Instructions for Installation and Maintenance

GESTRA® Reactomats
Continuous Blowdown Valves
BA 28, BA 29, BA 210, BA 211

Issue Date: 9/93

Blowdown Valves
PN 63 – 320
DN 25 mm (1")

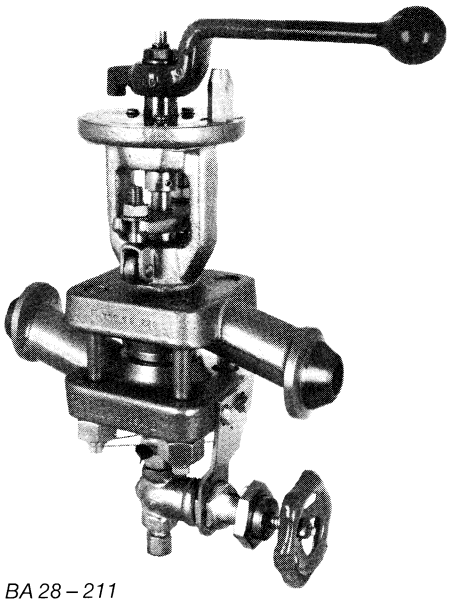
A 3

BA 28, BA 29, BA 210, BA 211

Description

Continuous blowdown valve with GESTRA stage nozzle, regulating lever, calibrated scale and sampling valve.

Application e. g. for continuous blowdown of steam boilers, evaporators, Quench coolers and as regulating or dosing valve for all industries.



BA 28 – 211

Range

Admissible pressures and temperatures in accordance with DIN 2401, sheet 2.

If used as continuous blowdown valve (at saturation temperature):

BA 28 max. 63 bar g (915 psig)
BA 29 max. 94 bar g (1360 psig)
BA 210 max. 142 bar g (2060 psig)
BA 211 max. 226 bar g (3280 psig)

Max. temperature		°O	120	200	250	300	350	400	450	500	530
Max. service pressure	BA 28 PN 63/100	bar g	100	80	70	60	56	50	–	–	–
		psig	1450	1160	1015	870	810	725	–	–	–
	BA 29 PN 160*)	bar g	160	130	112	96	90	80	–	–	–
		psig	2320	1885	1625	1390	1305	1160	–	–	–
	BA 210 PN 250*)	bar g	250	200	175	150	140	125	–	–	–
		psig	3625	2900	2540	2175	2030	1810	–	–	–
	BA 211 PN 320*)	bar g	320	320	320	320	304	292	278	237	124
		psig	4640	4640	4640	4640	4410	4235	4030	3435	1800

*) For relatively small capacities (see charts) use BA 29k, 210k or 211k with special stage nozzle.

Installation

1. Flow in the direction of arrow. Installation in any position, calibrated scale clearly legible.
2. If possible, connect the BA immediately below the lowest water level.
3. Never connect valve to the lower connection of the water-level indicator.

Install an isolating valve upstream of BA valve.

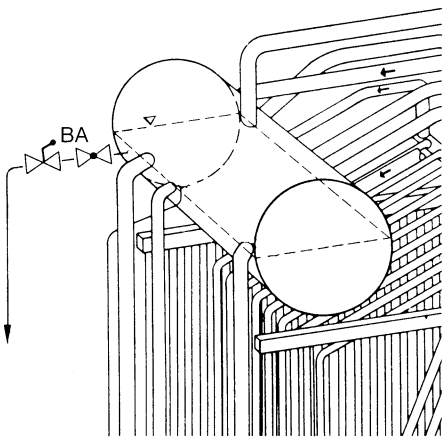
Operation

Adjustment

1. Chart 1 indicates the boiler-water quantity in kg/h to be discharged to keep the boiler water density below the admissible value.
2. The scale division required to obtain the necessary capacity can be read from chart 2 or 3.
3. The valve is adjusted by turning the regulating lever to the scale division found in the chart.
4. In purge position (regulating lever against stop) the capacity is approximately three times the capacity at scale division 100. The blowdown valve should only be set to purge position for a few seconds to avoid the risk of wire drawing.

Taking of Samples

For the purpose of determining the boiler-water density water samples can be taken through sampling valve **14**.



GESTRA Reactomat BA
at the upper drum
of a water-tube boiler

A3

Blowdown Valves
PN 63 – 320
DN 25 mm (1")

BA 28, BA 29, BA 210, BA 211

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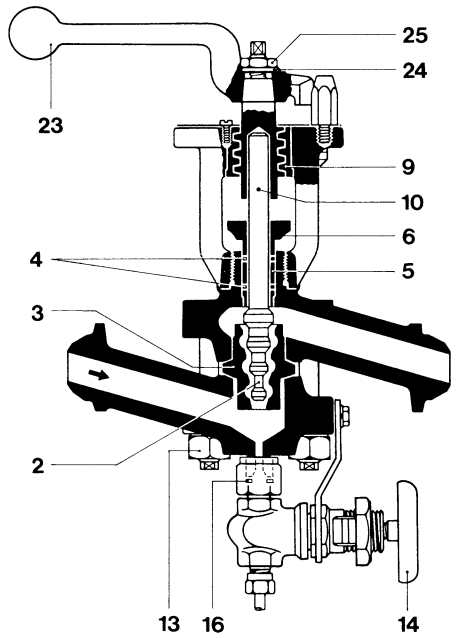
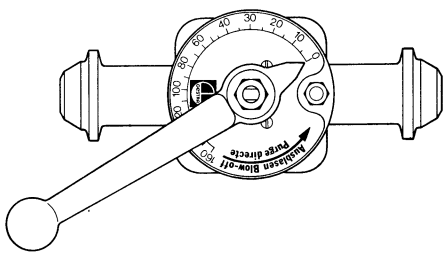




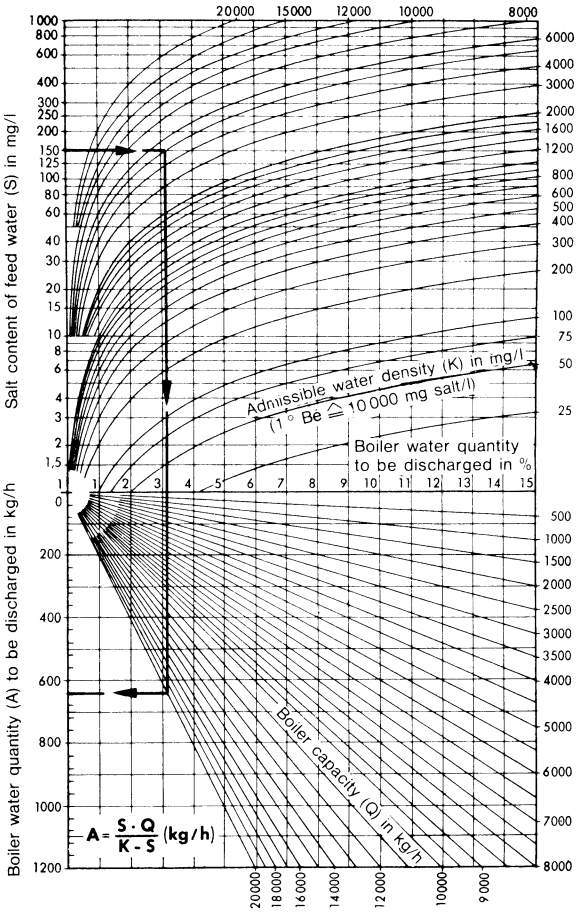


Chart 1

Example

Salt content of feed water	S = 150 mg/l
Admissible boiler-water density	K = 5000 mg/l
Boiler capacity	Q = 20 000 kg/h
Boiler-water quantity to be discharged	**A ≈ 640 kg/h**

Maintenance

Special maintenance is not required. To remove sludge accumulations it is recommended to place the operating lever for a few seconds in purge position under full boiler pressure.

Dismantling and Assembling of Stage Nozzle

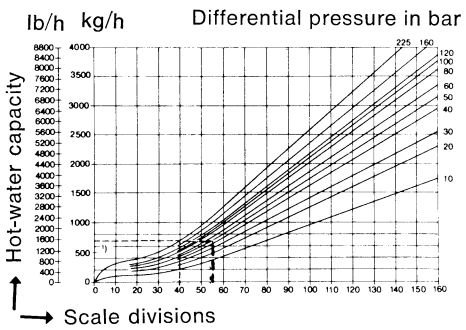
Should a dismantling of the stage nozzle become necessary, proceed as follows:

1. Isolate the valve from pressure and close the discharge line, if under pressure. Open sampling valve **14**.
2. Loosen nuts **13** (spanner A.F. 32 mm) and remove upper body part from lower body part. Pull out nozzle insert **3** from below.
3. Knock out adaptor sleeve **10**, remove gland **6** and pull out nozzle stem **2** from below.
4. Reassembly in reverse order.
5. In the closed position of the valve the pointer of the regulating lever should be positioned on zero. If this is not the case, remove nut **25** and washer **24**, remove regulating lever **23**. Turn nozzle stem **2** completely to the right to obtain the closed position of the valve. Replace regulating lever **23** in such a way that the pointer is positioned on zero. Screw on nut **25** with washer **24**.
6. Adjustment see corresponding chapter under "Operation".

Parts Subject to Wear

Parts Nr.	Designation	Number
2	Nozzle stem	1
3	Nozzle insert	1
4	Graphite rings	2
5	Graphite rings	4
10	Adaptor sleeve	1
16	Gasket	1

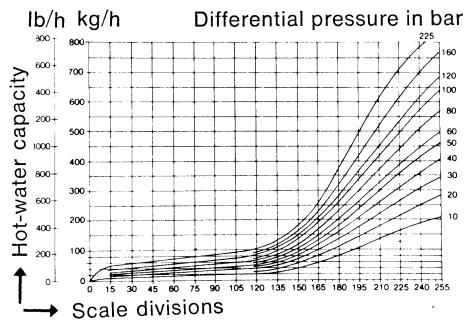
Chart 2: BA 28, 29, 210, 211



Example

Capacity required	640 kg/h
Differential pressure	40 bar
Scale graduation	**55**

Chart 3: BA 29k, 210k, 211k



Technical modifications reserved.

813252-00/993

Addition to Installation Instructions

Usage for the intended purpose

a) Steam Traps: BK 27 N, GK 11, GK 21, TK 23, TK 24, UNA 27h, UNA 39, UNA PN 25, UNA Special
Use steam traps only for the discharge of condensed water in steam lines. Observe the admissible pressure/temperature ratings and technical specifications, taking the chemical suitability and corrosion resistance of the pressure equipment into account.

b) Strainers: SZ 26 A
Use strainer SZ 26 A only for fluids of group 2 (not dangerous) to filter out solid impurities and dirt particles from steam and condensate lines. Observe admissible pressure/temperature ratings and technical specifications, taking the chemical suitability and corrosion resistance of the pressure equipment into account.

c) Sightglass: VK 16
Use sightglass VK 16 only for fluids of group 2 (not dangerous) for visual readings of condensate levels in steam/condensate lines. Observe admissible pressure/temperature ratings and technical specifications, taking the chemical suitability and corrosion resistance of the pressure equipment into account.

d) Intermittent and continuous boiler blowdown valves: BA, BAE, MPA, PA
Use boiler blowdown valves only for removing a portion of boiler water to reduce the total dissolved solids (TDS) concentration or to discharge sludge in blowdown lines. Observe admissible pressure/temperature ratings and technical specifications, taking the chemical suitability and corrosion resistance of the pressure equipment into account.

Chemical Resistance

The wear and corrosion resistance of the equipment has to be verified for the application in question. Special caution should be taken when handling hazardous materials. In case of doubt contact the manufacturer for specific recommendations regarding the chemical suitability of the equipment.

Safety Note

GESTRA equipment may only be installed by qualified staff.

Qualified staff are those persons who – through adequate training in engineering, the use and application of equipment in accordance with regulations concerning steam systems, and first aid and accident prevention – have achieved a recognised level of competence appropriate to the installation and commissioning of the device.

Danger

The valve is under pressure during operation.

When loosening flanged connections or sealing plugs hot water, steam, corrosive liquids or toxic gases may escape. This presents the danger of severe burns and scalds to the whole body or severe cases of poisoning.

Installation and maintenace work should only be carried out when the system is depressurized.

The valve becomes hot or extremely cold during operation. This presents the risk of severe burns to hands and arms. Installation and maintenace work should only be carried out at room temperatures.

Sharp edges on internals present a danger of cuts to hands. Always wear industrial gloves for installation and maintenance work.

If required, ask for the Declaration of Conformity covering the product in question at gestra.gmbh@gestra.de.
Please note that not all valves have to bear the CE marking.

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