

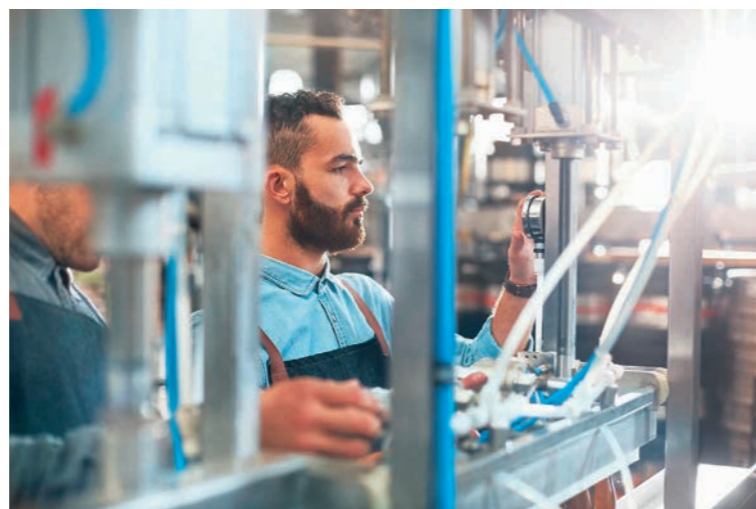
 JUMAG

# The best of steam

Our steam boiler product range

**Steam boilers, steam systems, components and services**

With our high-end equipment, components and services, we have been getting the best out of steam for more than 40 years. Reliable and resource-saving.



## CONTENT

At JUMAG, you get the best steam boiler for your requirements. Individually or as a whole system, for sale or for rent, electric, oil- or gas-powered. Complete it with the appropriate components. In addition, we are by your side with advice and services.

2 - 3	Table of contents
4 - 5	About JUMAG
6 - 7	Oil/gas steam boilers
8 - 9	DG 160 - 560
10 - 11	FLO 1060
12 - 13	Electric steam boilers
14 - 15	EDI 360
16 - 17	Steam systems
18 - 21	Components
22 - 23	Installation flow chart

# WE ARE JUMAG.

## TECHNOLOGY AND INNOVATION LEADER IN ALL THINGS STEAM.

What makes a JUMAG stand out? Its extremely robust pressure vessel and energy-efficient design. We are constantly challenging existing technologies and setting new standards.

### REPEATEDLY PROVEN AND TAILORED TO FIT

Together we will find the right product. In the proven standard version or as a customised solution.

### BUY OR RENT

You can also rent any of our equipment, including containers. Immediately ready for connection and operation.

### SUSTAINABILITY

We are constantly working to become even more climate-friendly. In everything we do.

### MADE IN GERMANY

We guarantee consistently superior quality, short delivery routes and the highest level of expertise.

### CONSULTATION

Priceless: For us, consulting and system optimisation are simply part of the job.

### MAINTENANCE

We offer maintenance contracts at fair flat rates and are available round the clock.

## PROOF OF OUR CAPACITY FOR INNOVATION: PATENTS

JUMAG is one of the most innovative companies in our industry. Our products are continuously evolving and represent the state of the art in steam generation.



## WE ARE CONSTANTLY CHALLENGING THE STATUS QUO.

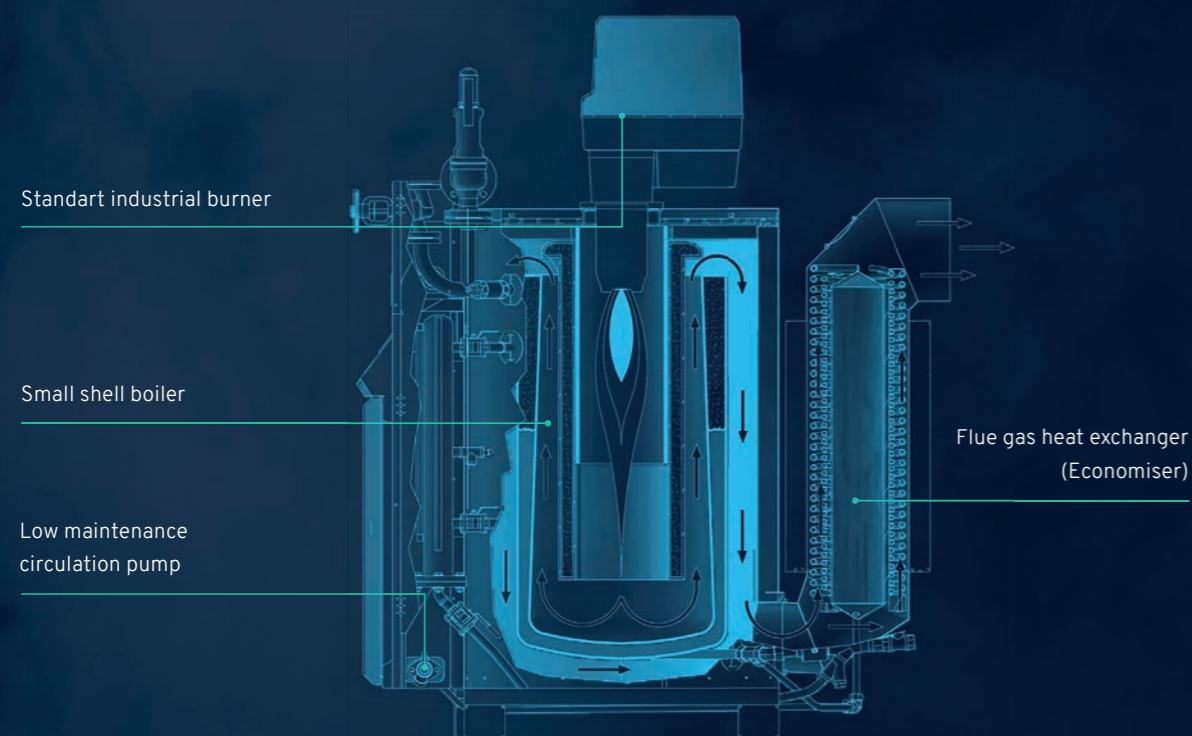
Because we are engineers. We are curious and ambitious. Future-oriented. We don't settle for „good“. We want to be better. Every day anew. We are like steam. We find ways to rise up and never stand still. **JUMAG - the best of steam.**

“THERE IS ALWAYS A WAY UP!”



# STEAM BOILERS OIL/GAS-FIRED

DG AND FLO



## THE BEST OF BOTH WORLDS

- In a class of its own: The DG and FLO steam boilers combine the benefits of the large water boiler with those of a quick steam boiler.
- Without pipe coils or piston pumps
- Depending on the water level, a **low-maintenance circulation pump** refills feed water through the **economiser**.
- The flue gas of the **flash burner** transfers energy to the water in the **pressure vessel** using several flues.
- The low flue gas temperature is a sign of how efficiently JUMAG steam boilers operate - efficiencies of more than 100% are possible.

## SIMPLE INSTALLATION

- Category III boiler according to PED 2014/68/EU
- No annual inspections by an approved authority required in Germany and many other countries (does not apply to FLO 1060 and EDI 360 steam boilers)

## ECONOMICAL AND SAFE

- Use of multiple units for larger amounts of steam and fluctuating steam consumption
- Single or multiple redundancy through the modular designed steam system

## THE UNIQUE PRESSURE VESSEL

- Double-walled small shell boiler
- Up to 12 mm wall thickness
- Extremely robust and unsusceptible
- High residual energy storage capacity



# STEAM BOILER DG

OIL- AND GAS-FIRED

The oil- or gas-fired steam generators of the DG series deliver steam outputs of 160 – 560 kg/h. This capacity can be multiplied with multiple units.

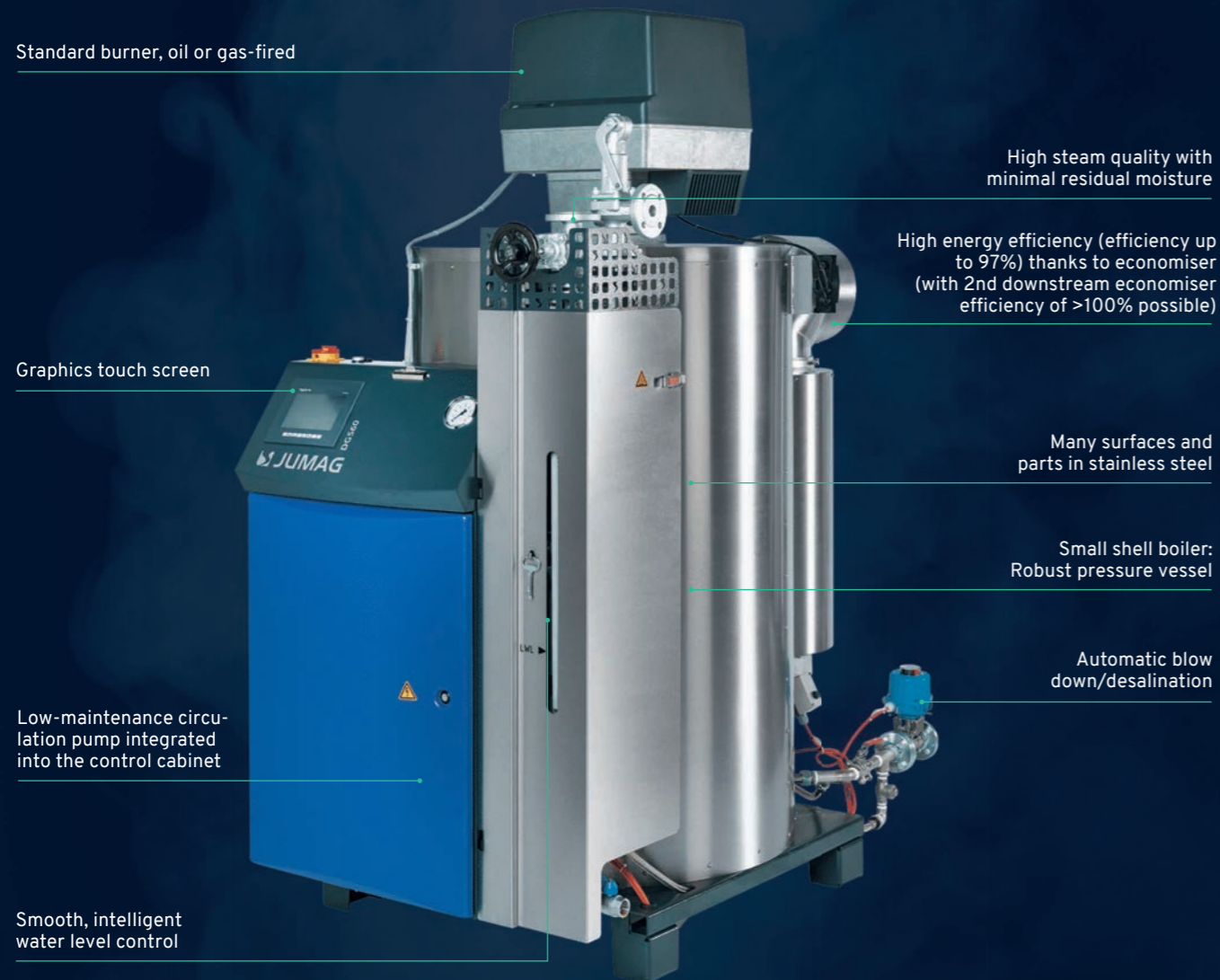


Fig.: JUMAG steam boiler DG 560



On request available in stainless steel



## Rent me!

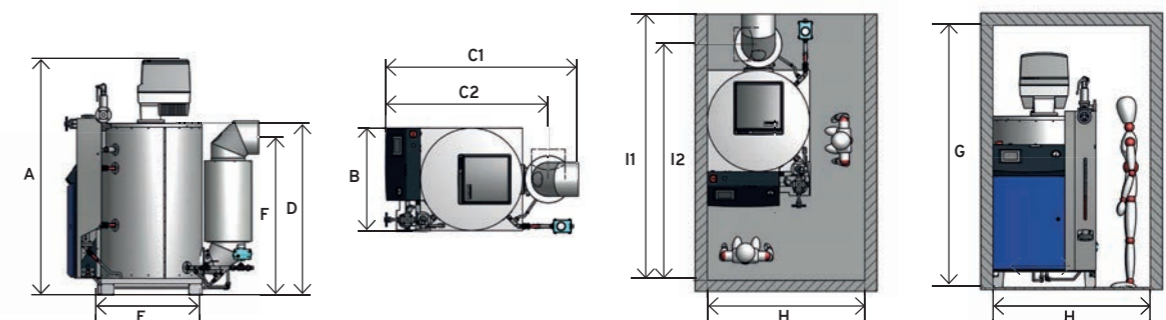
All steam boilers are available for rent. Learn more: <https://jumag.de/en/services/#rent>

## Technical data

Boiler type	DG 160	DG 260	DG 360	DG 460	DG 560
PED 2014/68/EU category III	PS * V < 1.000				
Steam output up to	160 kg/h (2,6 kg/min)	260 kg/h (4,3 kg/min)	360 kg/h (6,0 kg/min)	460 kg/h (7,6 kg/min)	560 kg/h (9,3 kg/min)
Heat load	110 kW	175 kW	245 kW	315 kW	400 kW
Heat output	105 kW	170 kW	235 kW	300 kW	380 kW
Max. operating pressure	13 barg (discharge pressure of the relief valve)				
Working Pressure	6 to 11 barg (lower pressures possible via JUMAG pressure reduction station)				
Heat up time	approx. 5 min	approx. 8 min			
Max. Oil flow rate (11,8 kWh/kg)	9,3 kg/h	14,8 kg/h	20,7 kg/h	26,7 kg/h	33,9 kg/h
Max. Natural gas flow rate (10,35 kWh/m³)	10,6 m³/h	16,9 m³/h	23,7 m³/h	30,4 m³/h	38,6 m³/h
Power supply	400 V / 50 Hz				
Power supply value	2,4 kW	3,2 kW	3,2 kW	4,0 kW	4,0 kW

These data are applicable for the following operating conditions:  
Use of a flue gas heat exchanger (economiser) / Feed water temperature of 90 °C / Operating pressure of 6 barg / Operation at max. 100m above sea level

## Key dimensions (Example diagram of DG 560)



## Dimensions

Boiler type	DG 160	DG 260	DG 360	DG 460	DG 560
Total height A	1.521 mm	1.764 mm	2.049 mm	2.044 mm	2.142 mm
Total width B	815 mm	829 mm		936 mm	
Total depth C1 (at backwards bend)	1.411 mm	1.631 mm			1.756 mm
Total depth C2 (at bend turned by 90° or straight up)	1.206 mm	1.370 mm			1.484 mm
Minimum charging height D	1130 mm	1.368 mm	1.568 mm	1.565 mm	
Minimum charging depth E	812 mm	856 mm			981 mm
Connection height F with 90° bend	795 mm	1.437 mm			
Minimum setup space height G	1.771 mm	2.014 mm	2.299 mm	2.294 mm	2.392 mm
Minimum setup space width H	1.315 mm	1.329 mm		1.436 mm	
Minimum setup space depth I1 (at backwards bend)	2.081 mm	2.301 mm			2.426 mm
Minimum setup space depth I2 (at bend turned by 90° or straight up)	2.000 mm	2.240 mm		2.368 mm	

# STEAM BOILER FLO

OIL AND GAS-FIRED

The big JUMAG: FLO steam boiler with a steam output of up to 1.060 kg/h.



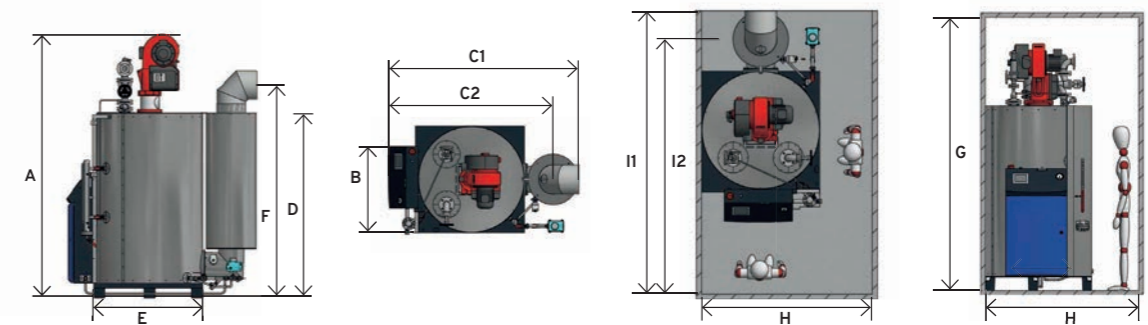
Fig.: JUMAG steam boiler FLO1060, example configuration

## Technical data

Boiler type	FLO 1060
PED 2014/68/EU category III	PS * V < 3.000
Steam output up to	1.060 kg/h (17,7 kg/min)
Heat load	760 kW
Heat output	720 kW
Max. operating pressure	13 barg
Working pressure	6 to 11 barg (lower pressures possible via JUMAG pressure reduction station)
Heat up time	approx. 10 min
Max. oil flow rate (11,8 kWh/kg)	64,4 kg/h
Max. natural gas flow rate (10,35 kWh/m³)	73,4 m³/h
Power supply	400 V/50 Hz
Power supply value	6,0 kW

These data are applicable for the following operating conditions:  
 Use of a flue gas heat exchanger (economiser) / Feed water temperature of 90 °C /  
 Operating pressure of 6 barg / Operation at max. 100m above sea level

## Key dimensions



## Dimensions

Boiler type	FLO 1060
Total height A	2.620 mm (Oil burner) 2.794 mm (Gas burner)
Total width B	1.130 mm
Total depth C1 (at backwards bend)	2.033 mm
Total depth C2 (at bend turned by 90° or straight up)	1.753 mm
Minimum charging height D	2.071 mm
Minimum charging depth E	1.196 mm
Connection height F with 90° bend	2.234 mm
Minimum setup space height G	3.158 mm*
Minimum setup space width H	1.630 mm
Minimum setup space depth I1 (at backwards bend)	2.703 mm
Minimum setup space depth I2 (at bend turned by 90° or straight up)	2.710 mm



## Rent me!

All steam boilers are available for rent.  
 Learn more:  
<https://jumag.de/en/services/#rent>

# STEAM BOILER EDI

ELECTRICALLY OPERATED UP TO 120 KW – 160 KG STEAM/H

Electrical steam boiler EDI impresses with outstanding steam quality, also permitting ultrapure steam. Boilers and nearly all media-contacting parts are made of stainless steel.

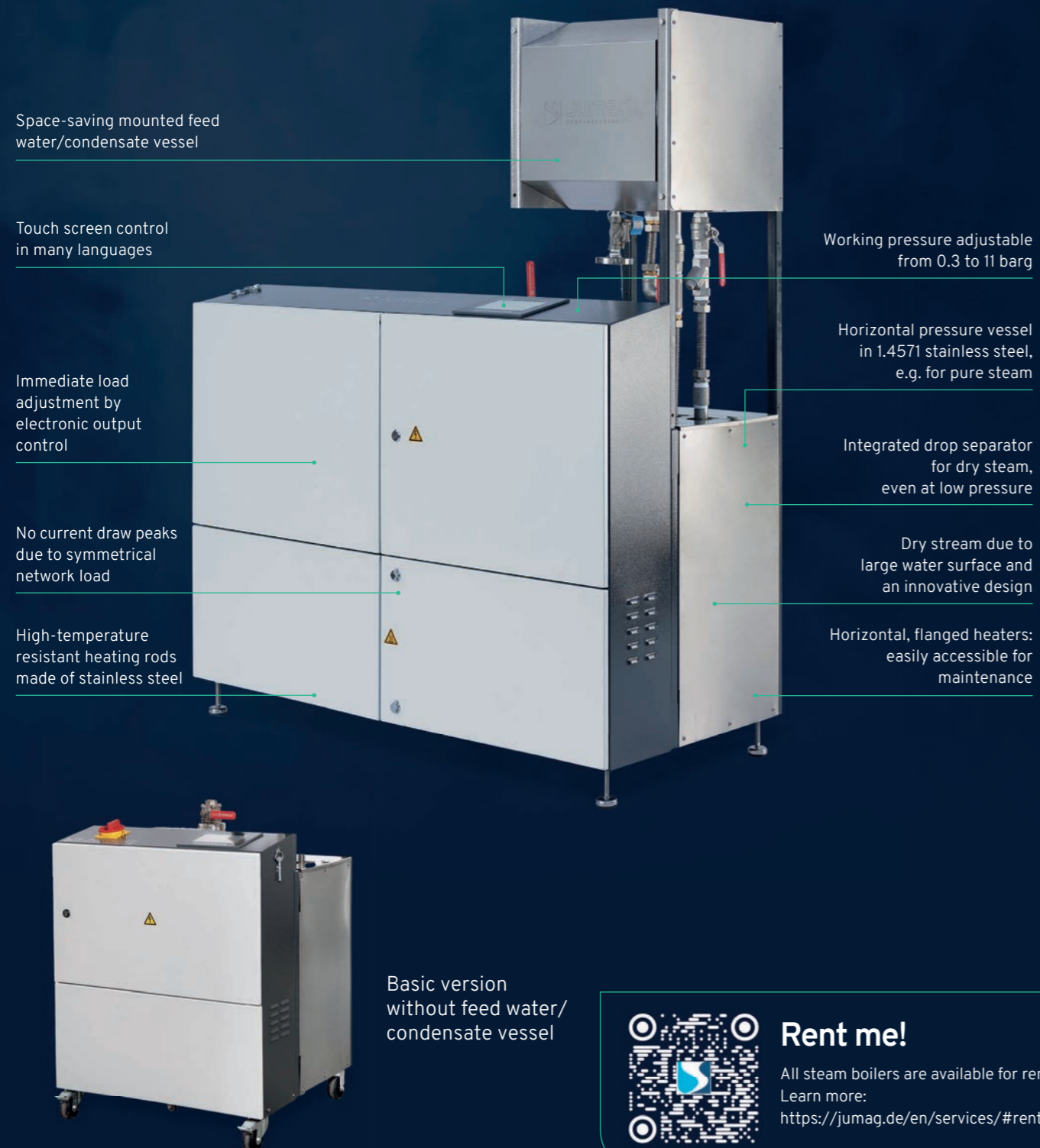


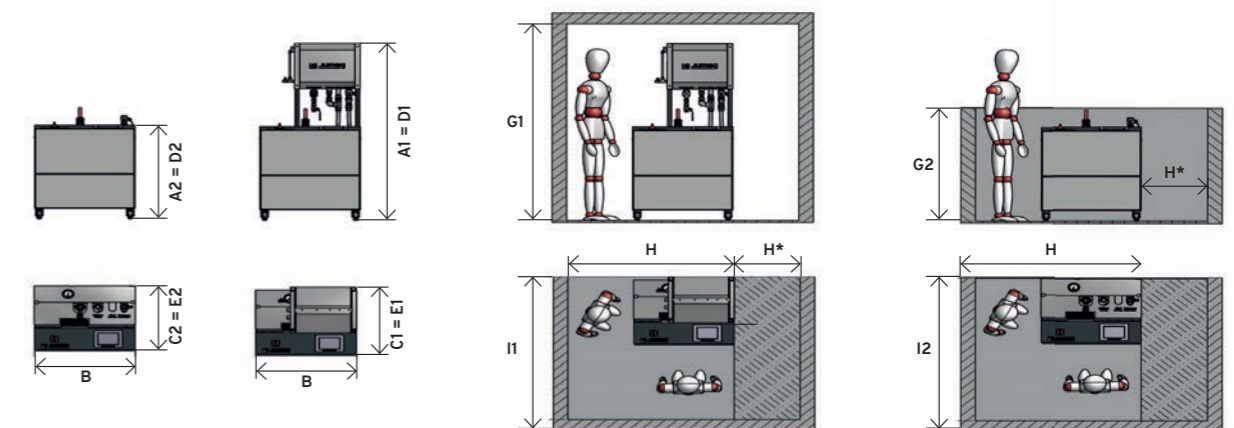
Fig.: JUMAG electrical steam boiler EDI with integrated feed water tank

## Technical data

Boiler type	EDI 20	EDI 40	EDI 60	EDI 80	EDI 100	EDI 120
Operating pressure (blow-off pressure relief valve) PED 2014/68/EU category II at (PS*V < 200)	5,3 barg		3,4 barg		2,6 barg	
Operating pressure (blow-off pressure relief valve) PED 2014/68/EU category III at (PS*V < 1000)	12,5 barg					
Steam output up to	26,5 kg/h 0,44 kg/min	53 kg/h 0,88 kg/min	80 kg/h 1,32 kg/min	106 kg/h 1,77 kg/min	132,5 kg/h 2,2 kg/min	160 kg/h 2,64 kg/min
Heat output	20 kW	40 kW	60 kW	80 kW	100 kW	120 kW
Working pressure	0,3 barg - 11 barg					
Heating time	approx. 15 min	approx. 7,5 min	approx. 8 min	approx. 6 min	approx. 6,5 min	approx. 5,5 min
Volume pressure vessel	37,7 l		58,8 l		76,7 l	
Low water level (STB)	14,3 l		31,5 l		40,5 l	
Power supply	400 V / 50Hz					
Power supplywert	22,2 kW	42,2 kW	62,2 kW	82,2 kW	102,2 kW	122,2 kW
Pre-fuse by the customer	min. 35 A – max. 63 A	63 A	min. 100 A – max. 125 A	125 A	min. 160 A – max. 200 A	200 A
Net weight	190 kg	200 kg	250 kg	260 kg	300 kg	310 kg

These data are applicable for the following operating conditions: Feed water temperature of 15 °C / Operating pressure of 6 barg

## Key dimensions (Example diagram of EDI 20/40)



## Dimensions

With feed water/condensate vessel	EDI 20/40	EDI 60/80	EDI 100/120	Without feed water/condensate vessel	EDI 20/40	EDI 60/80	EDI 100/120
Total height A1	1.798 mm			Total height A2	1.040 mm	1.105 mm	1.120 mm
Total width B	765 mm	1.176 mm	1.430 mm	Total width B	765 mm	1.176 mm	1.430 mm
Total depth C1	703 mm			Total depth C2	673 mm		
Minimum charging height D1	1.798 mm			Minimum charging height D2	1.040 mm	1.105 mm	1.120 mm
Minimum charging depth E1	703 mm			Minimum charging depth E2	673 mm		
Minimum setup space height G1	2.000 mm			Minimum setup space height G2	1.200 mm		
Minimum setup space width H	1.265 mm	1.676 mm	1.930 mm	Minimum setup space width H	1.265 mm	1.676 mm	1.930 mm
Optional maintenance space H*	-	500 mm		Optional maintenance space H*	-	500 mm	
Minimum setup space depth I1	1.463 mm			Minimum setup space depth I2	1.433 mm		



## Rent me!

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## Rent me!

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NEW

# EDI 360

ELECTRICALLY OPERATED UP TO 360 kW – 480 KG STEAM/H

The EDI 360 electrical steam boiler impresses with maximum safety, compact installation space and outstanding steam quality. Pure steam is possible. Boilers and practically all media-contacting parts can be made in stainless steel.

## FUTUREPROOF

ELECTRICAL STEAM BOILER  
EDI 360 360 kW – 480 kg steam/h



Rear side without connections for space-saving installation and easy maintenance

Integrated efficient cooling with heat recovery

Power supply from above, all connections easily accessible

Touch screen control in many languages

Immediate load adjustment by electronic output control

No current draw peaks due to symmetrical network load

Intelligent and individual low-wear control of the heating rods

Pressure can be precisely maintained as modulated and easy on the power grid



High energy storage thanks to large water header

Working pressure adjustable from 3 to 11 barg

High-temperature resistant heating rods made of stainless steel

Water level control via modern vibration limiters

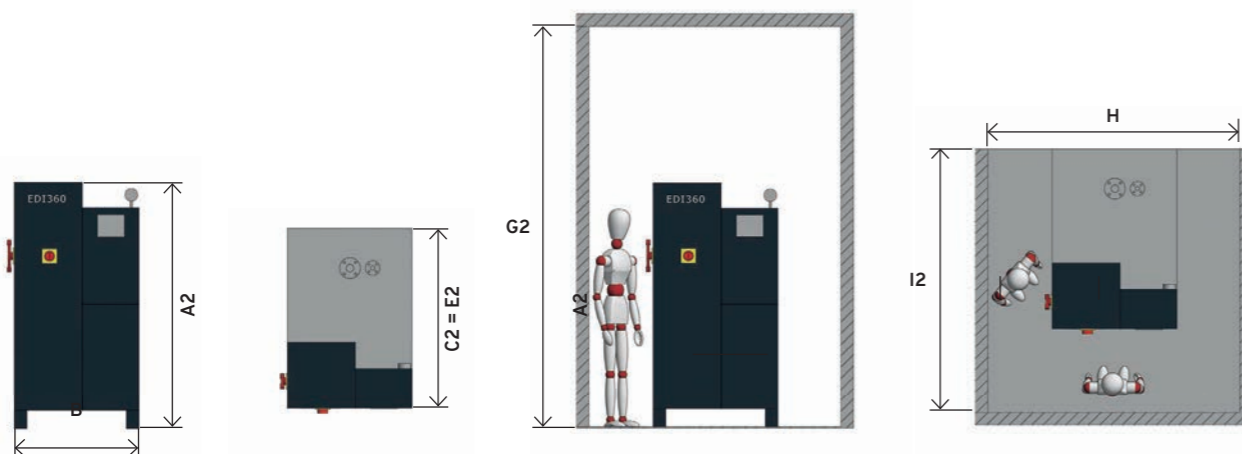
Good accessibility for maintenance

Dry steam due to large water surface and an innovative design

Pressure vessel and housing cladding made of stainless steel 1.4571

Fig.: JUMAG Steam boiler EDI 360

## EDI 360 Key dimensions



## Technical data

Electrical steam boiler	EDI 360
Operating pressure (blow-off pressure relief valve) PED 2014/68/EU category III at PS*V<3000	13 barg
Steam output up to	480 kg/h 8 kg/min
Heat output	360 kW
Working pressure	3 to 11 barg (lower pressures possible via JUMAG pressure reduction station)
Heating time	approx. 5 min
Volume pressure vessel	228 l
Low water level (STB)	140 l
Power supply	400 V / 50 Hz
Power supply value	362,2 kW
Pre-fuse by the customer	600 A
Steam output connection	DN 50
Blow down pipe connection	DN 20
Ventilation pipe connection	DN 40
Net weight	850 kg

These data are applicable for the following operating conditions:  
Feed water temperature of 15 °C / Operating pressure of 6 barg

## Dimensions

Electrical steam boiler	EDI 360
Total height A2	1.965 mm
Total width B	990 mm
Total depth C2	1.425 mm
Minimum charging height	1.990 mm
Minimum charging depth E2	1.425 mm
Minimum setup space height G2	3.165 mm
Minimum setup space width H	1.990 mm
Optional maintenance space	500 mm
Minimum setup space depth I2	2.125 mm



# Steam systems

SINGLE, COMPACT, MULTIPLE UNIT AND CONTAINER STEAM SYSTEMS

**Compact steam systems** can make do with minimal installation space. Pre-assembled, ready for connection, optimally matched to each other and adapted to the customer's needs. Flexible as an oil or gas-fired system, or in hybrid operation with electrically operated steam boilers.



Fig.: Compact steam boiler, example configuration



On request available in stainless steel

Fig.: Inside, Steam system



Fig.: Details Container steam system



Fig.: Multiple unit steam systems. Second downstream JUMAG economiser installed space-efficiently on the basic frame



Fig.: Container steam system

**Single and multiple unit steam systems** are coordinated, complete solutions. Multiple unit steam systems ensure optimum use and redundancy.

**Container steam systems**, installed and delivered ready for connection, can be used outside buildings or as mobile systems.



Rent me!

All steam boilers are available for rent. Learn more: <https://jumag.de/en/services/#rent>

# Components

## FEED WATER TREATMENT, BLOW DOWN AND DESALINATION

Fig.: Feed water/condensate vessel, example configuration

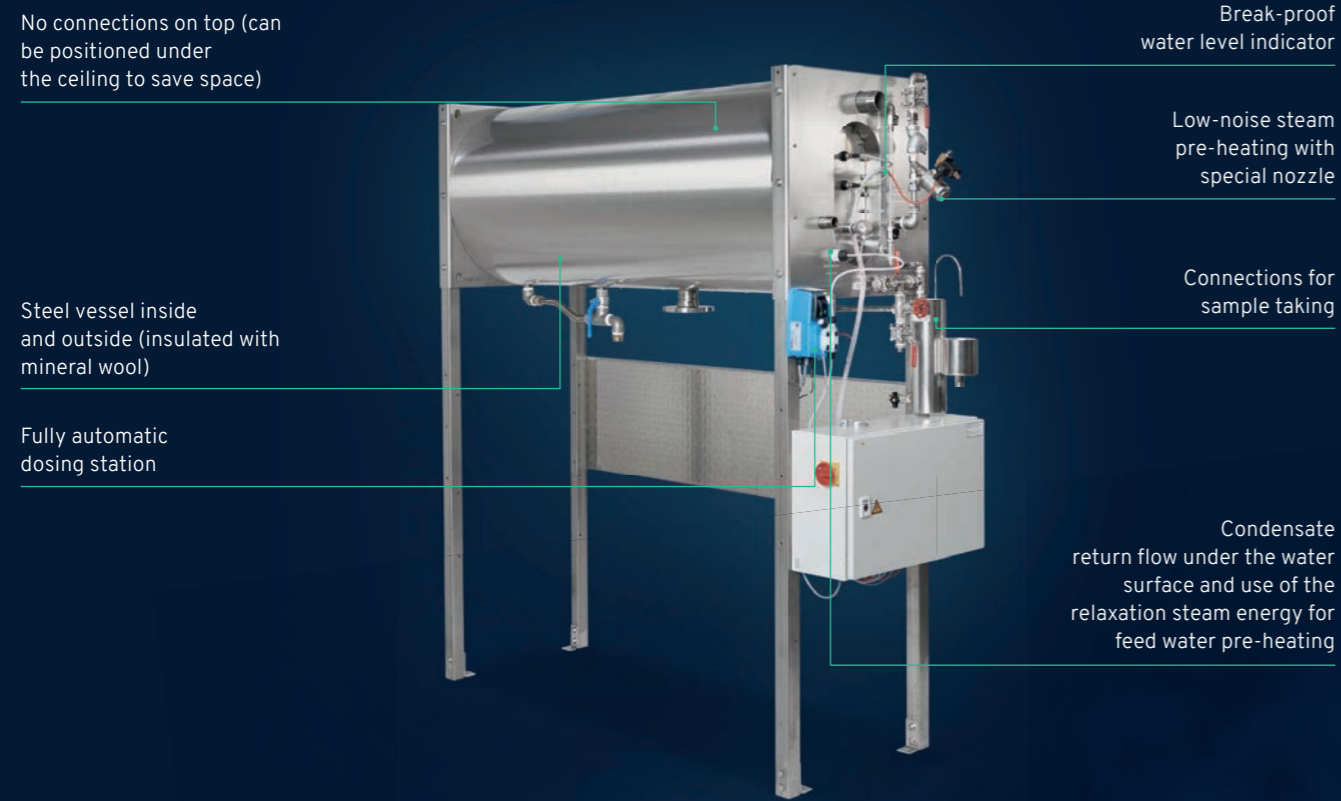
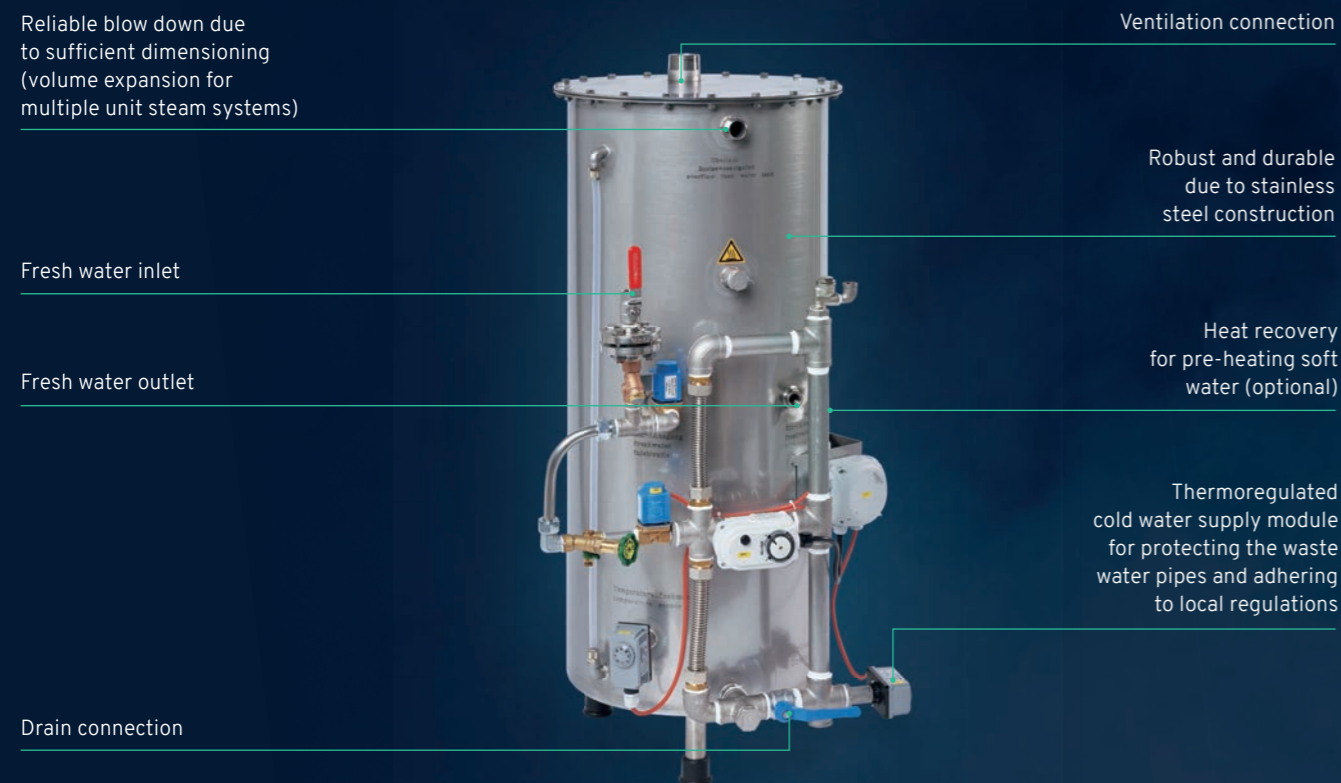


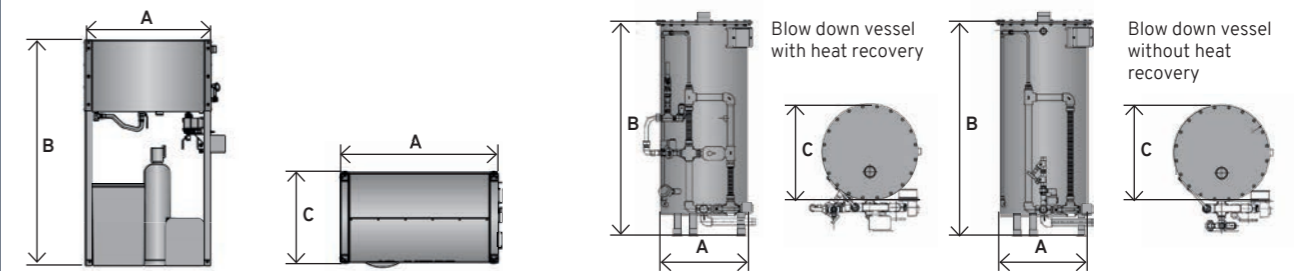
Fig.: Blow down container, example configuration



### Feed water/condensate vessel technical data and dimensions

Plant type	SWG 220	SWG 330	SWG 570	SWG 860	SWG 1140	SWG 1540	SWG 2050
Fresh water feed (Male thread at the vessel/ Female thread at the valve)	½"			1"			
Boiler feed (male thread)	DN50		DN65		DN80	2 x DN80	
Ventilation (male thread)	2"		2 ½"		DN100		
Overflow/drainage (female thread)	1"		1 ½"		2"		
Condensate return flow (male thread)	1"		1 ½"		1 x DN65 + 1 x 1 ½"		
Steam nozzle (male thread)	1"						
Steam pre-heating shut-off valve (female thread)	½" / 1"						
Sampling cooler connector (female thread)	¾"						
Width at the bottom A	1.150 mm	1.650 mm	1.150 mm	1.650 mm	2.150 mm	1.617 mm	2.117 mm
Inner stand distance	527 mm		827 mm		1.142 mm		
Height (adjustable) B	2.000 mm		2.000 mm - 2.400 mm		2.194 mm - 2.554 mm		
Depth C	645 mm		965 mm		1.250 mm		
Volume	220 l	330 l	570 l	860 l	1.140 l	1.540 l	2.050 l
Weight	155 kg	180 kg	230 kg	265 kg	300 kg	415 kg	475 kg

### Dimensions (e.g. DG 560)



### Blow down vessel technical data and dimensions

Plant type	Blow down vessel without increase	Blow down vessel with increase I	Blow down vessel with increase II
Blow down feed (male thread)	1"		
Drain (female thread)	1"		
Ventilation connection (male thread)	2"	3"	
Fresh water connections (female thread)	½" / 1"		
Feed water/condensate vessel overflow connection (male thread)	1"		
Width A	500 mm		
Height B	1.100 mm	1.600 mm	2.050 mm
Depth C	650 mm		
Volume	140 l	240 l	290 l
Net weight without heat recovery	65 kg	82 kg	94 kg
Net weight with heat recovery	90 kg	107 kg	119 kg

# Components

FOR OPTIMAL STEAM QUALITY AND ENERGY EFFICIENCY



## STEAM DRYER

A good water separation in steam protects the system and increases steam quality. The build of the JUMAG steam dryer is based on the benefits of a cyclone steam dryer and combines them with other advantages:

- High separation rate of entrained water droplets
- Small water droplets are also separated by the centrifugal force.
- Low pressure loss in the steam
- The steam dryer works efficiently even at low steam volumes.



## SECOND, SUBSEQUENT ECONOMISER

The second economiser is a heat exchanger that uses the energy contained in the flue gases for heating water, such as:

- the feed water supplied to the boiler
- the fresh, softened water supplied to the feed water/condensate tank
- soft water for other uses

It is installed on the flue-gas side between the first economiser and the chimney. The water to be heated flows to the flue gases to be cooled in a counter flow. The lower the temperature of the flowing water, the higher the efficiency.



## PRESSURE REDUCTION STATION with electronic control

JUMAG steam boilers mostly work with an adjustable steam pressure range of 6 - 11 barg. For working pressures between 0.3 - 6 barg or constant working pressure, pressure reducers are used. They are installed in the steam pipe between the steam boiler and the consumer.

The pressure reduction station with auxiliary energy compensates for large and quick pressure changes of the reduction line with quick reaction. A pneumatically controlled main valve can adjust the position of the valve smoothly on demand.

## STEAM ACCUMULATOR

If the steam consumption briefly fluctuates strongly, use of steam accumulators is sensible. A water supply in the steam accumulator is heated at low steam consumption and stores energy. At a high steam consumption, the water will release its energy in the form of steam.

- Covers short-term steam consumption peaks.
- Steam systems can be designed smaller in the case of fluctuating steam demands due to smoothing and will run more evenly.
- The JUMAG steam accumulator is adjusted to JUMAG boilers and uses the advantages of the JUMAG system and JUMAG control.



## JUMAG CONNECT REMOTE – Remote access to your steam boilers

Control and monitor your system from any location! Individually configured devices can be mirrored and operated in your network, via the internet, or via mobile devices.

- Operator and authorized users can access the control via the internet and view or change process values.
- The connection can be established by WiFi, LAN or mobile phone.
- Data security through encryption. No external access to the operator's network.
- JUMAG customer service can access the plant directly or import program updates for fast support and remote maintenance.



## CONDENSATE RETURN FLOW SYSTEM

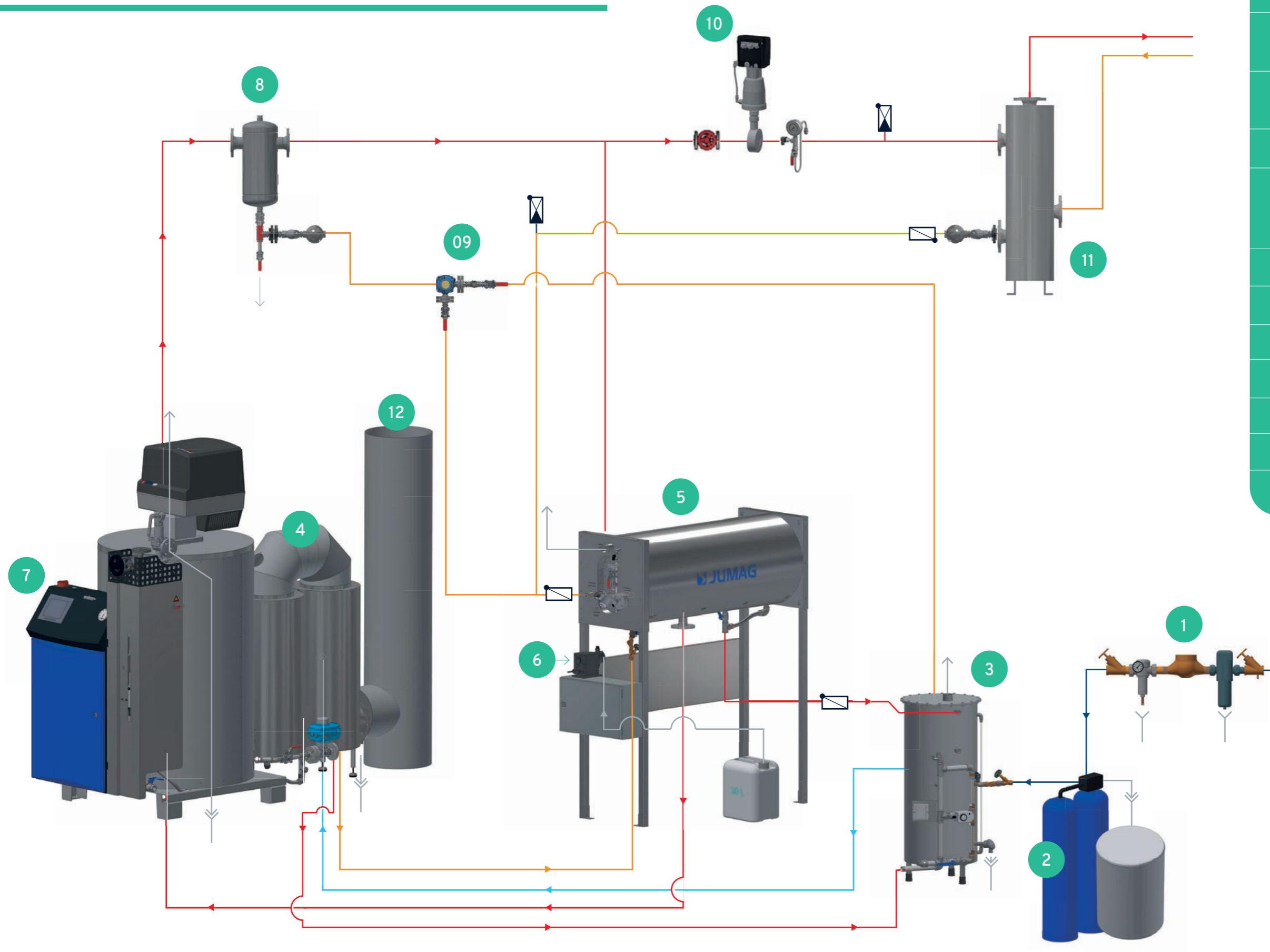
Condensate cannot always be routed directly into the feed water tank with a natural slope. In these cases, the condensate will be collected in a low location in a condensate return system and pumped into the feed water/condensate tank with circulation pumps.



## Deeply ingrained: Sustainability

For over 40 years, we have stood for durable equipment of the highest quality and efficiency. We are constantly working on optimising consumption, saving CO<sub>2</sub>, and making processes and packaging more climate-friendly.

# Installation flow chart



## LEGENDE

- 01 RAW WATER INLET MODULE
- 02 DOUBLE SOFTENER WITH BRINE CONTAINER
- 03 BLOW DOWN VESSEL WITH HEAT RECOVERY
- 04 SECOND ECONOMISER
- 05 FEED WATER/CONDENSATE VESSEL WITH FEED WATER-PRE-HEATING MODULE
- 06 DOSING PUMP
- 07 STEAM BOILER
- 08 STEAM DRYER
- 09 CONDENSATE SWITCH
- 10 PRESSURE REDUCTION STATION
- 11 CONSUME
- 12 CHIMNEY



**Steam generation  
in perfection.**

