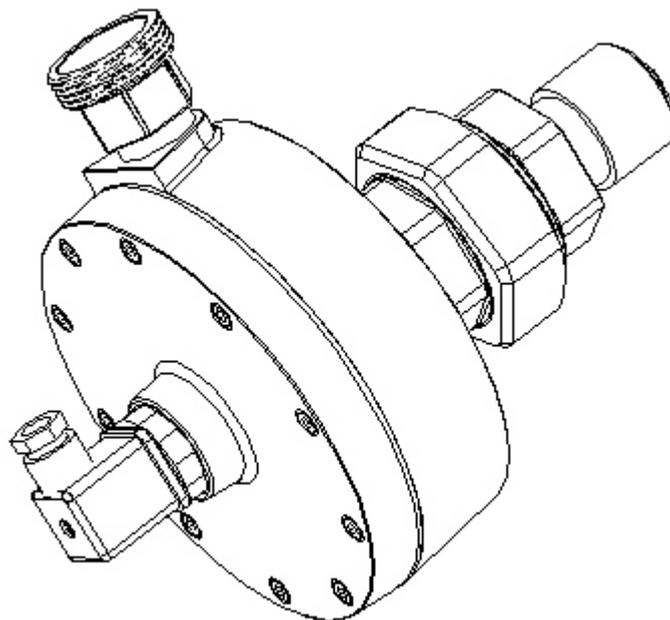


# **ALBRECHT - Pulsors**

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**Pneumatic Loosening and  
Fluidisation of Bulk Solids  
and Filter Dust**

## **Repair Instructions**



***ALBRECHT Ingenieurbüro GmbH***

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**Flow Promotion Technology  
for Bulk Solids and Filter Dust**

Mangenberger Str. 33  
D- 42655 Solingen • Germany  
Phone: +49 - (0)212 - 16393  
Fax: +49 - (0)212 - 201644  
Email: [albrecht@pulsoren.com](mailto:albrecht@pulsoren.com)  
Internet: [www.pulsoren.com](http://www.pulsoren.com)

## 1. General Notes

The Pulsors are to be used in keeping with the technical recommendations and documentation of ALBRECHT Ingenieurbüro. No liability is accepted for improper use of the equipment and consequential damage. The instructions concerning function tests and troubleshooting in chapter 4 of the operation manual must be followed ([http://www.pulsoren.com/english/operating\\_instructions.pdf](http://www.pulsoren.com/english/operating_instructions.pdf))

## 2. Exchange of Pulsor and Impulse Nozzle

### 2.1 Replacement of the Pulsor body without nozzle (nozzle remains installed):



Before starting, shut off the compressed air supply and vent the feed pipe.

#### Disassembly:

- a) Loosen and remove the solenoid valve plug.
- b) Open the pipe union between Pulsor and valve. Detach the valve from the Pulsor and carefully hang valve with hose aside.
- c) Unscrew the Pulsor body from the nozzle. To do so, insert a suitable lever tube into the air inlet opening and jerk suddenly in the counterclockwise direction (or briefly hit against the air inlet union with a rubber hammer in the counterclockwise direction). After that, the Pulsor body can easily be screwed off the nozzle tube.

#### Re-Assembly:

- d) Screw the Pulsor onto the nozzle without using a sealant and first tighten it by hand. Use a lever tube or rubber hammer to tighten it by 1/8 - 1/4th of a revolution.
- e) The air inlet union must now be aligned so that the solenoid valve can be installed without tension and torsion in the pipe. To do so, slightly loosen the union nut of the assembly union at the nozzle without unscrewing it completely. Loosen the conical pipe union with light strokes (rubber hammer!) till the nozzle with the Pulsor can be turned inside the weld-on nipple. Align the Pulsor and the nozzle in such a way that the valve can be installed easily. Firmly tighten the union nut of the assembly union again.
- f) Attach the valve, tighten the pipe union and fit the solenoid valve plug back on again.

### 2.2 Replacement of the impulse nozzle with or without Pulsor:

The nozzle can be dismantled together with the Pulsor body or separately after unscrewing the Pulsor body (see above).



When the impulse nozzle will be dismantled, there is always the danger that the product will flow out of the silo. As far as possible, empty the silo before replacing a nozzle. Never dismantle the impulse nozzle when product has just been filled or with a fluidised product. Switch off all fluidisation devices, make the tank pressure-less and wait for the product to get vented of air. Always wear safety glasses. With irritating, poisonous or corrosive products, wear protective clothing without fail (eyewear, mask, etc.).



Before starting, shut off the compressed air supply and vent the feed pipe.

#### Disassembly:

- a) Loosen and remove the solenoid valve plug.
- b) Open the pipe union between Pulsor and valve. Detach the valve from the Pulsor and carefully hang valve with hose aside.
- c) Loosen the union nuts of the assembly union. Loosen the conical pipe union with light blows (rubber hammer) and pull out the Pulsor with the impulse nozzle.

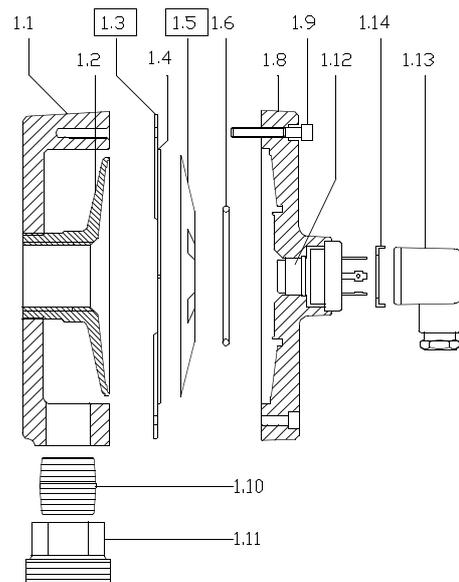
### Re-Assembly:

- d) Screw in the impulse nozzle into the Pulsor body without using a sealant and first tighten it by hand. Use a screw wrench to tighten it by 1/8 - 1/4th of a revolution.
- e) Insert the Pulsor with the impulse nozzle into the weld-on nipple. Align the Pulsor and the nozzle in such a way that the valve can be installed easily. Firmly tighten the union nut of the assembly union.
- f) Attach the valve, tighten the pipe union and fit the solenoid valve plug back on again.

### 3. Repair of the Pulsor:

#### Pulsor type 100, 150 und 300

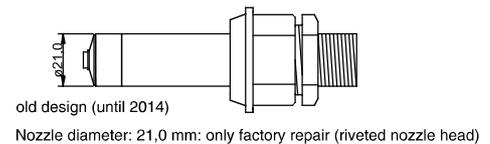
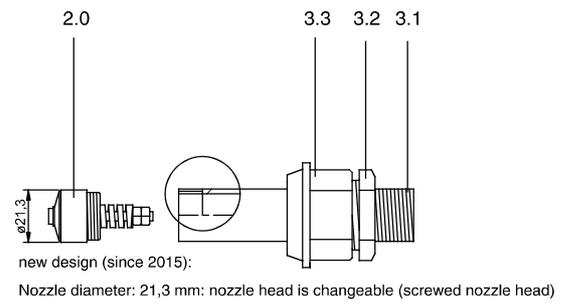
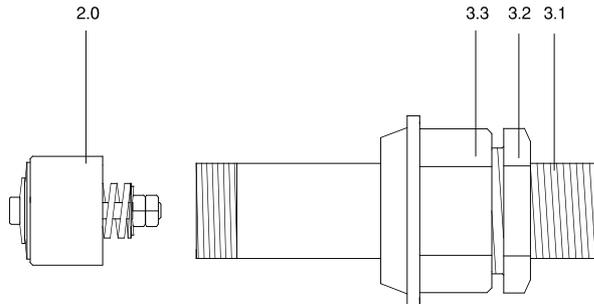
- 1.1 Bottom
- 1.2 Plate
- 1.3 Sealing diaphragm
- 1.4 Valve disc
- 1.5 Plate spring
- 1.6 Seat ring (with Pulsor type 100 two-part)
- 1.7 ./.
- 1.8 Cover
- 1.9 Hexagon socket screw
- 1.10 Pipe double nipple, conical
- 1.11 Pipe union (screw-in part)
- 1.12 Monitoring sensor (optional)
- 1.13 Angle plug (optional)
- 1.14 Sealing (optional)



- a) Remove the hexagon screws (1.9) and detach the Pulsor cover (1.8) from the Pulsor bottom (1.1). (Sometimes the cover adheres to the rubber diaphragm and can not be removed easily at once. For that reason wait a few minutes after loosening the screws, until the cover can easily be removed (or carefully use a screw driver or little chisel to open the housing.)
- b) Inspect the Pulsor plate (1.2): The plate must be firmly glued into the bottom. When hit slightly with e.g. a screw driver, a bright and clear sound must be heard. The sealing edge of the plate, on which the rubber diaphragm sits, must not be damaged or have notches. The edge must protrude uniformly about 0,2 - 0,3 mm from the sealing surface of the bottom. If the Pulsor plate is damaged or loosened, the Pulsor should be sent in for repair.
- c) Inspect the valve disk and sealing diaphragm (1.3+1.4) and replace it, if you discover ruptures or wear and tear. The rubber diaphragm (1.3) must be firmly glued to the disk (especially at the inner perimeter), except of a narrow zone along the edge of the disk (1.4). The central bore hole in the disk must not be clogged. Its diameter is crucial for the working frequency of the Pulsor.
- d) Inspect the plate spring (1.5) and the seat ring (1.6), and replace the parts, if worn.
- e) If present, check the monitoring sensor (see chapter 6.3 of the operating manual). If the sensor is defect, the Pulsor should be sent in for repair.
- f) Reassemble the Pulsor, referring to the above sketch, paying attention to a good centering of the disk and diaphragm (1.3+1.4).

## 4. Repair of the Impulse Nozzle:

Impulse nozzle type 20, 40 and 50	
2.0	Nozzle head
3.1	Nozzle tube
3.2	Hexagon reducing socket
3.3	Union (insert part)



### Impulse nozzle type 40 and type 50:

The nozzle head is screwed onto the nozzle tube

### Impulse nozzle type 20:

since 2015: screwed nozzle head ( $\phi$  21,3 mm)  
until 2014: riveted nozzle head ( $\phi$  21,0 mm)

After disassembly of the impulse nozzle, inspect nozzle tube and nozzle head. In case of significant corrosion or visible wear, the parts should be replaced. Particularly if the coil spring of the check valve has lost its tension and the plate spring on the end face of the cap is loose, the nozzle head must be replaced. Check the function of the non-return valve mechanism: it should just about be possible to turn the plate spring by hand on the end face of the cap, and the nozzle bolt must be movable in its guide.



The head of the impulse nozzle is hardened and agglutinated to the nozzle tube (screwlock). Do not screw off by force!



The nozzle head type 20 with a diameter of 21,0 mm (old design) can not be screwed off and changed because it is riveted! Only the heads with a diameter of 21,3 mm (new design) can be screwed off and changed.

- For change of the nozzle heads carefully heat it with a propane/butane gas flame up to about 200°C, until the screwlock disintegrates (white smoke). Clamp the nozzle head into a vice with pipe clamping jaws and screw off the nozzle tube by turning the hexagon reducing socket with screw-wrench. (The hexagon reducing socket is factory-made firmly agglutinated with the nozzle tube and should not be detachable).
- Let nozzle tube cool down, clean the thread with a steel brush and screw on new nozzle head, using a suitable screwlock (Marston-Domssel, Loctite or similar).

## 5. Repair of the Solenoid Valves:

For technical data sheets and spare parts see:

Buschjost-Valves: <http://www.buschjost.com/pdf/E82960.pdf>

ASCO-Valves: [http://www.asconumatics.eu/images/site/upload/\\_en/pdf1/x003aagb.pdf](http://www.asconumatics.eu/images/site/upload/_en/pdf1/x003aagb.pdf)