

# BONETTI®



950.1

## **BONT®** Valves type:

- RSS (manual) and RSSA (automated) are an absolute innovation.

**BONT®** type RSS/RSSA Valve has been designed specifically for boiler Blowdown.

- the seats are manufactured from a 'unique' material combining metal and special graphite layers that enables the valve to withstand high pressures and temperatures.
- the sealing system has been specifically designed so that the seat that chokes the process fluid during opening and closing sequences is not the same that grants in-line seal tightness and its sealing surface thereby protected from erosion and 'wire drawing'.

Extensive tests carried out in our test shop under the hardest conditions, combined with the feedback from the applications on a large number of plants, proved that BONT® type RSS Valve is a most efficient and cost effective 'Blowdown Valve'.

## **BONT®**

### Steel Valves type RSS & RSSA

### for Boiler Blowdown

The seating system described above is world-wide patented by Bonetti.

**BONT®** type RSS Valve is very adaptable and can be used in the following ways:

- **Manually operated type RSS.**
- **Pneumatically actuated type RSSA** air opens - spring closes - with solenoid valve.
- **Electronically actuated type TDA 100**, specifically designed for RSSA Valve. Full Automatic, equipped with electronic control device, easily programmable, to meet required operating times and procedures, the TDA 100 is designed to integrate and/or control Blowdown process.



# CESARE BONETTI S.p.A.

## I-20024 GARBAGNATE MILANESE (Italy)

Via Cesare Bonetti 17

Telefono: +3902 990721

Telefax: +3902 9952483

Internet web site: <http://www.cesare-bonetti.it>

E-mail: [bont.post@bont.it](mailto:bont.post@bont.it)

Vendite Italia:

Telefono:

+39 02 99 072 333

Telefax:

+39 02 99 072 300

E-mail:

[italia@bont.it](mailto:italia@bont.it)

Export sales:

Telephone:

+39 02 99 072 444

Telefax:

+39 02 99 072 400

E-mail:

[export@bont.it](mailto:export@bont.it)

## Bonetti Armaturen Vertriebs GmbH

D-65549 Limburg an der Lahn (Germany)

In den Fritzenstücker, 4

Sales Office

Telephone:

+49 06431 598310

Telefax:

+49 06431 598329

E-mail:

[info@bonetti.de](mailto:info@bonetti.de)

## BONETTI (Suzhou) Level Gauges & Valves Co., Ltd.

Yuandong Gongyefang, Minsheng Road,  
Shengpu District, Suzhou Industrial Park,  
Jiangsu, China 215021

Sales Office

Phone

+86-512-6281 6390

Fax:

+86-512-6281 6396

E-mail:

[bonettisuzhou@yahoo.com](mailto:bonettisuzhou@yahoo.com)

# BONT® Valves - Forged Steel

## Type RSS & RSSA, for Boiler Blowdown

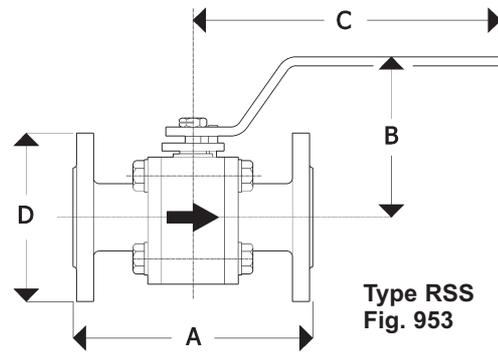
### PN 40 DIN 2401 - DN 25, 32, 40

### ASME Class 300 - DN 1", 1.1/4", 1.1/2"

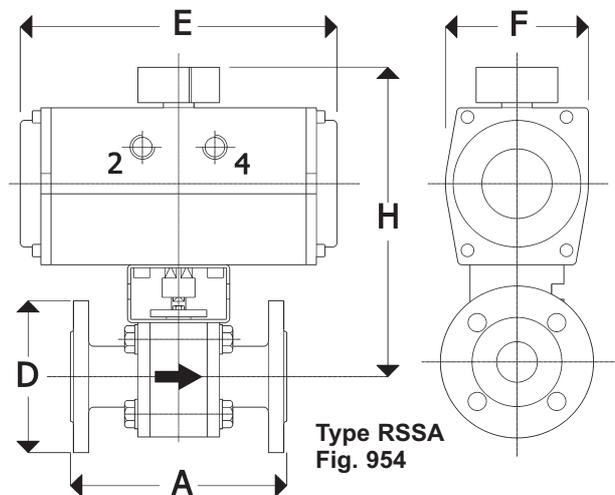
- 1 This Valve is a ONE WAY Valve. Do ensure that the flow direction is the same indicated by the arrow on the body.
- 2 According to European Standards (UNI, DIN, AFNOR etc.):
  - 2.1 Standard flanges are Raised Face to DIN 2526 Form C, drilled
  - 2.2 Face to face dimension (A) to DIN 3202-FI
  - 2.3 Rating as follows (according to DIN 2401):
 

|            |        |     |     |     |     |     |     |
|------------|--------|-----|-----|-----|-----|-----|-----|
| T. max 'C  | -10+20 | 120 | 200 | 250 | 300 | 350 | 400 |
| P. max bar | 40     | 40  | 35  | 32  | 28  | 24  | 21  |
- 3 According to American Standards (ASME/ANSI BI 6.34):
  - 3.1 Flanges are supplied R.F., drilled to ASME/ANSI B16.5
  - 3.2 Face to face dimensions (A) to ASME B16.10
  - 3.3 Rating as follows (according to ASME/ANSI B16.34):
 

|            |        |      |      |      |      |      |      |      |
|------------|--------|------|------|------|------|------|------|------|
| T.max 'C   | -29+38 | 100  | 200  | 250  | 300  | 350  | 400  | 425  |
| P. max bar | 51,1   | 46,4 | 43,8 | 41,7 | 38,7 | 37,0 | 34,5 | 28,8 |
- 4 On request valves suitable for PN 63 rating are available.
- 5 Every valve can be completed, even if already installed, with an actuator, which can be assembled as follows:
  - with its axis parallel to the process line as in Fig. 954 or
  - with its axis orthogonal to the process line as in Fig. 950.1.
 It is very simple to change the actuator position, even if already installed.



Type RSS  
Fig. 953



Type RSSA  
Fig. 954

| Flanged to DIN, PN 40 |                |                 |                    |                     | Flanged to ASME Class 300 |                 |                 |                    |                     | Dimensions |      |      |      |      |
|-----------------------|----------------|-----------------|--------------------|---------------------|---------------------------|-----------------|-----------------|--------------------|---------------------|------------|------|------|------|------|
| DN                    | Outs. Dia D mm | End to End A mm | Weight type RSS kg | Weight type RSSA kg | DN                        | Outs. Dia. D mm | End to End A mm | Weight type RSS kg | Weight type RSSA kg | B mm       | C mm | E mm | F mm | H mm |
| 25                    | 115            | 160             | 5.7                | 12.7                | 1"                        | 124             | 165             | 6.0                | 13.2                | 140        | 165  | 270  | 120  | 250  |
| 32                    | 140            | 180             | 11.7               | 18.8                | 1.1/4"                    | 133             | 178             | 11.2               | 19.3                | 220        | 230  | 270  | 120  | 265  |
| 40                    | 150            | 200             | 12.2               | 19.5                | 1.1/2"                    | 155             | 191             | 12.5               | 20.0                | 220        | 230  | 270  | 120  | 265  |

| Part No.                   | Material used for Mat. Sch. 52 |
|----------------------------|--------------------------------|
| 1 Body                     | ASTM A105                      |
| 2 End Connection Inlet     | ASTM A105                      |
| 3 End Connection Outlet    | ASTM A105                      |
| 4 Bolt                     | ASTM A193 B7                   |
| 5 Ball                     | ASTM A564 630 (17-4 PH)        |
| 6 Seat                     | Compound Graphite-Metal        |
| 7 Cushion Plate            | ASTM A182 F316                 |
| 8 Cushion Joint            | Graphite                       |
| 9 Stem                     | ASTM A182 F316 + Nitr.         |
| 10 Cushion Ring            | ASTM A182 F316 + Nitr.         |
| 11 Packing                 | Graphite                       |
| 13 Gland Flange            | AISI 416 + T.T.                |
| 14 Handle                  | Carbon Steel                   |
| 15 Handle Nut              | 5S                             |
| 16 Gland Bolt and Stop Pin | AISI 420                       |
| 35 Autoseal Ring           | Graphite                       |
| 36 Spacer Ring             | ASTM B 150 - C62300            |
| 37 Stem Ring               | Graphite                       |

★ For DN 32 and DN 40 only.

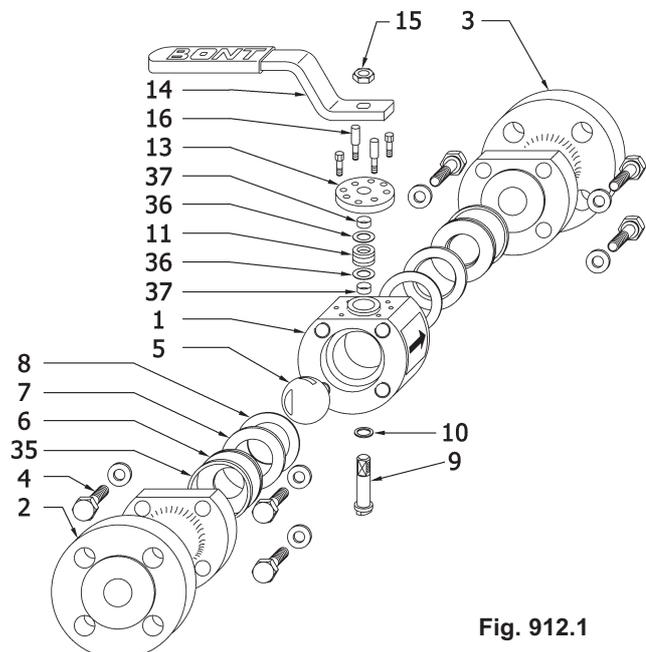


Fig. 912.1

## Actuator

Every RSS valve (Fig. 953) handle operated can be transformed into type RSSA (Fig. 954) controlled by a pneumatic actuator.

### The actuator supply includes:

- 30 Pneumatic actuator:  
air pressure opens - spring closes.  
Sized for air supply from 3,5 to 10 bar
- 31 Bracket
- 32 Adapter valve stem/actuator
- 14.1 Handle for emergency operation in case of air supply and/or power supply failure.

### Assembling of the actuator on the valve

- Piping must not be under pressure.
- Dismantle the handle (14)
- Apply the adapter valve stem/actuator (32) on the protruding end of the stem (9)
- Assemble the bracket (31) on the body and clamp it under the bolts.
- Assemble the actuator body on the bracket; position it as convenient (see note 5); fix the body on the bracket with the four supplied screws (34).
- **Please apply to our Sales or Technical Department to get the detailed Use and Maintenance Instruction Manual.**

### Fittings of the actuator

- On the top of the actuator an indicator (33) turns 90° at every operation and clearly shows OPEN - CLOSED.
- The same position indicator may be used to control switches (supplied on request) for remote indication and/or remote control. Switches housing can be installed by means of prepared threaded holes according to VDI/VDE 3845 requirements.

### Instructions for emergency manual operation

In case of power supply failure on the solenoid valve and therefore air supply failure on the actuator, the valve remains closed. In case necessary act as per the following procedure to open the valve:

- Ensure:
  - the electrical coil is totally isolated and no current is present,
  - the compressed air supply is isolated and all pressure is vented,
  - the valve is closed according to the indicator (33) on the top of the actuator.
- Position the handle (14.1) at the actuator's side (Fig. 956).
- Levering, lift the adapter (32) and insert the handle as in Fig. 957. The adapter may be jammed against the actuator housing: a soft blow is enough to release it.
- Pull the handle (14.1) to open the valve, making sure that the handle comes to the stroke end in contact with the bracket whether in closed or open position. Never leave the handle in an intermediate position.
- Handle (14.1) can be dismantled only when the valve is closed.

## Solenoid Valve

A solenoid valve is supplied to control the pneumatic actuator. It is connected directly on the side of the actuator in the hole "2" as in Fig. 954. The hole "4" must be free. The solenoid valve must provide the actuator with compressed air only when there is terminal voltage.

In case of electric voltage failure, the air in the actuator is vented off into the atmosphere.

Power Supply: to be specified.

Air Supply: from 3,5 to 10 bar.

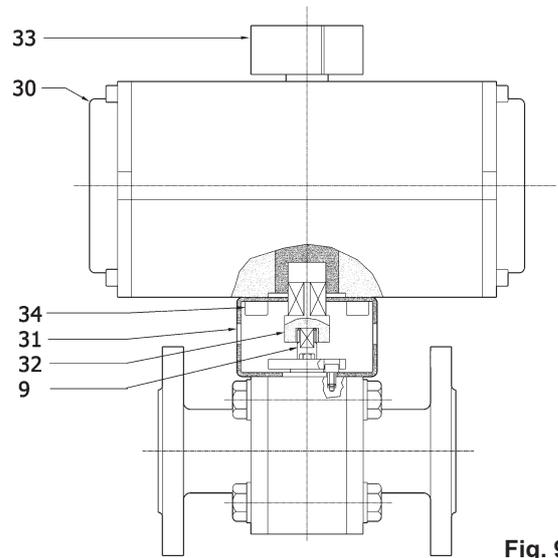


Fig. 955

- 9 - Stem
- 14.1 - Emergency Handle
- 30 - Pneumatic Actuator
- 31 - Bracket
- 32 - Adapter
- 33 - Indicator
- 34 - Clamping Screw

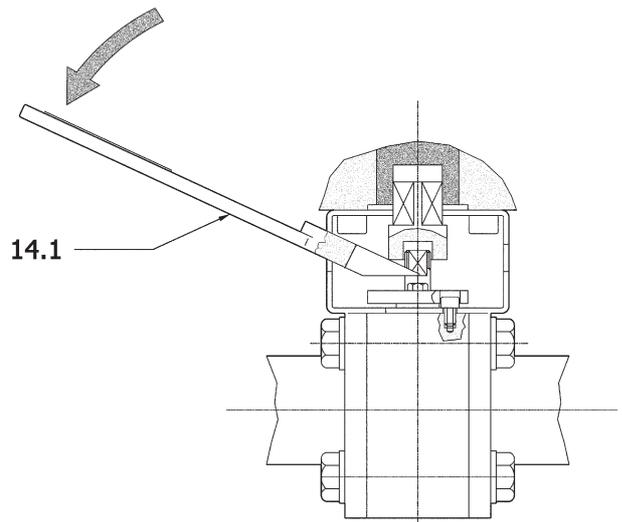


Fig. 956

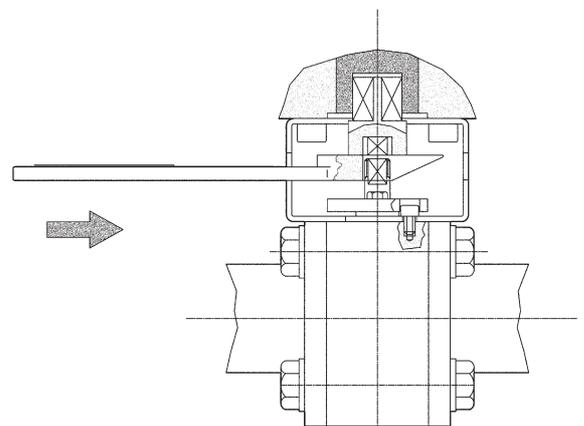


Fig. 957

## Electronic Timer TDA 100

The complete automation of the blowdown system of a boiler is achieved through the Timer TDA 100 with microprocessor, which has been specifically designed for BONT® valve type RSSA.

The operator can program at his convenience and absolutely independently:

- the duration of the blowdown time (the time the valve is open)
- the duration of the pause between two blowdown processes (the time the valve is closed).

**Detailed instructions supplied along with the instrument.**

The above mentioned times can be set:

- from 0,5 to 99,5 seconds (sharpness 0,5 seconds) when time unit SEC is selected,
- from 0,5 to 99,5 minutes (sharpness 0,5 minutes) when time unit MIN is selected,
- from 0,5 to 99,5 hours (sharpness 0,5 hours) when time unit HOURS is selected.

The time unit for every phase (blowdown = ON; closed = PAUSE) may be independently selected among SEC, MIN, HOURS; for example: SEC for blowdown duration and MIN for closing duration.

The instrument also allows to manually operate to open the valve during the pause time without modifying the settings already programmed.

For safety reasons, in case of power supply failure, the TDA 100 immediately changes into the phase PAUSE = closed and remains in this position,

### Technical Data

Power supply: 230 V ±10%, 50/60 Hz

Power consumption: 3 VA

Output relays with powerless exchange contact

Contact rating: 240 V, 3 A

Max ambient temperature: 70°C

Enclosure: standard IP40.

Additional front cover to achieve IP54 enclosure is available on request.

Overall dimensions: 72x72x125 mm.

Weight: 0, 100 kg.

### Assembling on Panel and Wiring

- This instrument can be installed on bar DIN 46277 by means of UNDECAL base included in the supply.
- This instrument must be connected to electric power supply through the two terminals No. 8 and No. 7, with the interposition of an additional switch.
- When connecting the solenoid valve, the following must be considered: the electric circuit between the terminals 1 and 11 is closed during ON phase and is opened during PAUSE phase.



Fig. 958 - Timer TDA 100

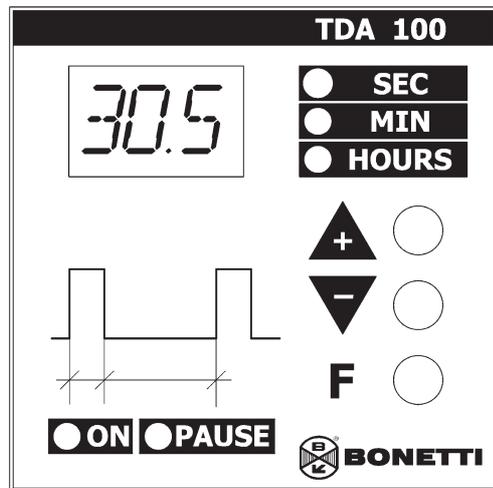


Fig. 959 - Front Plate

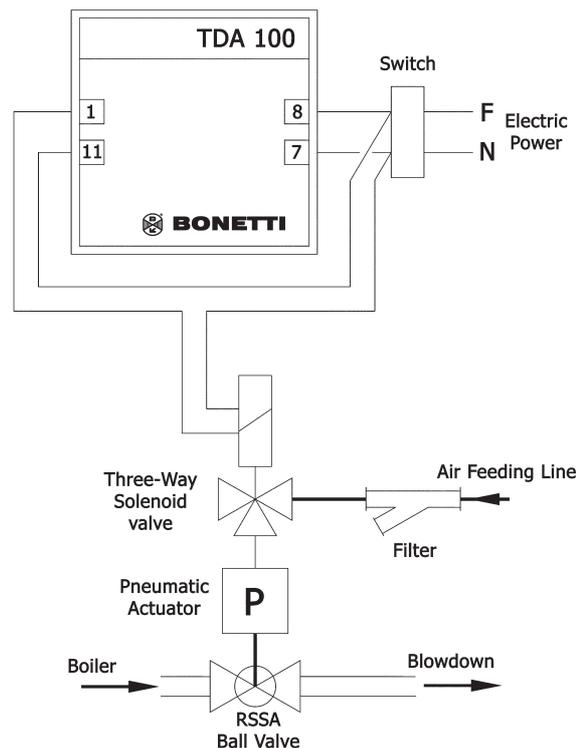


Fig. 960 - Wiring Diagram

This catalogue is exclusive property of Cesare Bonetti S.p.A. Any unauthorized reproduction, in total or in part, of this catalogue shall be prosecuted. Products and data sheets on this catalogue reflect current standard production. Cesare Bonetti S.p.A. reserves the right to carry out necessary amendments to products and materials. Amendments or modifications to drawings and materials can be done also to comply with particular Customer's request or technical specifications.