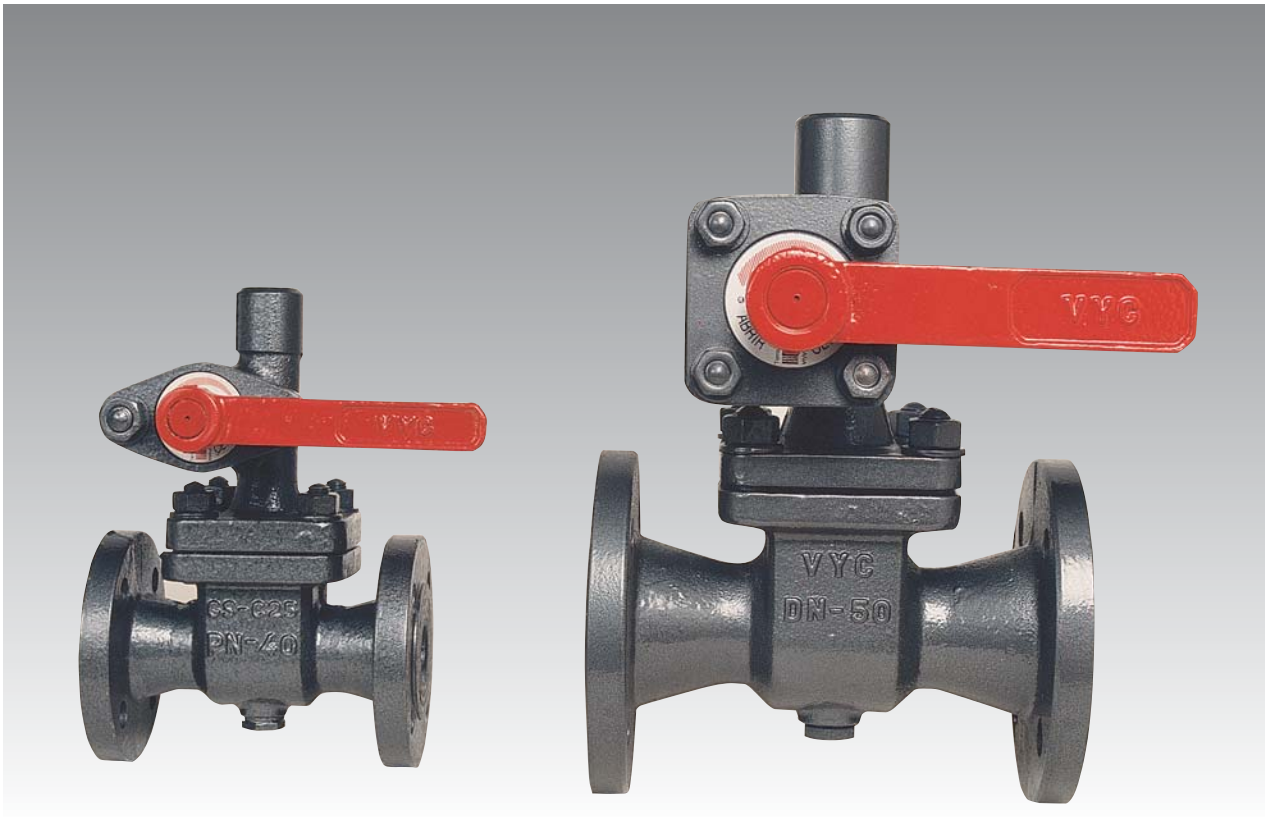
Blowdown valve for bleeding dirt and sludge

For steam boilers Model 460

EN



The water in the boiler contains salts, which are built up by the continuous evaporation. If these salts are not eliminated, bubbles and foam are formed when the density of the water increased.

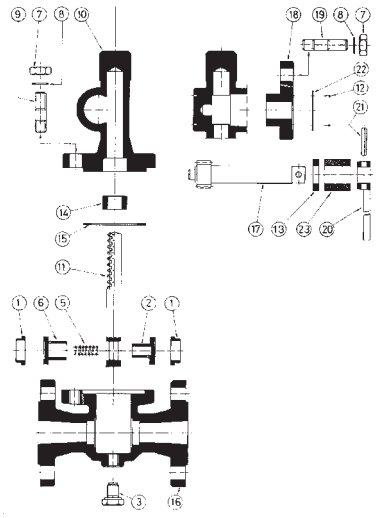
To prevent these lime deposits forming, the water supply must be suitably treated, with the result that certain salts are changed producing impurities which form sludge and encrusted deposits which then adhere to the sides or the bottom of the boiler and to the combustion tubes, together with particles of dirt, remains of electrodes, carbonic acid, oxygen, etc. This leads to a high level of rust which may:

- Destroy the metal plate of the boiler, causing high maintenance costs.
- Produce thermic voltages, causing cracks in the metal plate and soldering cord.
- Notably slow down thermic transmission, meaning an unnecessary and excessive consumption of fuel.

Nominal pressure: PN-40.
Permitted pressures and temperatures according to DIN-2401. Sheet 2.
Flange connection: DN-25, 32, 40 and 50 (EN-1092-1).

Specifications

— A the draining section is opened quickly and completely by driving the lever from right to left. The deposits, collected at the bottom of the boiler, are disturbed and sucked up by the sudden air intake which carries them out.
— Direct emptying passage, meaning a high volume and low level of load loss.
— Rotating the lever from left to right causes instant closing, preventing irrevocable losses of water and pressure.
— Seatings and stoppers treated and balanced ensuring a level of tightness higher than that required by DIN-3230, Sheet 3.
— Equipped with a screw for the drainage of the sedimentations.
— Simplicity of design ensures good performance.



According to demand: Closing surfaces with "stellita n°. 6" DIN-8555.

N°. PIECE	PIECE	MATERIAL
1	Seating	S. steel (EN-1.4028)
2,6	Plug	S. steel (EN-1.4028)
3	Cap	Carb. steel (EN-1.1191)
4,15	Coupling	Graphite
5	Spring	S. steel (EN-1.4310)
7	Nut	Carb. steel (EN-1.1141)
8	Washer	Carb. steel (EN-1.1141)
9,19	Stud	Carb. steel (EN-1.1181)
10	Cover	Cast steel (EN-1.0619)
11	Rack	S. steel (EN-1.4305)
12	Rivets	Carb. steel (EN-1.1141)
13	Gland disc	Bronze (EN-CC491K-GZ)
14	Valve base	Bronze (EN-CC491K-GC)
16	Body	Cast steel (EN-1.0619)
17	Axis with pinion	S. steel (EN-1.4305)
18	Gland	Cast steel (EN-1.0619)
20	Lever	Cast iron (EN-JL1030)
21	Elastic gudgeon	Carb. steel (EN-1.1231)
22	Gauge plate	Aluminium
23	Seal	Graphite

DN		25 to 50		
PN		40		
OPERATING CONDITIONS	PRESSURE IN bar	40	35	32
	MAXIMUM TEMP. IN °C	120	200	250

Efficiency and Emptying

Bleeding processes should coincide as far as possible with moments when the water is at rest or at minimum steam extraction, so that the deposits are collected at the bottom of the boiler.

Carry out bleeding process at least every 8 hours. The effective duration is estimated to be 3÷4 seconds although we recommend you keep to the following mathematical model:

To establish the salinity of the water, the quantity of salts extracted per unit of time must be equal to that of the water supply in this same period. Which can be expressed:

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

Where:

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 = 1.850 Kg/h.
M = 150 mg/l.
S = 4.000 mg/l.
ϱ = 1 Kg/l.
p = 20 bar.

The water to be bled compared to the steam produced is:

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

P = 72,07 l/h.

For the DN the volume (C) in l/s can be calculated as shown in the diagram.

C = 18 l/s.

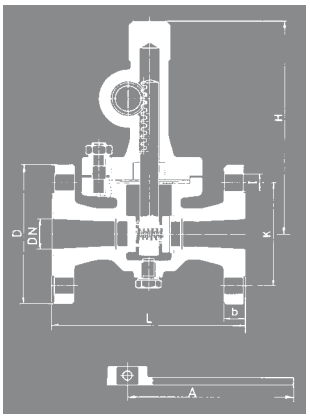
The quotient (P/C) tells us the intervals between bleeding processes and the duration of them (T) in seconds per hour.

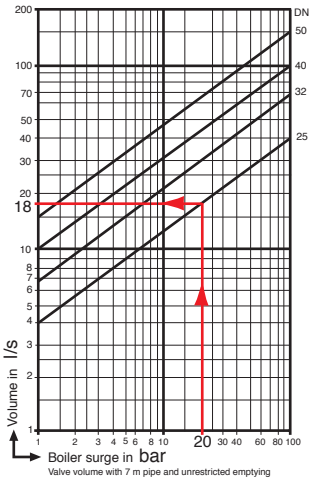
T = 4 s.
- The boiler will bleed itself for 4 seconds every hour.
- If, in accordance with the mathematical model, times shorter or longer than 3÷4 seconds are obtained, the bleeding process must be carried out more or less times.

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 and 560-A).
• (See brochure for Models 260 and 260-A).





DN	25	32	40	50
H	179	245	245	245
L	160	180	200	230
D	115	140	150	165
K	85	100	110	125
I	14	18	18	18
b	18	18	18	20
A	135	170	170	170
DRILLS N°.	4	4	4	4
WEIGHT IN Kgs.	8,50	16,40	18,50	20.00
CODE	2103-460.8104	2103-460.8144	2103-460.8124	2103-460.8204

VYC industrial, sa
Founded in 1914
www.vycindustrial.com
Avenc del Daví, 22 Pol. Ind. Can Petit 08227 TERRASSA (Barcelona) SPAIN
+34 93 735 76 90 +34 93 735 81 35 119 info@vycindustrial.com