



## Product Overview

The optimum components  
for every application



Engineering steam performance

## Steam Traps

### BK Range

Steam traps with bimetallic regulator up to PN 630/Class 2500. BK steam traps are suited to the toughest operating conditions. The bimetallic regulator makes this steam trap particularly resistant to waterhammer and frost.



### BK 45

*In applications up to PN 40/Class 300. For air-venting.*

### MK Range

Steam traps with membrane regulator up to PN 40/Class 300. The GESTRA thermostatic capsule exhibits very high control precision in discharging the condensate. This range is suitable for both small and large condensate flowrates.



### MK 45-2

*For large condensate flowrates, up to 32 bar. For air-venting.*

### UNA Range

Steam traps with ball float up to PN 160/Class 900. Especially suitable for condensate discharge without banking-up, for extreme and sudden fluctuations of pressure and condensate flowrate.



**UNA 1 (left) and UNA 4**  
*Adaptable for horizontal or vertical installation.*

### UNA 25 PK/PS Range

Pump steam trap / condensate lifter PN 40. Pumping effected by means of motive steam of up to 6 or 13 bar for condensate discharge without banking-up, suitable for all operating conditions, low pressure and vacuum applications.



**UNA 25 PK**  
*Automatic activation of motive steam.*

### Trap Monitoring

The Vaposcope VK is a sight glass that provides a visual indication of flow in pipelines and monitors the discharge downstream of steam traps. The Vaposcope can be used in horizontal or vertical pipework without any modification.



**Type VK**

## Non-Return-Valves

### Type SBO

Gravity circulation checks are used to prevent gravity circulation in heating and hot-water installations. Depending on the type, they are fitted by union nut to the circulation pump or with a threaded connection at the pump outlet. The SBO types are available from DN 3/4 to DN 1 1/4.

### Type RK 41

Made of special brass (DN 15–100) or grey cast iron (DN 125–200) and with metal-to-metal seating, the non-return valve RK 41 is suitable for liquids, gases and vapours, and for use in heating installations. Soft seats available, PN 6–16, DN 15–200, short overall length to DIN EN 558-1, series 49.

### Type RK 86

This non-return valve distinguishes itself for standard applications in piping systems as well as for use with corrosive media and low temperatures. Soft seats available, PN 40/Class 300, DN 15–200, short overall length to DIN EN 558-1, series 49.

### Type CB

The swing check valve CB 26 is a cost-efficient unit for applications involving liquids, gases and vapours. This range can be supplied in extremely short overall lengths for DN 50–300 and PN 40.

### Type BB

The dual-plate check valves BB, DN 50–1000, short overall length to DIN EN 558-1, series 16, are characterized by low pressure losses and high reliability. Also suitable for gaseous media. Special versions are available with plate dampers and various linings.

## Continuous and Intermittent Blowdown Valves



SBO 21

### Type MPA

For automatic, program-controlled intermittent blowdown of steam boilers and waste-heat boilers. Especially suited for boilers operating without constant supervision (TRD 604). DN 20–50, PN 40–250.



MPA 46



RK 41

### Type BAE

Continuous blowdown valves with adjustable stage nozzle, sampling valve and electric actuator for automatically controlled continuous blowdown. Especially suited for boilers operating without continuous supervision (TRD 604). DN 15–40, PN 40–320.



BAE 46



RK 86

## Cooling Water Control Valves



RK 86

### Type CW

Operating without auxiliary energy, the cooling water control valves type CW, PN 16, DN 25–100, are proportional controllers which regulate the cooling water flowrate of the users or plant components individually as a function of the cooling-water return temperature.



CW 44



CW 41



BB

### Type BW

Return-temperature control valves are proportional controllers operating without auxiliary energy. PN 40/25, DN 15/20/25/40, with external setting device as optional extra.  
BW 31 for hot water  
BW 31A for hot oil



BW 31

### Temperature/Pressure Control Valves

#### Type 5801

Directly controlled pressure-reducing valve with large set-point ranges for steam, gases and liquids.



#### Type Clorius

Self-acting temperature control valves of the type Clorius operate as normal- and reverse-acting valves with external feeler. Suitable for applications with steam, gas and liquids.



### Control Valves

#### Type 701

For the automatic control of the level, temperature, pressure and flow of liquids in heat engineering and process-control technology. DN 15–100, PN 16/40. With pneumatic or electric actuators.



#### Type ZK

Control valve with multi-stage pressure reduction for high differential pressures up to 560 barg. Suitable for water, condensate and steam. High wear resistance, low noise and highest leakproofness (leakage rate A / Class VI). DN 25-300, up to PN 630/CL 2500. With pneumatic, electric or hydraulic actuator or handwheel.



### Background:

## Energy Recovery

### Energy Recovery after Continuous Blowdown

After continuous blowdown, irrespective of whether automatically controlled or manually set, it is easily possible to utilize the dissipated heat. For example, in a GESTRA blowdown flash vessel, the energy generated by the continuous blowdown in the boiler blowdown is recuperated to a large degree by flashing. In a residual blowdown cooler located downstream, the heat remaining in the flash vessel can also be used to preheat the feedwater. Our experienced specialists in industrial systems engineering are available to you for individual advice. In Germany, the heat recovery plants made by GESTRA are eligible for an investment subsidy; according to the Income Tax Law and the Investment Subsidy Law, the grant amounts to 7.5 %.

## Steam Trap Testing

### Diagnostic tool for testing, analysing and evaluating steam trap operation

VKP 41plus (Ex) can detect leaks in steam systems and calculate steam loss and CO<sub>2</sub> emissions.



## Spare Part Kits

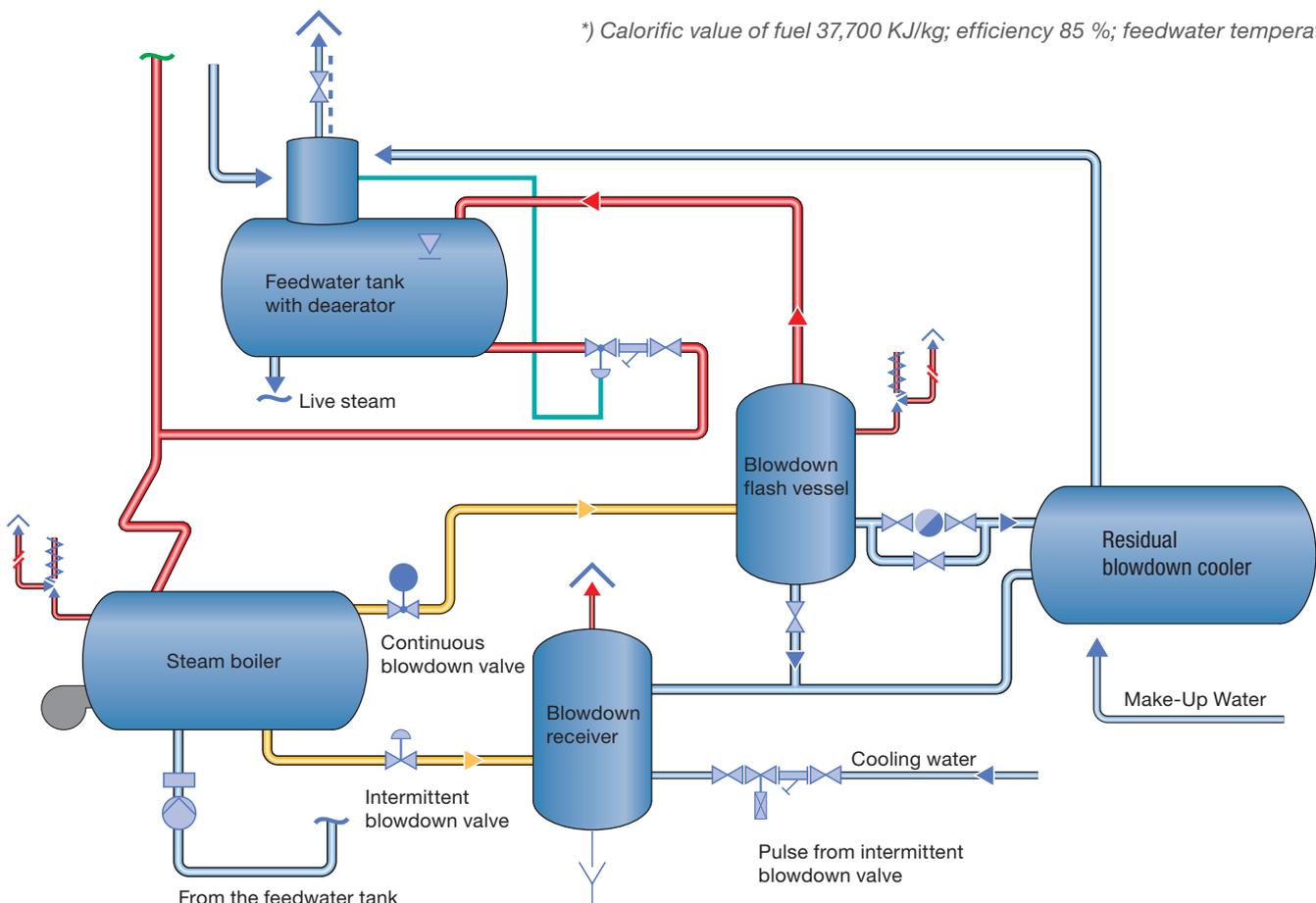
By using genuine GESTRA spare parts, you can be sure that your equipment will continue to function perfectly, that no problems will occur during installation and that the right materials have been selected with regard to the required pressure and temperature stability. Naturally, the GESTRA warranty also applies to the spare parts to the full extent and all statutory provisions are met.



Boiler pressure		bar	8	16	32
Hourly heat savings when the continuous blowdown flowrate is reduced by 20, 50 and 100 kg/h	20 kg/h	W	4,126	4,844	5,231
		kJ/h	14,852.8	17,436.8	18,832
	50 kg/h	W	10,314	12,109	13,078
		kJ/h	37,132	43,592	47,080
	100 kg/h	W	20,629	24,218	26,156
		kJ/h	74,264	87,184	94,160
Annual savings of heating oil or energy costs when the continuous blowdown flowrate is reduced by 20, 50 and 100 kg/h (taking 250 days with 24 hours = 6,000 hours *)	20 kg/h	kg	2,624.6	3,108.5	3,369.7
		€	787.40	932.50	1,010.90
	50 kg/h	kg	6,796.1	8,005.7	8,658.8
		€	2,038.80	2,401.70	2,597.60
	100 kg/h	kg	13,748.6	16,167.7	17,473.9
		€	4,124.60	4,850.30	5,242.20
Equipment investment on basis of WÜ100; units with TÜV and EU type approval (with Reactomat) not incl. installation		approx. €	3,634	3,634	3,634
Equipment amortization when the top blowdown quantity is reduced by 20, 50 and 100 kg/h	20 kg/h	Months	55	47	43
	50 kg/h	Months	21	18	17
	100 kg/h	Months	10.6	9	8.3

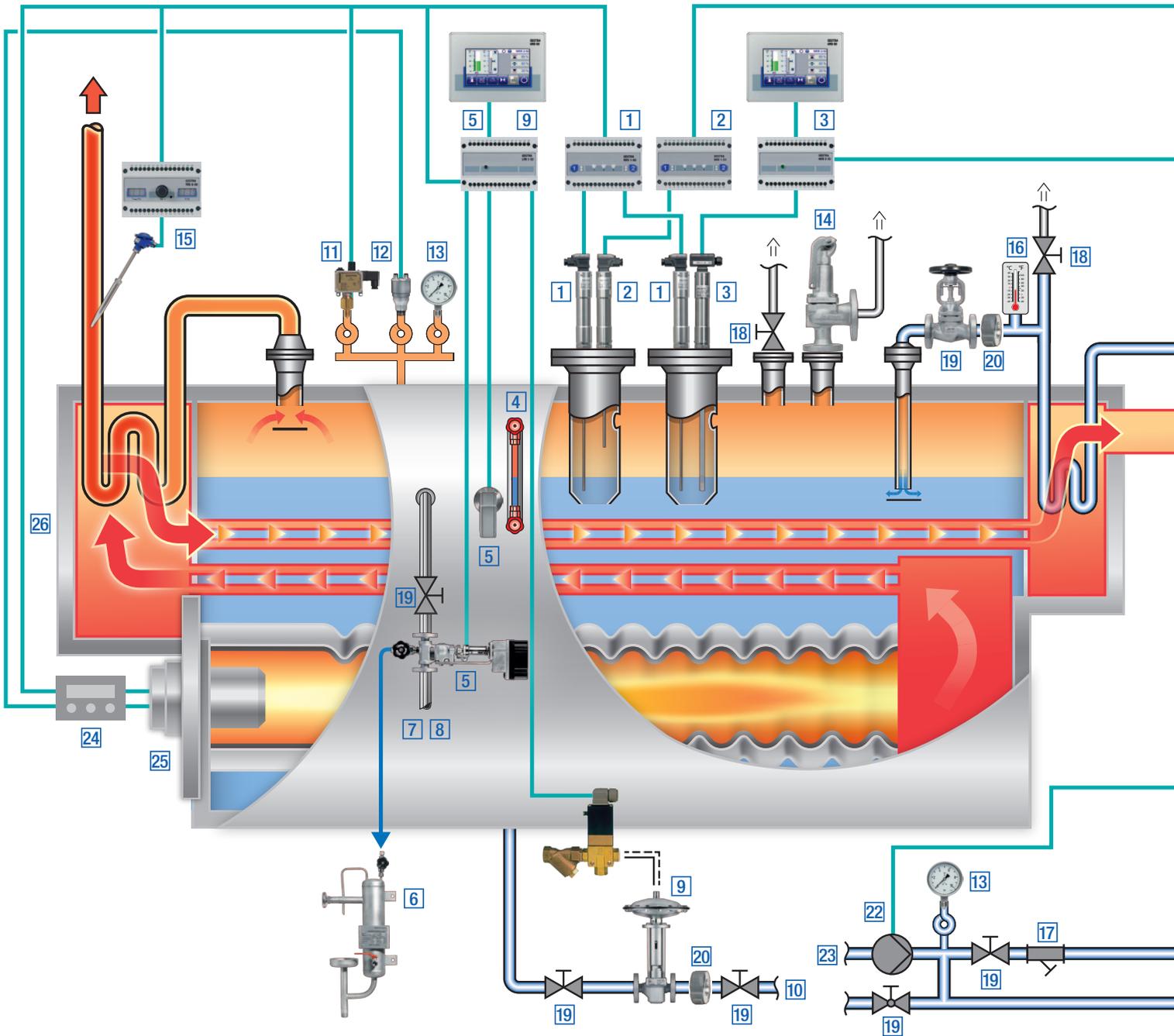
Schematic diagram of a blowdown flash installation with blowdown receiver

\*) Calorific value of fuel 37,700 KJ/kg; efficiency 85 %; feedwater temperature 10 °C

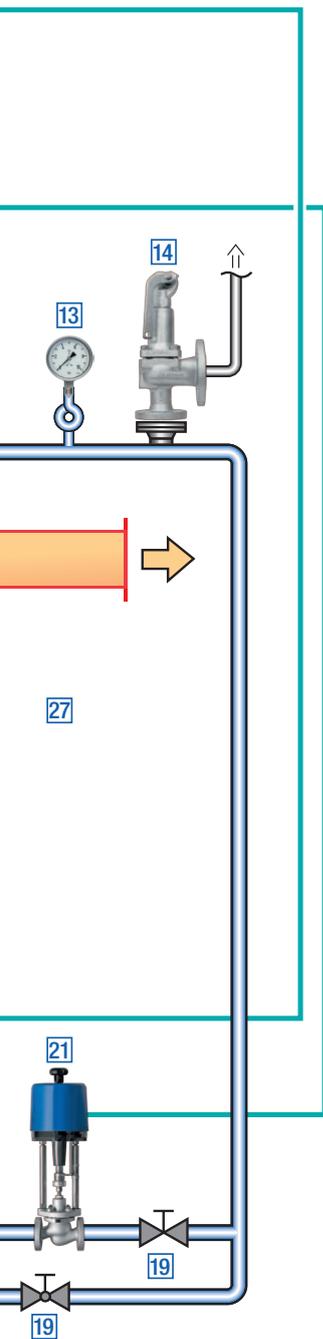


# GESTRA Steam Boiler Equipment – SPECTORmodule –

For operation without constant supervision according to EN 12953



## The benefits in detail



Key	Function
1	Low-level limiter of "high-integrity design": level electrode NRG 16-50, level switch NRS 1-50, SIL 3
2	Separate high-level alarm of "high-integrity design": level electrode NRG 16-51, level switch NRS 1-51, SIL 3
3	Level control with high-level alarm and remote water level indicator: level probe NRG 26-21, level controller NRR 2-52, control terminal and display unit URB 50 und control valve V 725
4	Water level gauge
5	Conductivity measurement with indication, limit switch and continuous blowdown control: conductivity electrode LRGT 16-2, continuous blowdown controller LRR 1-53, continuous blow down valve BAE, control terminal and display unit URB 50
6	Sample cooler
7	Blowdown flash vessel
8	Residual blowdown cooler
9	Automatic intermittent blowdown: intermittent blowdown valve MPA, pilot valve
10	Blowdown receiver
11	Pressure limiter DSF
12	Pressure transmitter DRT
13	Pressure gauge
14	Safety valve GSV
15	Safety temperature monitor/limiter: resistance thermometer TRG, temperature switch TRS 5-50, SIL 3
16	Thermometer
17	Strainer
18	Vent valve
19	Stop valve (also in bypass)
20	Non-return valve
21	Electrical or pneumatic control valve V 725
22	Feedwater pump
23	Monitoring of the feedwater/condensate
24	Burner control unit
25	Burner
26	Superheater
27	Economizer

### 1. No risk of overheating:

- Patented thermal barrier in cylindrical body above electrode flange
- Electronic temperature protection in the terminal box
- Minimization of thermal effects

### 2. Easy installation and maintenance:

- Freely accessible connecting terminals in the control units
- Large terminal box for easy installation

### 3. Reduced cost:

- Minimized inventory and reduced spare parts
- Supply voltage 24 VDC, i. e. independent of national supply voltages
- Supply via reliable networks possible without additional components (inverters)
- Intuitive operating using rotary push-button
- Indication by 7-segment digital display

### 4. Increased safety:

- SIL 3 certification

### 5. SPECTORmodule Touch

- Separation of power components and operating level, i. e. no elaborate wiring needed in the control cabinet.
- Use of a colour touch display for intuitive, clear operating that is language-neutral



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