DIN PN 40 — DN 40 - 50 mm
ANSI 300 — 1.1/2" - 2"

DS 31, 35

Application

Fast blowdown valve for periodic lyes and salts of steam boilers extractions, pressurized vessels and similar equipments. They are also applicated in liquids, gases, or steam whenever they impose instantaneous closing and openning.

Main features

-Instantaneous closing and openning of the passage full section make the maximum effect of silt extraction and minimum loss of pressure and hot water.
- Exttremely high closing force assures the absolute stanching of valve;
- Economy and security about performance of steam boilers;
- DS 35 with duo functional valve: Fast-action blowdown and continuous boiler descharge;
- In the DS 31: lever located in longitudinal and transversal direction of the flow and arm of lever in horizontal and vertical position.

Presentation

Hand-operated valves DS 31
Flanged straight passage with body (1), seat (1.1) and plug (1.2) and of the frame with driving lever (2.1) and mechanism spring (2.3). The valve has as features, handed wheel on the top, for aditional auxiliar blocking.
In its normal execution, the valves DS 31 are supplied with lever (2.1) in the same flow and arm direction (2.2) of lever, in horizontal position.
For other assenbley positions , look item “special executions”.

Pneumatic driving valves DS 35

Flanged straight passage valves with body (1) seat (1.1) and PLUG (1.2) and of the frame (2) with mechanism spring (2.3) and lateral wheel (2.5), besides the pneumatic actuator (2.4) combined with pneumatic-electronic programmer ASCA AT 03N, becomes de silt extraction totally automatic (Look automatic Descharge).
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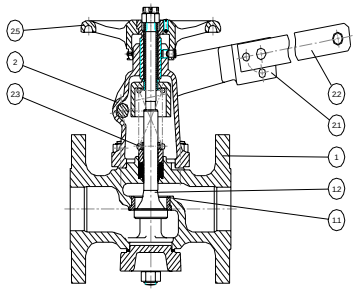
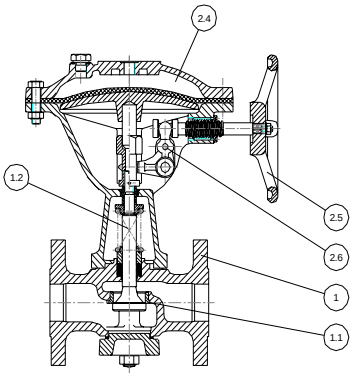
DS 31



DS 35



Attention: Is necessary to unlock before using the wheel.

Technical competence, materials and connections

Models			DS 31	DS 35	
Nominal pressure			DIN PN 40	ANSI 300	
Nominal diameter		(mm)	40	50	
		(pol)	1.1/2"	2"	
Maximum service pressure		(bar)	40	35	32
		(PSI)	570	500	450
Maximum correspondent temperature		(ºC)	120	200	250
		(ºF)	248	392	482

	Nº	Description	Quantity DS31	Quantity DS35	Specification
Materials	1	Body	01	01	ASTM A 216 Gr. WCB
	1.1*	Seat	01	01	AISI 420 heat treated
	1.2*	Plug	01	01	AISI 440 heat treated
	1.3	Lower cover	01	01	ASTM A 126 Gr. B
	2	Common frame	01	-	
		Frame with diaphragm	-	01	
	2.1	Complete actioning lever	01	-	ASTM A395
	2.2	Arm of the lever	01	-	
	2.3	Spring mechanins	01	01	Carbon steel
	2.4	Pneumatic actuator with menbrane	-	01	ASTM A395
	2.5	Wheel	01	01	
	2.6*	Wheel lock	01	01	Carbon steel
Connections: flanged					DIN PN 10/16 or 25/40; ANSI 150 or 300

*Recommended spare parts

Descharge

Special executions

Valve DS 31

- Driving lever (2.1) in right and left position.
- Arm (2.2) of driving lever in vertical position.

When specified in the order, these special executions are supplied without addition in the price. If necssary, these positions can be Mountained by the own user, following the orientation given in “instructions for installation and maintenance”, that follow the valves.

Optional

Pedal for driving of the lever in the valves DS 31. Suplying by means of price increase.

Installation

Isn’t necessary installation of a blocking valve the sum in the valves DS 31 and DS 35 because the handed wheel (2.5) can be locked in open position. The flow must obey the direcion indicated by the arrow , in the body. For more details, consult “instructions for installation and maintenance” together the devices.

Operating

The fast periodic descharge valves of the DS series, when are operated, liberate instanteneously the full section of passage and close automatcally, by spring effect, wth the same spped. The immediate and integral liberation of the passage is decisive for getting the brusque aceleration of descharge, what optimizes the extraction silt effect, minimizing the pressures and hot water losses. The total force of closing is extremelly high assuring the absolute stanching of valve and corresponds to 1800 Kgf for both models. Part of this force is produced automatically by spring mechanism (2.3) and the rest, when necessary, by handed wheel closing (2.5). The wheel (2.5) is also usefull to keep the valve hand closing the improper driving or open it for empting the boiler. (look, also, technical information 0401- “Steam boilers”- Silt extraction).

Dimensioning

For determinate the intervals of the blowdown is necessary to know what is the quantity of water to be descharged from the boiler, specially if there is no a continuous desalting valve (serie DB from ASCA, look prospects PR-04.10.10-I and Technical information 0402-”Steam boilers-continuous desalting”), that would keep the concentration of solid in suspension in admissible limits.

The chart 1 indicates the quantity of water, in Kg/s to be descharged in function of content saline of alimentation water, of the admissible maximum density in the water from the boiler and the capacity generator of the boiler.

The chart 2 indicates the capacity of flow in Kg/s of respective valves. The necessary duration openning (indicated in seconds per hour), results from division of quantity found on the chart 1 per flow found on chart 2. Each descharge must be limited in 3 seconds, if there is need of a duration more drawn out, the descharges must be repeated with more frequency, shorting the intervals among them.

Exemple

Following the sketched line on chart 1 we find:

Saline content of alimentation water .

S = 150 mg/ l

Admissible density of water in the boiler

K = 5000 mg/ l.

Generator capacity of the bloiler Q=1600 Kg/h and, finally, the quantity of water to be descharged A = 50 Kg/h.

Noticing the Sketched line of the chart 2, we find:

Boiler pressure = 6 bar.

Nominal diameter of boiler dep exit DN 40 mm (1.1/2’’) and therefore, the correspondent flow of the valve DS 31 or DS 35, DN 40 mm (1.1/2’’).

Determination of the total closing time and of the extention of the intervals among descharges

If we divide the partial result found on chart 1 by partial result found on chart 2, we get the necessary total closing duration in the period of one hour:

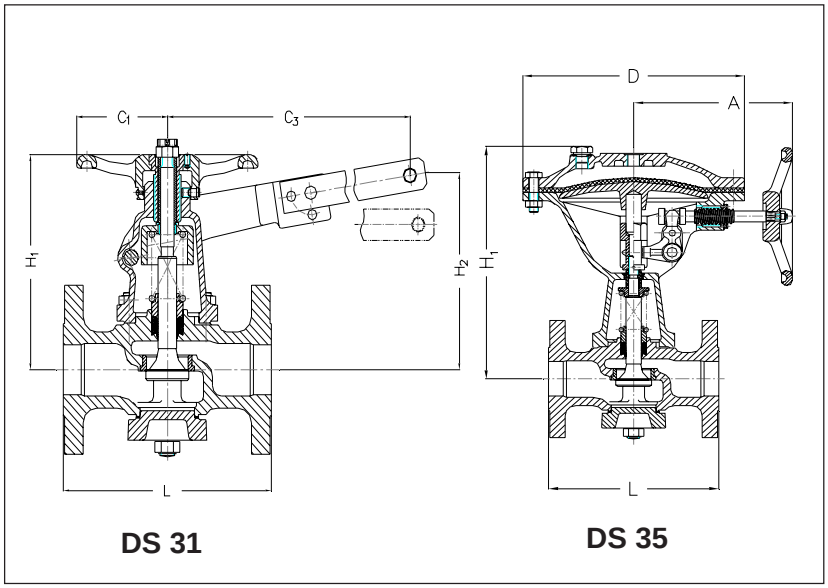
$$\frac{50}{12} = 4 \text{ seconds per hour.}$$

Considerinig that the duration of each descharge must be fixed in 3 seconds, we use a simple “three rule” for determinating the intervals among discharges:

$$\frac{4}{3} = \frac{60}{X} \qquad X = \frac{3 \times 60}{4} = 45 \text{ minutes}$$

Measures and weights

Models		DS 31		DS 35	
DN	(mm)	40	50	40	50
	(pol)	1.1/2"	2"	1.1/2"	2"
Measures (mm)	H_1	230		333	
	H_2	257		-	
	C_1	55		-	
	C_3	690		-	
	D	-		300	
	A	170		220	
	L	230		230	
approx. weights	(Kg)	22,5	24,0	34,5	36,0



Automatic discharge

The eletronic-pneumatic programmer AT 03N from ASCA emit impulses with the neccessary duration to keep the valve open during 3 seconds, to adjustable intervals from 0 to 9,9 hours, becoming the extraction of silts and salts totally automaic.

Data for sizing

For order, ASCA can adjust the dimension for your equipment. In this case, we solicitate to indicate model of the valve, pressure and service temperature, back pressure (if there is), nominal diameter, flow as well as kind of feature of equipment, for exemple, model of the boiler, quantity of descharge points, etc...

Standard Specificatiion

Periodic descharge valve for silt extraction from deep of the boilers.
Model DS..... from ASCA
as per prospect PR-04.20.10-I
Flanged connections as per norm.....
Pressure class.....
Nominal diameter.....
Special execution.....
Optional.....

Chart 1

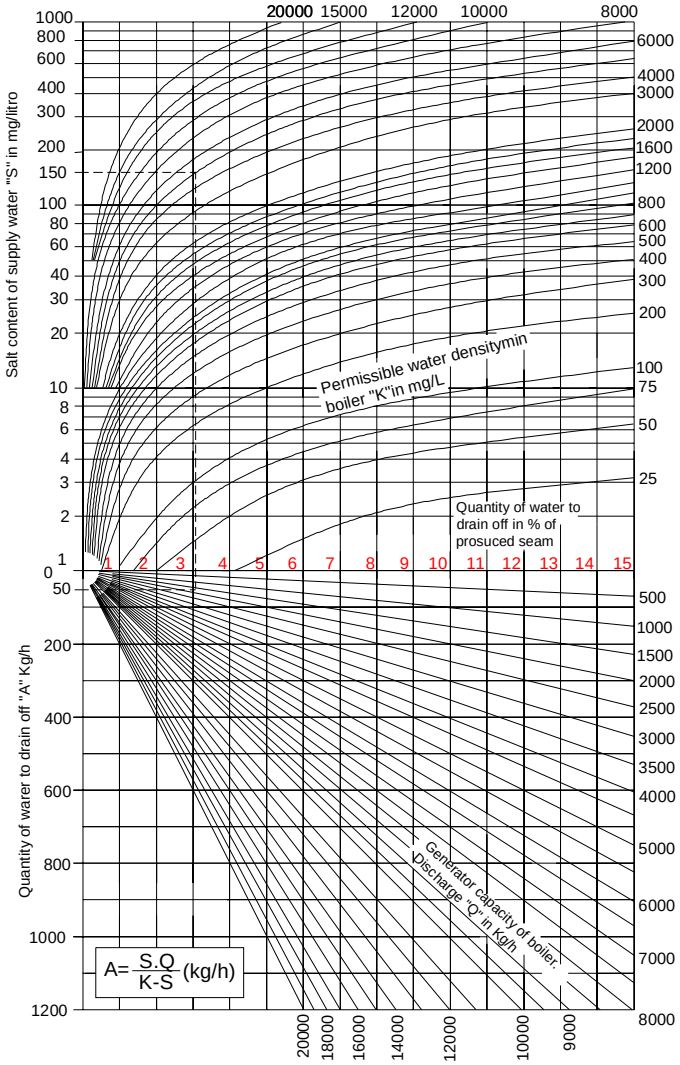
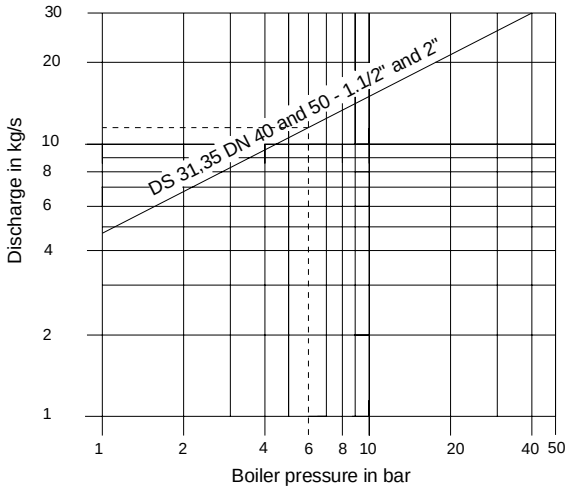


Chart 2



Descharge

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