# Continuous desalting valve

## For steam boilers

**Model 560**

EN

The continuous desalting valve is used to empty an adjustable quantity of water from the steam boiler, removing:

- Organic matter and mineral salts in solution. (Calcium, magnesium, sodium, potassium, iron, bicarbonate ions, chlorides, sulphates, nitrates, ...etc.).
- Solid materials in suspension. (Sand, clay, metal residues, rock residues, organic matter, ...etc.).

The continuous bleeding process prevents:

- Damage caused by erosion and perforation, entailing the following high costs:
  - — Direct: Replacement or repair of materials.
  - — Indirect: Stoppages, product losses, ...etc.
- Danger of boiler explosion.

and reduces:

- Incrustations and sediments caused by precipitation of calcium and magnesium salts, which obstruct thermic transmission and which cause unnecessary and excessive fuel consumption.
- Foam formation caused by excessive saline concentration, with its corresponding drag.

Nominal pressure: PN-40.
Flange connection: DN-15 and 20 (EN-1092-1).

### Specifications

— Consists of Faucet for taking samples and Measuring nozzle in one single unit.

1 Faucet for taking samples: Makes process of analysing the salt concentration of boiler water easier. Possibility of guided connection for pipes with a Ø of 6/8 mm.

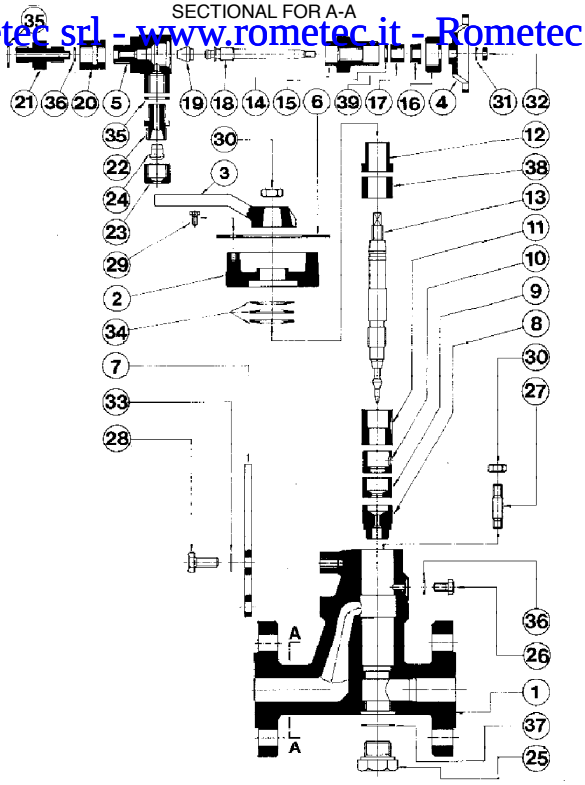
2 Reader plate: Allows bleeding positions to be seen clearly and concisely, even from some distance away.

3 Control lever. For precise and progressive adjusting of quantities to be bled.

4 Plug for draining the measuring nozzle.

5 Measuring nozzle: Acts as a valve, measuring and control organ. The water under pressure expands silently and gradually into it. Thus, dirt, incrustations and salt deposits are removed. Due to this gradual expansion, the system does not suffer erosion.

SECTIONAL FOR A-A




| N° PIECE | PIECE | MATERIAL |
|---|---|---|
| 1 | Body | Cast steel (EN-1.0619) |
| 2 | Gland body | Nodular iron (EN-5.3106) |
| 3 | Control lever | Cast iron (EN-5.1300) |
| 4 | Flywheel | Aluminium (EN-AC-44200) |
| 5 | Sample-taking faucet body | Stainless steel (EN-1.4008) |
| 6 | Reader plate | Aluminium |
| 7 | Lever lock | Carbon steel (EN-1.1141) |
| 8 | Measuring nozzle seating | Stainless steel (EN-1.4028) |
| 9,10 | Measuring nozzle cap | Stainless steel (EN-1.4028) |
| 11 | Measuring nozzle endless nut | Stainless steel (EN-1.4028) |
| 12,17 | Gland | Carbon steel (EN-1.1191) |
| 13 | Measuring nozzle shaft | Stainless steel (EN-1.4028) |
| 14 | Sample-taking faucet gland body | Carbon steel (EN-1.1191) |
| 15 | Sample-taking faucet gland washer | Stainless steel (EN-1.4401) |
| 16 | Gland nut | Carbon steel (EN-1.1191) |
| 18 | Sample-taking faucet shaft | Stainless steel (EN-1.4401) |
| 19 | Seal | Stainless steel (EN-1.4401) |
| 20 | Sample-taking faucet connection nut | Carbon steel (EN-1.1191) |
| 21 | Sample-taking faucet connection | Carbon steel (EN-1.1191) |
| 22 | Adapter | Carbon steel (EN-1.0308) |
| 23 | Adapter nut | Carbon steel (EN-1.0308) |
| 24 | Cutting ring | Carbon steel (EN-1.0308) |
| 25 | Draining plug | Carbon steel (EN-1.1191) |
| 26,28 | Screw | Carbon steel (EN-1.1191) |
| 27 | Stud | Carbon steel (EN-1.1181) |
| 29 | Screw | Stainless steel (EN-1.4401) |
| 30 | Nut | Carbon steel (EN-1.1141) |
| 31 | Washer | Stainless steel (EN-1.4401) |
| 32 | Nut | Stainless steel (EN-1.4401) |
| 33 | Washer | Carbon steel (EN-1.1141) |
| 34 | Disc spring | Vanadium chrome steel (EN-1.8159) |
| 35, 36, 37 | Joint | Copper |
| 38, 39 | Seal | Graphite |

| | | | | | |
|---|---|---|---|---|---|
| DN | | 15 and 20 | | | |
| PN | | 40 | | | |
| OPERATING CONDITIONS | PRESSURE IN bar | 40 | 35 | 32 | 28 |
| | MAXIMUM TEMP. IN °C | 120 | 200 | 250 | 300 |

**Installation**

a) Make a by-pass with some kind of drilling pipe, leading out from inside the steam chamber at 30÷50 mm. below the minimum water level.

b) Connect this by-pass to the continuous desalting valve, which can be installed in any position.

c) Convey the water coming out of the valve to the outlet.

When the bleeding percentage is high, the heat can be overcome using an exchanger.

**Operation, efficiency and emptying**

To establish the boiler's salinity, the quantity of salts extracted per unit of time must be equal to that of the water supply in this same period. This can be expressed in the following way:

$$M \cdot A = S \cdot P$$

Q = Real steam production of the boiler. (Kg/h).
A = Water supply. (l/h).
M = Salinity of the water supply. (mg/l).
P = Water extracted in the bleeding process. (l/h).
S = Desired salinity inside the boiler. (mg/l).
ϱ = Specific mass of water inside the boiler. (Kg/l).
p = Working pressure. (bar).

Example:
Q = 1.000 Kg/h.
M = 1.000 mg/l.
S = 6.000 mg/l.
ϱ = 1 Kg/l.
p = 13 bar.

The effect is achieved when the salts are removed continuously and without movement to prevent uncontrolled water losses from the boiler.

The water to be bled in relation to the steam produced is:

$$P = \frac{M}{(S-M) \cdot \varrho} \cdot Q$$

P = 200 l/h.

Using the calibrated scale, the lever allows exact adjustment of the measuring nozzle.

We shall set the lever at the position that allows us to remove a volume of water (P) at a differential pressure.
Differential pressure = Working pressure - (Back pressure + Load losses).
Continuous desalting is achieved with adjustment values of 0 to 35.

The position "Direct bleeding" corresponds to the section of nozzle that is totally open and allows complete bleeding in a few seconds. In this case, the volume is approximately three times greater than that for 35 on the scale.

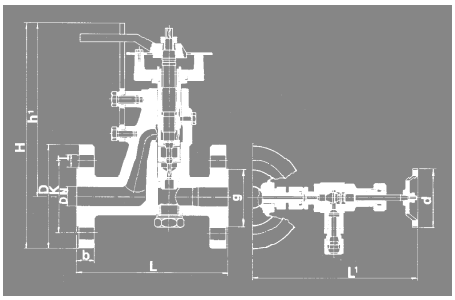
The combination of the Continuous desalting valve* and the Blowdown valve for bleeding dirt and sludge• is essential for optimizing the boiler's efficiency, and include its maximum security and availability.

Neither of them can be replaced with others not designed for this specific application.

Their moderate cost is depreciated in the short term.

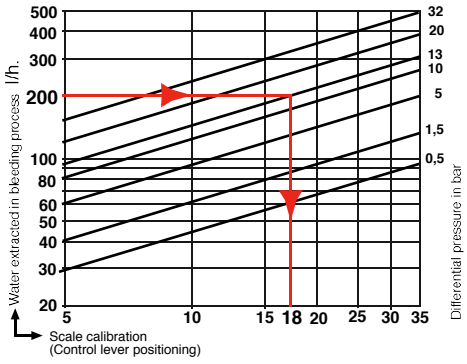
* (See brochure for Models 560-A).

• (See brochure for Models 260, 260-A and 460).




| DN | 15 (1) | 20 |
|---|---|---|
| H | 222 | 227 |
| h1 | 174 | 174 |
| L | 150 | 150 |
| L1 | 167 | 167 |
| d | 60 | 60 |
| D | 95 | 105 |
| K | 65 | 75 |
| l | 14 | 14 |
| b | 16 | 18 |
| DRILLS N°. | 4 | 4 |
| WEIGHT IN Kgs. | 5,30 | 5,70 |
| CODE 2102-560- | 8024 | 8344 |

(1) Pitch Ø 20 mm.

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