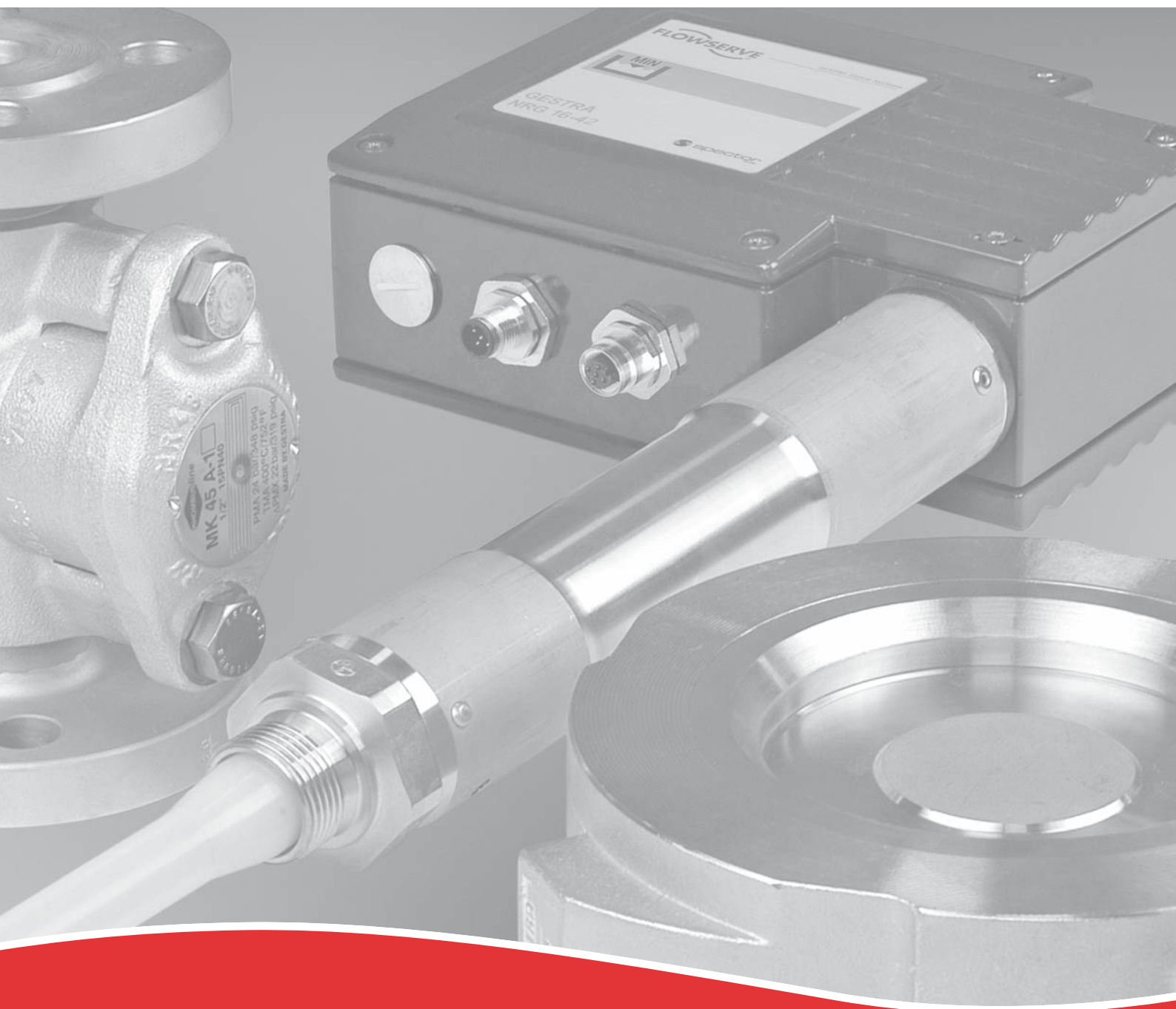


GESTRA

Product Overview

The optimum components for every application





Steam Traps

BK Range

Steam traps with regulator of DUO stainless steel up to PN 630. BK traps are suited to the toughest operating conditions. The DUO stainless steel regulator makes this steam trap particularly resistant to waterhammer and frost.



BK 45
In applications up to PN 40. For air-venting.

MK Range

Steam traps with membrane regulator up to PN 40. 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 22 bar. For air-venting.

UNA Range

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



UNA 1 (left) and UNA 2
Adaptable for horizontal or vertical installation.

Trap Monitoring

The Vaposcope VK makes the flow processes in pipelines visible by sight-glass. For monitoring the heat exchange surfaces and condensate piping. 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 10–40, 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 50–1200, 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



RK 41



RK 86



CB 26



BB



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



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



Cooling Water Control Valves

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





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

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.



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.



Background: Energy Recovery

Energy Recovery after Continuous Blowdown

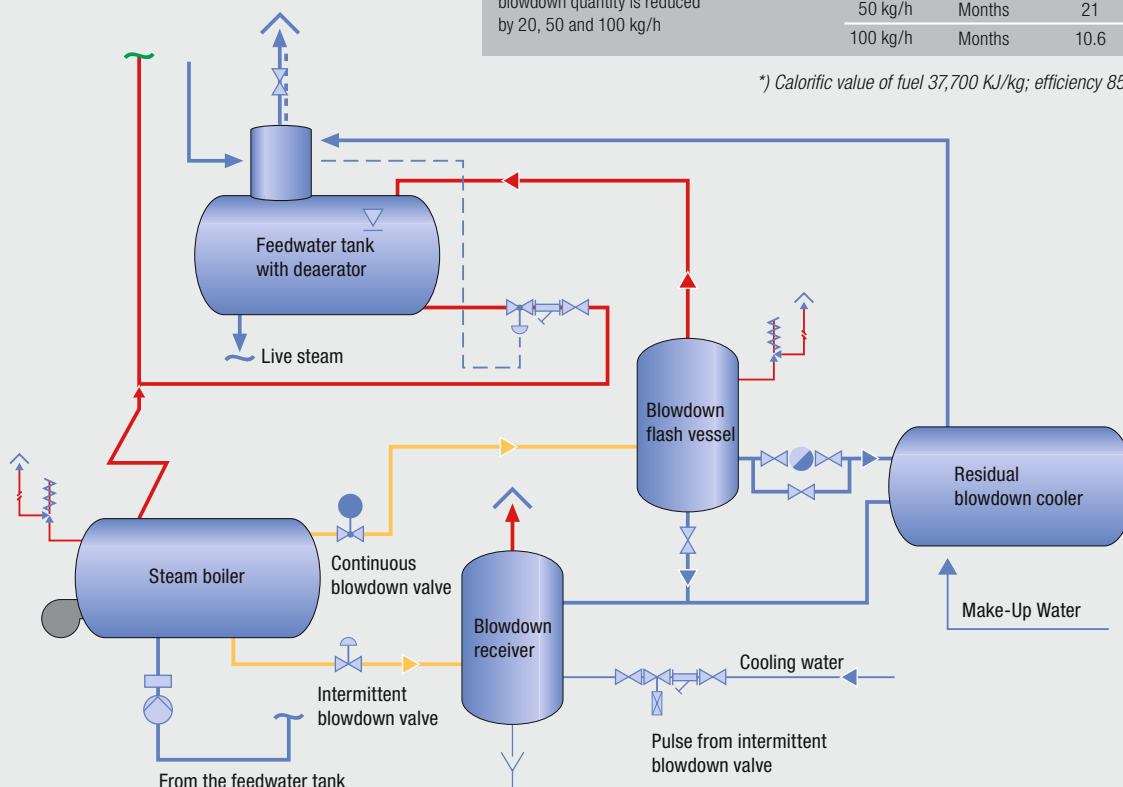
After continuous blowdown, irrespective of whether automatically controlled or manually set, it is easily possible to utilize the dissipated heat. For example, in a GESTRA blowdown flash vessel, the energy generated by the continuous blowdown in the boiler blowdown is recuperated to a large degree by 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 %.



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		Months	55	47	43
		Months	21	18	17
		Months	10.6	9	8.3

Schematic diagram of a blowdown flash installation with blowdown receiver

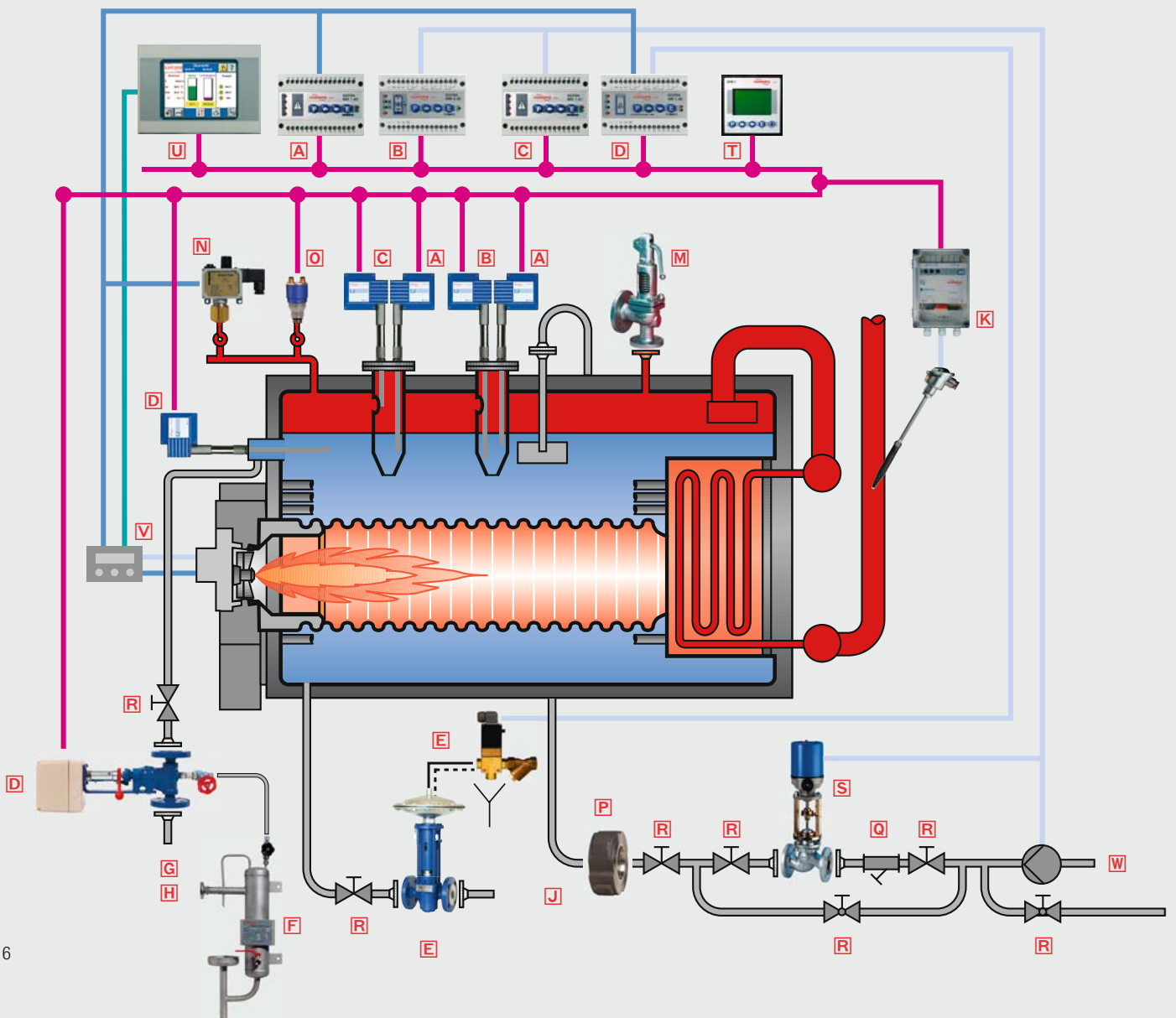


*) Calorific value of fuel 37,700 KJ/kg; efficiency 85 %; feedwater temperature 10 °C



GESTRA Steam Boiler Equipment with Bus Technology

For operation e.g. according to TRD 604 (72 h) or EN 12953 (24 h)





- A** Low-level limiter of “high-integrity design”:
level electrode NRG 16-40, level switch NRS 1-40.1 ¹⁾
- B T** Modulating level controller with integrated 2nd water level and conductivity indicator: level probe NRG 26-40, level controller NRR 2-40, control terminal and display unit URB 1 (URB 2)
- C** High-level alarm of “high-integrity design”:
level electrode NRG 16-41, level switch NRS 1-41 ²⁾
- D E** Conductivity measurement and continuous/intermittent blowdown:
conductivity electrode LRG 16-40, continuous blowdown controller LRR 1-40, continuous blowdown valve BAE, intermittent blowdown valve MPA, 3/2-way pilot valve, strainer
- F** Sample cooler
- G** Blowdown flash vessel
- H** Residual blowdown cooler
- J** Blowdown receiver
- K** Safety temperature limiter: resistance thermometer TRG 5-65, temperature preamplifier TRV 5-40, level switch NRS 1-40.1 ¹⁾
- M** Safety valve GSV
- N** Pressure limiter DSF
- O** Pressure controller/transmitter
- P** Disco non-return valve RK 86
- Q** Strainer GSF
- R** Stop valve GAV
- S** Electrical/pneumatic control valve V 725
- T** Control terminal and display unit URB 1 (URB 2)
- U** Process data acquisition SPECTOR*control* with interfaces:
CAN, MODbus, Ethernet, modem, Profibus (optional)
- V** Burner control unit
- W** Monitoring of the fresh water:
 - ▶ Demineralization equipment – using conductivity monitoring
 - ▶ Partial demineralization equipment: by monitoring residual hardness (not part of our product range)

The benefits in detail

No risk of overheating

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

Easy installation and maintenance

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

Reduced cost

- Minimized inventory and spares levels
- Only a single cable needed between boiler and control cabinet
- Only one cable in the control cabinet for all sensing units
- Optimum system integration without additional cable installations

Increased safety

- Active cable monitoring
- Easy integration into visual display and automation systems

Get a technical lead with the first and only control package for energy supply centres using an open CAN-bus system. Only GESTRA permits easy interfacing to other open bus systems.

¹⁾ Only **one** electronic control unit is needed.

²⁾ Not required by EN.



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