



**Power Plus BOX & Power MAX BOX Beretta
product solutions**

Vodice, Hotel Olympia, March 2019, 20-23





Pre-sales Service Manager
Application Heating Engineering
RIELLO International Sales

Rossano Corti

Power Plus BOX: 500 & 1000 SERIES CURRENT RANGE



500 SERIES based on 50 kW Heat exchanger

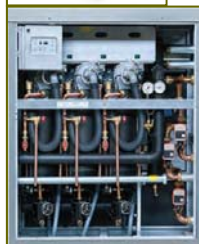
models for CASCADE



**FLOOR STANDING
INDOOR & OUTDOOR**

POWER PLUS BOX 150
POWER PLUS BOX 200
POWER PLUS BOX 100 SE

STAND ALONE models



**FLOOR STANDING I.&O.+
LOW LOSS HEADER+ SAFETY
DEVICES AND PUMPS/3-WAY
VALVE FOR SECONDARY
CURCUITS**

POWER PLUS LE Hi 77 SYS
POWER PLUS LE Hi 115 SYS

1000 SERIES based on 128 kW Heat Exchanger

models for CASCADES APPLICATIONS



**FLOOR STANDING
OUTDOOR**

P. PLUS BOX 1002 P EXT
(230 kW)
P. PLUS BOX 1003 P EXT
(340 kW)
P. PLUS BOX 1004 P EXT
(460 kW)



**FLOOR STANDING
INDOOR**

P. PLUS BOX 1002 P INT
(230 kW)
P. PLUS BOX 1003 P INT
(340 kW)
P. PLUS BOX 1004 P INT
(460 kW)

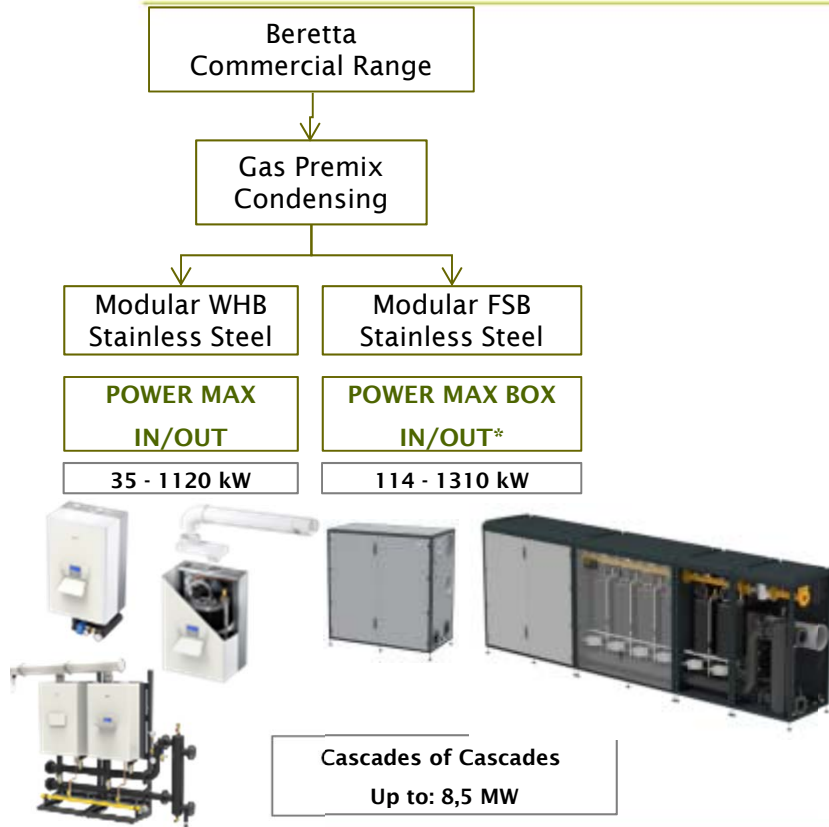
STAND ALONE models



**FLOOR STANDING+
HEADER+ SAFETY D.**

P. PLUS BOX 1001 P INT
(115 kW)
P. PLUS BOX 1001 P EXT
(115 kW)

BERETTA Commercial boilers overview NEW RANGE OF POWER MAX WALL HUNG and POWER MAX BOX



- WHB: Wall Hung Boilers
- FSB: Floor Standing Boilers
- IN/OUT: suitable for indoor/outdoor (* for POWER MAX BOX with specific kit)

NEW RANGE: POWER MAX BOX Why



- Enlargement and rationalization of the **range**
- Performance **improvement**
- New patented **heat exchangers**
- Update of the control **electronic**
- Extension and enrichment of **accessories** range



POWER MAX BOX

Main features



- Floor-standing, pre-assembled modular condensing gas fired boilers
- Product Range with 2, 3 or 4 thermal modules, for 10 power output from 114 up to 524 kW
- Nr. 20 models: **NEW**
 - 10 models with circulation pumps (shunt pumps) for each thermal module (MTS)
 - 10 models with 2-way valves for each thermal module (MTO)
- Electronic control with Managing / Depending logics, native climatic regulations **NEW**
- Suitable for indoor or outdoor installations with optional kit **NEW**

POWER MAX BOX Heat exchanger (Helix)



New **patented** stainless steel heat exchanger, ensures high heat exchange and high efficiency, ensuring reduced hydraulic losses (low pressure drops)

NEW

Power output from 57 up to 131 kW

4 sizes → 6 power output values

Helix 70	57 kW
	68 kW
Helix 100	90 kW
	97 kW
Helix 115	112 kW
Helix 135	131 kW

Double hydraulic circuit helicoidal development with **parallel circulation**

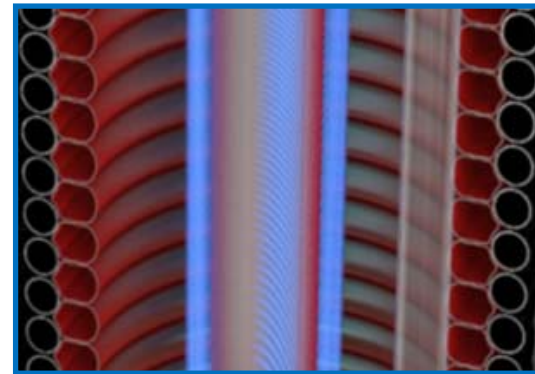
Circulator profile for external loop (stainless steel pipe with circular section)

Pentagonal profile for internal coil (stainless steel pipe with pentagonal section)



All **POWER MAX BOX** models are equipped with a Non-Return valve (clapet) for flue exhaust located inside the flue gas conveyor, placed at the bottom of each thermal module.

NEW HELIX HEAT EXCHAGER



HELIX

HEAT EXCHANGER CHARACTERISTICS

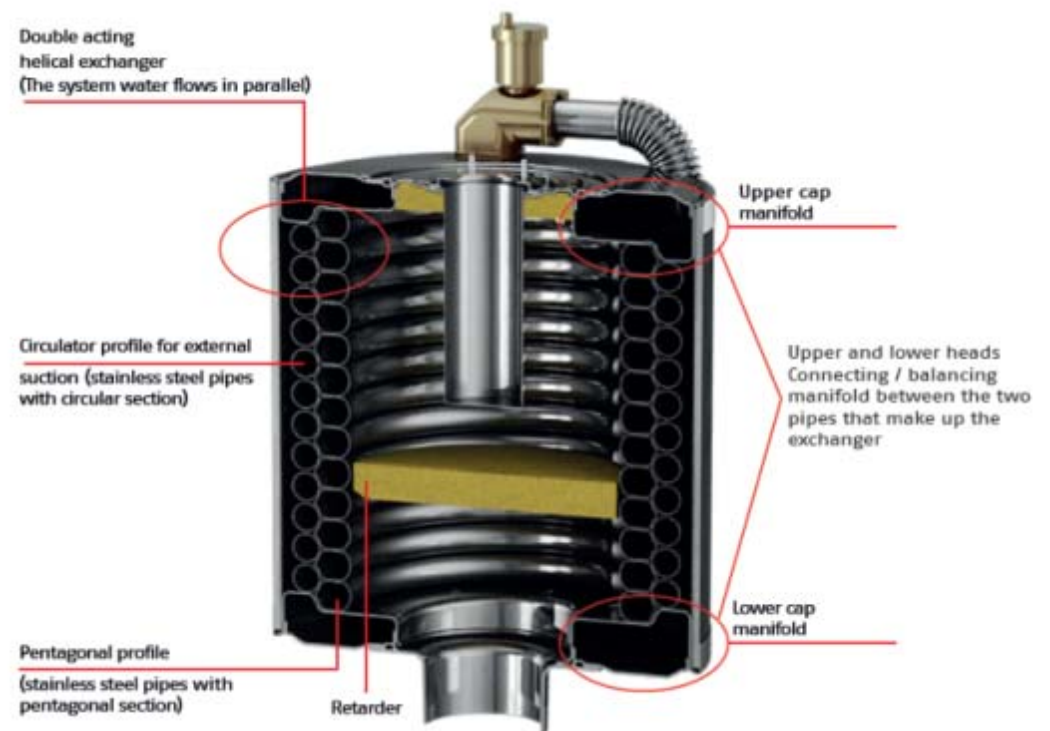


The heat exchanger consists of two stainless steel caps that act also as flow and return hydraulic manifolds; between the two caps two 316-mm austenitic stainless steel coils are connected, with a thickness of 1.2 mm in which the system water flows in parallel.

The first is made of a plain tube with a pentagonal section (innermost) and a second one with a circular section (outermost).

The hot flue gases leave the burner (driven by the fan) and they first reach the surface of the pentagonal pipe and then of the circular pipe, allowing a rapid reduction of the flue gas temperature and an efficient heating of the water, which flows in parallel from the lower cap (upwards) inside the two coils and is sent to the utility from the upper cap.

The drawing shows the main water, gas, condensate and flue gas flows inside the heat exchanger.

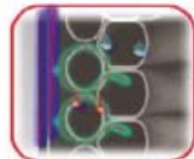
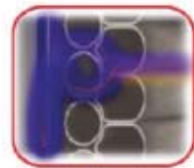


HEAT EXCHANGER CHARACTERISTICS



FUNCTIONING PRINCIPLE

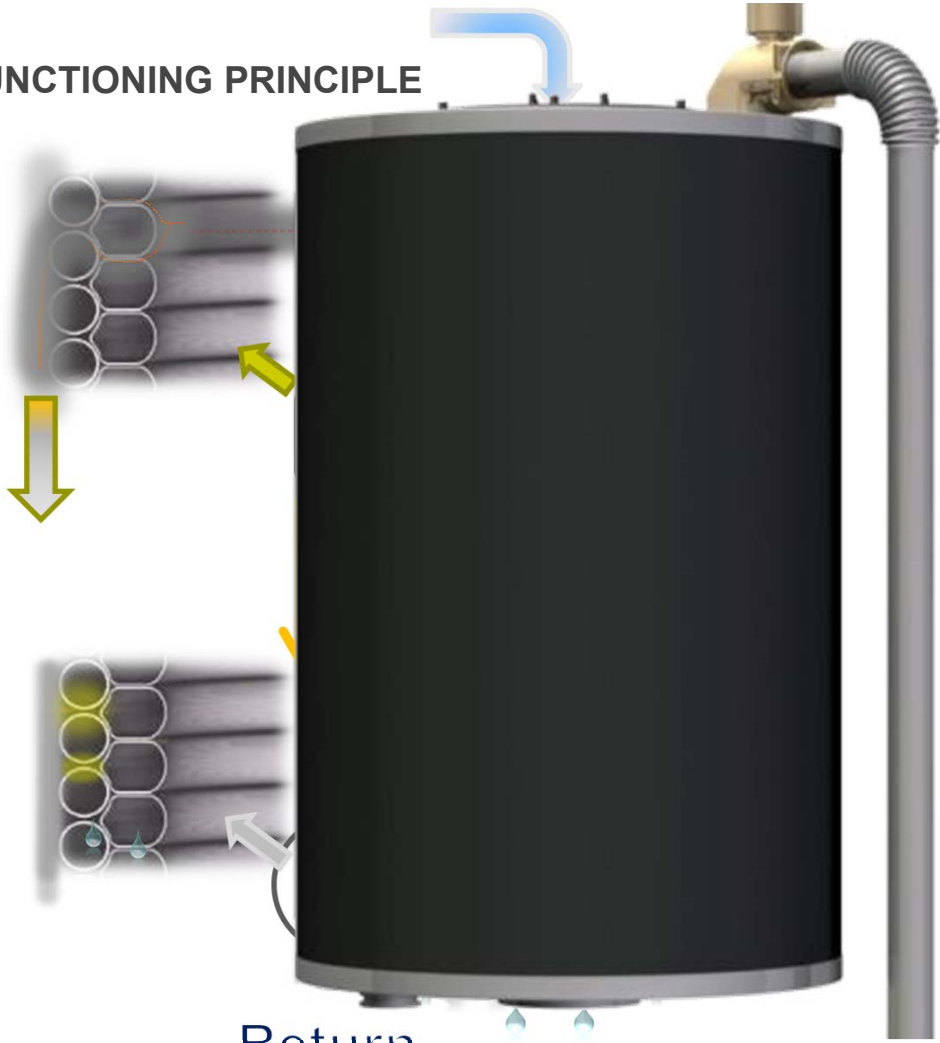
The combustion products flow along the double acting helical exchanger and transfer sensible heat to the water



Flowing past the retarder, the flue gases transfer sensible and latent heat to the system water (condensing phenomenon)



FUNCTIONING PRINCIPLE



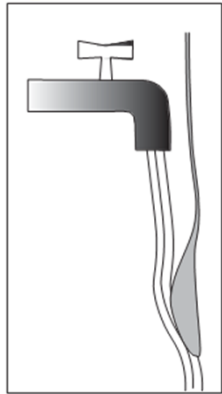
Return

FLOW

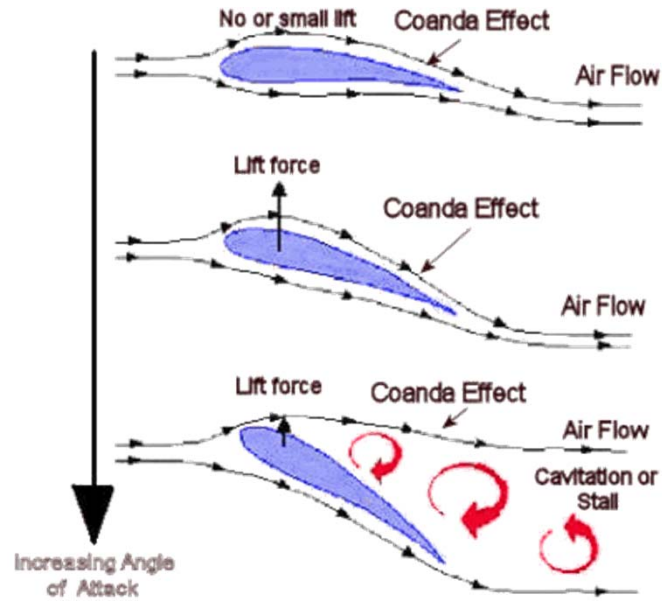


HEAT EXCHANGER CHARACTERISTICS

VERTICAL HETA EXCHAGER IN ORDER TO TAKE ADVANTAGE OF THE COANDA EFFECT



Water follows the surface of the spoon. A demonstration of the Coanda effect



HEAT EXCHANGER Working Principle

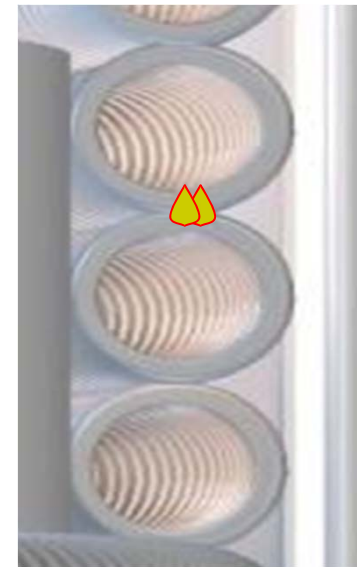


COANDA Effect:

The water / air fluid is attracted by the curved surface

**Applications:
Aerodynamics
Automotive industry**

Pipe Exchanger





1,2 mm tickness
ASME certification
40 bar max pressure test

Explosion test at 55 bar !!!
Super reliable heat
exchanger!



POWER MAX BOX

Flow regulation and control devices



NEW

- A **flowmeter (1)** is installed on the flow pipe of each thermal module, it's a safety device able to control the **flow of water** inside the heat exchanger, so as to guarantee **optimal operation** in all operating conditions.

NEW

- To ensure proper hydraulic management, each module is equipped with **non-return valves (2)**, which prevent the **«parasitic» water circulation** in the modules turned off, a condition that could be generated at partial loads.

POWER MAX BOX

Burners, efficiency and emissions



Note:

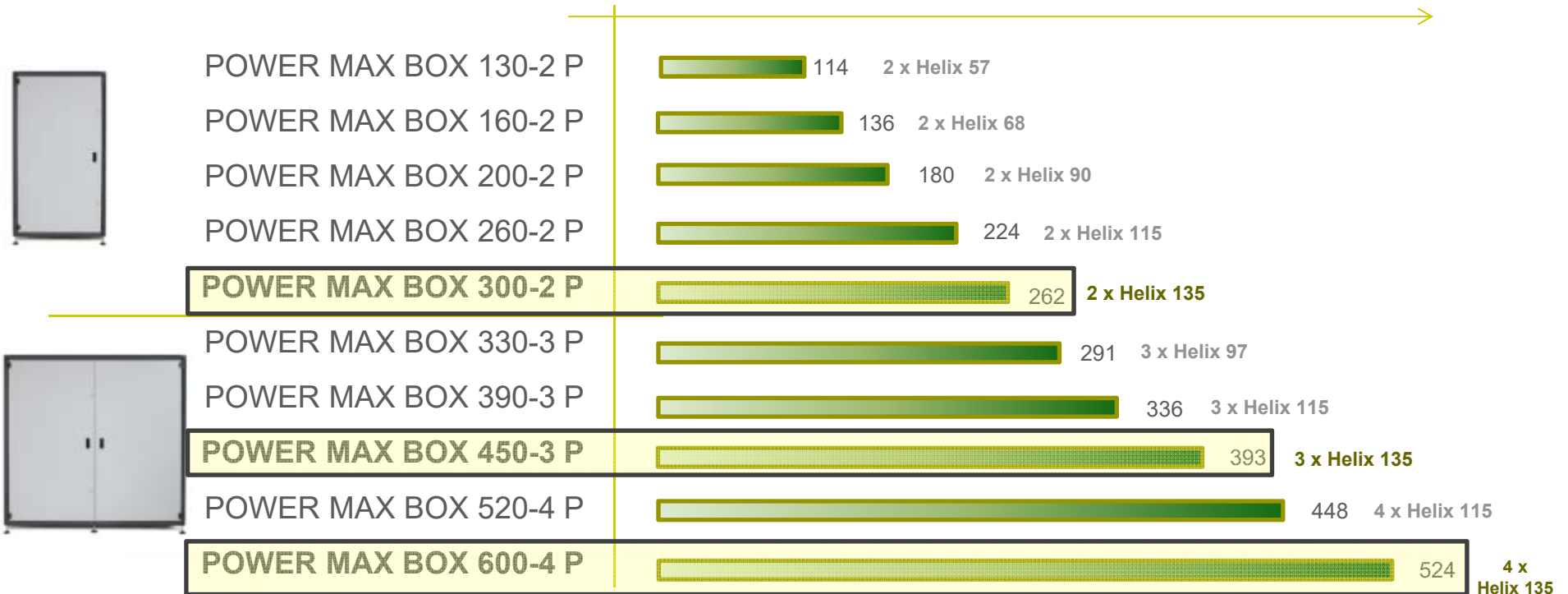
- separate ignitor ensure low noise starting
- new burner flange ensure easier maintenance operations

- Premix burner for every units
- Turndown ratio of 1:5 for every unit, for a total modulation of :
 - 1:10 for model with 2 units
 - 1:15 for models with 3 units
 - 1:20 for models with 4 units
- High **efficiency** values, according with **ErP** limits
(PT < 400 kW)
- Reduced polluting emissions of:
 - CO
 - **NOx (Class 6** according with EN 15502)
- Separate igniter ensures silentness during ignition

POWER MAX BOX
Models range (stand alone installation)



Nr.10 Models from 114 up to 524 kW
 The models **highlighted** are those used for cascade configurations



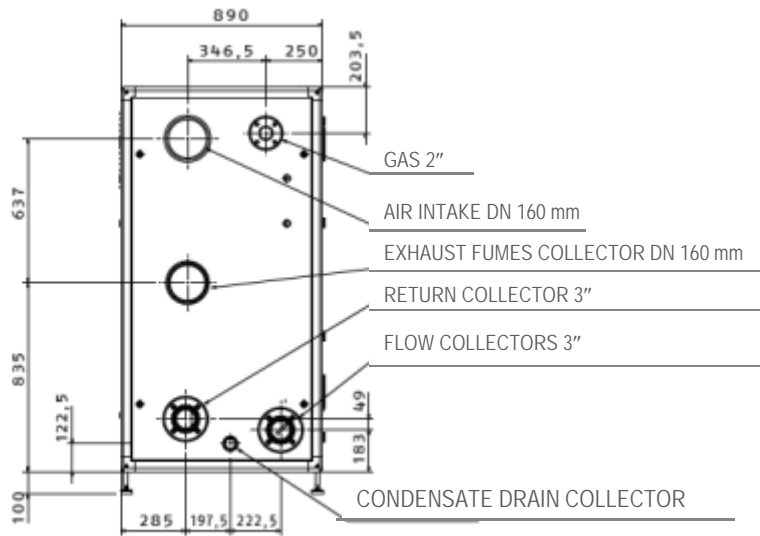
POWER MAX BOX

Hydraulic Collectors dimensions (Flow & Return Htg; Gas Manifolds; Condensate Drain Manifold)



- Power Max BOX 130-2 P
- Power Max BOX 160-2 P
- Power Max BOX 200-2 P
- Power Max BOX 260-2 P
- Power Max BOX 330-3 P
- Power Max BOX 390-3 P
- Power Max BOX 520-4 P

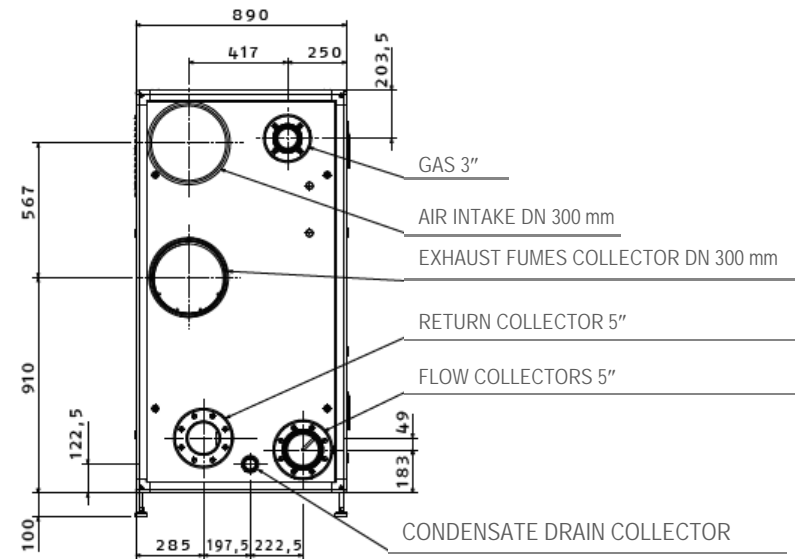
STAND ALONE MODELS



© 2011 Beretta. Proprietary and Confidential. For Internal Use Only.

- Power Max BOX 300-2 P
- Power Max BOX 450-3 P
- Power Max BOX 600-4 P

MODELS SUITABLE FOR CASCADES APPLICATIONS

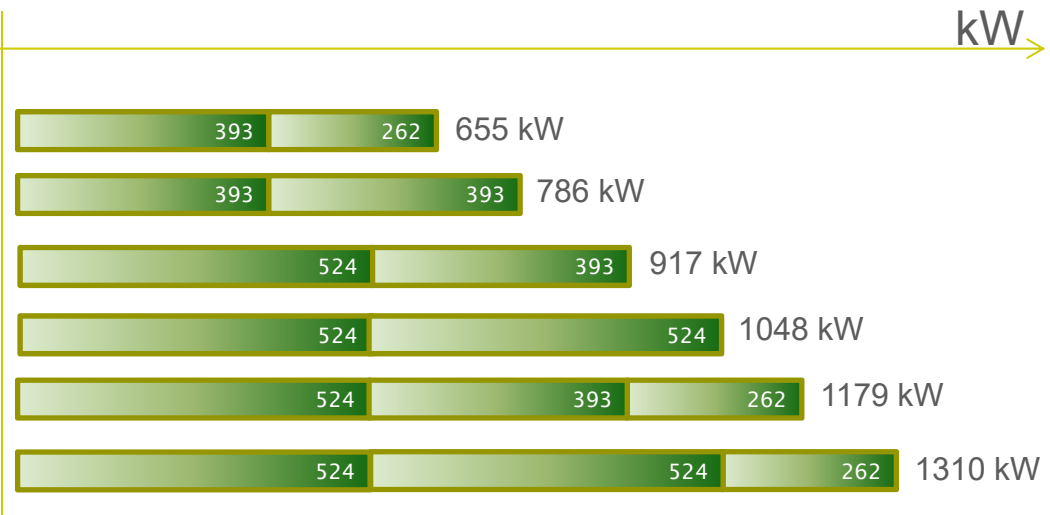


POWER MAX BOX
Range for cascaded systems – Power Output values



Nr.6 cascade system configurations from 655 up to 1310 kW
 Usable Models: POWER MAX BOX 300-2 / 450-3 / 600-4

- POWER MAX BOX 750 System**
- POWER MAX BOX 900 System**
- POWER MAX BOX 1050 System**
- POWER MAX BOX 1200 System**
- POWER MAX BOX 1350 System**
- POWER MAX BOX 1500 System**



POWER MAX BOX User interface display



- Wide display back lighted
- Graphic Display 255x80 pixel
- Simple & User's friendly test menu
- Management of weekly time schedules
- Boiler error history (Errors and status **database**)

- 8 buttons for menu navigation and for software parameter settings
- Multilanguage menu
- Multi-level tree menu
- User profiles management protected by password

POWER MAX BOX Electronic control – New Mother Board

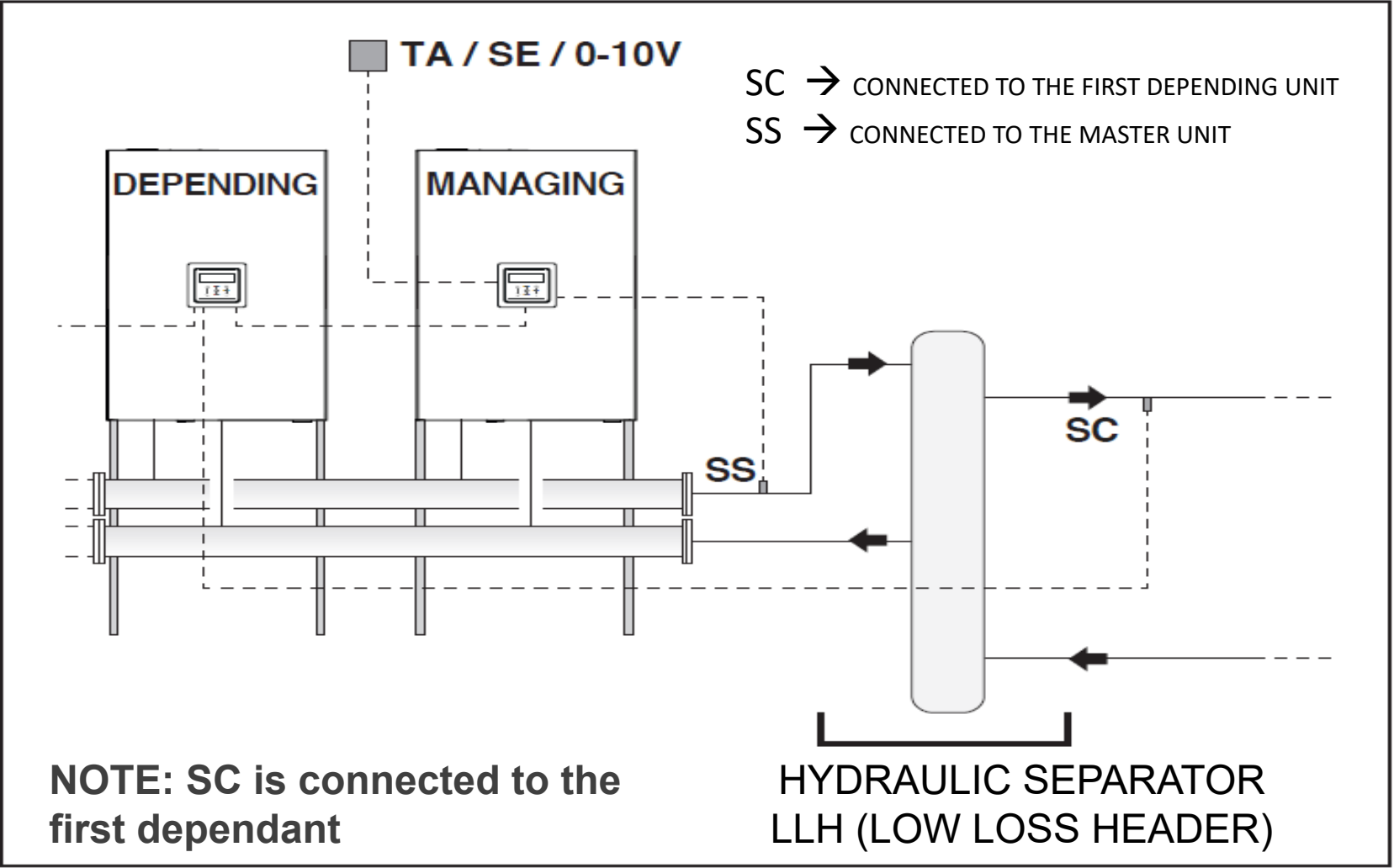


NEW

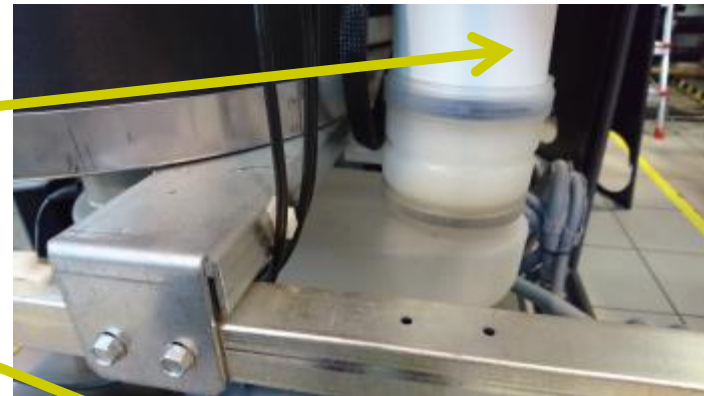
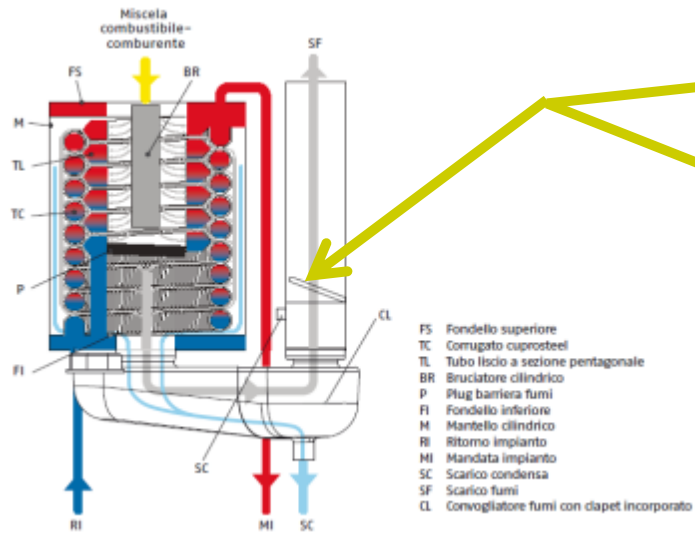


- Integrated MANAGING/DEPENDENT logic (selected by dip-switch)
- Multi-module cascades with three different modes
- Modulating water flow regulation (PWM or 0÷10 V)
- Secondary Temperature Probe Management (Optional, code: 4030036); Control of the delivery temperature at the secondary;
- Output for MODBUS channel;

- Power Output control with ΔT pursuit (possibility to work at ΔT constant)
- Climate regulation by not-linear curves for each circuit (zones)
- DHW circuit management; One direct zone management (High Temperature);
- Additional heating zones can be managed by «dependent» modules or by an additional electronic module
- 0-10 V input for power output regulation via external BMS
- PC/Laptop connection with optional kit

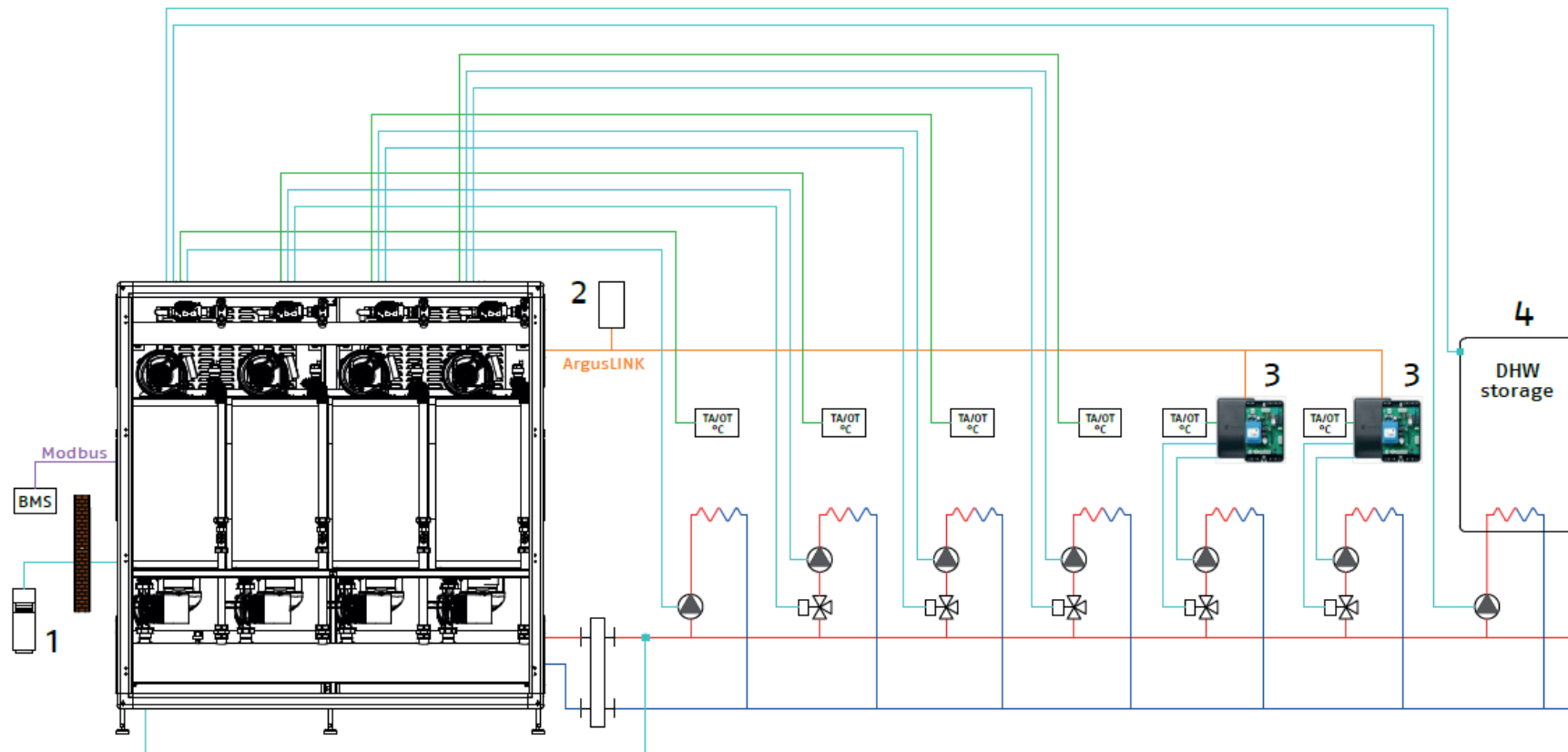


NON RETURN VALVE – FLUE GAS CHIMNEY



POWER MAX BOX

Typical Electrical/hydraulic scheme



POWER MAX BOX Maximum installation flexibility



Thanks to the modularity and a wide range of accessories, with POWER MAX BOX are possible multiple possible configurations:

- stand alone boilers for indoor or outdoor use
- Cascade for indoor or outdoor applications
- hydraulic with hydraulic separator (Low Loss Header-LLH) or plate to plate exchanger-PHE with,
 - connections on the right or on the left
 - with or without covering cabinet
- open or sealed combustion
- flue discharge / air intake on the opposite side of the technical box for LLH/PHE or through the cabinet



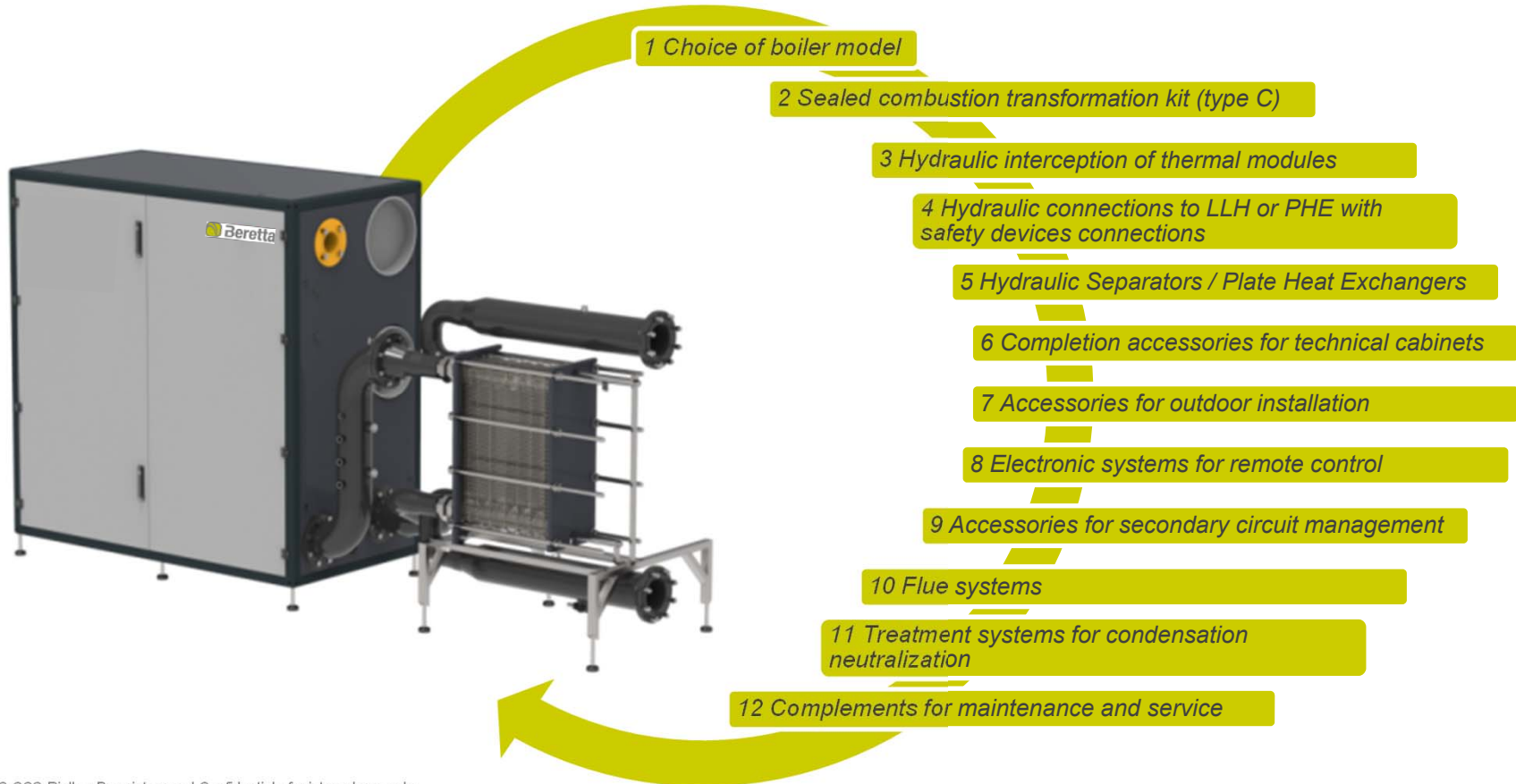
POWER MAX BOX Product layout - Flue / intake air Collectors



- Flue collector installed inside the boiler casing
- External collector are not required (as 1000 EXT Series)
- Protection from UV ray, suitable as standard for outdoor installations (not required stainless steel external collectors as 1000 EXT Series)
- Kit of transformation for room sealed combustion



POWER MAX BOX Accessories selection

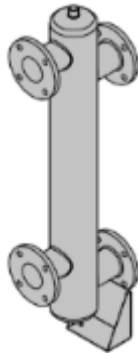


POWER MAX BOX
Hydraulic separator accessories



20145255

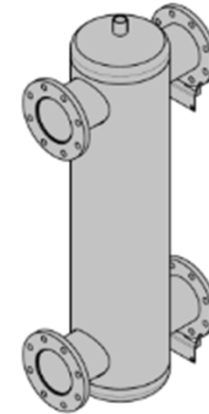
Hydraulic 3" separator
for connections up to
485 kW



*Hydraulic separator with 3" connections
for models with power ≤ 485 kW
(POWER MAX BOX 130-2 P; 160-2 P; 200-2 P; 260-2 P;
330-3 P; 390-3 P; 520-4 P) and
300-2 P, 450-3 P
with reduction kit 5" \rightarrow 3")*

20145260

Hydraulic 5" separator
for connections up to
1310 kW



*Hydraulic separator with connections from 5"
for models with power > 485 kW
(POWER MAX BOX 600-4 P) and cascade systems:*

POWER MAX BOX SYSTEM 675
POWER MAX BOX SYSTEM 810
POWER MAX BOX SYSTEM 945
POWER MAX BOX SYSTEM 1080
POWER MAX BOX SYSTEM 1215
POWER MAX BOX SYSTEM 1350



SUITABLE ONLY FOR INDOOR APPLICATIONS

POWER MAX BOX

Accessories for hydraulic separators in boxes



For left side installation

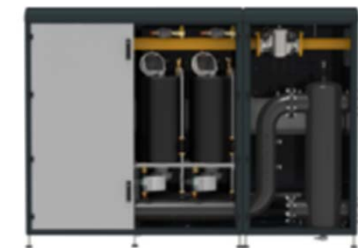
The hydraulic separator option in the technical cabinet includes pre-configured codes at the factory, with all components mounted except for INAIL devices (safety devices, safety valves and the gas safety cut-off valve).

There are variants:

- for right and left side
- by size of the hydraulic separator, with 3 "connections for models with power ≤ 485 kW and with 5 "connections for models with power > 485 kW (up to 1310 kW)



For right side installation



Suitable only for indoor and outdoor installation with roof cover kit addition

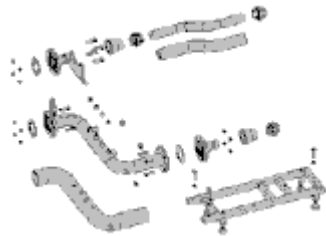
POWER MAX BOX

Accessories fittings for plate heat exchangers



20146827

Connection kit for plate heat exchanger DN80 (Ø3")/DN50
Up to 485 kW



DN50

20146828

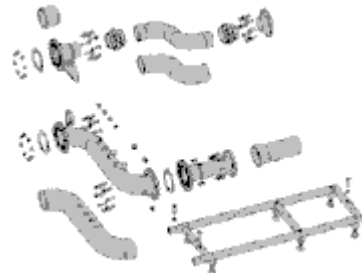
Connection kit for plate heat exchanger DN125 (Ø5")/DN65
Up to 800 kW



DN65

20146829

Connection kit for plate heat exchanger DN125 (Ø5")/DN100
Up to 1310 kW



DN100

The exchanger of the corresponding family must be combined with the fitting kits. The model of the plate heat exchanger, to be selected according to the power and operating conditions (delta T ° between primary and secondary circuits). See the specific table.



POWER MAX BOX

Accessories fittings for plate heat exchangers in box



For left side installation

The plate heat exchanger option in the technical cabinet includes pre-configured codes at the factory, with all components mounted with the exception of INAIL devices (safety devices, safety valves and safety gas cut-off valve) and plate heat exchanger, which must be selected according to the power and the operating conditions (delta T ° between primary and secondary circuit).

There are variants:

- *for right and left side*
- *by size of the plate heat exchanger, with DN 50 mm up to 485 kW; with DN 65 mm up to 800 kW; with DN 100 mm up to 1310 kW*



For right side installation

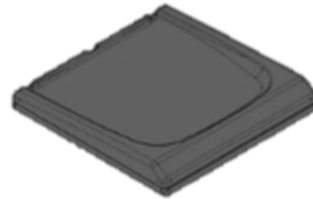
Suitable only for indoor and outdoor installation with roof cover kit addition

POWER MAX BOX Accessories for outdoor installation



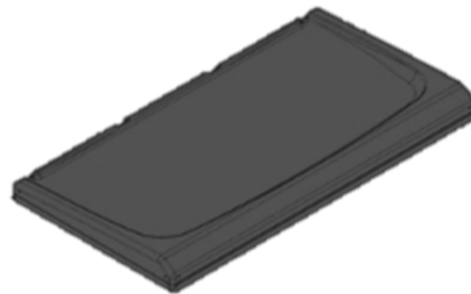
20146841

KIT FOR BOX with 2
units - Roof kit for
outdoor installation L =
900 mm



20146842

KIT FOR BOX with 3-4
units - Roof kit for
outdoor installation L =
1800 mm



The whole range of cabinets can be transformed with the addition of specific kits for outdoor installation.



NOTE:


Accessories for boiler cabinets and technical cabinets

 Beretta



The whole range of cabinets can be transformed with the addition of specific kits for outdoor installation



The whole range of cabinets can be transformed with the addition of specific kits  Beretta
for outdoor installation



POWER MAX BOX



POWER MAX BOX
Accessories for the service



20146846

Internal light
emergency and
service kit



The service light allows and facilitates service operations even in the case of low-light control panels or in outdoor installations, during low light hours.

**MANDATORY IN SPAIN FOR ROOF
TOP INSTALLATIONS**



POWER MAX BOX Handling accessories

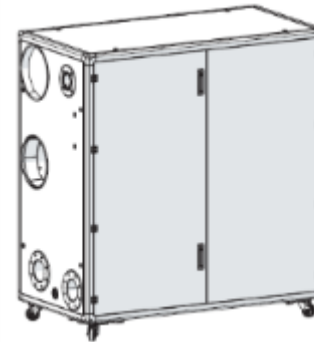


20146845

Handling wheels kit



4x

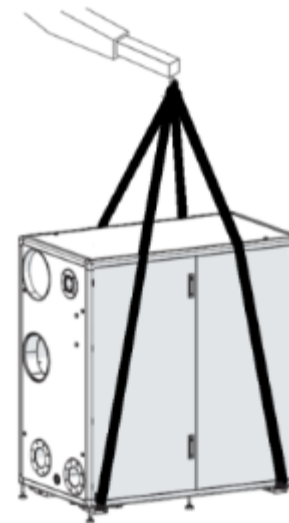


20146844

Top lift kit



4x



ATTENTION !!!!!
The TOP LIFT KIT IS MANDATORY AS THE STRUCTURE and the thread of the screws IS NOT DESIGNED TO RESIST AT THE WEIGHT OF THESE APPLIANCES

POWER MAX BOX

Tools to support the launch



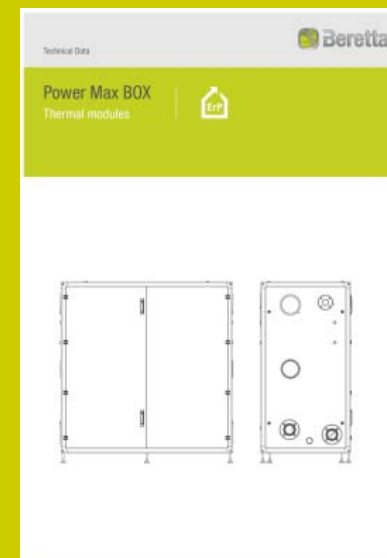
Technical documentation:

- Data sheet
- Instruction manual User / Installer
- CAD Drawings (.dxf/.dwg)
- BIM Drawings (Models – REVIT)

Commercial documentation:

- News tab
- Editorial
- Specification text
- Poster stand alone / cascade
- Brochure
- Product configurator

(Software for BOM preparation)



POWER MAX BOX Product configurator



NEW

POWER MAX BOX will be available in the product configurator with a dedicated section, alongside Condexa Pro and Tau Unit.

The software guides the user in selecting accessories, depending on the desired configuration, between stand-alone or cascade installation, for indoor or outdoor use, with hydraulic separator or plate heat exchanger, etc.

- Selection wizard of the desired configuration
- Available on PC / Tablet / Smartphone browsers
- Access by registered user
- Management of discounts scale
- BOM generation (PDF file)
- Ability to attach documentation to complete the offer
- Quotation archiving



POWER MAX BOX

The project at a glance



Increase market leadership through:

- Renewed range
 - Unique proposal with greater depth of range (up to 524 kW)
 - Greater coverage with the new models (114, 262, 393)
 - Cascade applications up to 1310 Kw
 - Simplification proposed with a single range suitable for indoor / outdoor
- The improvement of installation flexibility
- Improvement of hydraulic performance with reduced water pressure loss
- Integrated Master / Slave logic
- New accessories range
- The ease of selection
- Configuration and estimate software



NEW
Power MAX BOX

... thank you for your attention

