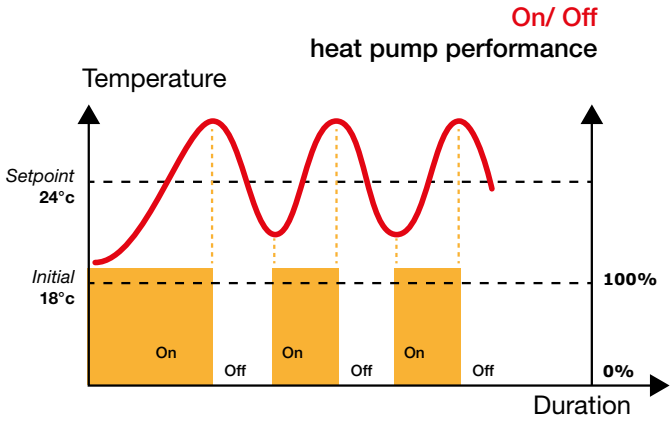
BWT M.P.I. heat pumps are fitted with a frequency converter that a the speed of rotation of the compressor and the fan(s). The compressor and fan(s) in conventional On/Off heat pumps run at 50 Hz, on the contrary those in a BWT M.P.I. heat pump can run at between 11 and 100 Hz to adapt to the machine's operating conditions and the outdoor temperature.

In fact, while the outside temperature is low, or while the heating demand is high, the compressor will run at high speed (between 50Hz and 100Hz).

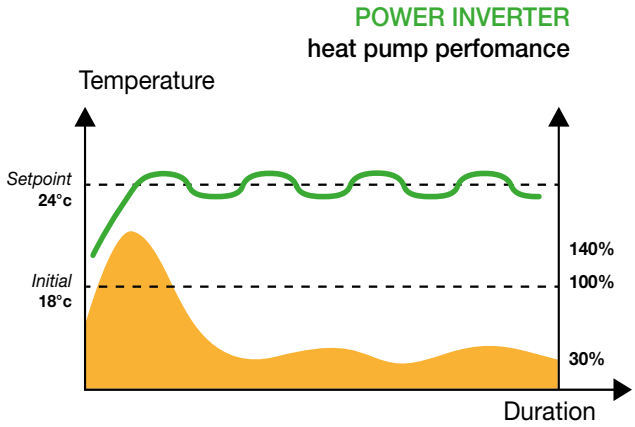
Inversely, while the heating demand is low, notably around the set point, the Inverter compressor will run at low speeds (between 11Hz and 50Hz).

It is while running at lower speeds that the COP of BWT M.P.I. heat pumps is 30 to 40 % higher.

While the Power Inverter ® compressor and fan(s) are running at low speed, the acoustic power is very low, the yield is optimised and the service of oft he compressor and other M.P.I. heat pump components is longer.



On/ Off heat pump



POWER INVERTER heat pump

Performance

Technical data

	M.P.I.-100M	M.P.I.-160M	M.P.I.-190M	M.P.I.-190T	M.P.I.-240M	M.P.I.-240T	M.P.I.-320T	M.P.I.-380T
Certified heating capacity, Air temp 26° C, Water temp 26° C	16.2 kW	26 kW	31.4 kW	31.4 kW	39 kW	39 kW	50 kW	59 kW
Certified heating capacity, Air temp 15° C, Water temp 26° C*	10.6 kW	17 kW	20.2 kW	20.2 kW	25.5 kW	25.5 kW	33 kW	39 kW
Certified cooling capacity, Air temp 35° C, Water temp 28° C	5.7 kW	13 kW	19.5 kW	19.5 kW	20.25 kW	20.25 kW	35.2 kW	36.5 kW
Recommended pool water volume**	≤ 65 m^3	≤ 104 m^3	≤ 123 m^3	≤ 123 m^3	≤ 156 m^3	≤ 156 m^3	≤ 208 m^3	≤ 247 m^3
Operating temperature range (°C)	From -15°C to 46°C							
Type of refrigerant	R 410A	R 410A	R 410A	R 410A	R 410A	R 410A	R 410A	R 410A
Recommended water flow rate	4 to 5 m^3/h	4 to 6 m^3/h	5 to 7 m^3/h	5 to 7 m^3/h	8 to 10 m^3/h	8 to 10 m^3/h	10 to 12 m^3/h	12 to 14 m^3/h
Maximum current consumed	13 A	19 A	29.5 A	13 A	29.5 A	13 A	19 A	21 A
Power supply	230 V 1ph	230 V 1ph	230 V 1ph	400 V 3ph	230 V 1ph	400 V 3ph	400 V 3ph	400 V 3ph
Power cable cross section	3 × 2.5 mm^2	3 × 4 mm^2	3 × 6 mm^2	5 × 2.5 mm^2	3 × 6 mm^2	5 × 2.5 mm^2	5 × 6 mm^2	5 × 6 mm^2
Electrical protection	16 A	25 A	32 A	16 A	32 A	16 A	32 A	32 A
Exchanger model	Helical plate	Helical plate	Helical plate	Helical plate	Helical plate	Helical plate	Helical plate	Helical plate
Compressor	Rotary	Rotary	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
Quantity of gas	2.10 Kg	3.20 Kg	4.60 Kg	4.60 Kg	4.60 Kg	4.60 Kg	7.10 Kg	7.70 Kg
Number of fans	1	1	2	2	2	2	2	2
Dimensions L x W x H (mm)	995×495 x600	1150×360 x950	1250×360 x1350	1250×360 x1350	1250×360 x1350	1250×360 x1350	1250×360 x1340	1250×360 x1340
Weight	49 Kg	82 Kg	125 Kg	137 Kg	125 Kg	137 Kg	142 Kg	148 Kg

** Technical data was certified by CETIAT and were measured according to the test protocol EN-14511 (Test report available from procoshop.com).*
*** The values shown are valid under the following conditions: Ambient air temperature 15°C. Water temperature 26°C, pool covered with an isothermal cover at night, filtration system running at least 15 hours per day during the heating season.*

The table below summarises the main characteristics of the BWT M.P.I. heat pumps in their various operating modes. BWT M.P.I. heat pumps automatically select the operating mode best suited to the current weather and operating conditions:

- **LOW SPEED:** BWT M.P.I. heat pumps have three operating speeds below 50 Hz (Steps 1, 2 and 3). The heat pump runs at one of these speeds when it is close to the set point (within approximately 1°C). At these speeds, BWT M.P.I. heat pumps offer a COP and sound levels that cannot be achieved by conventional On/ Off heat pumps.
- **CRUISING SPEED:** This is the operating speed of a standard On/ Off heat pump, it corresponds to a compressor speed of 50 Hz, or Step 4.
- **HIGH SPEED:** BWT M.P.I. heat pumps operate at one of three speeds greater than 50 Hz (Steps 5, 6 and 7) during the initial heating ramp or when weather conditions are harsh.

			M.P.I. 100M	M.P.I. 160M	M.P.I. 190M	M.P.I. 190T	M.P.I. 240M	M.P.I. 240T	M.P.I. 320T	M.P.I. 380T
LOW SPEED	STEP 1 : 20 Hz	COP*	8.51	8.14	7.69	7.69	7.20	7.20	6.95	6.84
		Acoustic pressure level at 10 m, in dB (Lp)	24	29	27	27	30	30	34	34
		Acoustic power, in dB (Lw)	52.8	57.9	55.8	55.8	58.7	58.7	62.9	62.9
CRUISING SPEED	STEP 4 : 50 Hz	COP*	7.06	6.95	6.54	6.54	6.12	6.12	5.84	5.75
		Acoustic pressure level at 10 m, in dB (Lp)	28	33	29	29	34	34	39	39
		Acoustic power, in dB (Lw)	56.5	61.9	57.8	57.8	62.8	62.8	67.3	67.3
HIGH SPEED	STEP 7 : 100 Hz	COP*	5.72	5.44	5.15	5.15	4.84	4.84	4.68	4.60
		Acoustic pressure level at 10 m, in dB (Lp)	35	40	40	40	43	43	47	47
		Acoustic power, in dB (Lw)	63	69	68.6	68.6	72	72	76	76

** COP is quoted for the following operating conditions: Air temp 15°C and water temp 26°C*

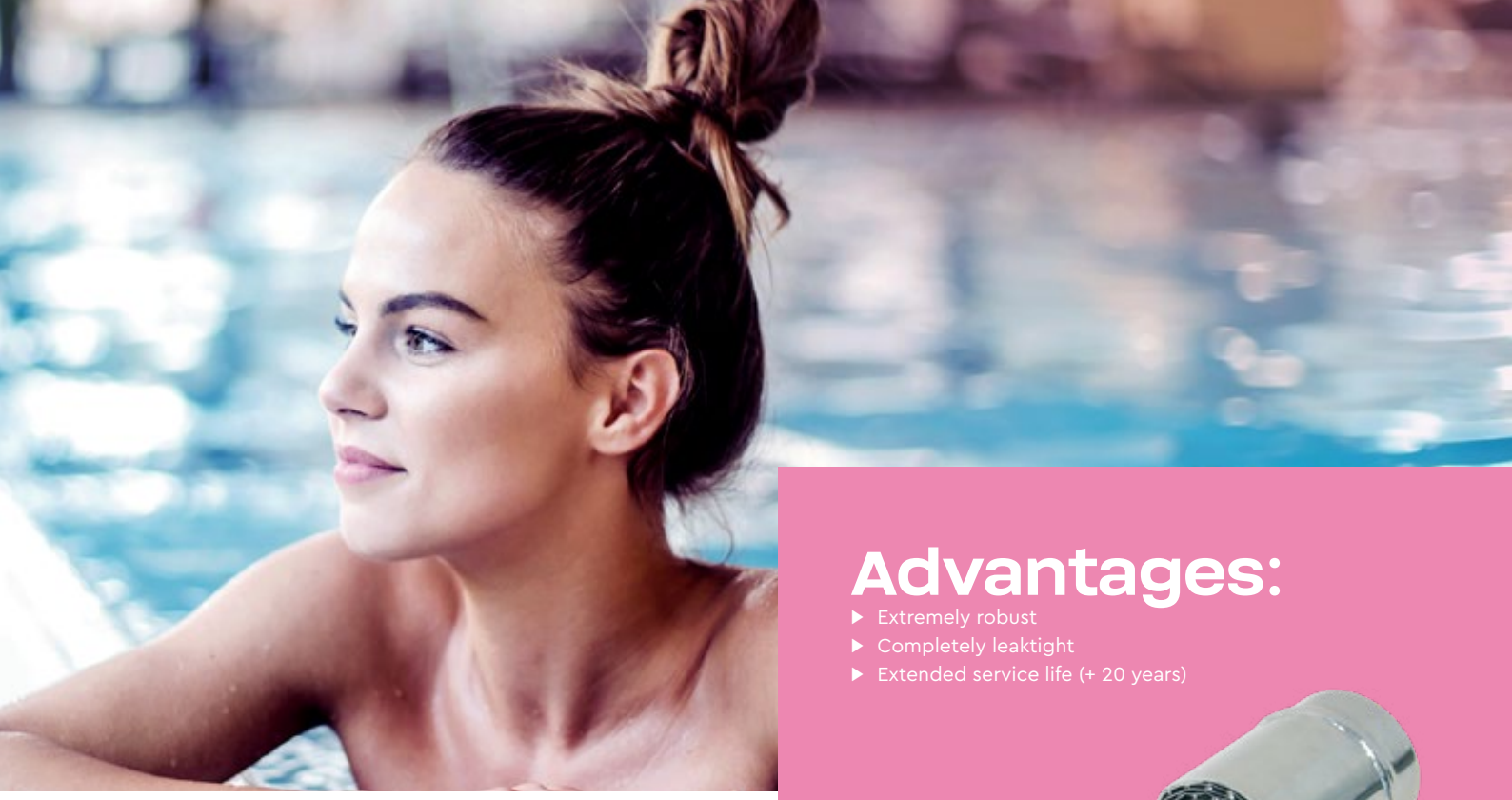
NOTA BENE: Technical data provided in the tables above was certified by CETIAT according to the test protocol EN-14511, as recommended by DTP no.10 issued by the "Fédération des Professionnels de la Piscine" (French federation of pool professionals) and used by CERTITA in its heat pump certification standard.

BWT M.P.I. heat pump guarantee conditions

Duration of the guarantee:
BWT M.P.I. heat pumps are covered by a 5 year guarantee, as of the date of invoice. Heat pump guarantee clauses and conditions are available on our internet site.,

The Titanium heat exchanger is covered by a 10 year guarantee.

Trophée d'Or 2013
innovation category



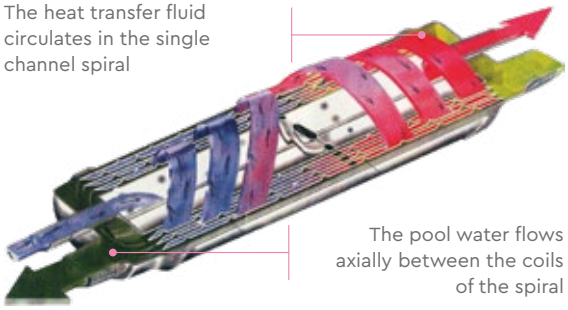
Advantages:

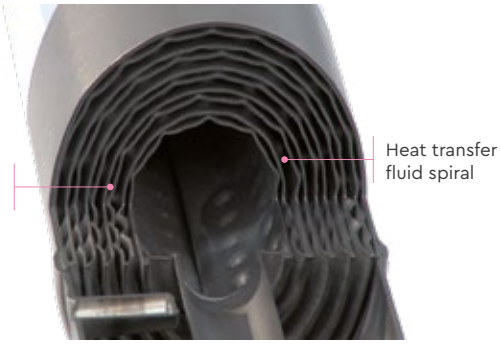
- Extremely robust
- Completely leaktight
- Extended service life (+ 20 years)

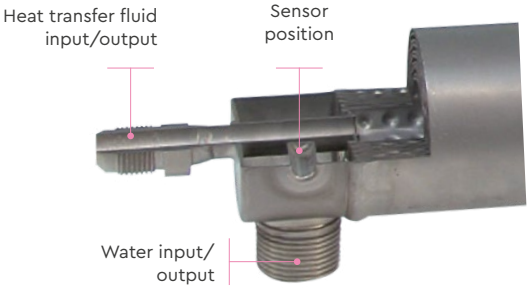
The BWT heat exchanger

What is a heat exchanger?
A heat exchanger is a device that transfers heat from a hot body to a cold body or vice versa. The larger the surface area, the higher the yield. For this reason, Procopi fits all BWT heat pumps with spiral plate exchangers that offer a much larger heat exchange surface area than tube exchangers.

Pure Titanium, single channel, spiral plate heat exchangers :
The titanium, spiral plate exchanger is a Procopi exclusive.
Its large surface area guarantees excellent performance data. Made of Titanium, it is compatible with all water treatment methods available, notably salt water electrolysis.







Specifications

Improved heating power and COP (coefficient of performance),

Reversible machine, can be used to heat or cool the pool water, compatible with 60 Hz installations,

The pool water temperature, set point and operating mode (heat/cool) are displayed on the thermostat,

Automatic defrosting by cycle inversion, allows the machine to work at temperatures down to -15°C,

Complies with EC standards,

Low acoustic power in low speed mode, thanks to the Mitsubishi Scroll Inverter,

Titanium, helical plate heat exchangers (Procopi exclusive), compatible with salt electrolysis. The plates feature bosses that prevent the phenomenon of laminar flow and substantially increase the heat exchange capacity.

Low water level safety mechanism (flow switch),

Wired in via a watertight deck box,

UV stable ABS cabinet allowing integration of a regulator, deck box, heat exchanger, flow controller, sensors, communication and control circuit boards,

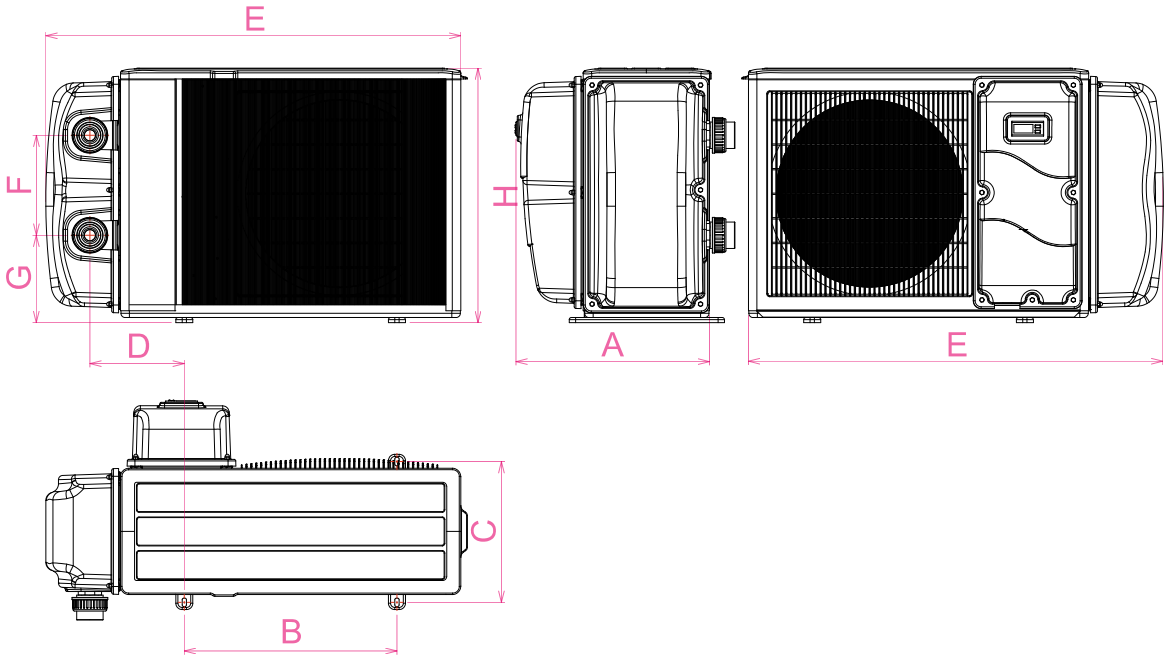
Hydraulic connections solvent unions, Ø 50 mm,

ICHILL Thermostat, comfort mode and Eco mode,

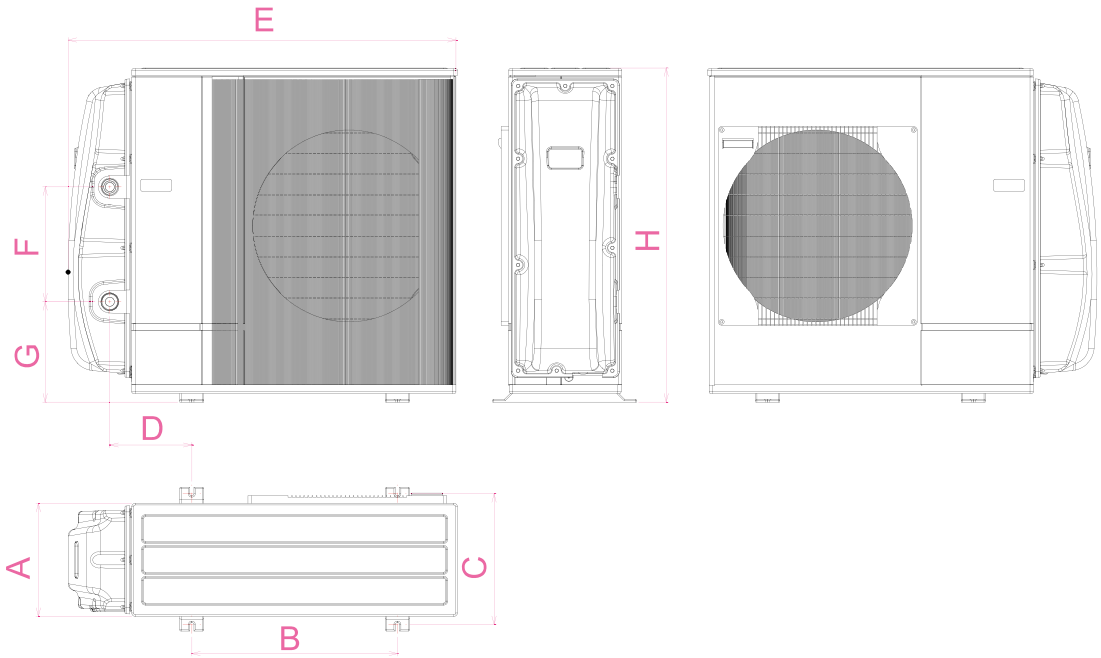
Condensate drainage and recovery kit.

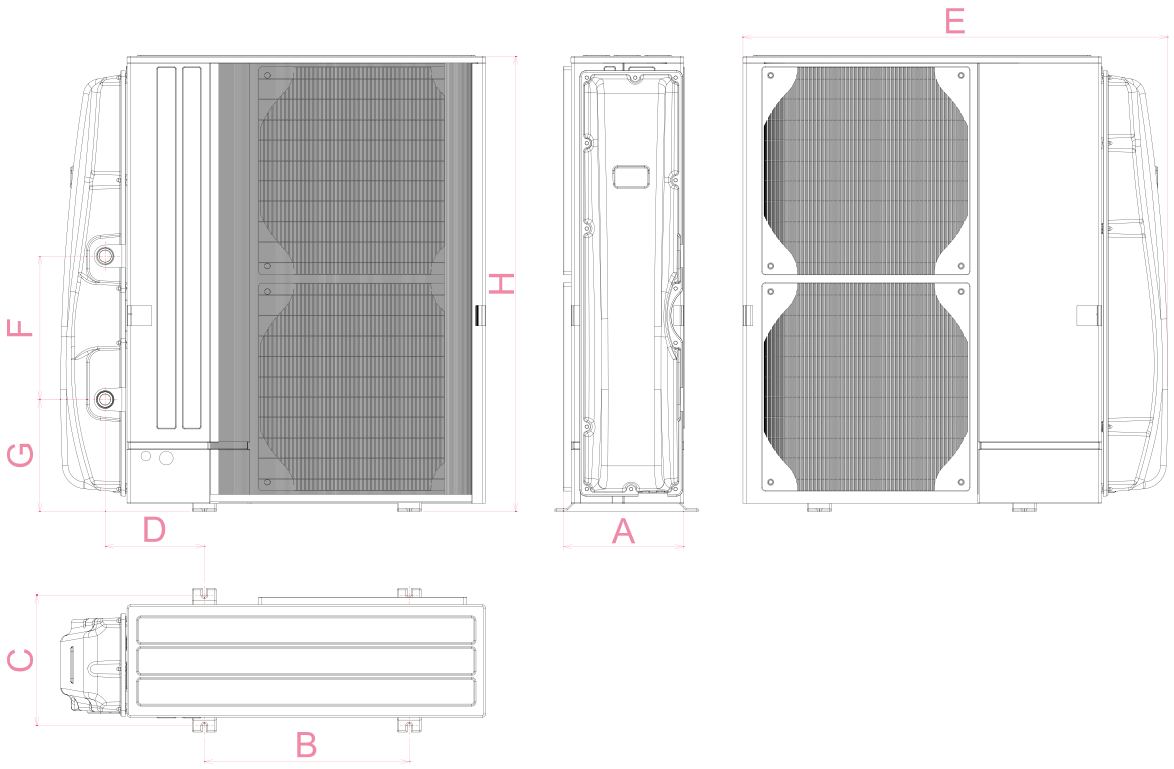
Dimensions

M.P.I. – 100



M.P.I. – 160





M.P.I. – 190
M.P.I. – 240
M.P.I. – 320
M.P.I. – 380

Models / Dimensions (in mm)	A	B	C	D	E	F	G	H
1 fan								
M.P.I. - 100M	455	500	330	222	975	235	205	600
M.P.I. - 160M	330	600	370	240	1145	335	266	943
2 fans								
M.P.I. - 190M	330	600	370	240	1245	335	412	1350
M.P.I. - 190T	330	600	370	240	1245	335	412	1350
M.P.I. - 240M	330	600	370	240	1245	420	327	1350
M.P.I. - 240T	330	600	370	240	1245	420	327	1350
M.P.I. - 320T	330	600	370	240	1245	420	327	1335
M.P.I. - 380T	330	600	370	240	1245	420	327	1335

BWT CHANGE THE WORLD sip by sip

If you drink Diamond Mineralized Water, you have made a decision. You have chosen local water that has been enriched with valuable magnesium and silicate using the patented technology from BWT. You have decided against conventional bottled water, which has to be shipped many kilometers unnecessarily and pollutes the environment. You also decided that you give a child in Africa access to safe drinking water. You have chosen a better world. Sip by sip.
Thank you.

CHANGE THE WORLD - SIP BY SIP.

BWT Pool Products

Cachet du revendeur :

FR

BWT Best Water App

GET IT ON Google Play

Download on the App Store

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