DAB
WATER • TECHNOLOGY

e.sybox

ERGONOMIC TECHNOLOGY

product
design award

2013

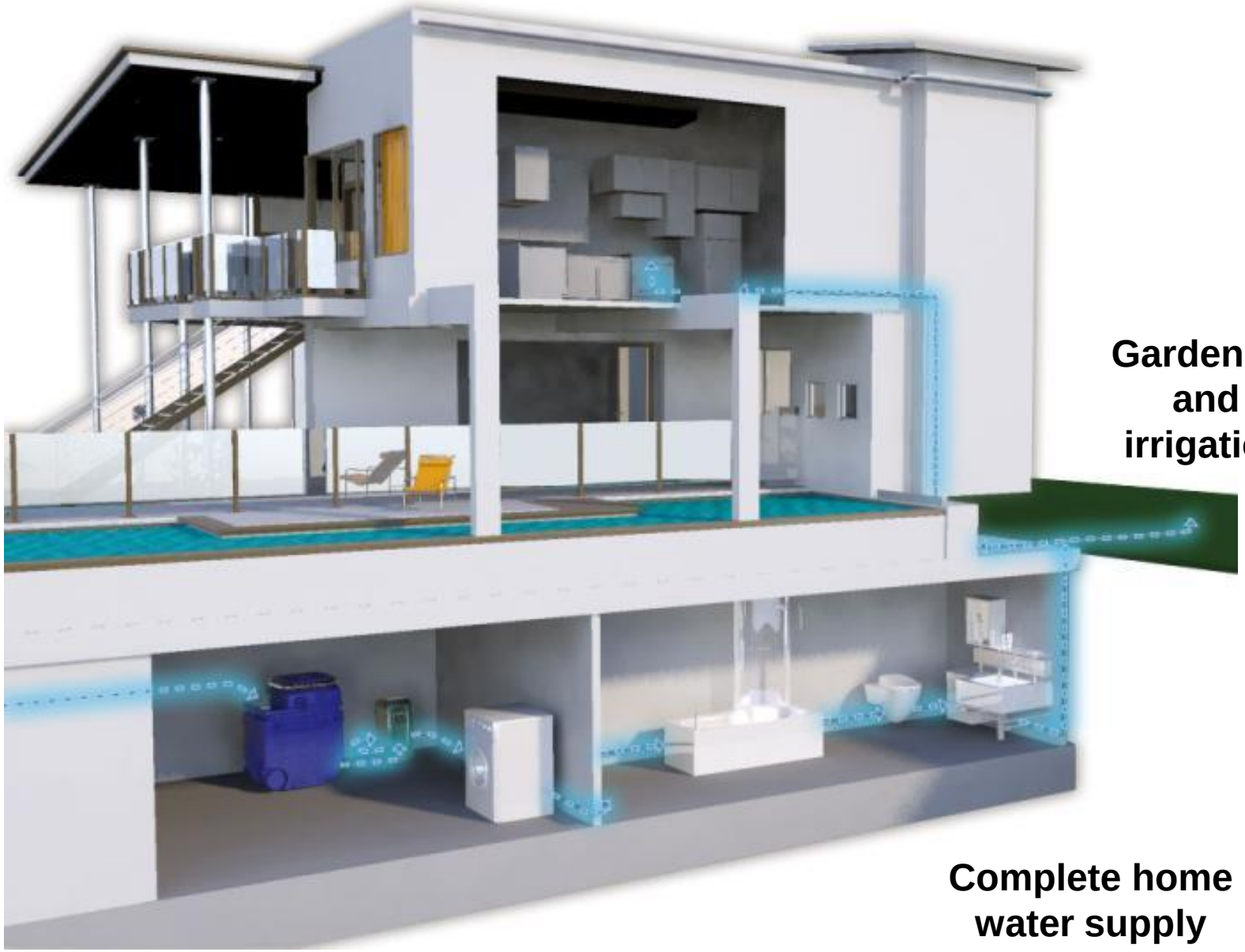
WELCOME...TO THE FUTURE!!!

e.sybox is the most evolved ergonomic system in the world in the field of water pressurization

- ✓ *Easy to install*
- ✓ *Easy to use*
- ✓ *Flexible installation*
- ✓ *Compact & design product*
- ✓ *Silent*

e.sybox has 14 patents pending

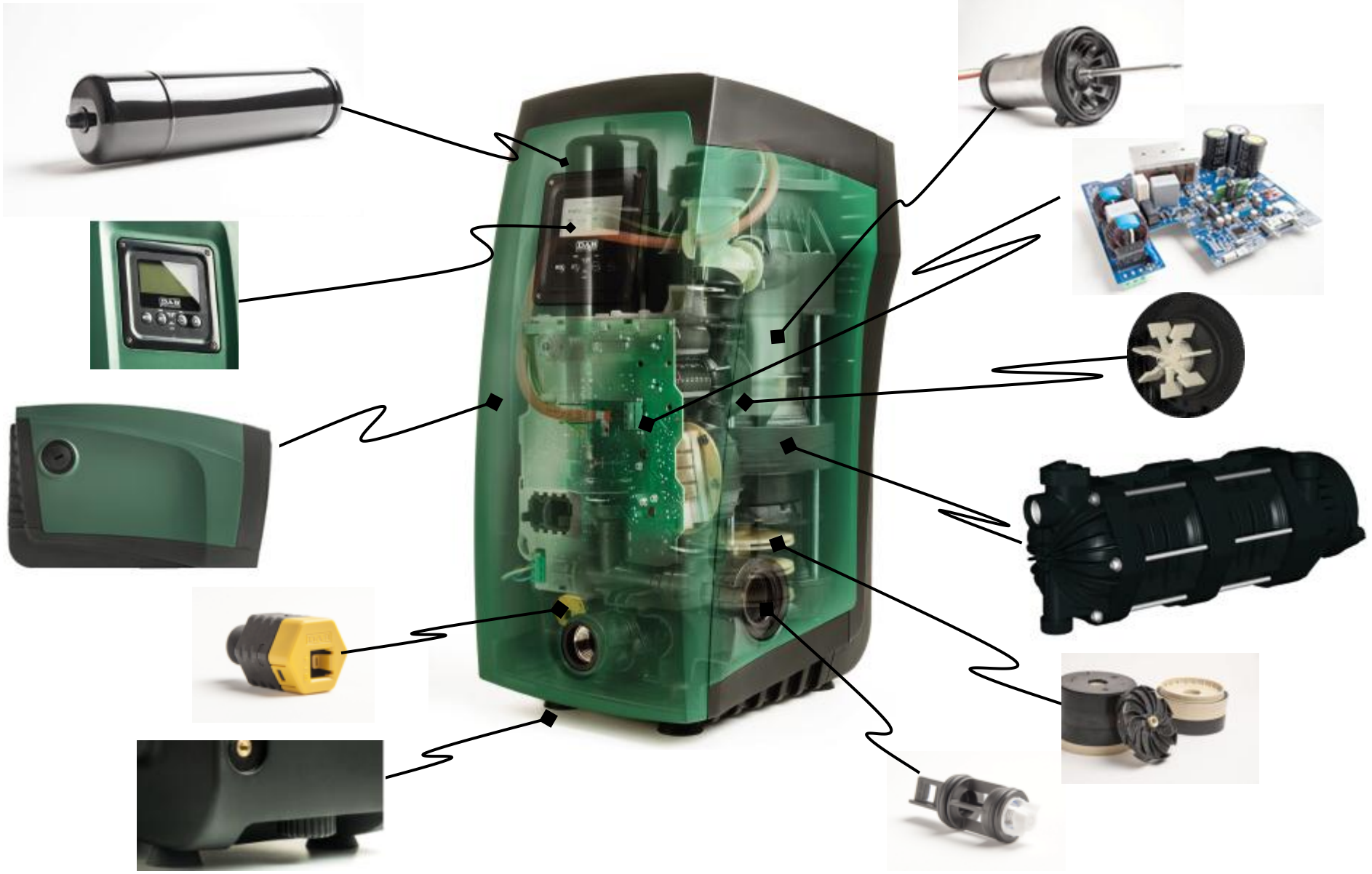
APPLICATIONS



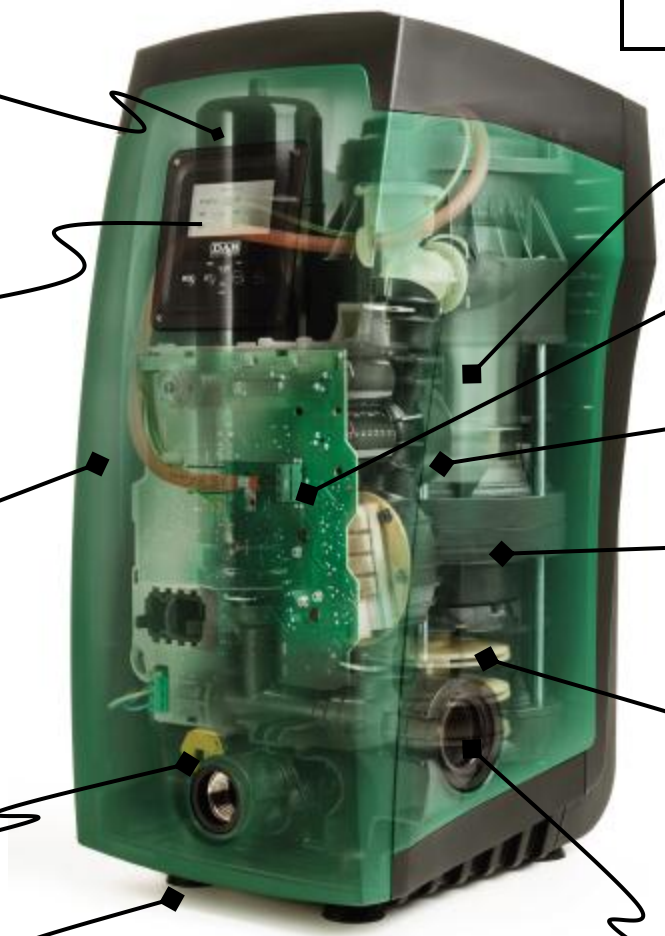
Gardening and irrigation

Complete home water supply

MAIN FEATURES



MAIN FEATURES



Integrated 2 litres pressure vessel

Water cooled motor. No fan!

Inverter Electronic with wireless communication

Interface with high resolution LCD display

Flow sensor

Multistage self priming pump

External hulls with aesthetic and noise proof functions.

Multi stage hydraulics.

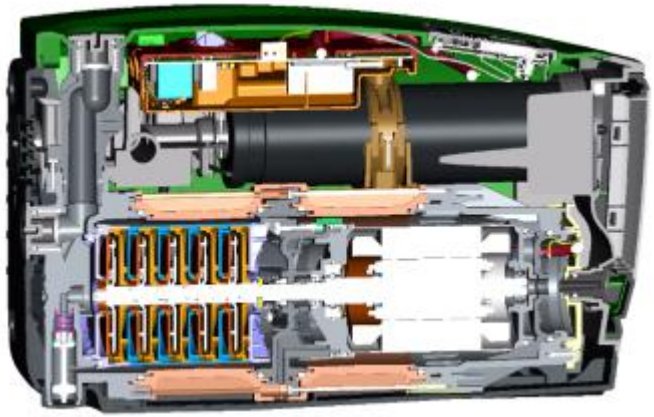
Self priming up to 8 meters

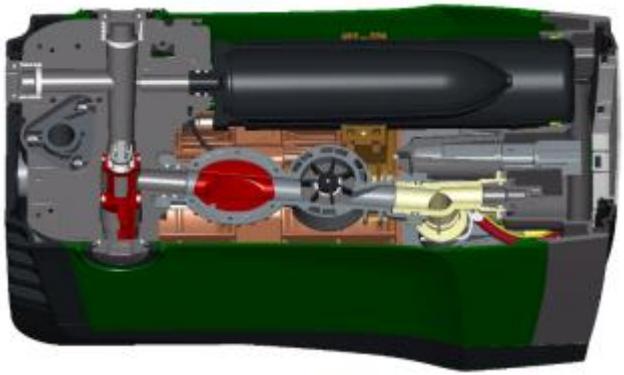
Pressure sensor

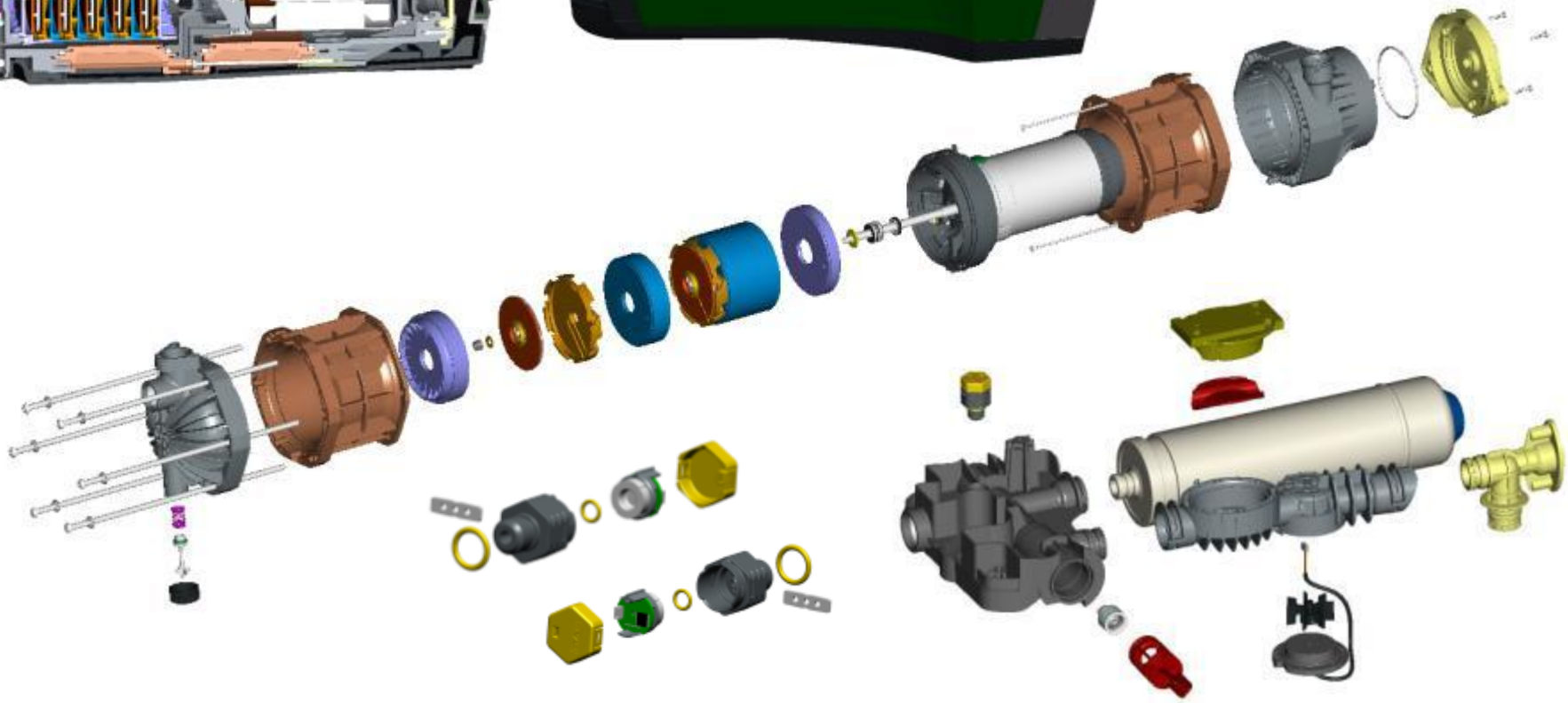
Anti vibration feet

Check Valve

MAIN FEATURES







HYDRAULIC PART

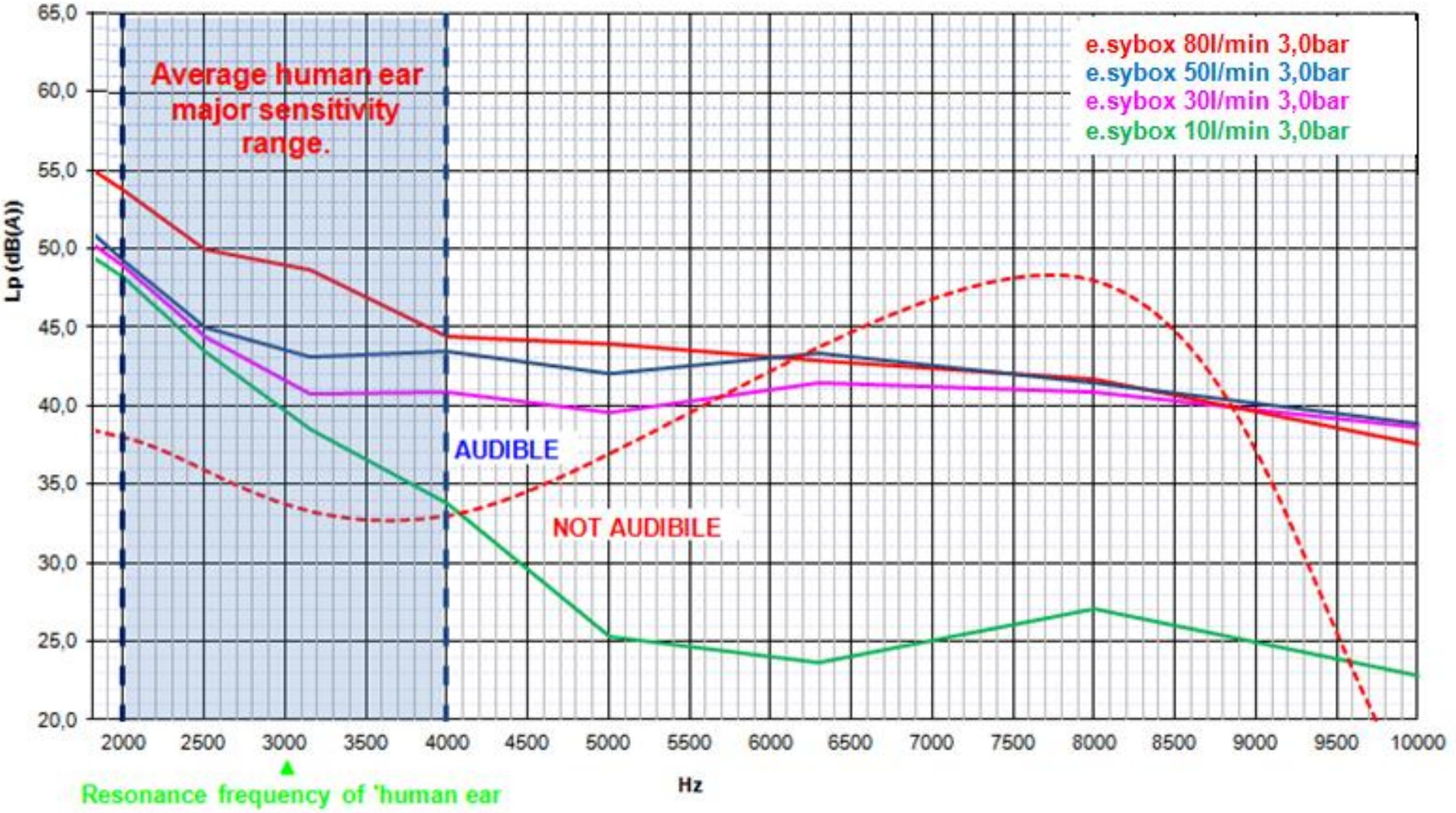
- ***Technological mix between EUROINOX 40/80 and BOOSTER SILENT***
- ***Multistages (5 stages)***
- ***Water-cooled motor***
- ***Self-priming up to 8 m***

SILENT

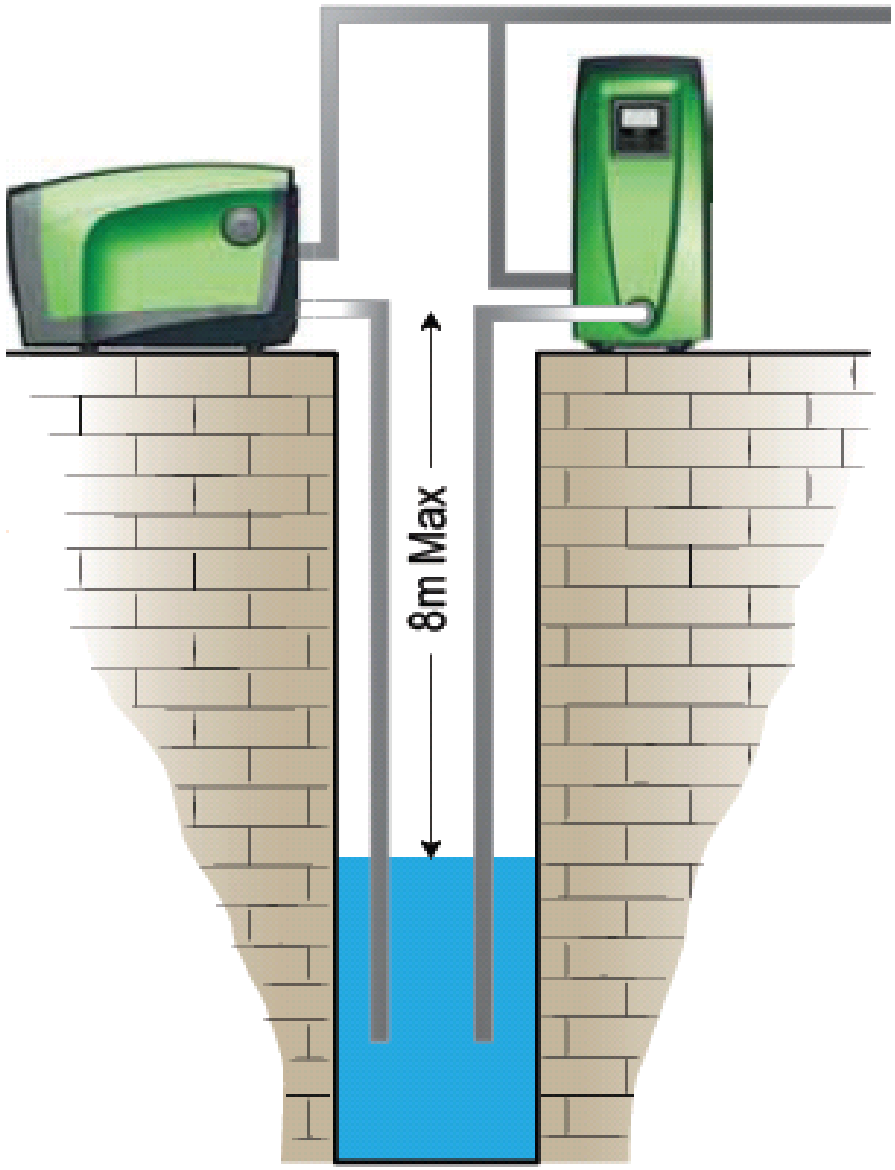
45 dB

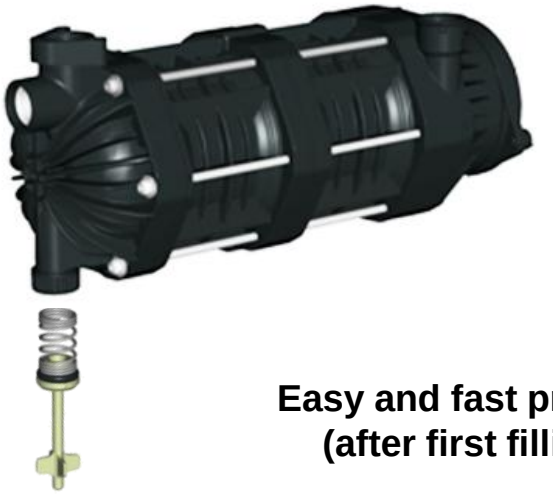
3 Bar
12 l/min

SILENT

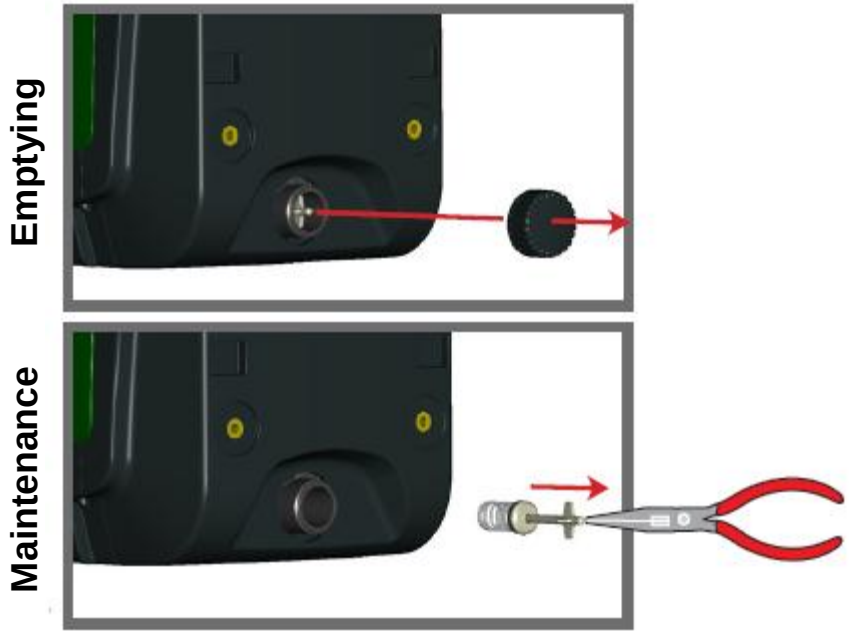

Average human ear major sensitivity range.
e.sybox 80l/min 3,0bar
e.sybox 50l/min 3,0bar
e.sybox 30l/min 3,0bar
e.sybox 10l/min 3,0bar
AUDIBLE
NOT AUDIBILE
Lp (dB(A))
Hz
65,0
60,0
55,0
50,0
45,0
40,0
35,0
30,0
25,0
20,0
2000
2500
3000
3500
4000
4500
5000
5500
6000
6500
7000
7500
8000
8500
9000
9500
10000
Resonance frequency of 'human ear

SELF-PRIMING EFFECT



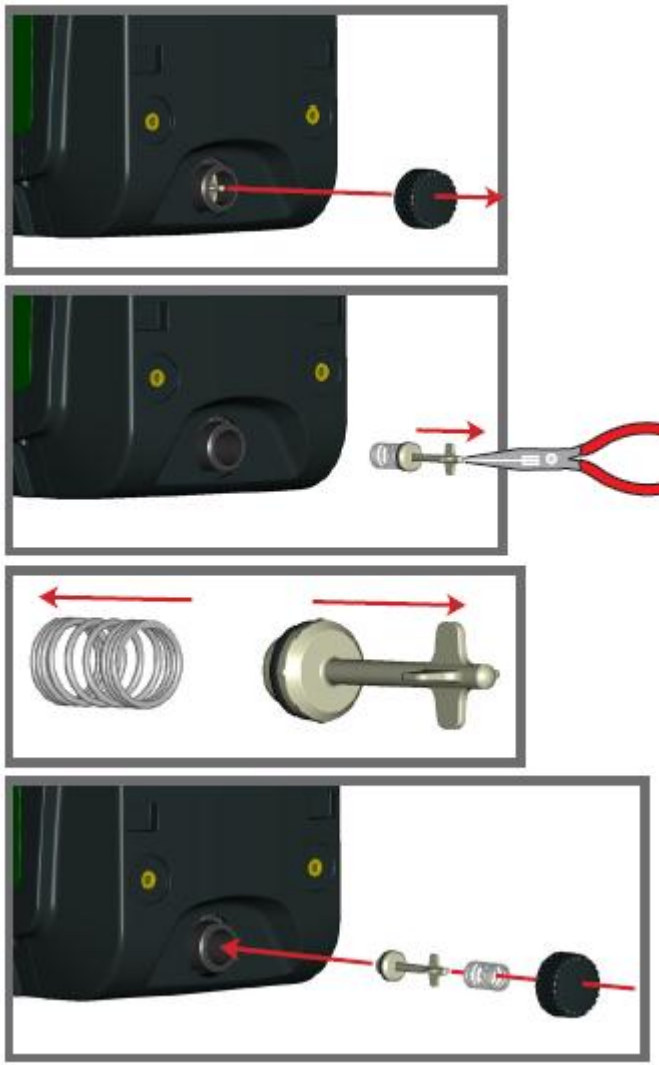


Easy and fast priming (after first filling)



SELF-PRIMING EFFECT

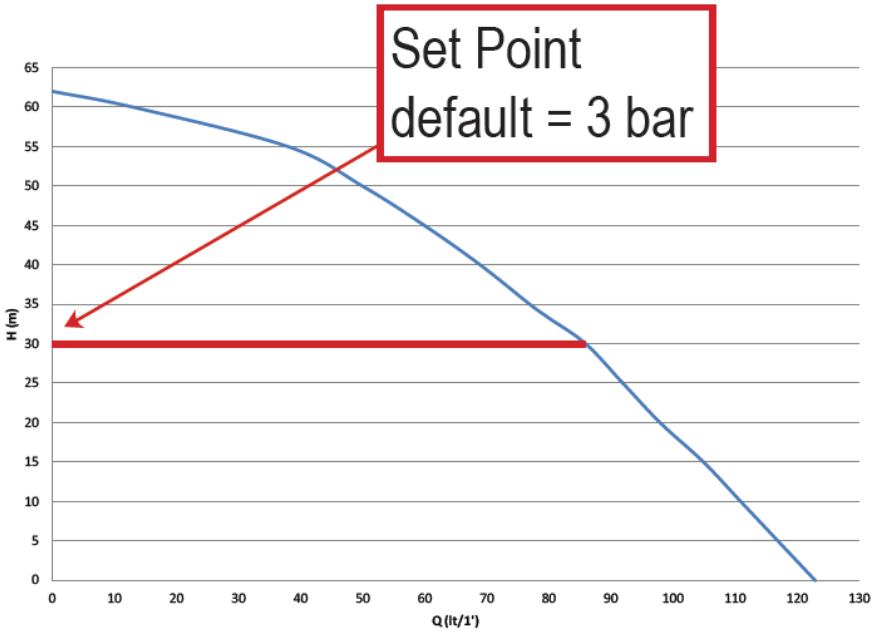
The self-priming effect can be excluded:



Exclude the self-priming effect in this conditions:

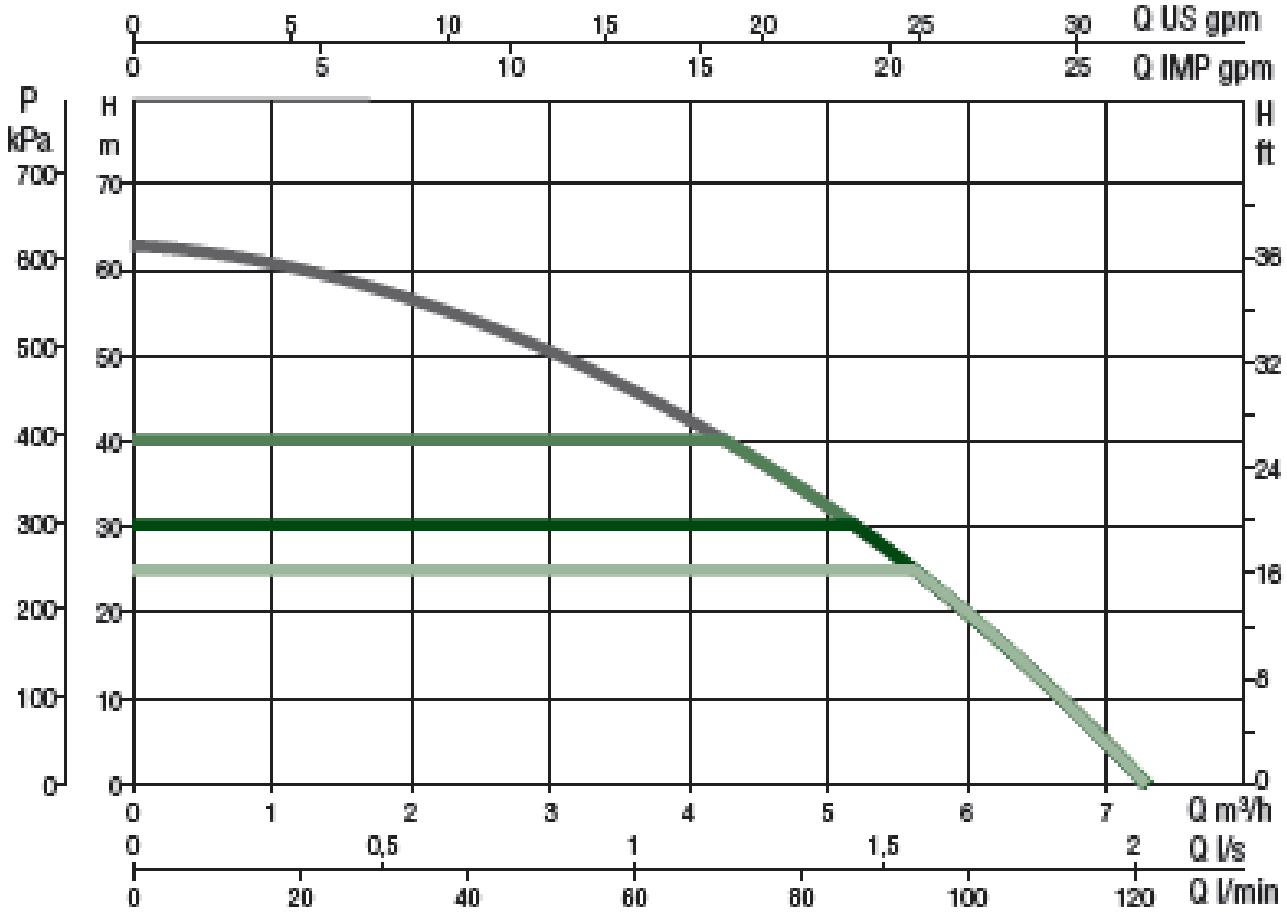
- ***Negative suction head***
- ***Water arrives at the system intake already under pressure (MAX 2 bar)***

INVERTER



- ***Costant pressure with variable flow***
- ***More precise motor control***
- ***Informations calculated istantanly and sent to LCD monitor***
- ***Wireless comunication (max 4 modules without any cable)***

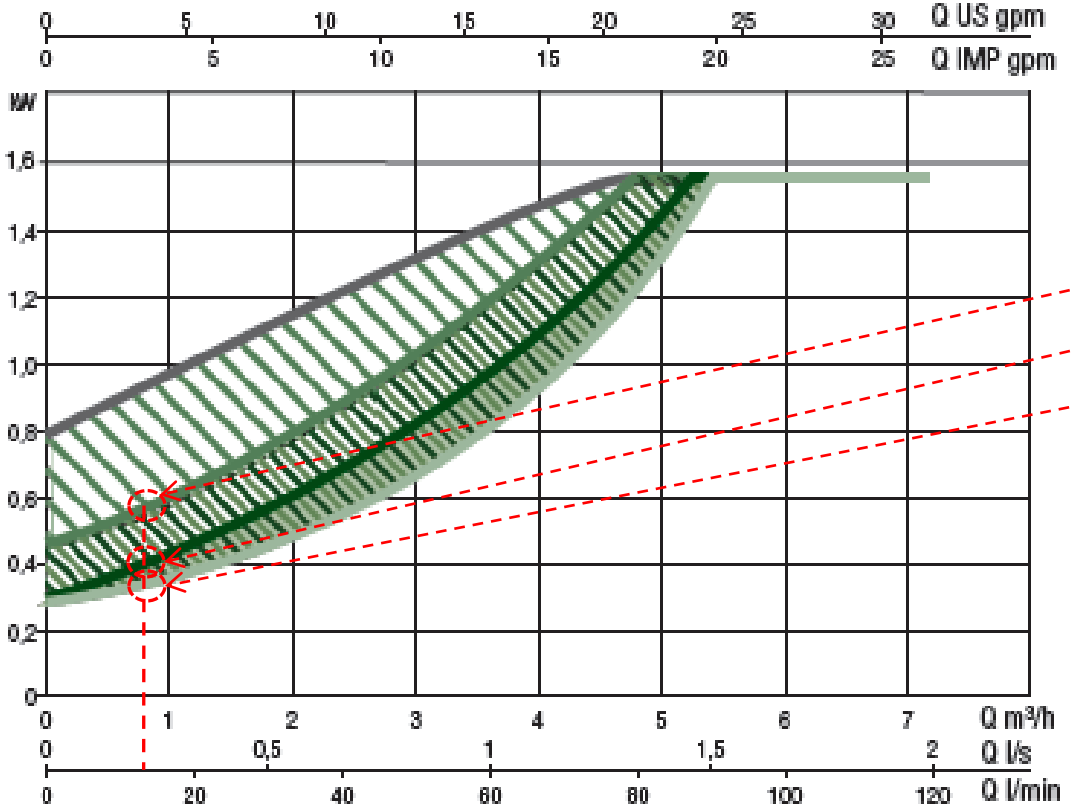
PERFORMANCE



Performance curves of the complete unit including all the connections

(for vessel, heat sink, inverter controllers, flow and pressure sensors)

ENERGY SAVING



500 Watt at 4 bar

360 Watt at 3 bar

300 Watt at 2,5 bar

with + **Open *(12 l/min)***

NO INVERTER *Pump full speed*

DEFAULT SET POINT

4 BAR SET POINT

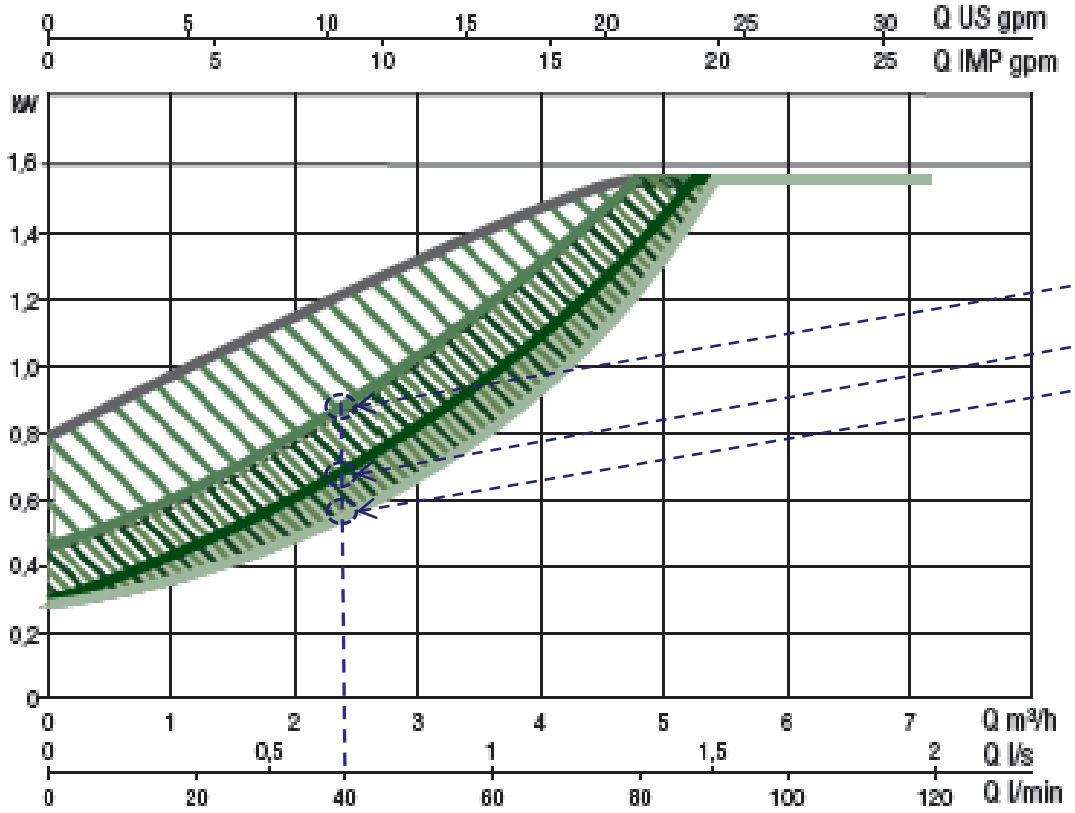
2,5 BAR SET POINT

Thanks to the Inverter technology, e.sybox draws only the necessary energy according to water requirements, thereby avoiding wastes and allowing considerable economic savings.

ENERGY SAVING AREA

energy saving

ENERGY SAVING



870 Watt at 4 bar

680 Watt at 3 bar

540 Watt at 2,5 bar

with

Open *(40 l/min)*

NO INVERTER *Pump full speed*

DEFAULT SET POINT

4 BAR SET POINT

2,5 BAR SET POINT

ENERGY SAVING AREA

Thanks to the Inverter technology, e.sybox draws only the necessary energy according to water requirements, thereby avoiding wastes and allowing considerable economic savings.

energy saving

EXPANSION VESSEL

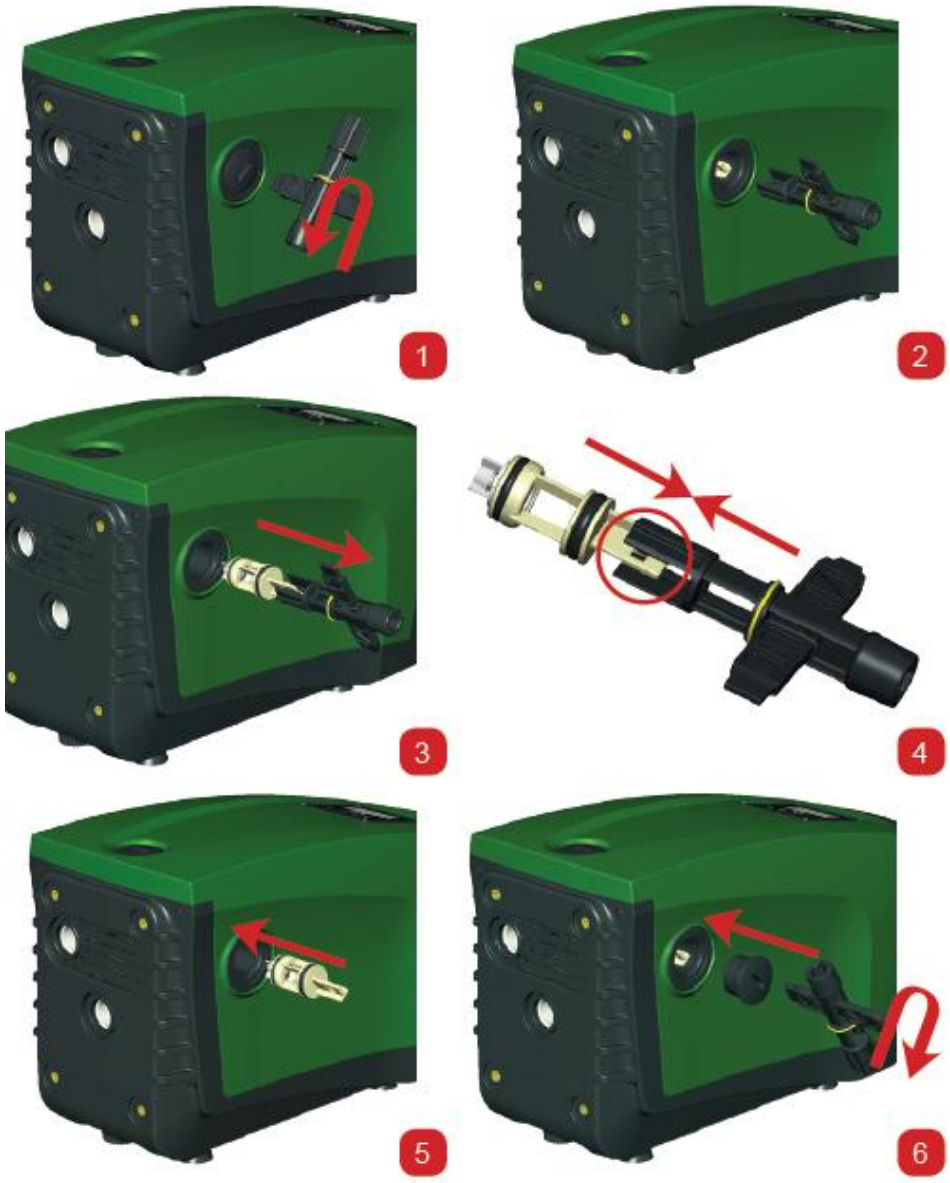
- ***Integrated in the system***
- ***Capacity: 2 litres***
- ***Certified for drinking water***
- ***5 years guarantee without any maintenance***
- ***Pre-charged at 2.0 bar***

P.Air = SetPoint - 1 bar
(default = 3 - 1 = 2 bar)

GLOBAL WATER SOLUTIONS LTD.

NON-RETURN VALVE

Easy access to non-return valve for maintenance



The same product can be installed in

vertical and horizontal

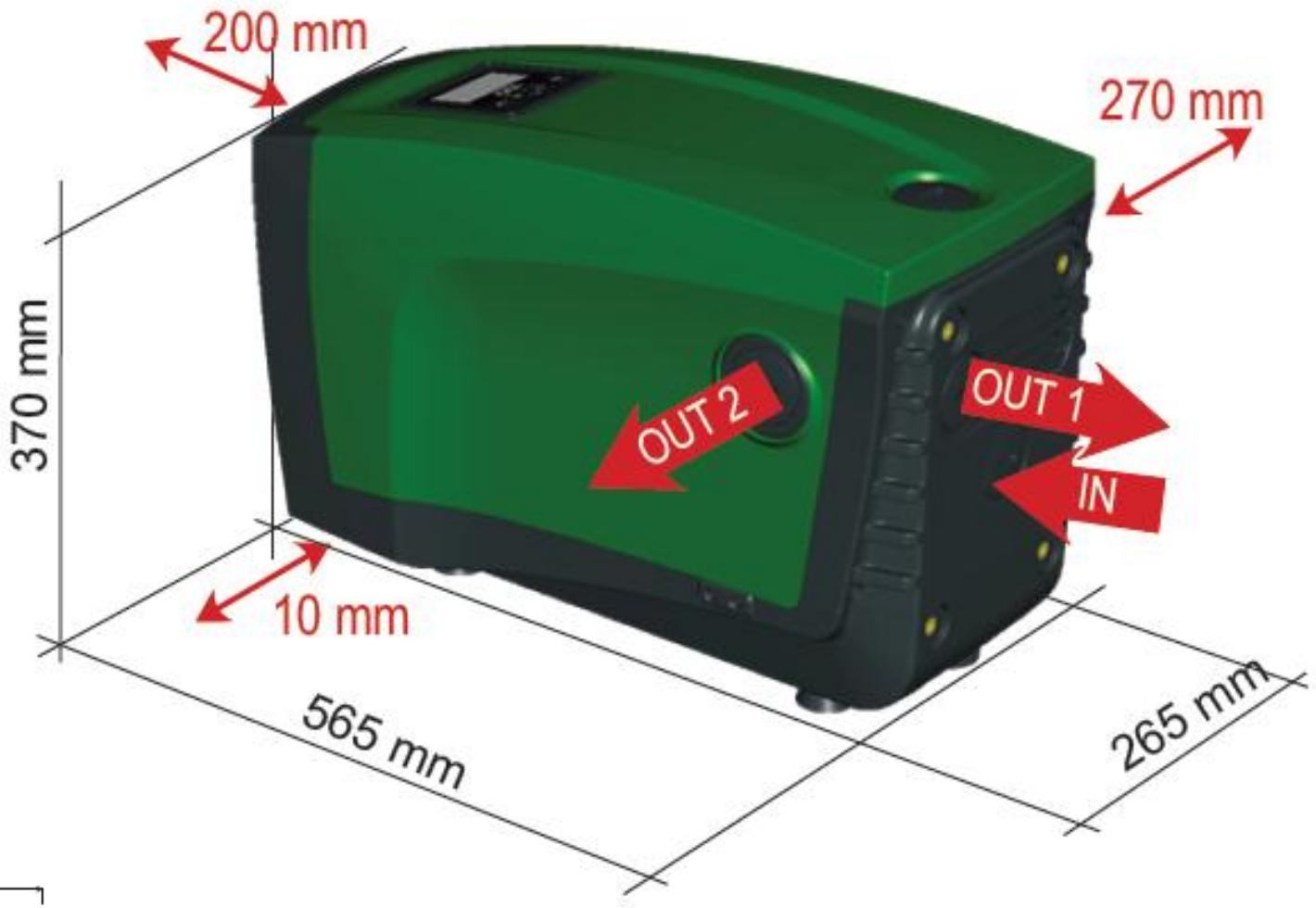
position both, on the ground or on a wall

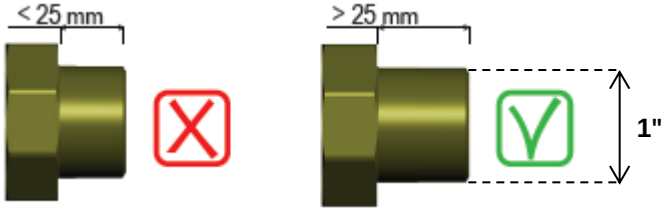
e.Sybox is easily adaptable to any type of installation.
Horizontal or Vertical, in a ventilated room or in a recess, any setting will be perfect for making the best possible use of it.

Horizontal view

HORIZONTAL INTALLATION

First time water fill up





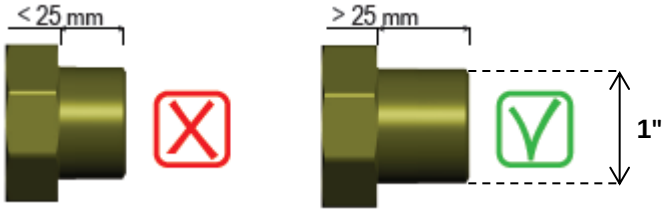
**** Possibility to simultaneously connect 2 different deliveries***

VERTICAL INSTALLATION

Vertical view

VERTICAL INSTALLATION

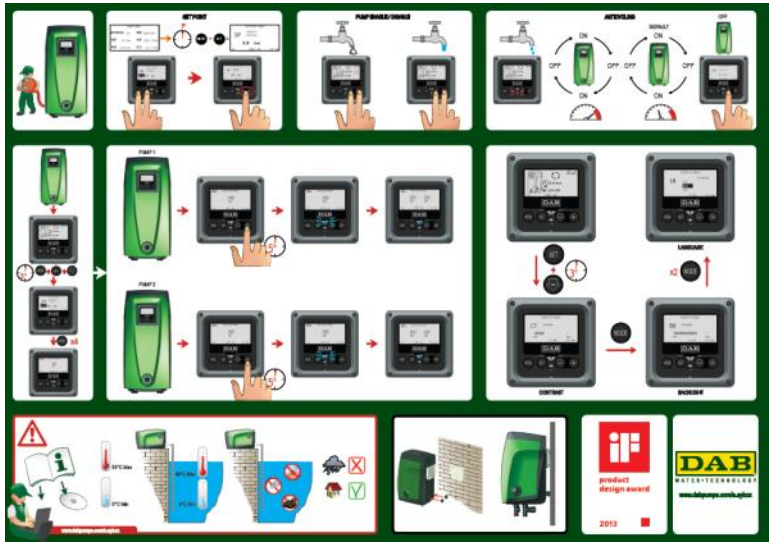
First time water fill up



TECHNICAL COMPARTMENT

1. *Valve of the expansion vessel*
2. *Thecnical data plate*
3. *Quick guide*
4. *Access to motor shaft*
5. *Accessory tool*
6. *Filling cap (vertical installation only)*

INSTALLATION: QUICK GUIDE



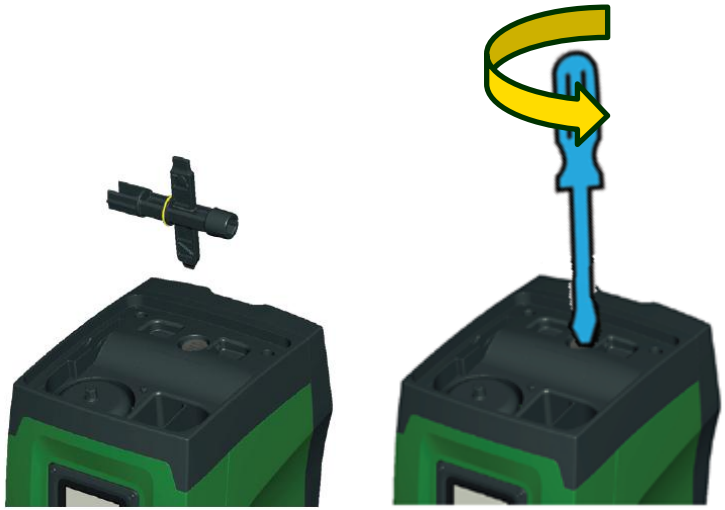
ACCESS TO MOTOR SHAFT

After a period of inactivity, perhaps with the system drained, the salts dissolved in the water could have settled and formed calcification between the moving part (motor shaft) and the fixed part of the pump, thus increasing the resistance on starting.
In this case it may be sufficient to help the motor shaft by hand to detach itself from the calcifications.

In this system the operation is possible because access to the motor shaft from outside is guaranteed and a groove is provided at the end of the shaft.
Proceed as follows:

1. remove the motor shaft access cap
2. insert a straight tip screwdriver in the groove on the motor shaft and maneuver, turning in both directions

Do not fill up the pump using this hole as illustrated on the stick:



SUPPLIED TOOLS

To open caps

To open the filling cap (vertical installation)

To open the motor shaft cap

SUPPLIED TOOLS

To remove the non-return valve (maintenance)

To remove the control panel

CONTROL PANEL

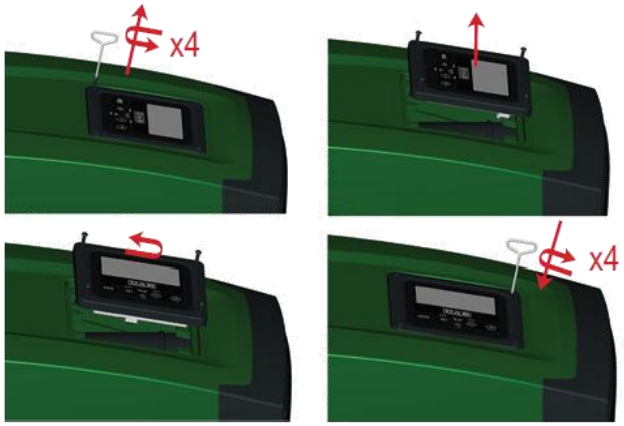
ORIENTABLE

Removing the screws the panel can be rotated by 180°

LCD display

70x40 mm

240x128 dots



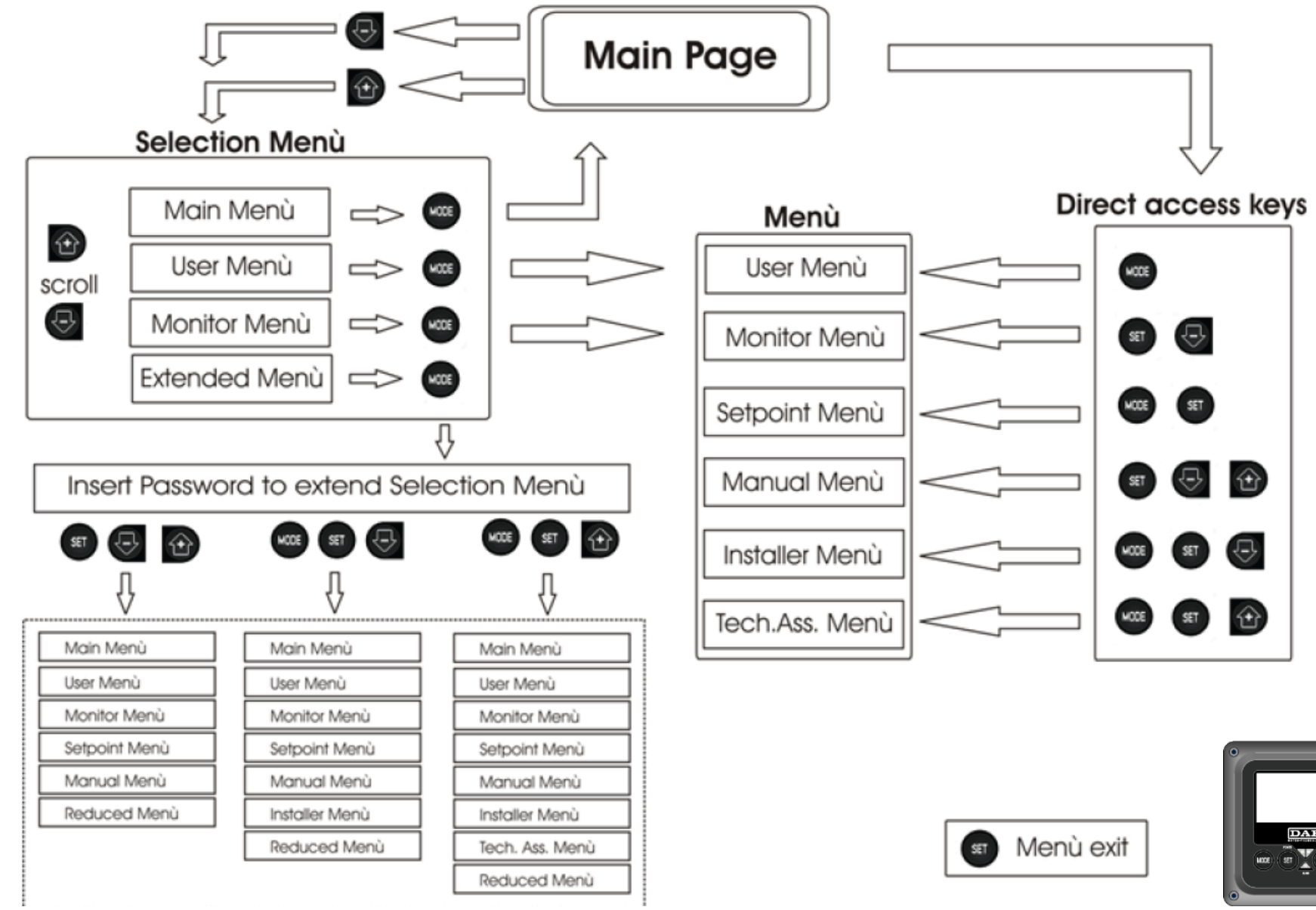
CONTROL PANEL

MODE	The MODE key allows you to move on to the next items in the same menu. Holding it down for at least 1 sec allows you to skip to previous menu item.
SET	The SET key allows you to leave the current menu.
−	Decreases the current parameter (if it is an editable parameter).
+	Increases the current parameter (if it is an editable parameter).

CONTROL PANEL

MENU NAME	DIRECT ACCESS KEYS	HOLD-DOWN TIME
User	MODE	On releasing the button
Monitor	SET −	2 Sec
Setpoint	MODE SET	2 Sec
Manual	SET − +	5 Sec
Installer	MODE SET −	5 Sec
Technical assistance	MODE SET +	5 Sec
Reset factory values	SET +	2 sec after switching on appliance
Reset	MODE SET − +	2 Sec

CONTROL PANEL



COMPLETE MENU

Reduced menu (visible)			*Extended menu (direct access or password)*			
Main Menu	**User Menu** **mode**	**Monitor Menu** set-minus	**Setpoint Menu** **mode-set**	**Manual Menu** set-minus-plus	**Installer Menu** mode-set-minus	**Tech. Assist. Menu** mode-set-plus
MAIN (Main Page)	**STATUS** **RS** Revs per minute **VP** Pressure **VF** Display of flow **PO** Power absorbed by pump **C1** Pump phase current	**CT** Contrast	**SP** Setpoint pressure	**STATO** **RI** Speed setting **VP** Pressure **VF** Display of flow **PO** **Power absorbed by pump** **C1** Pump phase current **RS** Revs per minute	**RP** Decrease pressure for restart	**TB** Block time for water lack.
Menu Selection		**BK** Back lighting	**P1** Auxiliary setpoint 1		**OD** Type of plant	**T1** Delay in switching off KIWA function
		TK Backlight switch-on time	**P2** Auxiliary setpoint 2		**AD** Address Configuration	**T2** Delay in switching off
		LA Language	**P3** Auxiliary setpoint 3		**MS** Measuring system	**GP** Proportional gain.
	Hours switched on Working hours Number of starts	**TE** Dissipator temperature	**P4** Auxiliary setpoint 4		**AS** Wireless Devices	**GI** Integral gain
					PR Remote pressure sensor	**RM** Maximum speed
	PI Power histogram					**NA** Active devices
	Multi-pump system					**NC** Max. simultaneous devices
	VE Informazioni HW e SW					**IC** Device configuration
	FF Fault & Warning (Log)					**ET** Exchange Time

COMPLETE MENU

							AY Anti Cycling
							AE Anti-blocking
							AF AntiFreeze
							I1 Function input 1
							I2 Function input 2
							I3 Function input 3
							I4 Function input 4
							O1 Function output 1
							O2 Function output 2
							RF Reset fault & warning
							PW Set Password

LANGUAGE SELECTION

Available languages:

- Italian
- English
- French
- German
- Spanish
- Dutch
- Swedish
- Turkish
- Slovak
- Romanian

SETPOINT PRESSURE – STANDARD CONFIGURATIONS

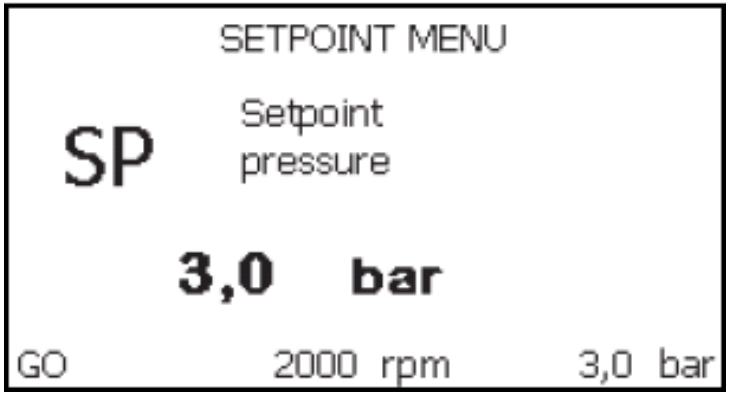
The system is configured to satisfy the majority of installation cases, operating at constant pressure.

The default values are the following:

Set-Point (desired value of constant pressure): SP = 3.0 bar

Reduction of pressure to restart: RP = 0.3 bar

Anti-cycling function: Disabled



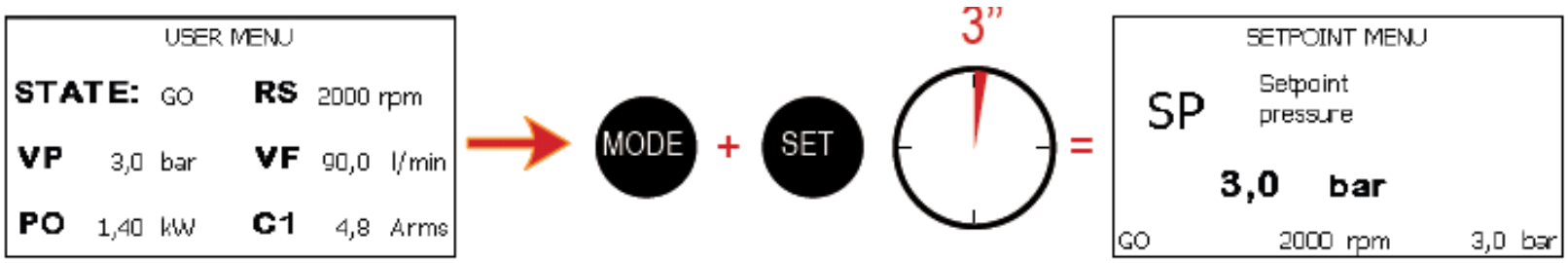
However, all these parameters (and many others) can be set by the installer/user.

For the definition of the parameters SP and RP, the pressure at which the system starts has the value:

Pstart = SP – RP For example: 3.0 – 0.3 = 2.7 bar in the default configuration

The system does not work if the utility is at a height higher than the equivalent in metres of water column of the Pstart (consider 1 bar = 10 m water column): for the default configuration, if the utility is at a height of at least 27 m the system does not start.

SETPOINT PRESSURE



Modify the value by:

INCREASING

or

DECREASING

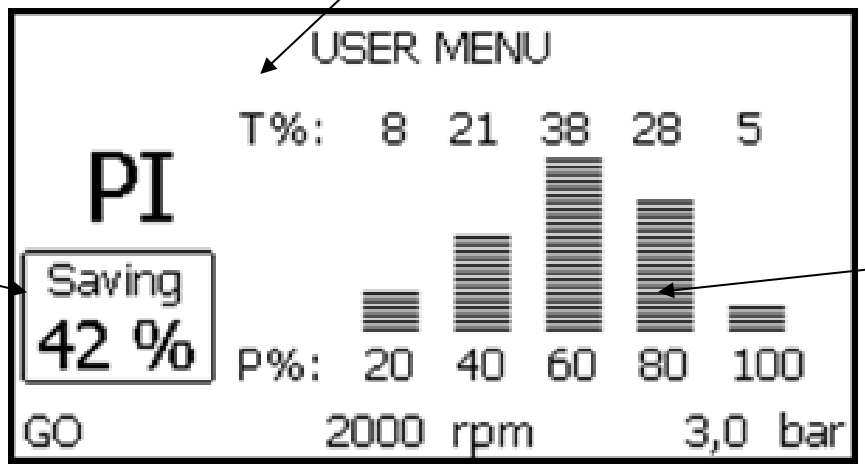
ENERGY SAVING

e.sybox supplies the water you require when it's required.

And you can see it!

On the vertical axis, the time for which the pump has been on at the specific power level (% of the time with respect to the total).

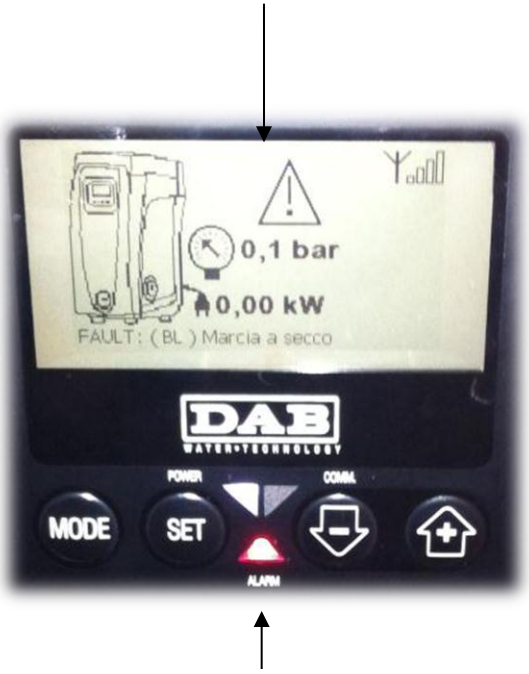
Energy Saving respect to an on-off system with the same motor power.



On the horizontal axis are the bars at the various power levels (% with respect to the maximum power).

ALARM AND WARNING SIGNALS

Alarm indication and error or status condition on screen



Red alarm light lit

Error or status conditions shown on the main page	
Identifying code	**Description**
GO	Motor running
SB	Motor stopped
BL	Blockage due to water lack
LP	Blockage due to low supply voltage
HP	Blockage due to high internal supply voltage
OC	Blockage due to overcurrent in the electropump motor
SC	Blockage due to short circuit on the output phases
OT	Blockage due to overheating of the power stages
BP	Blockage due to fault of the pressure sensor
NC	Pump not connected
F1	Float function status / alarm
F3	System disable function status / alarm
F4	Low pressure signal function status / alarm
P1	Operating status with auxiliary pressure 1
P2	Operating status with auxiliary pressure 2
P3	Operating status with auxiliary pressure 3
P4	Operating status with auxiliary pressure 4

DRY-RUNNING PROTECTION

Manual restart

Protection against dry running:

In the case of lack of water the pump is stopped automatically after the time T2.

This is indicated by the red “Alarm” led and by the letters **“BL”** on the display.

After having **restored** the correct flow of water you can try to leave the protective block manually by **pressing the “+” and “-“ keys simultaneously and then releasing them.**

If the alarm status remains, or if the user does not intervene by restoring the flow of water and resetting the pump, the **automatic restart** will try to restart the pump.

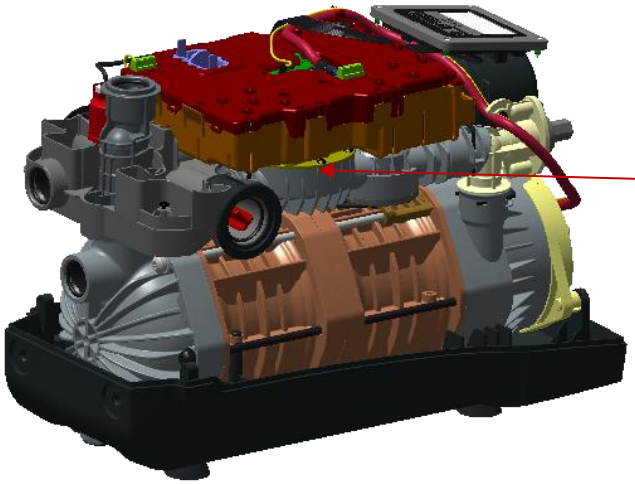
Automatic restart

Every 10 minutes for the first hour

Every hour for 24 hours

Every day for 7 days

ANTIFREEZE PROTECTION



Protection against freezing:

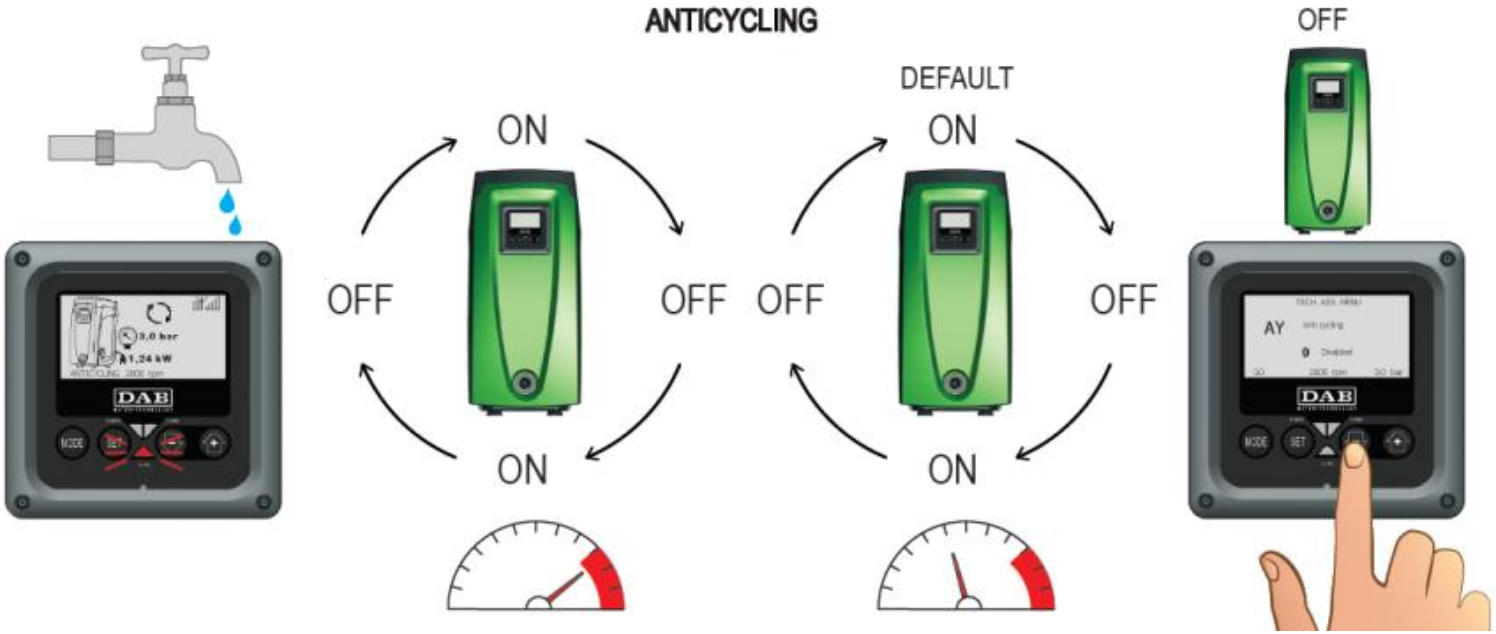
e.sybox is provided with a protection device which prevents the formation of ice inside the hydraulic part, by activating the electric pump in case the temperature falls below values approaching freezing point (**T < 5° C**).

The temperature sensor is located on the electronic device near the dissipator.

The pump must be power supplied

The electric pump is activated for 5 min at 1800 rpm to heat the system and move the water inside pump body

ANTICYCLING



Protection against continuous cycles without utility request:

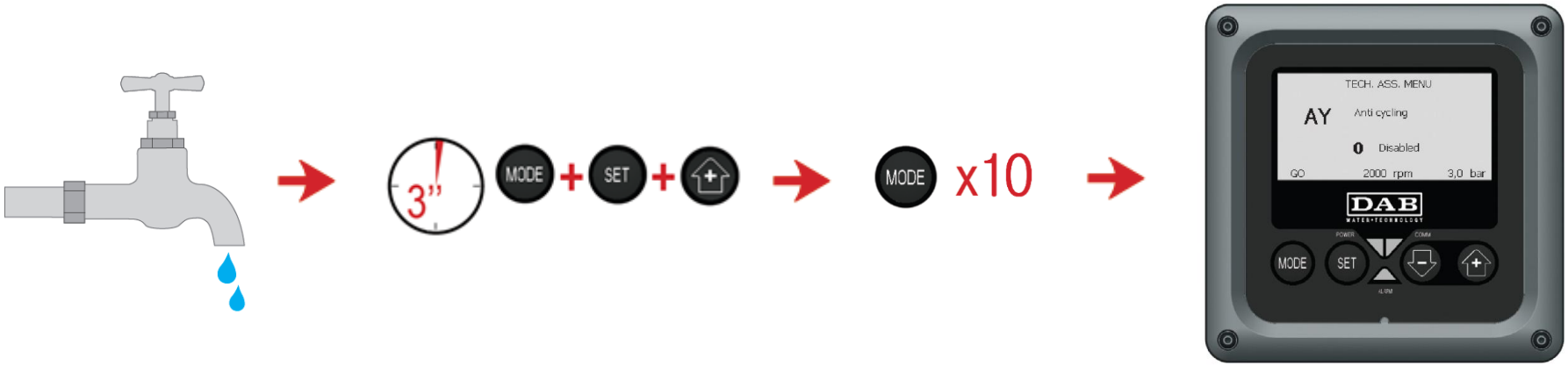
If there are leaks in the delivery section of the plant, the system starts and stops cyclically even if no water is intentionally being drawn: even just a slight leak (a few ml) can cause a fall in pressure which in turn starts the electropump.

The electronic control of the system is able to detect the presence of the leak, based on its recurrence.

Default parameters: ANTICYCLING (AY) DISABLED

Activate the AY function only in case of suspected leakage

ANTICYCLING



In case of leakage the Anti-Cycling **AY** function can be activated in ***BASIC or SMART MODE*** by pushing the **"+" button**:

- **BASIC MODE (** x1 **: AY 1)** : once the condition of recurrence is detected (***40 identical start/stop cycles***) the pump stops and remains waiting to be manually reset. This condition is communicated to the user by the lighting of the red "Alarm" led and the appearance of the word "ANTICYCLING" on the display. After the leak has been removed, you can manually force restart by **simultaneously pressing and releasing the "+" and "-" keys**.

Manual restart

- **SMART MODE (** x2 **: AY 2)** : once the leak condition is detected, the parameter **RP** (***Reduction of pressure to restart***) is increased to decrease the number of starts over time (**RP = 1 bar**).

TECHNICAL CHARACTERISTICS

- **ELECTRIC POWER SUPPLY**

Input current frequency	50/60 Hz
Input current voltage	1 x 220/240 ~ VAC
Current intensity	10 A
Max absorbed power - P1	1550 W

- **CONSTRUCTION CHARACTERISTICS**

Overall dimensions	565 x 265 x 350 w/o feet
Empty weight	24,8 kg
Protection class	IP x4
Motor insulation class	F

- **HYDRAULIC PERFORMANCE**

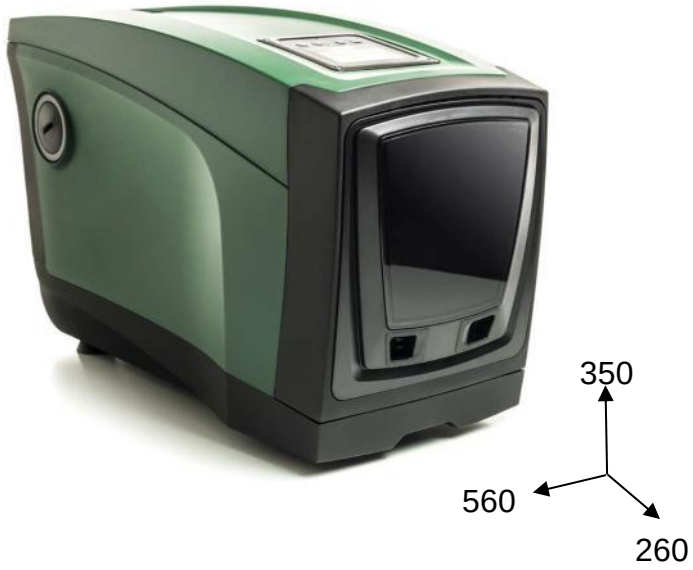
Maximum head	65 m
Maximum flow rate	125 l/min
Priming	< 5 min at 8 m

- **WORKING CONDITIONS**

Maximum working pressure	8 bar
Liquid max temp.	40 ° C
Environment max temp.	50 ° C
Storage environment temp.	-10÷60 ° C

COMPACT

TOTAL VOLUME ≈ 72 dm^3



TOTAL VOLUME ≈ 51 dm^3

- 30% of occupied space

QR CODE

E.SYWALL

E.SYDOCK

E.SYTWIN

E.SYBOX

ACCESSORIES & KIT

AVAILABILITY

E.SYWALL

E.SYDOCK

E.SYTWIN

October 2013

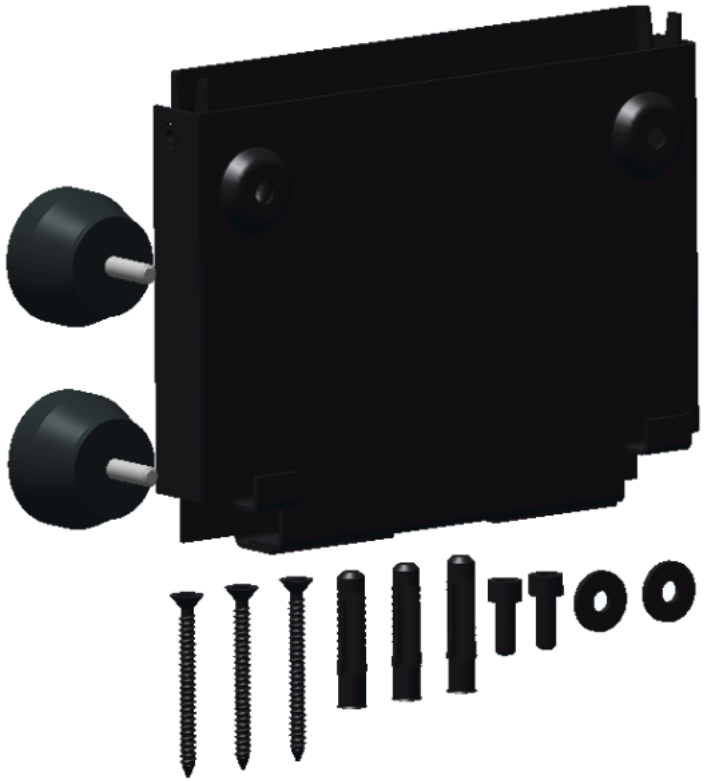
October 2013

October 2013

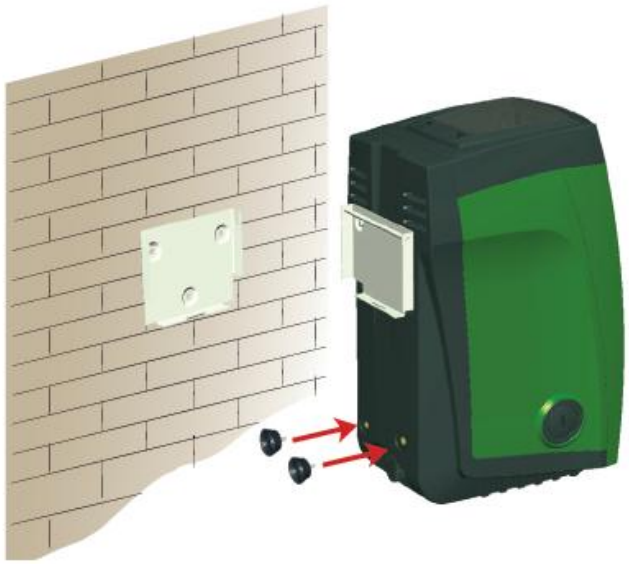
November 2013

E.SYWALL – BRACKET FOR WALL INSTALLATION

E.SYWALL



E.SYWALL – BRACKET FOR WALL INSTALLATION



e.sybox is already set up for installation hanging on the wall with the DAB accessory kit e.sywall.

Advantages:

- Saving space on the ground
- Possibility to simultaneously connect 2 different deliveries in vertical position

E.SYDOCK – FAST CONNECTION TOOL KIT

e.sydock

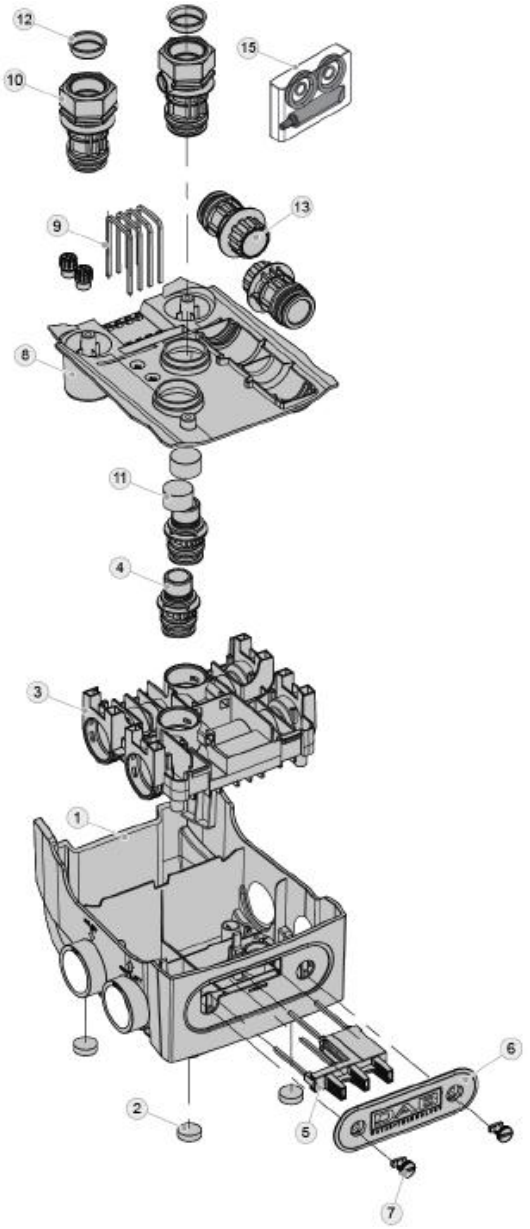
E.SYDOCK – FAST CONNECTION TOOL KIT

Accessory kit for Quick Connection of the system. This is a quick coupling base on which to make the connections to the plant and from which the system can be simply connected or disconnected.

Advantages:

- possibility of making up the plant on-site, testing it, but removing the actual system until the moment of delivery, avoiding possible damage
- it is easy for the assistance service to replace the system with a “spare” in the event of special maintenance

Index	Q.ty	Description
15	1	KIT O-RING FCT
14	2	PLUG 3/8 BLACK CROSS -PA66+30GF
13	2	CONNECTION CUP FITTING FCT
12	2	THREAD GUARD PLUG D.1 1/4
11	2	PLUG FOR PIPE 1
10	2	FCT EXTERNAL FITTING
9	4	CLIP - SQUARE SECT.4 - SPAN 41,5
8	1	FCT COVER
7	2	FCT LOGO PLATE STOPPER
6	1	FCT LOGO PLATE
5	1	FCT RETAINER DEVICE
4	2	FCT INTERNAL FITTING
3	1	FCT MANIFOLD
2	4	FCT RUBBER FOOT
1	1	FCT SUPPORT BASE



E.SYDOCK – CONNECTION FEATURES

2 adapters:
to connect the e.sybox

2 suction and delivery union

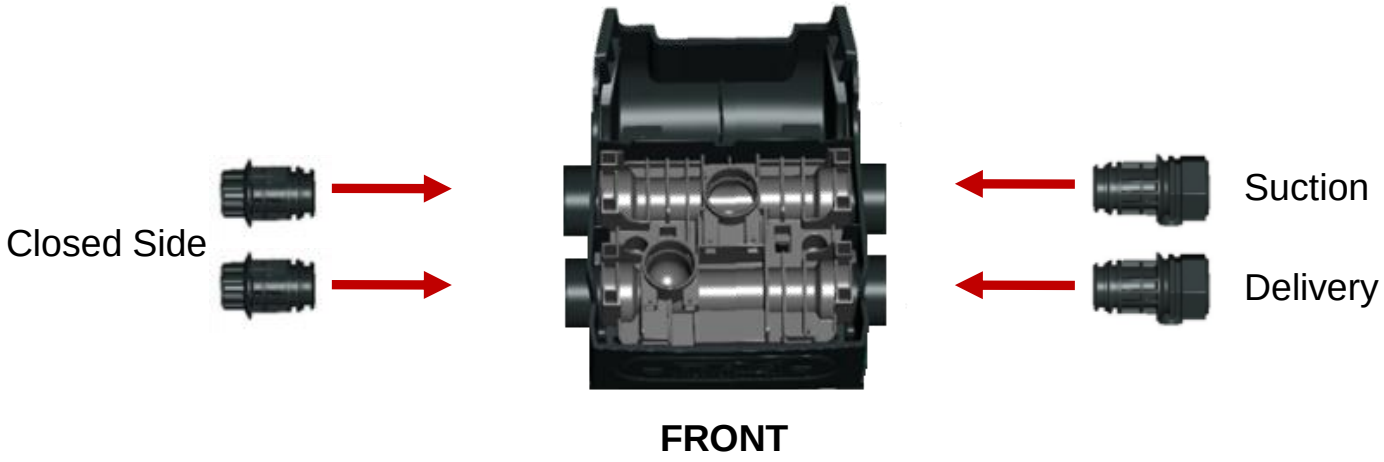
2 side plugs

4 Clammers: to fasten
the union + side plugs

1 upper covers

E.SYDOCK – SUCTION AND DELIVERY ON ONE SIDE

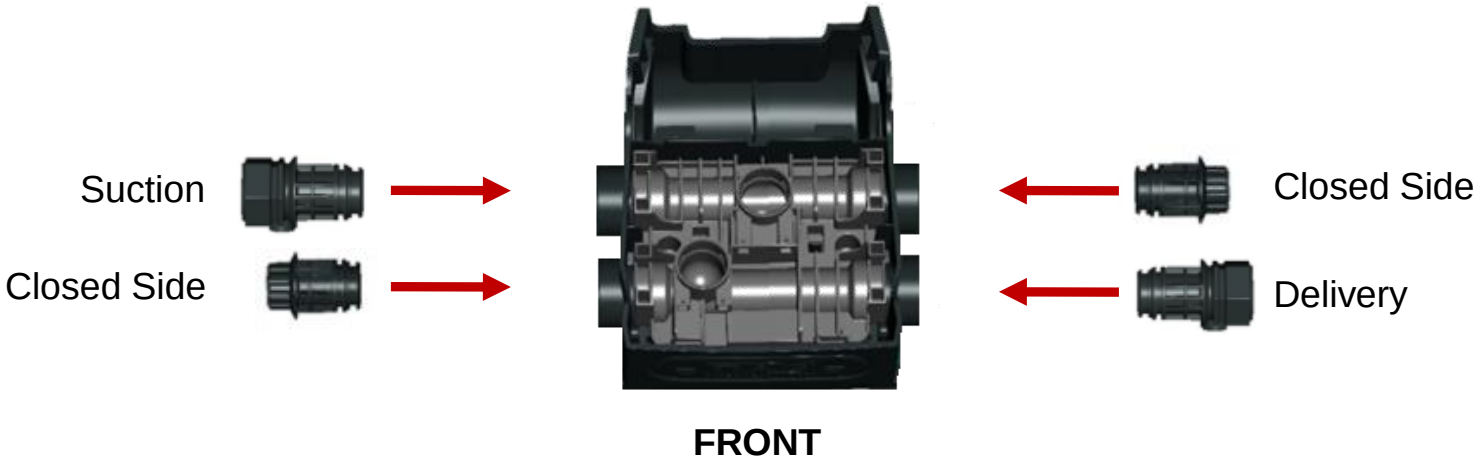
Right Suction and Delivery



Left Suction and Delivery

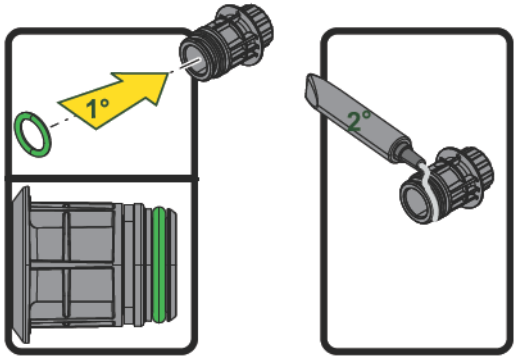
E.SYDOCK – SUCTION AND DELIVERY IN LINE

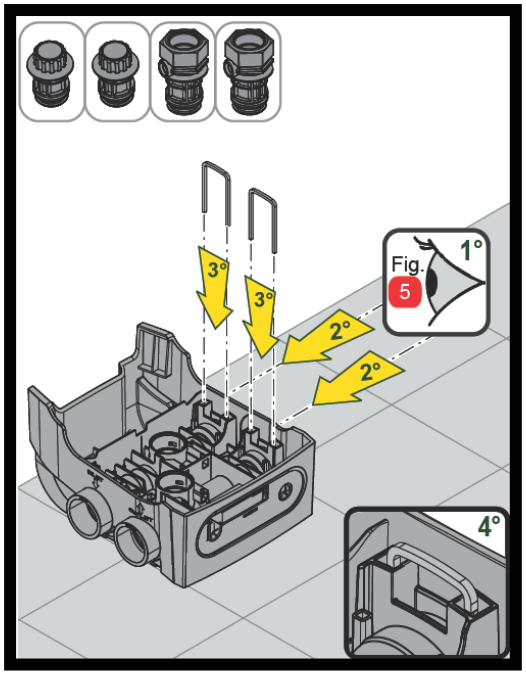
Left Suction, Right Delivery

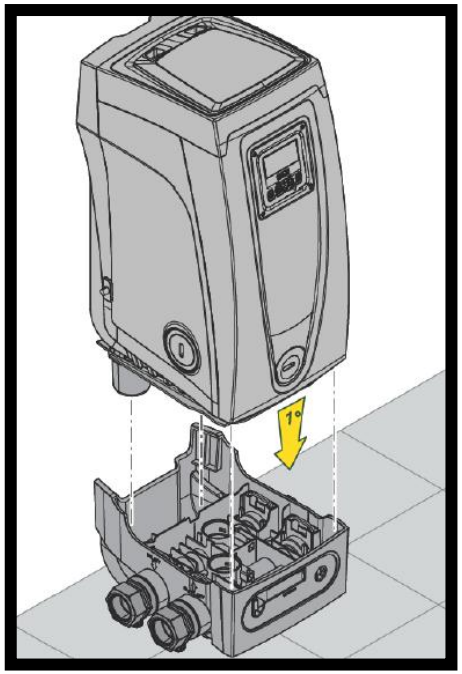


Right Suction, Left Delivery

E.SYDOCK – HYDRAULIC CONNECTION FIXING







WARNING:

- ***Use the quick guide during the installation***
- ***Pay attention on the correct position of all o-rings***
- ***Grease all o-rings before placing them***

E.SYTWIN – BOOSTER SET

E.SYTWIN

E.SYTWIN – BOOSTER SET

Pump set made up of two pumps whose deliveries all flow into a common manifold (pumps in parallel).

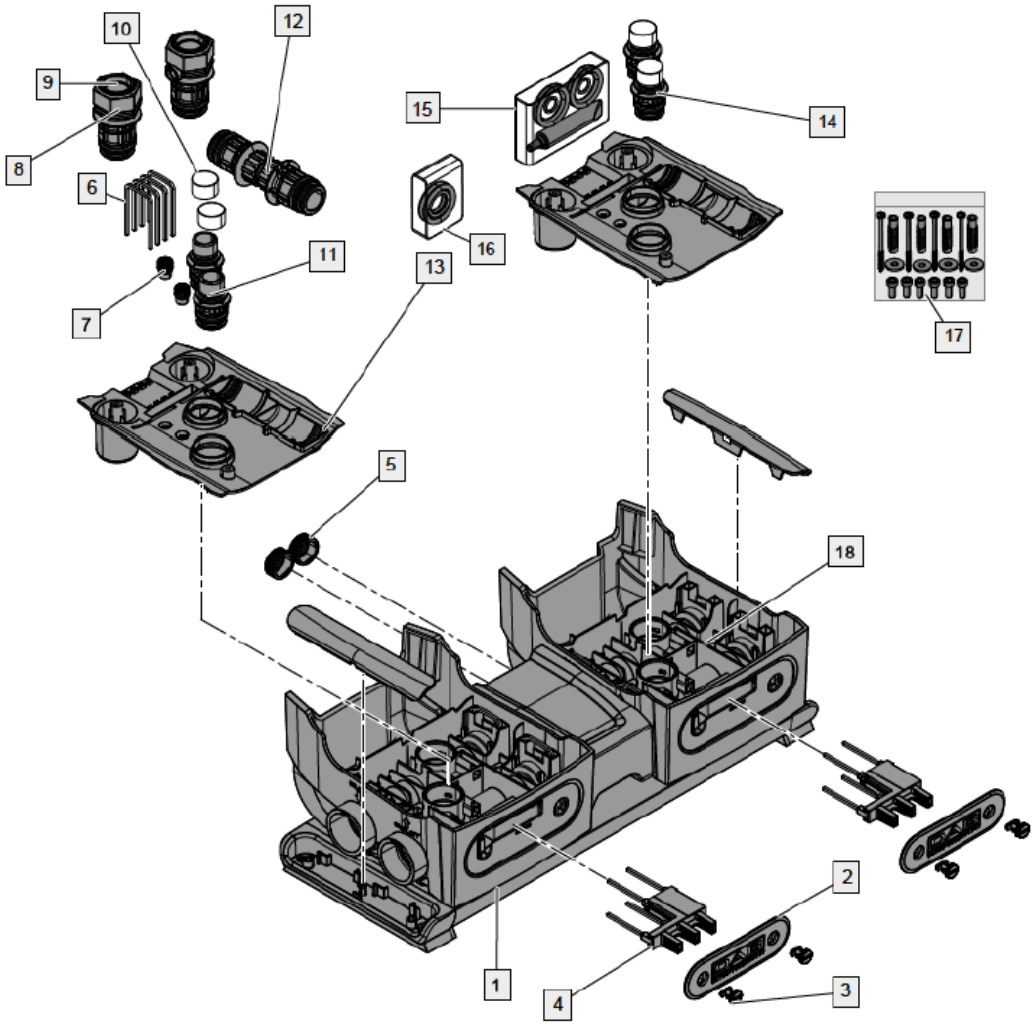
Advantages:

- Increasing hydraulic performance in comparison with a single device
- Ensuring continuity of operation in the event of a device developing a fault
- Sharing out the maximum power

Wireless communication:

Modules communicate each other without any cable, just using the wireless connection unit placed on the inverter.

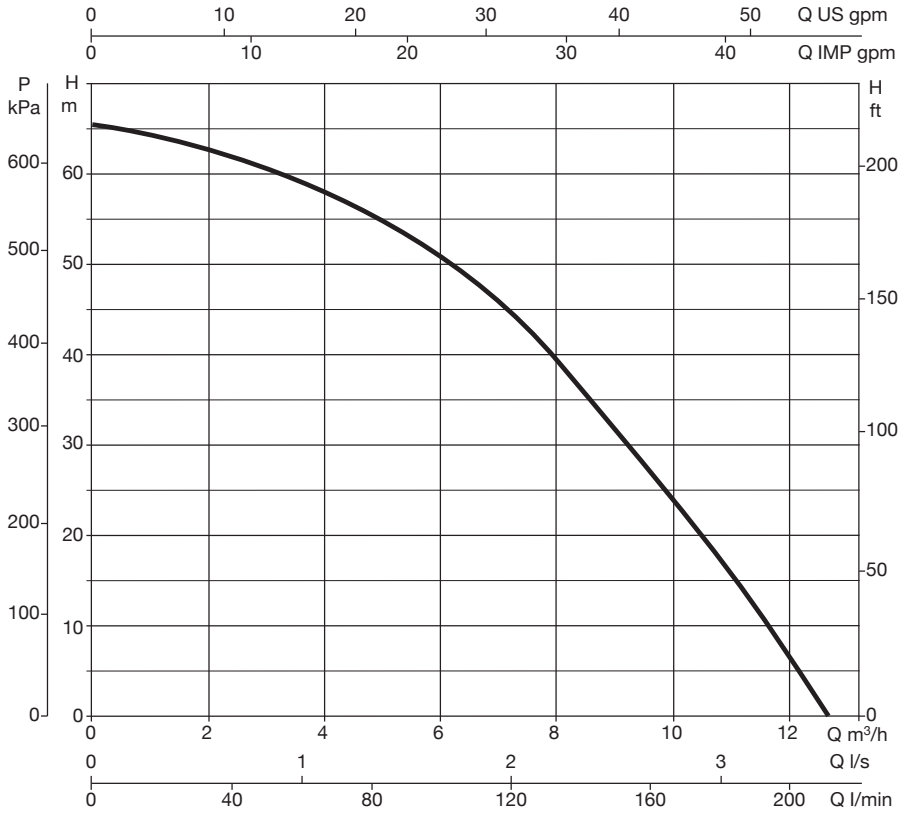
E.SYTWIN – BOOSTER SET



Index	Q.ty	Description
18	2	FCT MANIFOLD
17	1	KIT SCREWS
16	1	KIT O-RING TWIN
15	1	KIT O-RING FCT
14	4	FCT INTERNAL FITTING
13	2	FCT COVER
12	2	CONNECTION CUP FITTING FCT
11	4	O-RING 28.17X3.53 FKM70 GREEN
10	4	PLUG FOR PIPE 1

Index	Q.ty	Description
9	2	THREAD GUARD PLUG D.1 1/4
8	2	FCT EXTERNAL FITTING
7	2	PLUG 3/8 BLACK CROSS -PA66+30GF
6	8	CLIP - SQUARE SECT.4 - SPAN 41,5
5	2	CAP 1" BLACK WRAS
4	2	FCT RETAINER DEVICE
3	4	FCT LOGO PLATE STOPPER
2	2	FCT LOGO PLATE
1	1	BASE AND SUPPORT BASE TWIN E.SYBOX

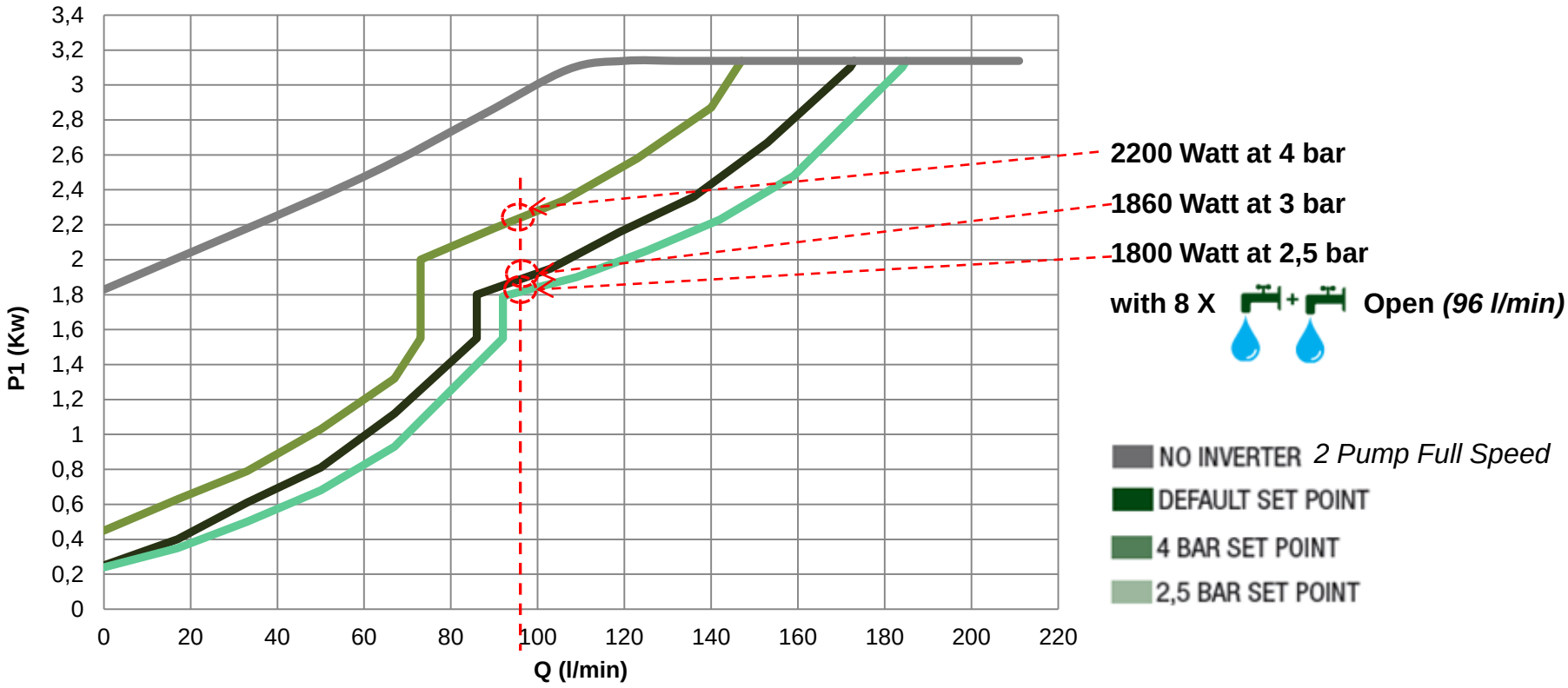
E.SYTWIN – PERFORMANCE



Performance curves of the complete e.sytwin unit including all the connections

(for vessel, heat sink, inverter controllers, check valve, flow and pressure sensors)

E.SYTWIN – ENERGY SAVING

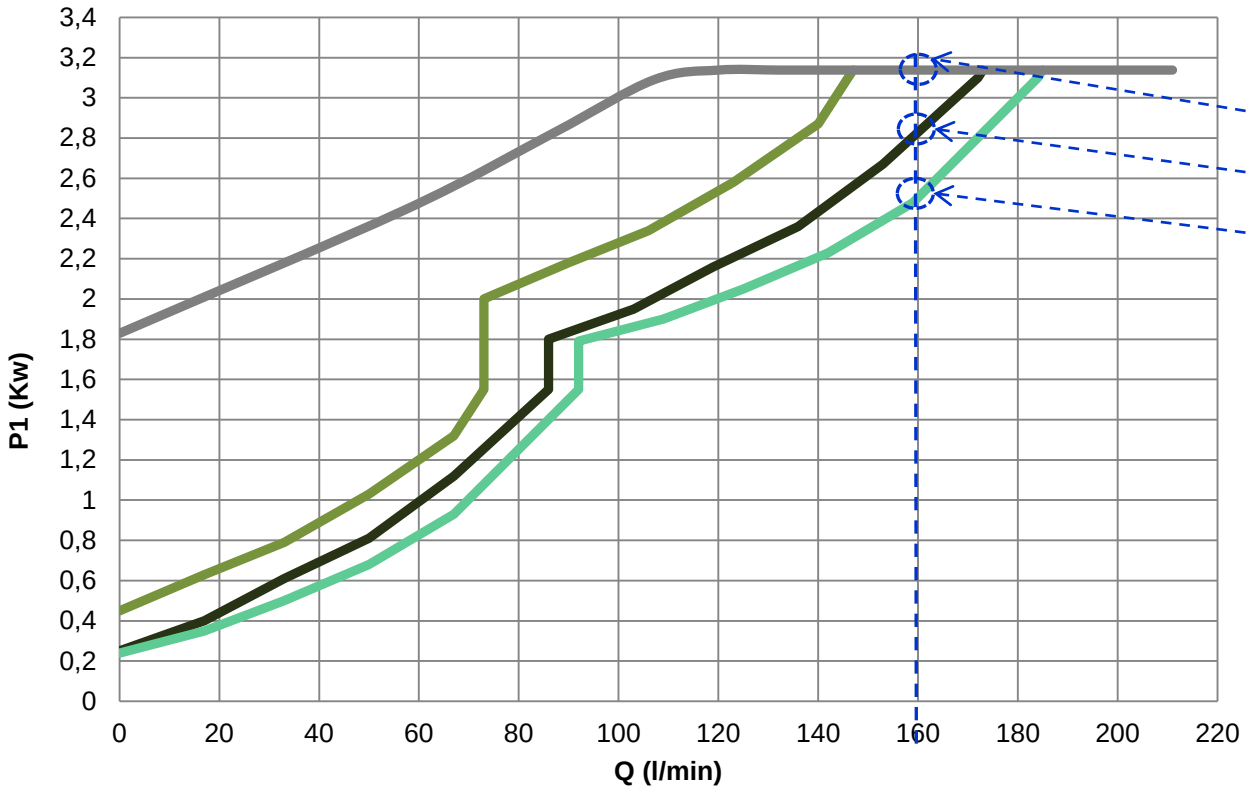


Thanks to the Inverter technology, e.sybox draws only the necessary energy according to water requirements, thereby avoiding wastes and allowing considerable economic savings.

ENERGY SAVING AREA

energy saving

E.SYTWIN – ENERGY SAVING



3190 Watt at 4 bar

2800 Watt at 3 bar

2440 Watt at 2,5 bar

with 4 X

Open *(160 l/min)*

NO INVERTER *2 Pump Full Speed*

DEFAULT SET POINT

4 BAR SET POINT

2,5 BAR SET POINT

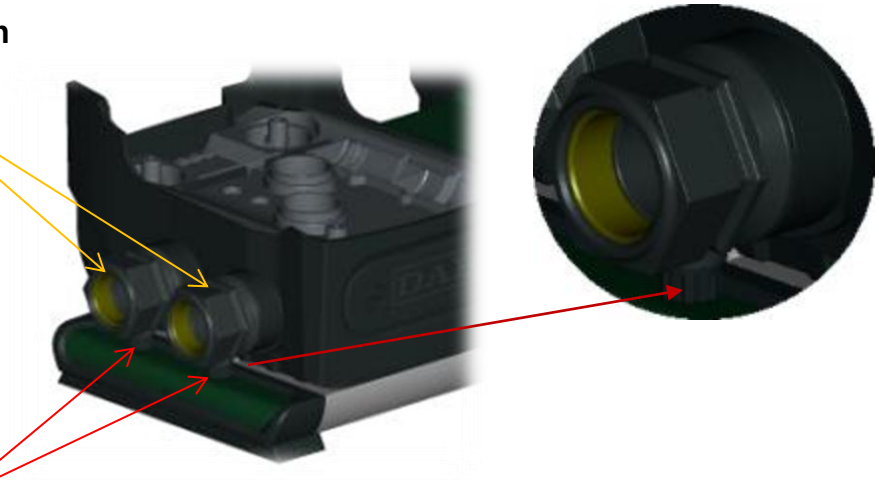
Thanks to the Inverter technology, e.sybox draws only the necessary energy according to water requirements, thereby avoiding wastes and allowing considerable economic savings.

ENERGY SAVING AREA

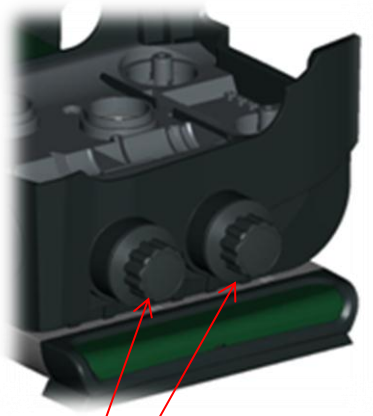
energy saving

E.SYTWIN – FEATURES

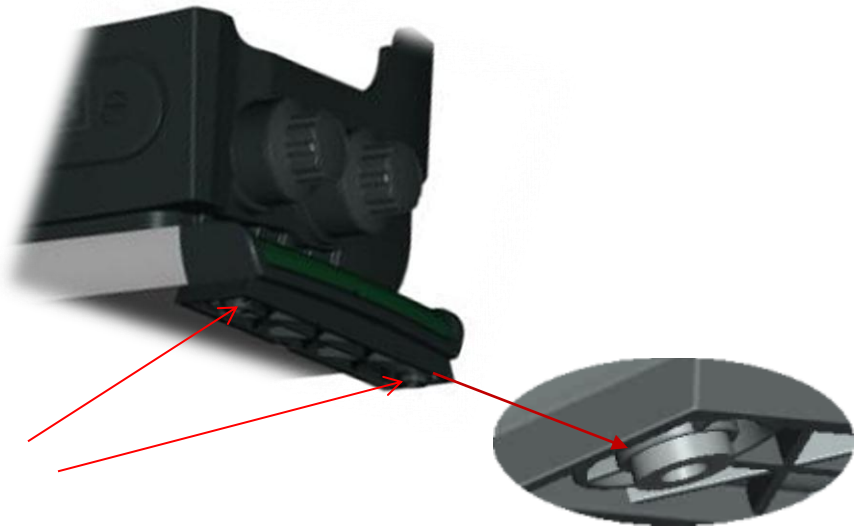
Delivery & Suction Unions



Caps to discharge the system in case of maintenance/removal of the e.sybox



Side caps



Anti Vibration Feet

Ground Fixing System

E.SYTWIN – CONNECTION FEATURES

4 Clammers: to fasten the union + side plugs

4 Clammers: To fix the central junction.

2 upper covers

4 adapters: to connect 2 e.sybox

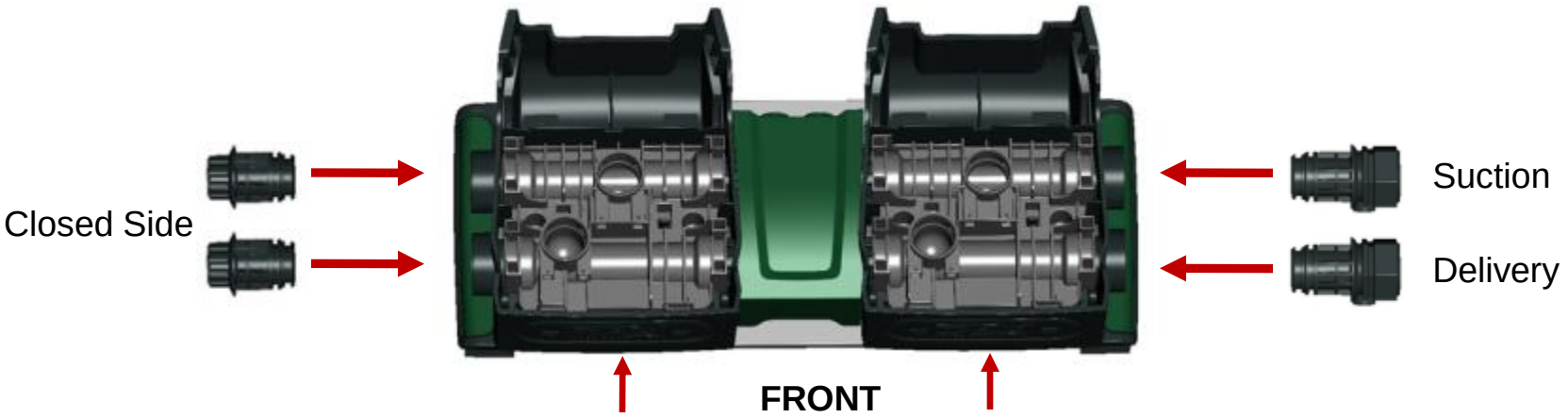
2 suction and delivery union

2 side plugs

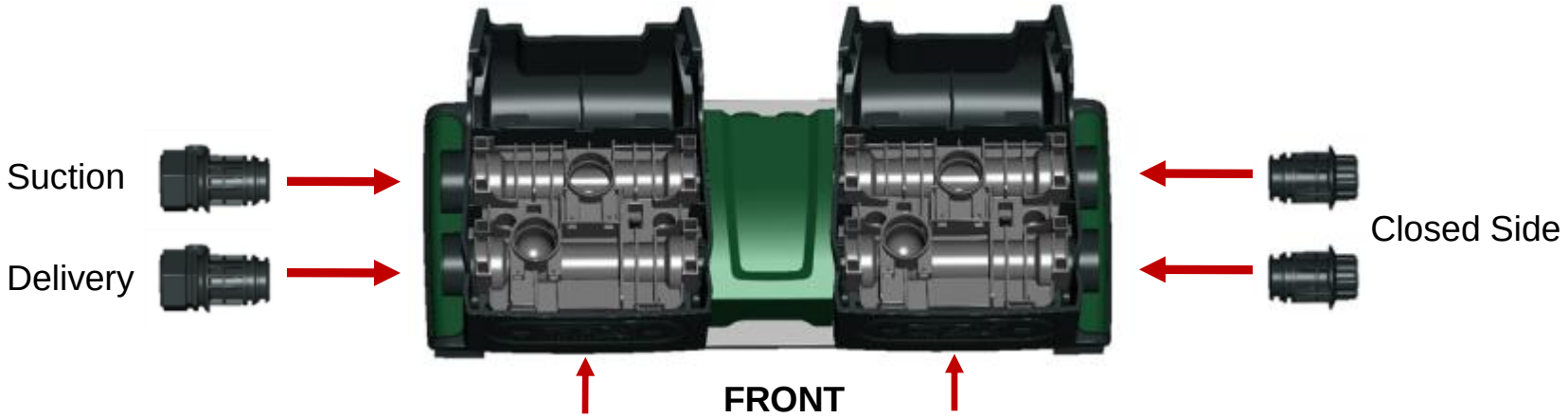
2 maintenance plugs: see next slide

E.SYTWIN – SUCTION AND DELIVERY ON ONE SIDE

Right Suction and Delivery

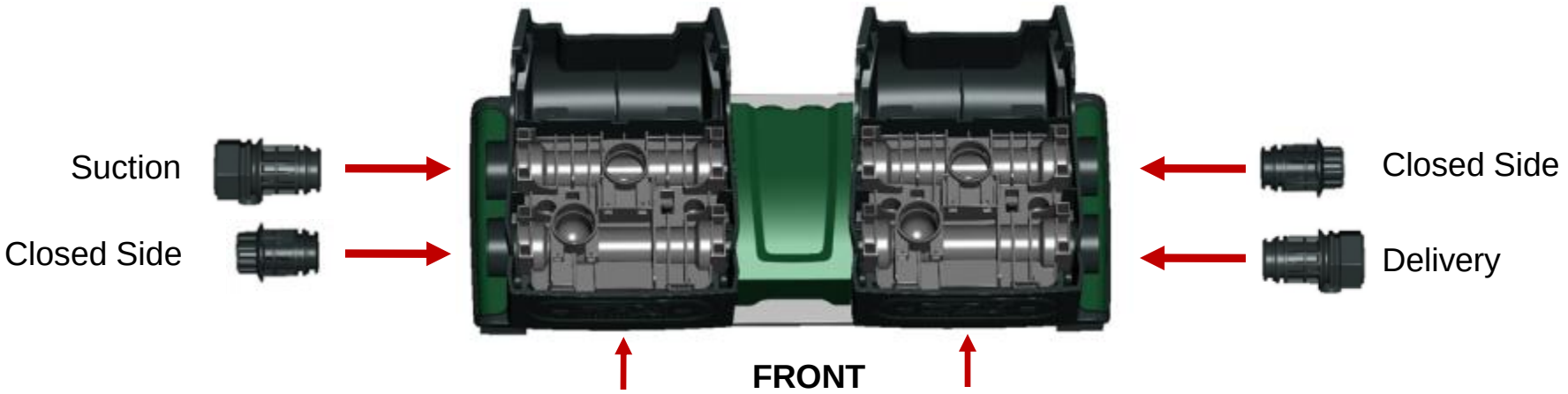


Left Suction and Delivery

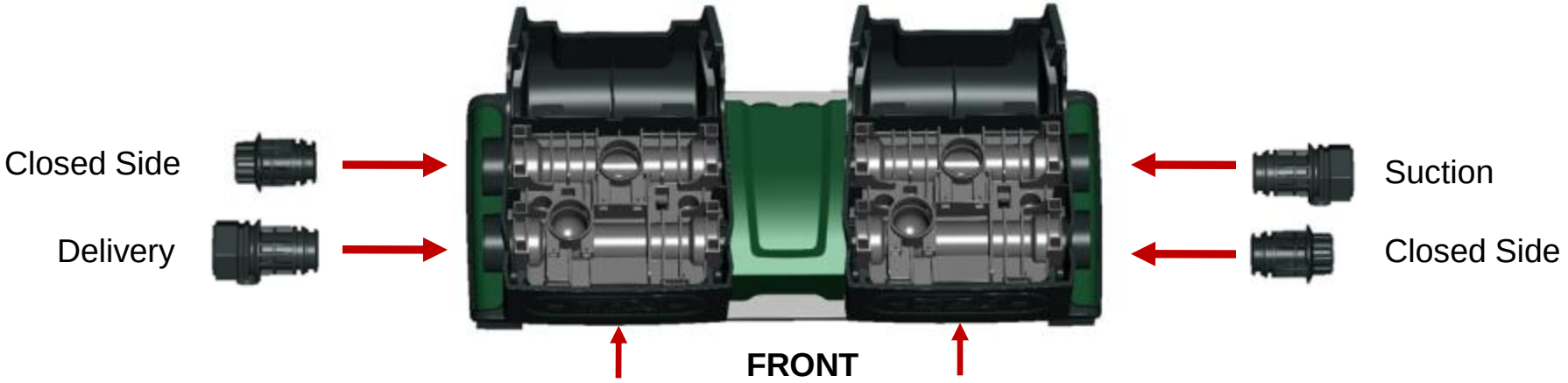


E.SYTWIN – SUCTION AND DELIVERY IN LINE

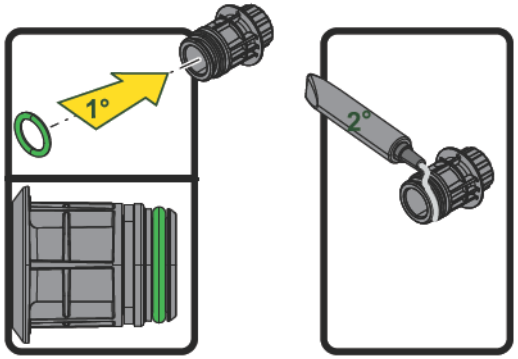
Left Suction, Right Delivery

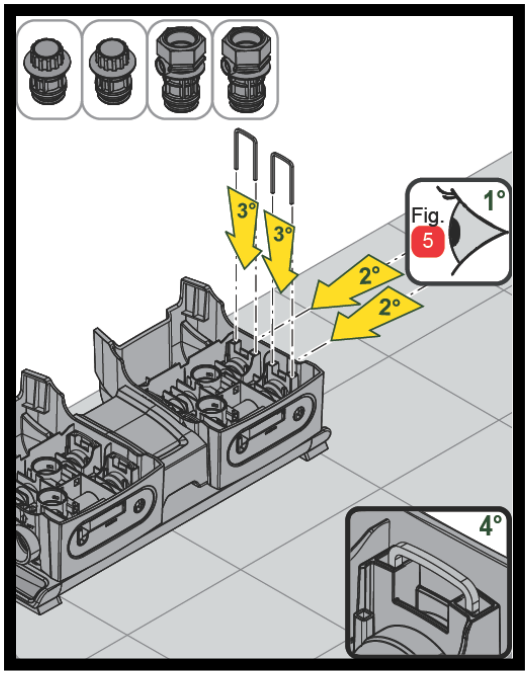


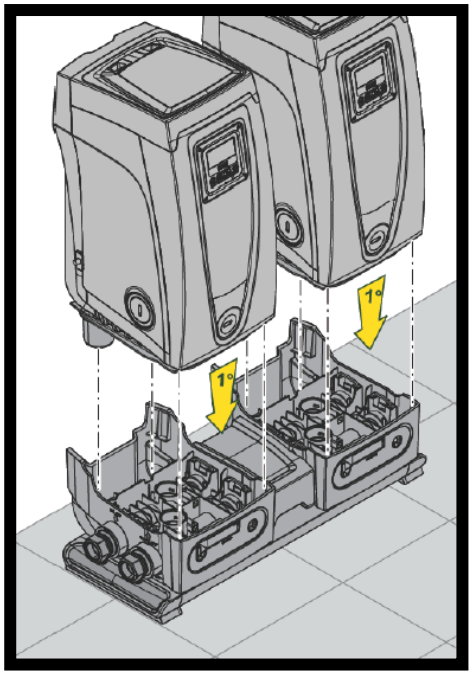
Right Suction, Left Delivery



E.SYTWIN – HYDRAULIC CONNECTION FIXING







WARNING:

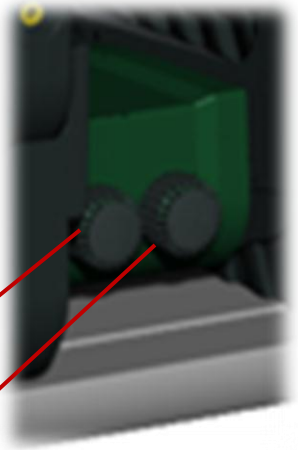
- ***Use the quick guide during the installation***
- ***Pay attention on the correct position of all o-rings***
- ***Grease all o-rings before placing them***

E.SYTWIN – WIRELESS CONNECTION

NO CABLE INTERCONNECTION BETWEEN E.SYBOX

E.SYTWIN – CONNECTION FEATURES

It's possible to disconnect one e.sybox ensuring the water supply thanks to the remaining e.sybox (left pic.).



After disconnecting one unit, fix the adapters and the upper cover to the base. Then screw the 2 maintenenace plugs to the adapters.

E.SYTWIN – COMPACT

882
540
755

TOTAL VOLUME ≈ 360 dm^3

Pressure vassel not included

710
750
350

TOTAL VOLUME ≈ 190 dm^3

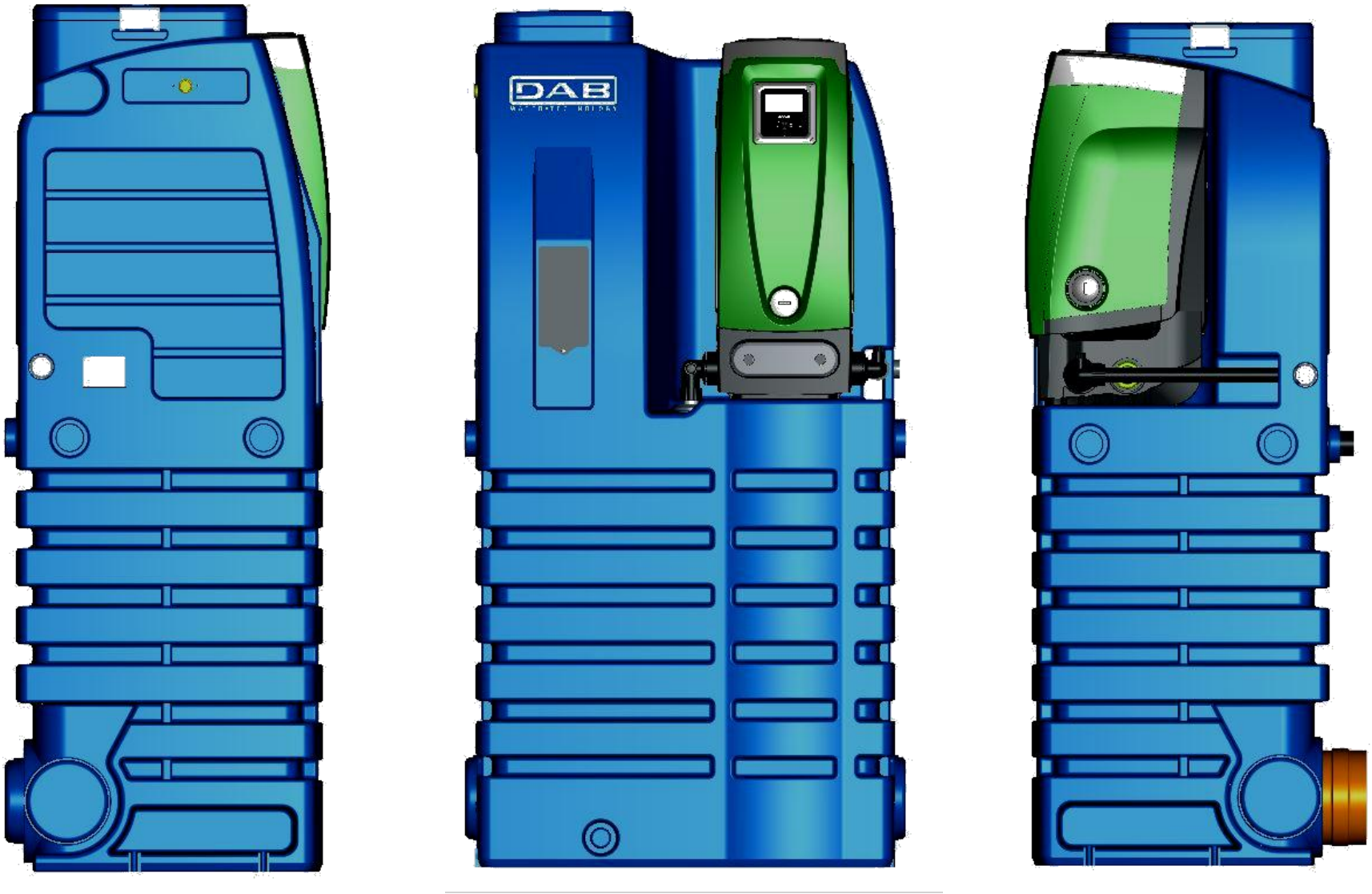
- 50% of occupied space

E.SYTANK

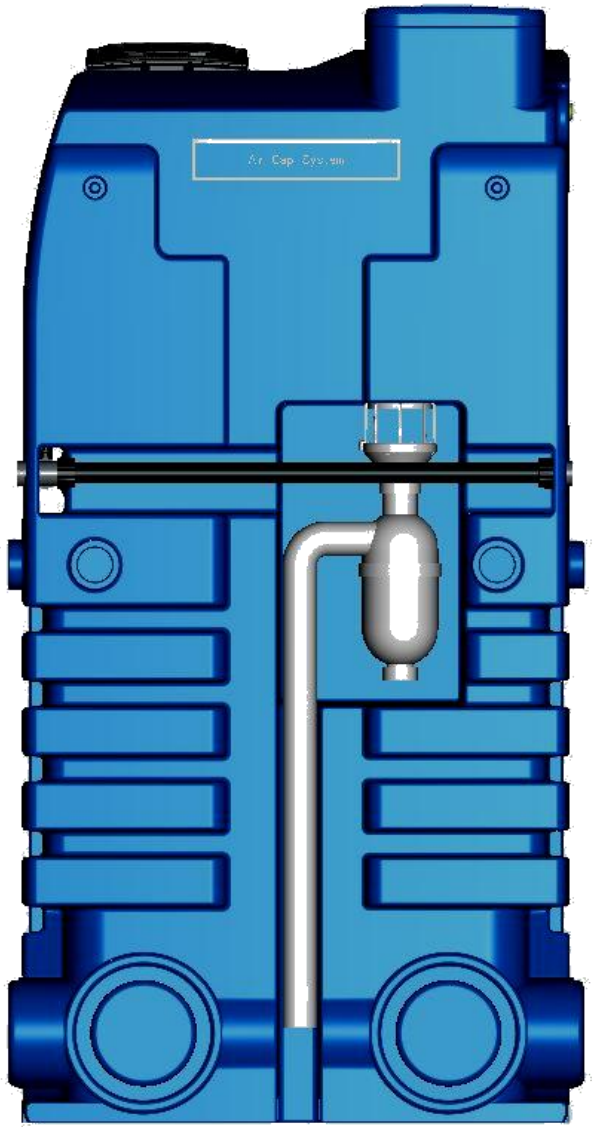
PRELIMINARY DESIGN

Dimension: 78 x 58 x150 cm **Net Capacity: 440 litres. approx.**

E.SYTANK – FRONT AND LATERAL SIDE

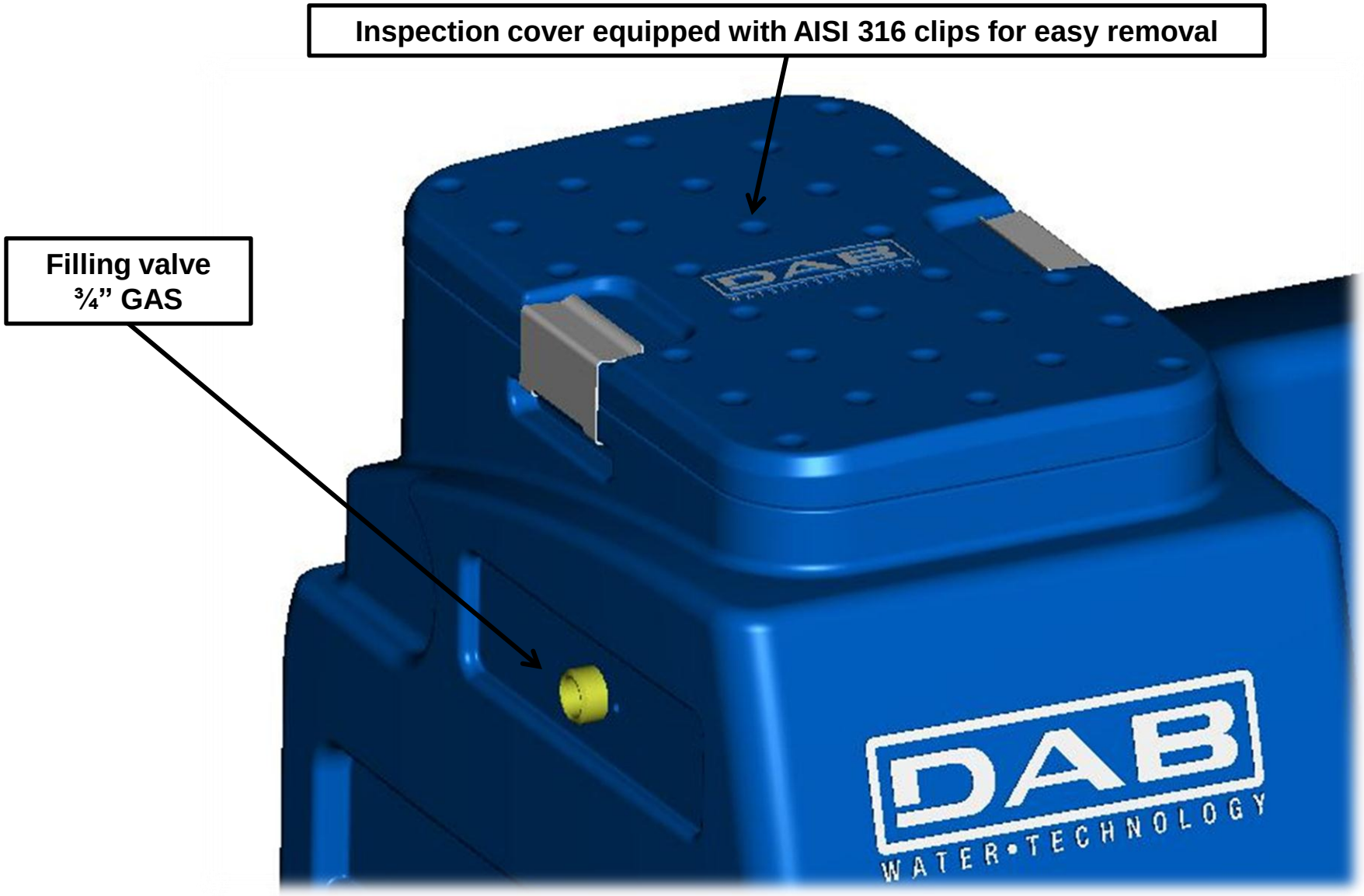


E.SYTANK – BACK SIDE

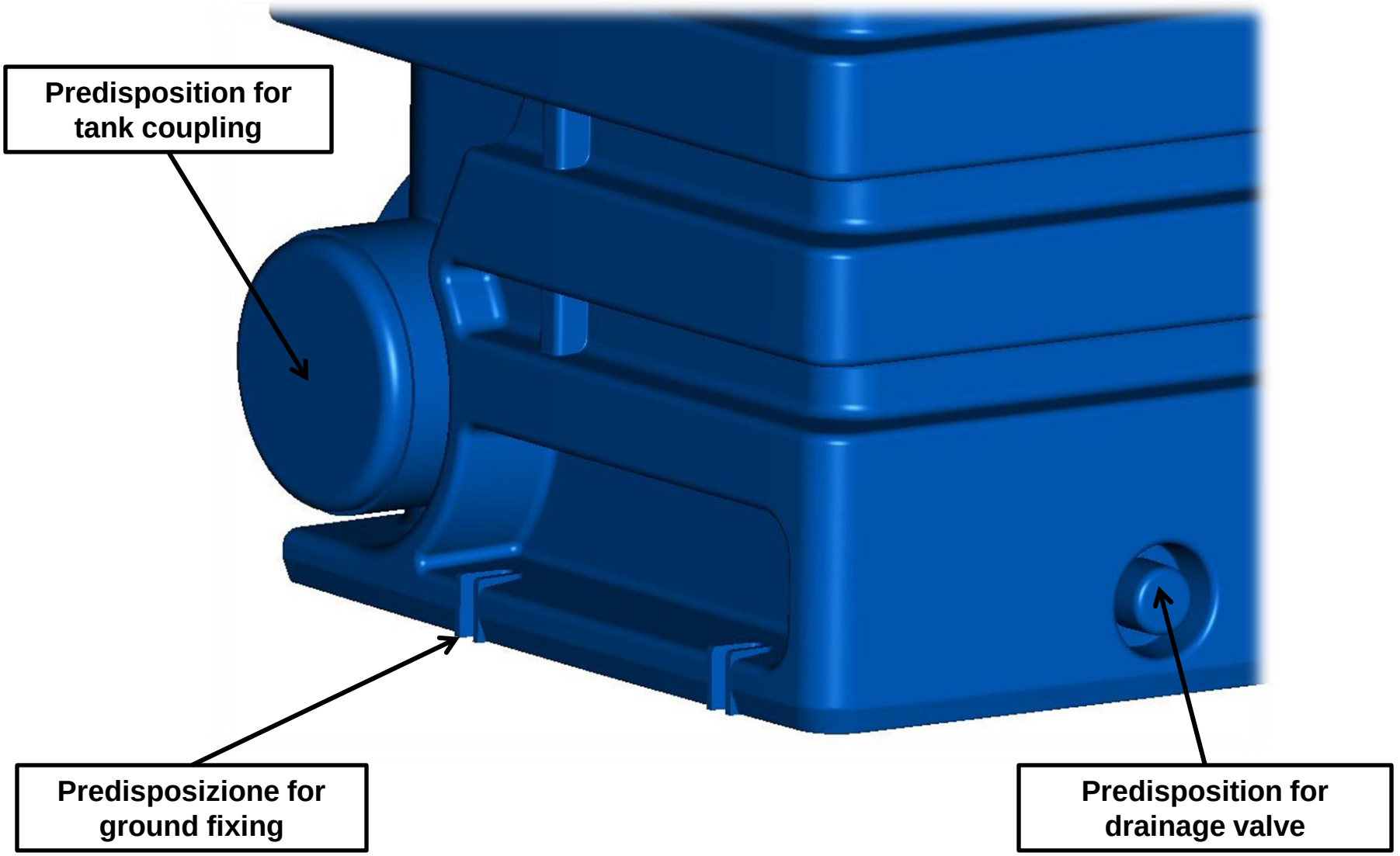


E.SYTANK – TOP

E.SYTANK – FEATURES



E.SYTANK – FEATURES

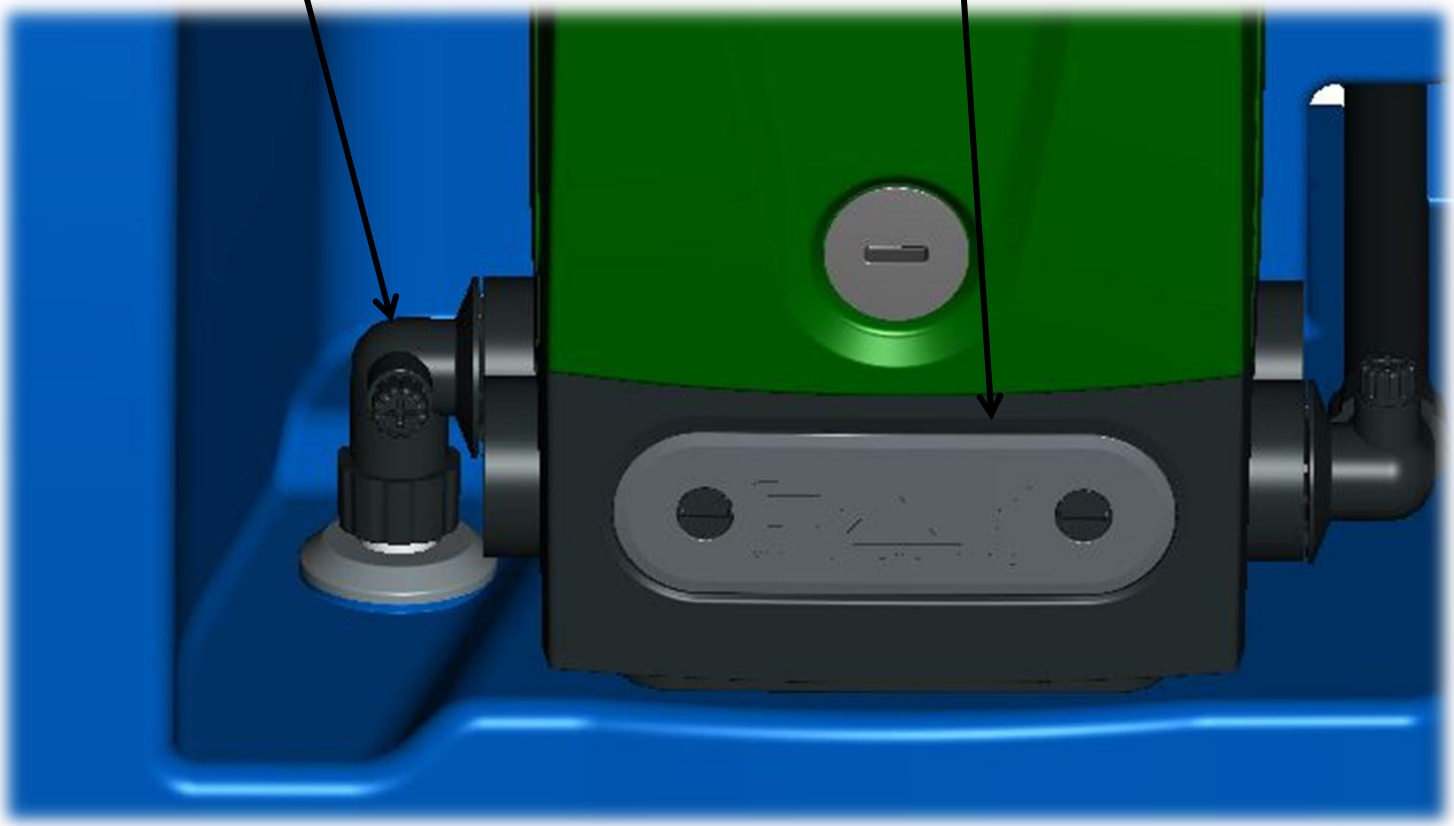


E.SYTANK – FEATURES

Suction side → from tank with o-ring

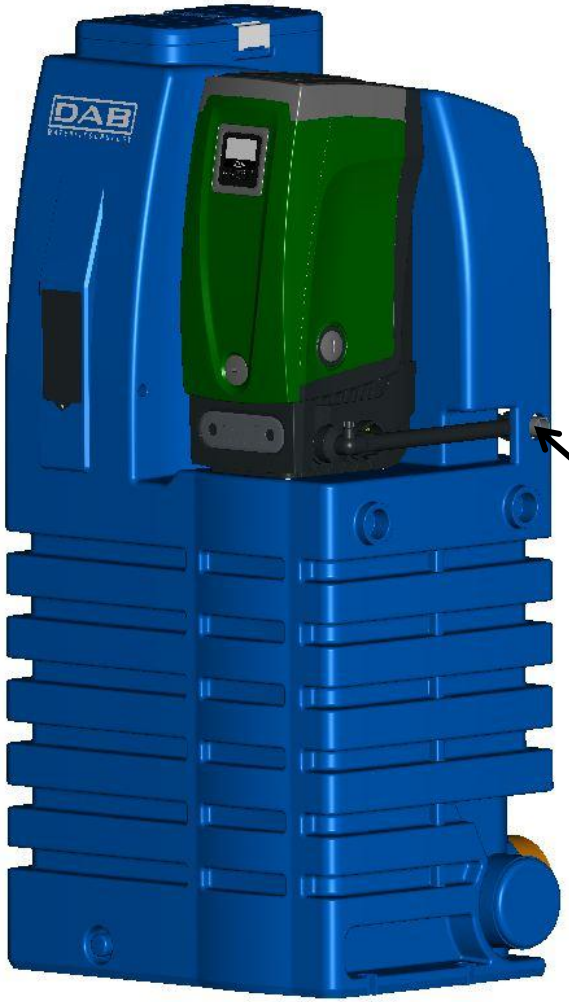
Fast connection system for the quick connection and easy maintenence of the e.sybox

e.sydock **INCLUDED**



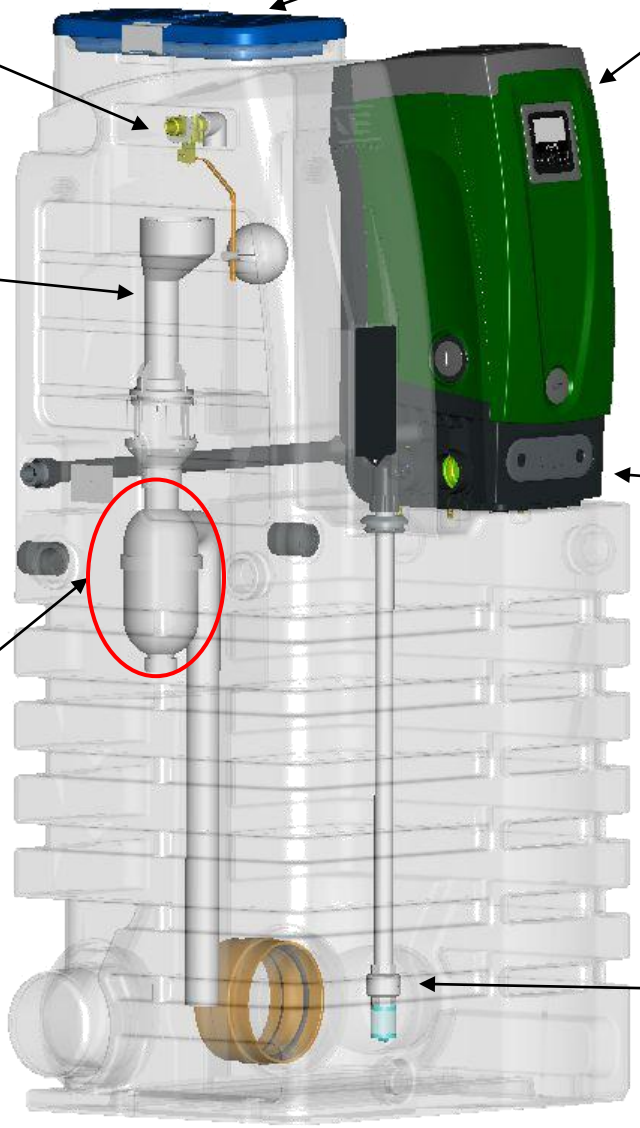
E.SYTANK – FEATURES

Predisposition for Air Gap System



Delivery: right side

E.SYTANK – FEATURES RESUME



Inspection Cap

e.sybox

Filling valve from the main

Overflow

Fast connection system

Predisposition for the odor trap syphon wich could be optional (in the red circle)

e.sybox suction/inlet from the tank with foot valve

E.SYTANK – 360° MODULARITY

E.SYTANK – 360° MODULARITY

E.SYTANK – 360° MODULARITY

THANK YOU FOR YOUR ATTENTION