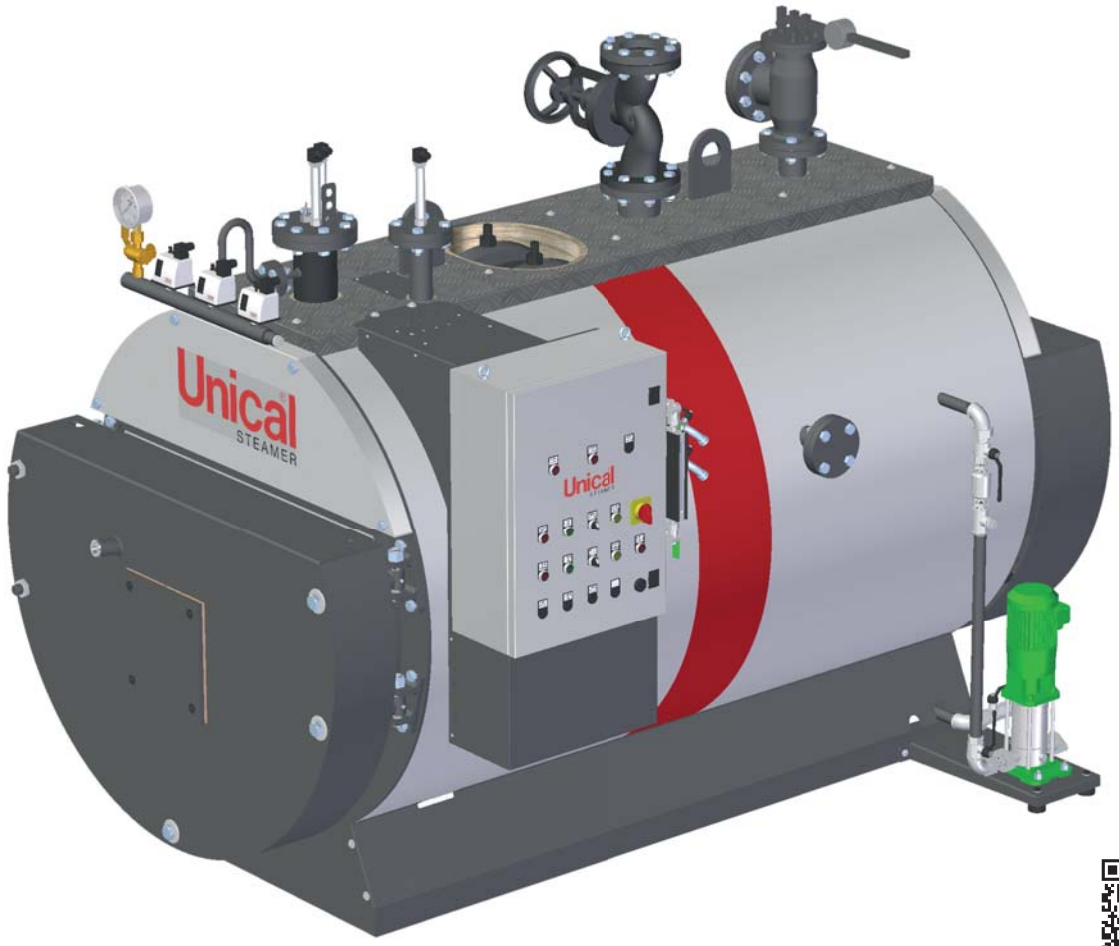
BAHR'UNO OR



LOW PRESSURE STEAM BOILER, THREE PASS REVERSE FLAME
HIGH PERFORMANCES

RANGE	from 94 kW (140 kg/h) to 2012 kW (3000 kg/h)		
TYPE	OR		
	smooth pipe	ESA pipe	ESALU pipe
FUEL	gas, light & heavy oil		
DESIGN PRESSURE	0,98 bar		
DESIGN TEMPERATURE	119,6°C		

MODELS	140	160	200	300	400	500	600	800
	1000	1250	1500	1750	2000	2500	3000	-

DESCRIPTION

Low pressure steam boiler, three pass reverse flame, smooth pipes with turbulators, 91% efficiency (1).

BAHR'UNO is a family of packaged smoke tube steam boilers, three pass reversed flame, wet back. Standard safety pressure up to 0.98 bar and output from 140 to 3000 kg/h. It can be operated with liquid or gaseous fuels. Every model is complete with regulations and safety accessories for automatic operation and easy commissioning. In compliance to the current laws, each steam boiler undergoes a conformity assessment, carried out by a Notified Body. The conformance to the essential safety requirements demanded by the European Pressure Equipment Directive 97/23/CE (PED) is guaranteed by the CE mark.

Design features:
By means of the reverse flame principle the smoke gases in the combustion chamber are diverted to the front, then reversed again to the smoke tube sections and discharged through the chimney connection. The appliance is designed to ensure low heating loads in the combustion chamber and low superficial loads.

- **Boiler body:** is made up of a cylindrical shell and a wet back furnace, made of high quality steel. All the materials have certificates attesting their chemical and mechanical characteristics, the controls are carried out during each production stage, and, theirs suitability for use as well. The welding seams are carried out by qualified personnel in compliance to certified procedures and are subjected to Non Destructive Tests, in accordance to an internal "Manufacturing and Control" program. Once the boilers have been manufactured they are subjected to hydraulic testing in accordance to the requirement 7.4 – Annex I, laid down in the Directive 97/23/CE (PED).

- **Smoke tubes:** made of high quality steel, are welded to tube plates. Pipes are equipped with helical turbulators.

- **Front door:** is built in welded steel plate, completely cladded internally with a layer of insulation material and with a layer of high density refractory material. The door is fitted with hinges which enable it to be easily adjusted and quickly opened. Moreover, the door is fitted with a self-cleaning sight glass for combustion control during boiler operation.

- **Rear smoke-box:** is built in welded steel plate and fixed on to the tube plate by nuts for an easy access to it. It is fitted with a small door for cleaning purposes and the flue connection, with a diameter sized to the boiler's output. The rear smoke-box can be accessorized with and external economizer.

- **The base:** is built with a steel frame, welded to the tube plates and closed with steel plates.

- **Walkway:** positioned on the top part of the boiler, is made of steel, covered with chequered plate and completed; on request with handrail and access ladder.

- **Insulation:** the shell is thermally insulated with a 100 mm rock wool cladding binded with high density, thick thermosetting resins, suitably supported and covered externally in 10/10 thick enamelled aluminum.

Standard equipment: (2)

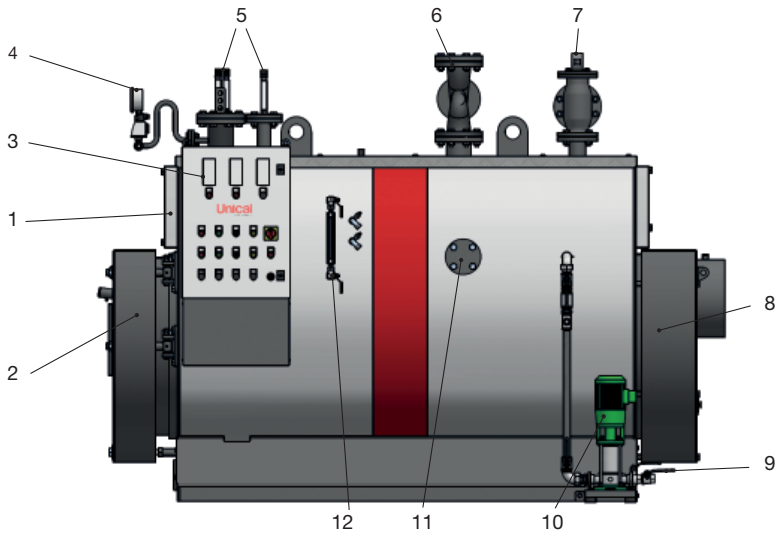
- Steam main globe valve.
- n. 2 spring loaded safety valves.
- n. 2 reflecting level indicators, with flanged connections, purging and cut-off cocks.
- n. 1 large manometer with 3 way cock for manometer calibration.
- n. 1 safety pressure switch with manual reset onto the board panel, CE PED certified.
- n. 1 limit working pressure switch.
- n. 1 regulation pressure switch for two stages burners or probe for modulating burners.
- n. 2 safety minimum level switches, with auto-diagnosis and manual reset on the board panel, CE certified.
- n. 2 water level probes for ON-OFF pump regulation.
- Feeding group complete with 2 centrifugal pumps.
- Valve assembly for feeding circuit, with relevant pipes already fitted.
- Automatic group for level control.
- n. 1 manual bottom blowdown valve.
- Man-hole on top and hand-hole on water side.
- Integral steam drier for high steam quality.
- Blind burner plate.
- Carbon steel turbulators.
- Lifting lugs.
- Control board panel IP55 400V - 3+N - 50Hz
- Document folder enclosing:
  - Manufacturer's Declaration of Conformity in compliance with the Annex VII of the European Directive 97/23/EC (PED)
  - Installation, operation and service manuals.
  - Certificates of safety components.
  - Control board's electric schemes and related Declaration of Conformity.
  - Water characteristics: requirements concerning the quality of water supply, the water in the boiler, frequency and type of sample tests to do.

Options:
- Spring actuated safety valve
- Kit of "Second boiler water feeding pump"
- Kit of "maximum safety level"
- Kit TDS (Total Dissolved Salts)
- Kit of "Automatic de-sludging" (Blow down)
- Kit of "72 hr exemption" for standard steam boiler Supplied with electronic board panel Unical, model IML (Industrial Multi Logic)
- Pre-drilled burner plate
- Oil or gas fired burner

(1) This value is intended without economizer and may change according working pressure and load conditions.
(2) The quantity and the model may vary according to the configuration.

MAIN COMPONENTS

1. Boiler body
2. Front door
3. Board Panel
4. Instruments assembly
5. Level safety sensors
6. Steam valve
7. Safety valve
8. Rear smoke chamber
9. Drain
10. Pump feeding group
11. TDS connection
12. Level gauge



TECHNICAL DATA

Model	Steam production	Nominal output*	Nominal input OR	ΔP smoke side	Max. working pressure**	Water content at level	Total volume	Burner head min. length	Burner head max. dia.
	kg/h	*kW*	*kW*	*mbar*	*bar*	*l*	*l*	*mm*	*mm*
140	140	94	106	2,0	0,98	310	410	340	210
160	160	107	121	2,3	0,98	310	410	340	210
200	200	134	151	2,6	0,98	310	410	340	210
300	300	201	226	2,2	0,98	568	730	340	210
400	400	268	301	2,6	0,98	568	730	340	210
500	500	335	376	2,8	0,98	814	1040	340	240
600	600	402	452	3,5	0,98	814	1040	340	240
800	800	537	603	3,8	0,98	1160	1545	340	240
1000	1000	671	754	4,2	0,98	1160	1545	340	240
1250	1250	838	942	4,5	0,98	1663	2250	370	280
1500	1500	1006	1130	5,1	0,98	1663	2250	370	280
1750	1750	1174	1319	5,5	0,98	2140	2890	370	280
2000	2000	1341	1507	6,0	0,98	2140	2890	370	280
2500	2500	1677	1884	6,8	0,98	2970	4060	370	360
3000	3000	2012	2261	7,0	0,98	2970	4060	370	360

*with feeding water temperature = 70°C and pressure = 1 bar ** safety valves setting value

PRODUCT PLUS VALUES

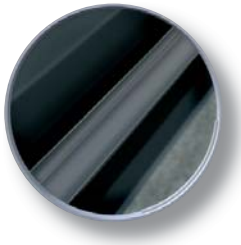
- **EFFICIENT THERMAL INSULATION**
  given by:
  - high total thickness, made by joining two rock wool
  - layers with aluminium foil
  - insulation between the casing and the hot parts of the boiler body for thermal bridges elimination
- **REVERSIBLE DOOR OPENING**
  hinges and closing bolts adjustment in all directions
- **PLATFORM**
  in checker plate, placed in the upper part
- **SIMPLIFIED ELECTRICAL CONNECTION**
  via fast coupling connectors
- **BOARD PANELS**
  electromechanical and electronic, expandable (optional)
- **POSSIBLE COMBINATION**
  with one, two, three stage or modulating burners
- **IMPLEMENTABLE FUNCTIONS**
  boiler and board panel designed for the integration of optional kits, also with boiler already installed
- **SMOOTH PIPES**
  The smooth smoke pipes, suitable for gas, light and heavy oil operation, constituting the tube bundle, increase the thermal exchange and allow the removal of the residual combustion products. They are formed by pipes with, inside, helical turbulators. They are standard supplied for gas, light and heavy oil operation.

TYPE OF PIPES

SMOOTH PIPES

The smooth smoke pipes, suitable for gas, light and heavy oil operation, constituting the tube bundle, increase the thermal exchange and allow the removal of the residual combustion products.
They are formed by pipes with, inside, helical turbulators.
They are standard supplied for gas, light and heavy oil operation.

Efficiency up to 91%.
In function of working pressure of the boiler.



ESA PIPES

BREVETTO Unical PATENT

The ESA smoke pipes (UNICAL patent), suitable for gas and light oil operation, constituting the tube bundle, increase the thermal exchange and allow the removal of the residual combustion products.
They are formed by pipes with, inside, six 60° sectorial pipes. The adoption of the ESA pipes allowed to reach high performances in terms of efficiency, with important reduction in terms of running costs, fuel consumption and polluting emissions.
They are standard supplied for gas and light oil operation.

Efficiency up to 93%.
In function of working pressure of the boiler.



ESALU PIPES

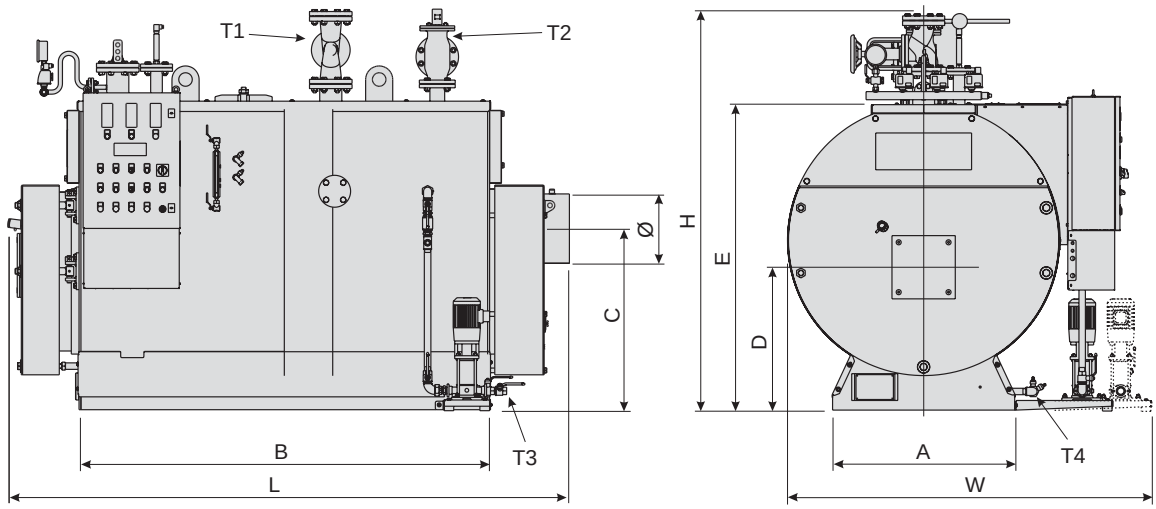
BREVETTO Unical PATENT

The ESALU smoke pipes (UNICAL patent), suitable for gas, constituting the tube bundle, allow to reach a very high thermal exchange. They are formed by pipes with, inside, special inserts of different types and shapes. The adoption of the ESALU pipes allowed to reach high performances in terms of efficiency, with important reduction in terms of running costs, fuel consumption and polluting emissions.
They are standard supplied for gas operation.

Efficiency up to 96%.
In function of working pressure of the boiler.



DIMENSIONS



Model	W	L	H	A	B	C	D	E	ø	T1	T2	T3	T4	Empty weight	Total weight
	mm	*mm*	*mm*	*mm*	*mm*	*mm*	*mm*	*mm*	*mm*					*kg*	*kg*
140	1560	1865	1485	720	1100	725	580	1220	219	DN 50	DN 50	1"	1/2"	1030	1340
160	1560	1865	1485	720	1100	725	580	1220	219	DN 50	DN 50	1"	1/2"	1030	1340
200	1560	1865	1485	720	1100	725	580	1220	219	DN 50	DN 50	1"	1/2"	1030	1340
300	1680	2315	1630	780	1550	815	635	1340	219	DN 65	DN 65	1"	1"	1330	1898
400	1680	2315	1630	780	1550	815	635	1340	219	DN 65	DN 65	1"	1"	1330	1898
500	1800	2515	1800	860	1750	880	685	1460	258	DN 80	DN 80	1"	1"	1630	2444
600	1800	2515	1800	860	1750	880	685	1460	258	DN 80	DN 80	1"	1"	1630	2444
800	1940	2885	1980	950	2120	945	745	1600	358	DN 100	DN 100	1"	1"	2130	3290
1000	1940	2885	1980	950	2120	945	745	1600	358	DN 100	DN 100	1"	1"	2130	3290
1250	2085	3322	2220	1090	2527	1075	860	1790	408	DN 125	DN 125	1"	1"	2740	4403
1500	2085	3322	2220	1090	2527	1075	860	1790	408	DN 125	DN 125	1"	1"	2740	4403
1750	2210	3545	2350	1200	2750	1170	905	1920	408	DN 125	DN 150	1"	1 1/2"	3360	5500
2000	2210	3545	2350	1200	2750	1170	905	1920	408	DN 125	DN 150	1"	1 1/2"	3360	5500
2500	2480	3625	2725	1470	2830	1410	1080	2250	508	DN 150	DN 100 (2x)	1"	1 1/2"	4650	7620
3000	2480	3625	2725	1470	2830	1410	1080	2250	508	DN 150	DN 100 (2x)	1"	1 1/2"	4650	7620

MAIN FUNCTIONS OF THE BOARD PANEL

BASIC

- One and two stage burner regulation
- ON / OFF level regulation
- N. 2 safety level switches on low level
- N. 1 PED safety level switch on low level
- Terminal strip on fast coupling connectors
- Expandability through optional kits
- Electrical protection degree IP 55



IMC

- One and two stage burner regulation
- ON / OFF level regulation
- N. 2 PED safety level switches on low level
- Terminal strip on fast coupling connectors
- Expandability through optional kits
- Electrical protection degree IP 55



IML

- Regulation PLC
- Touch screen 7” display with graphic interface
- One, two, three stage or modulating burner
- ON / OFF or modulating level regulation with valve or with inverter
- N. 2 PED safety level switches on low level
- Terminal strip on fast coupling connectors
- Expandability through optional kits
- Electrical protection degree IP 55



BASIC BOARD PANEL

Regualtion simplicity

The boiler regulation is committed to a board panel with electromechanical components that allows to obtain numerous advantages, among which:

- Simple use;
- Kit fitting:
  - high level
  - management of a second water feeding pump

Installation

The board panel is supplied with fast multi-pole connections that simplify the installation on to the boiler.

Safety

- The board panel allows the automatic regulation of the steam boiler;
- On the board panel are fitted the components that allow, if necessary, the manual operation of the steam boiler.



IMC (Industrial Multi Cabling) BOARD PANEL

Simplicity and functionality

The boiler regulation is committed to a board panel with electromechanical components that allows to obtain numerous advantages, among which:

- simple use;
- complete control of all the requested functionalities;
- mounting of numerous optional kits.

The “IMC” system is made with components that allow a modular management. The harness is so designed that the system can operate in many configurations.

Installation

The board panel is supplied with fast multi-pole connections that simplify the installation on to the boiler.

Safety

- The board panel allows the automatic regulation of the steam boiler.
- It is configurated for the alarms signalling; the management of the boiler safety devices is designed according to the rules in force.
- On the board panel are fitted the components that allow, if necessary, the manual operation of the steam boiler.



IML (Industrial Multi Logic) BOARD PANEL



Simplicity and functionality

The boiler regulation is committed to a board panel with electromechanical components that allows to obtain numerous advantages, among which:

- operation with multiple logic;
- simple use;
- efficient regulation;
- complete control of all the requested functionalities;
- approval for 24/72 hr operation w/o continuous surveillance.

The “IML” system is made with components that allow a modular management. The harness is so designed that the system can operate in many configurations.
The main aesthetic novelty is the matching of the signalling bulbs for the operation and safety, with a touch-screen display and the synoptic representation of the boiler.

The use of a programmable electronic device through PLC, allows to attain a high complexity in the boiler operation logic, guaranteeing a more intelligent and complete management.

The electronic unit is endowed of several inputs and outputs that can control, at the same time, several boiler functions and in a more articulated manner, if compared with an electromechanical board panel.

The board panel manages completely all the operational and safety parameters during the operation periods, without continuous surveillance up to a maximum of 72 hrs.

User interface with touch-screen display

The use of a graphic display allows to show, on the main page of the menu, the steam boiler in operation with the scheme of the main control devices. The touch-screen display allows to use virtual direct access keys to the setting and regulation pages. So, the graphic representation through symbols, results intuitive and of easy use.

Hardware and system expandability

The basic system is composed of:

- central unit (CPU)
- user interface (display)
- module of additional inlets

The display is the user interface and acts both, as an output device (visualization and signalling) and an input (commands entering).

The central unit is prearranged for the connection to additional expansion units.

The expansion allows:

- to perform boiler cascade systems (with master-slave logic);
- to connect the steam boiler to a supervision system (SCADA);
- to connect the control via GSM for the remotation of alarm signals;
- to control other devices present in the system (with more additional modules);
- to update the software per “upgrading” or modifications to the system.

Modulation

The IML board panel allows the management of the modulating burner without the need of the burner modulating kit; furthermore, it allows the level modulation through the signal coming from the capacitive sensor factory fitted.

Service

The IML board panel allows the function of the “guided service” (SAFE SERVICE) for performing the routine controls by the person authorised to the operation, at the expiring of the without surveillance operation period. The controls results are stored in an internal database, transferable on an archives through USB port on the L.H. side panel.

Installation

The board panel is supplied with fast multi-pole connections, that make easy the installation on to the steam boiler.

Safety

- The electronic regulator replaces only the regulation components;
- The board panel is set for the alarm signalling on the display; the management of the boiler safety devices remains of electromechanical type.
- On to the board panel are also fitted the components that allow, if necessary, the manual operation of the steam boiler.

BOARD PANEL COMPARISON TABLE

DESCRIPTION FUNCTIONS			BASIC	IMC	IML
Elettromechanical components for regulation and safeties			•	•	•
Regulation with PLC			-	-	•
Graphical user interface with 7" touch screen display			-	-	•
Fast connection terminal			•	•	•
Electrical prearrangement for kits mounting			-	•	•
Forced and thermostat controlled cooling system			-	•	•
Differentiated management of the boiler with economiser installed			-	-	•
First controlled water filling mode			-	-	•
Boiler starting mode from cold			-	-	•
Burner	Pressure transducer		-	-	•
	Pressure continuous visualization		-	-	•
	One stage		•	•	•
	Two stage		•	•	•
	Three stage		o	o	•
	Modulating (3 points)		- (1)	- (1)	•
	Modulating (analogic+feed back signal)		- (1)	- (1)	•
Level	Capacity sensor level transducer		-	o	•
	Continuous visualization of water level		-	-	•
	Pump manual operation function		•	•	•
	Water feeding pump ON/OFF regulation		•	•	•
	Modulating regulation with solenoid valve (3 points)	KIT MODUL V	-	o	•
	Modulating regulation with pneumatic valve (analogic+feed back signal)	KIT MODUL V	-	o	•
	Two stage regulation with inverter	KIT INVERTER	-	-	o
	Modulating regulation with inverter	KIT INVERTER	-	-	o
	Second water feeding pump control	Kit 2nd POMPA	o	o	o
	Automatic changeover between 1st & 2nd pump for load & consumption sharing	Kit 2nd POMPA	-	-	o
	Pump 2 manual operation function	Kit 2nd POMPA	o	o	o
	1st safety low water level control, PED approved		•	•	•
	2nd safety low water level control, PED approved		•	•	•
	Software safety limit for high water level		-	-	•
	Safety basic level switch for high water level	KIT HWL std	o	o	o
	Safety PED approved level switch for high water level	KIT HWL	o	o	o
TDS	Adjusting and safety system for the salt quantity dissolved in the boiler water	KIT TDS1	-	o	o
	Adjusting and safety system for the salt quantity dissolved in the boiler water equipped with self cleaning sensor	KIT TDS2	-	o	o
Drain	Time controlled drains with desludging function	KIT BLOW DOWN	o	o	o
Remote control	Alarm signal remotation	KIT REMOTE ALARM	-	o	o
	Via cable remote control system	KIT REMOTE CONTROL	-	-	o
	Via WEB remote control system	KIT WEB CONTROL	-	-	o
Service	Supervision for ordinary service works		-	-	•
	Supervision for extra-ordinary service works		-	-	•
Management	Exemption from continuous suveillance up to 24 hrs		-	-	o
	Exemption from continuous suveillance up to 72 hrs		-	-	o
	Total exemption (only for BAHR'UNO boilers)		-	o	o

LEGENDA	
-	NOT AVAILABLE
o	OPTIONAL
•	STD. SUPPLIED

Notes:
(1) Possible with external burner regulator

KIT COMPOSITION

for	BAHR'UNO	BAHR'12	TRYPASS'
with	BASIC	IMC	IML

KIT HWL std
high water level safety sensor



Kit Composition

- Nr. 1 electrode type sensor for high water level safety alarm

for	BAHR'UNO	BAHR'12	TRYPASS'
with	BASIC	IMC	IML

KIT HWL
"Fail safe", safety maximum water level switch, CE PED certified



Kit Composition

- Nr. 1 safety sensor 1/2" connection
- Nr. 1 sensor electrode in stainless steel
- Nr. 1 Safety regulator with self-diagnosis
- Electrical components

KIT COMPOSITION

KIT TDS 1

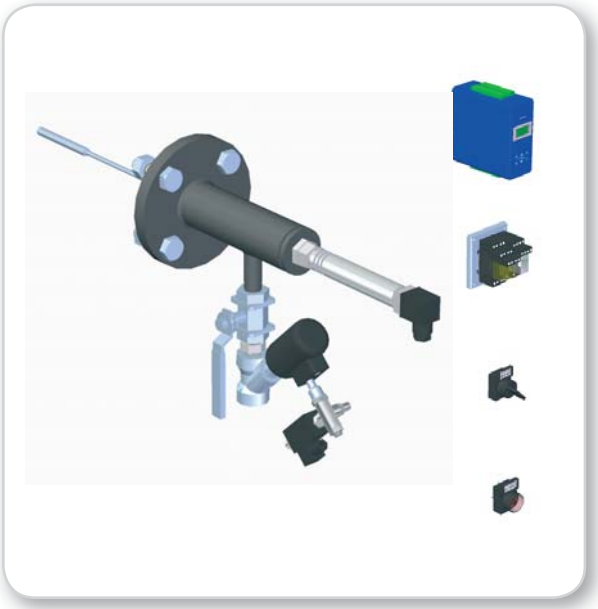
Salinity control group

for	BAHR'UNO	
with	IMC	IML

Kit Composition

Boiler water salinity control group through sensor for electrical water conductivity, made of:

- Conductivity sensor
- Flanged connecting pipe
- Gate valve
- Surface drain valve pneumatically actuated on high salinity/conductivity values
- Gasket
- Electrical kit with selectors and basic electronic regulator



KIT TDS 2

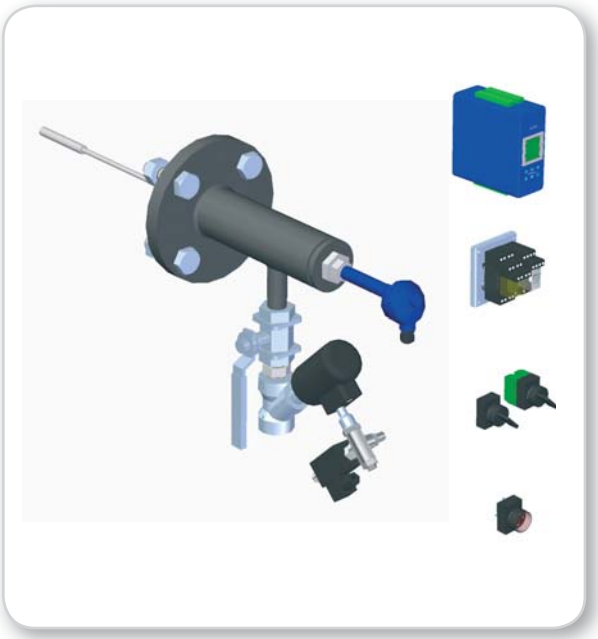
Salinity control group

for	BAHR'UNO	
with	IMC	IML

Kit Composition

Boiler water salinity control group through sensor for electrical water conductivity, made of:

- Self cleaning conductivity sensor with temperature compensation for measurement of TDS
- Flanged connecting pipe
- Gate valve
- Surface drain valve pneumatically actuated on high salinity/conductivity values
- Gasket
- Electrical kit with selectors and advanced electronic regulator



KIT COMPOSITION

KIT TDS 1

for	BAHR'12	TRYPASS'
with	IMC	IML

Salinity control group

Kit Composition

Boiler water salinity control group through sensor for electrical water conductivity, made of:

- Conductivity sensor
- Flanged connecting pipe
- Gate valve
- Surface drain valve pneumatically actuated on high salinity/conductivity values
- Gaskets
- Counterflange
- Electrical kit with selectors and basic electronic regulator



KIT TDS 2

for	BAHR'12	TRYPASS'
with	IMC	IML

Salinity control group

Kit Composition

Boiler water salinity control group through sensor for electrical water conductivity, made of:

- Self cleaning conductivity sensor with temperature compensation for measurement of TDS
- Flanged connecting pipe
- Gate valve
- Surface drain valve pneumatically actuated on high salinity/conductivity values
- Gaskets
- Counterflange
- Electrical kit with selectors and advanced electronic regulator



KIT COMPOSITION

KIT BLOW DOWN

Boiler bottom automatic drain group

for	BAHR'UNO
with	IMC

Kit composition

Automatic drain group, controlled by timer cycles with desliming function, made of:

- 90° gate valve
- Fast opening pneumatic valve
- Gaskets
- Counterflange
- Electrical kit (for IMC*)

*to be combined with KIT TDS 2



KIT BLOW DOWN

Boiler bottom automatic drain group

for	BAHR'UNO
with	IML

Kit composition

Automatic drain group, controlled by timer cycles with desliming function, made of:

- 90° gate valve
- Fast opening pneumatic valve
- Gaskets
- Counterflange
- Electrical kit (for IML)



KIT BLOW DOWN

Boiler bottom automatic drain group

for	BAHR'12	TRYPASS'
with	IMC	

Kit composition

Automatic drain group, controlled by timer cycles with desliming function, made of:

- 90° gate valve
- Fast opening pneumatic valve
- Gaskets
- Counterflange
- Electrical kit (for IMC*)

*to be combined with KIT TDS 2



KIT BLOW DOWN

Boiler bottom automatic drain group

for	BAHR'12	TRYPASS'
with	IML	

Kit composition

Automatic drain group, controlled by timer cycles with desliming function, made of:

- 90° gate valve
- Fast opening pneumatic valve
- Gaskets
- Counterflange
- Electrical kit (for IML)



KIT COMPOSITION

for	BAHR'UNO		
with	BASIC	IMC	IML

KIT 2nd PUMP

Kit second boiler water feeding pump

Kit composition

- A 2nd three phase 400V / 50 Hz motor pump
- Basement with vibration-damping feet
- Check valve
- Gate valve
- Fitting pipe



for	BAHR'12		TRYPASS'
with	BASIC	IMC	IML

KIT 2nd PUMP

Kit second boiler water feeding pump

Kit composition

- A 2nd three phase 400V / 50 Hz motor pump
- Basement with vibration-damping feet
- Check valve
- Gate valve
- Fitting pipe
- Gaskets
- Counterflange for feeding water connection



KIT COMPOSITION

for	BAHR'UNO	
with	IMC	IML

KIT EC (gas) / KIT EC (light oil)

Economizer kit
Efficiency increase: +3%

Kit composition

- Exchange battery with carbon steel finned pipes
- Modulating valve
- Transformation piping
- Thermometer



for	BAHR'12	
with	IMC	IML

KIT EC (gas) / KIT EC (light oil)

Economizer kit(1)
Efficiency increase: +4%

Kit composition

- Exchange battery with carbon steel finned pipes
- Modulating valve (Inverter as per model 2000)
- Transformation piping
- Thermometer

(1) Inverter as per model 2000



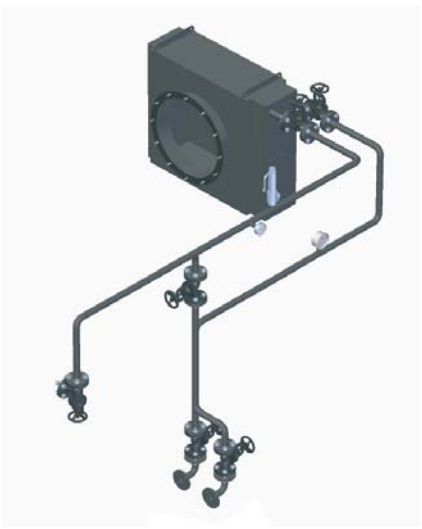
for	TRYPASS'	
with	IMC	IML

KIT EC (gas) / KIT EC (light oil)

External economizer kit
Efficiency increase: +5%

Kit composition

- Exchange battery with carbon steel finned pipes
- Kit Inverter (IML) / Kit Modul V (IMC)
- Transformation piping
- Thermometer



KIT COMPOSITION

for BAHR'UNO
with IMC

KIT MODUL V

Water level modulation

Kit composition

- Tank and level capacitive sensor
- Solenoid valve for flow rate adjustment
- Connection piping
- Electrical kit for IMC



for BAHR'UNO
with IML

KIT MODUL V

Water level modulation

Kit composition

- Tank and level capacitive sensor
- Solenoid valve for flow rate adjustment
- Connection piping



KIT COMPOSITION

for BAHR'12 TRYPASS'
with IMC

KIT MODUL V
Water level modulation

Kit composition

- Tank and level capacitive sensor
- Pneumatic valve for flow rate adjustment
- Connection piping
- Electrical kit for IMC



for BAHR'12 TRYPASS'
with IML

KIT MODUL V
Water level modulation

Kit composition

- Tank and level capacitive sensor
- Pneumatic valve for flow rate adjustment
- Connection piping

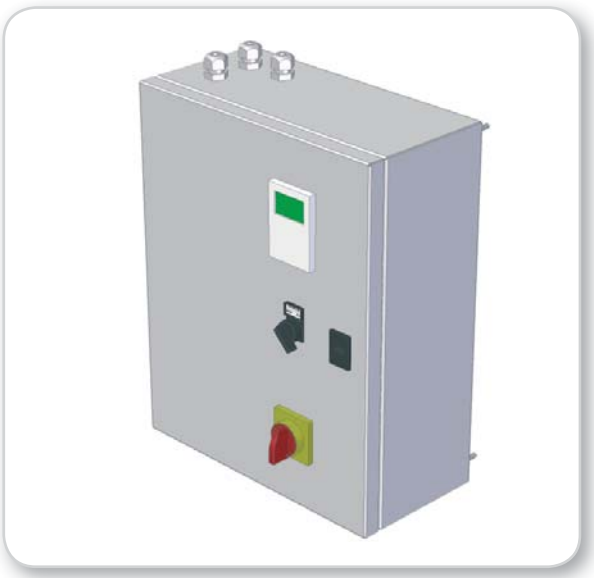


for BAHR'12 TRYPASS'
with IML

KIT MODUL INVERTER
Water level modulation

Kit composition

- Additional inverter board panel



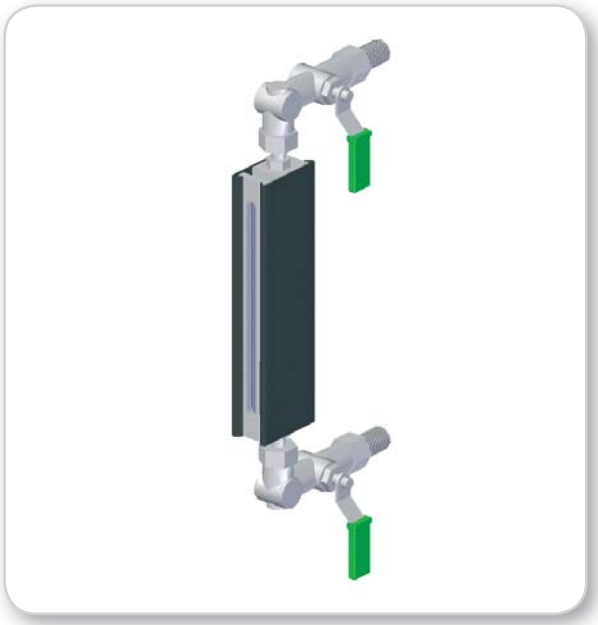
KIT COMPOSITION

for BAHR'UNO'

2nd LEVEL GAUGE KIT

Kit composition

- Reflexion type level gauge



for BAHR'12 TRYPASS'

2nd LEVEL GAUGE KIT

Kit composition

- Reflexion type level gauge
- Gaskets



KIT COMPOSITION

for BAHR'12 TRYPASS'

KIT SAMPLE COOLER

Water samples cooling group

Samples of boiler water need to be analysed on a regular basis to check if its values are within correct parameters.
Bad water quality is a major cause of boiler damages.
Sample cooler is necessary to take samples safely cooling them down; it suppresses flash steam also, ensuring accurate samples.

The cooler consists of a stainless steel coil, through which the sample flows, and a stainless steel body, through which cooling water flows in the opposite direction.

Kit composition

The cooler is composed by the following parts:

- Stainless steel cooler
- Sample inlet valve
- Cooling water inlet valve
- Connection piping



for BAHR'12 TRYPASS'
with IMC IML

KIT DRY RUN PROTECTION

Protection against dry operation of the water pump

Kit composition for one pump

- Nr. 1 Pressure switch and fitting
- Electrical kit for IMC/IML

Kit composition for two pumps

- Nr. 2 Pressure switches and fittings
- Electrical kit for IMC/IML



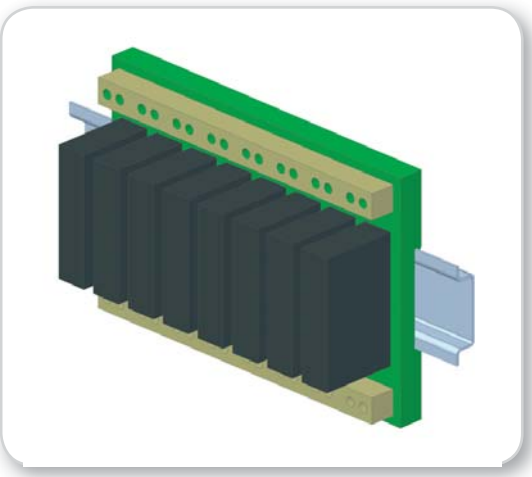
for BAHR'UNO BAHR'12 TRYPASS'
with IMC IML

KIT REMOTE ALARM

Alarms remotation

Kit composition

- Relay PCB with wiring harness interface



KIT COMPOSITION

for BAHR'UNO BAHR'12 TRYPASS'
with IMC IML

KIT SIGNAL TOWER

Kit composition

- Luminous signalling tower



for BAHR'UNO BAHR'12 TRYPASS'
with IML

KIT REMOTE WEB CONTROL 3G

Kit composition

- Ethernet Router - 4 ports / modem 3G
- Antenna
- Connecting cables for touch-screen and PLC



for BAHR'UNO BAHR'12 TRYPASS'
with IML

KIT REMOTE WEB CONTROL ADSL

Kit composition

- Ethernet Router - 4 ports / modem ADSL
- Connecting cables for touch-screen and PLC

