Besteman Techno Support

BTS RESONATOR NOZZLE

- The finest spray at maximum intensity/capacity
- Minimal compressed air consumption for the finest spray

The droplet size depends on the volume of liquid atomised per hour. At 4.5 bar the resonator nozzle will produce the largest volume: droplets of 1 to 8 micron with the liquid . When the resonator nozzle atomises other liquids, the resonator nozzle may react differently if the liquid is thicker. For liquids with the same viscosity the resonator nozzle will react virtually the same.
Always test the spray pattern of the resonator nozzle and the liquid consumption per hour before use. If necessary adjust the pressure reducing valve. High pressure means more liquid consumption. Lower pressure means less liquid consumption.

The more small droplets, the better the distribution per unit area. A resonator nozzle that is correctly adjusted ensures the effectiveness of the liquid. The finer the spray, the greater the effectiveness.
Research has shown that a high intensity fine spray results in greater effectiveness of the liquid.

Data:

Compressed air consumption	: 60 to 70 litres/min at 5 bar
Working pressure	: between 4.5 and 6 bar
Suction hose	: 3.5 m 6x4 mm PE hose with internal restriction
Suction hose fitted with	: INOX nut M12 (counterweight) with silicon hose
Material resonator nozzle	: INOX 316
Liquid connectors	: INOX 316
Air connectors	: Nickel-plated brass air connectors 6x4 mm
Mounting height resonator nozzle	: 0.6 to 2.5 m
Art. No.	: 222107-3
Standard liquid consumption	: ± 2 litres/hour at resonator nozzle height 2.4 m
Max. standard liquid consumption	: ± 3 litres/hour at resonator nozzle height 1.5 m
Max. volume droplet size	: 0 - ≤ 8 micron for 2.4 metre
DUANE PRODUCT CODE	:NCM 8424.30.10

Warning:

For the best disinfection in the egg disinfection room make sure that the ventilation is always switched OFF while atomising Let the disinfectant take effect for 20 minutes after reaching the maximum volume per square metre. Then ventilate.

Warning:

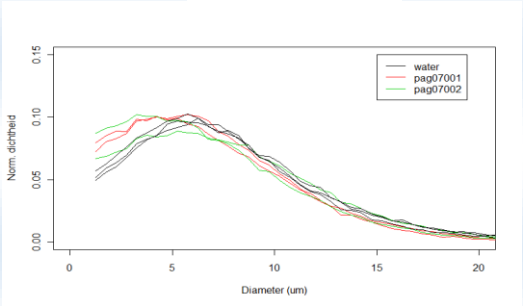
For Hatchers the ventilation must always be switched ON!

Important:

- Mount the resonator nozzle as shown in the picture (FIG 1.3)
- Mount the resonator nozzle at the height indicated on the sticker on the resonator nozzle. The resonator nozzle should be pointing upward (FIG 1.3).
- Besteman Techno Support B.V. will not accept any responsibility for deviations from the specified settings (working pressure and mounting height) indicated on the resonator nozzle.
- 1/8” liquid connector on the side of the resonator nozzle.
- 1/8” air connector on the rear of the resonator nozzle.
- Working pressure, flow rate and atomiser height are indicated on the sticker on the resonator nozzle.
- Check the resonator nozzle before use and regularly during use.
- Set the compressed air/flow rate accurately.
- The ventilator/ventilation must always be switched on during atomising in a Hatcher.
- De-clogging or cleaning can be carried out by inserting a plastic card (bank card) between the atomiser and the resonator nozzle for 1 second during atomising. Repeat this a number of times if necessary. The card should be pressed lightly against the nozzle.

Adjusting the flow rate

The air pressure is controlled by a pressure reducing valve.
Air consumption per atomiser is ± 60 litres of compressed air per minute at 4.5 bar.



[Nevelbundel Hotfog =] spray volume Hotfog
[Nom. dichtheid =] nominal density
[Diameter =] diameter (µm)
[water =] water

Conclusion based on the above measurement of water droplet sizes: the resonator nozzle with a spray capacity of 2 litres per hour produces a very effective fine spray.

FIG 1.2

FIG 1.3

Important to remember!

• Always test the operation of the resonator nozzle before use.
• Check whether the ring of the resonator nozzle is in front of the outflow opening of the nozzle. It should be right before the nozzle! It is easy to check the distance, which should be just large enough to insert a bank card.
• Check the flow rate (the speed of an air bubble in the suction hose).
• Check how the resonator nozzle reacts to the liquid. Clean the resonator nozzle with a scouring sponge or adjust the pressure.
• Do not atomise chlorine-containing products because the stainless steel and chrome-plated brass materials in the nozzle cannot withstand chlorine or chlorine-containing products.

The operation of the BTS resonator nozzle

The compressed air that is blown through the nozzle and the liquid that flows out of the venturi on the inside of the nozzle are cone shaped and hollow. In the cone a vacuum is created as a result of which the liquid is sucked up from tank.
In the BTS resonator nozzle the liquid is mixed with compressed air, after which the liquid bumps against the resonating ring at a speed of over 700 km/hour (435 mile/hour) at 4.5 bar, resulting in a fine spray.

Never disassemble the resonator nozzle yourself!

The resonator nozzle has been calibrated for a specific mounting height.
If the resonator nozzle has been disassembled all the rings and gaskets should be replaced.
The resonator nozzle should also be adjusted in a certain way.

This should be carried out by the supplier!

- **Make sure that you have a few resonator nozzles in stock, so you can exchange them.**
- **Each resonator nozzle has been calibrated and the quality and mounting height have been tested before the resonator nozzle leaves our workshop.**
- **If you are not fully satisfied with the resonator nozzle you can send it back for revision.**

Basically this should not be necessary. The problem is often a leaking suction hose or connectors. No matter how small the hole, it has significant influence on the spray pattern and distribution of the product.

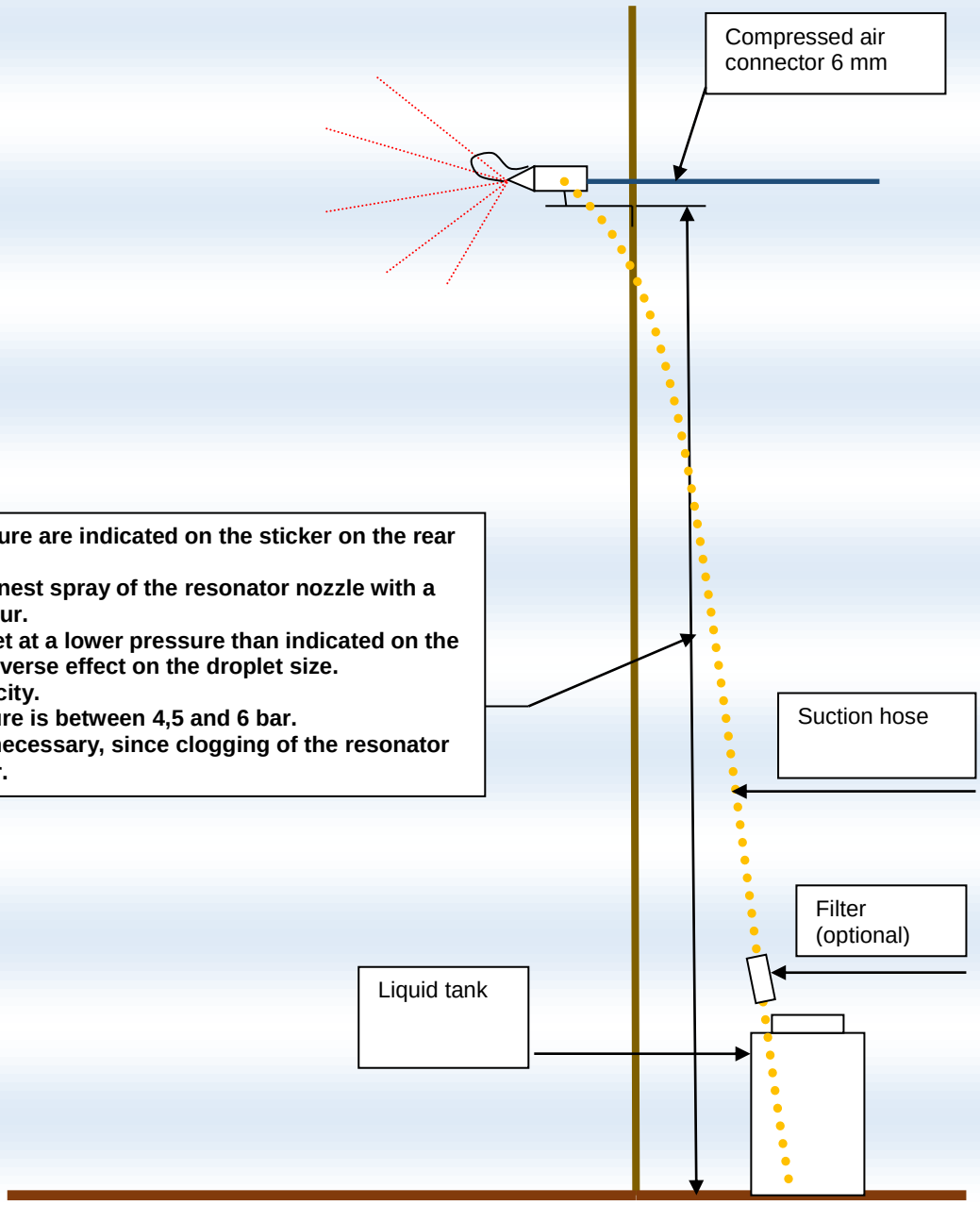
- **First check whether there is no accidental intake of air at the liquid connectors.**
- **Also check whether the pressure and mounting height of the resonator nozzle are the same as the pressure and mounting height indicated on the sticker on the resonator nozzle.**

If you are not satisfied with the operation of the resonator nozzle, you can clean it completely in an ultrasonic cleaner with the appropriate cleaning solution.

Clogging of this resonator nozzle is almost impossible! However, if the spray pattern is disturbed, you can block the nozzle during atomising, so the nozzle and hoses are cleaned. The pressure is then diverted to the supply tank and the resonator nozzle which will clean itself.
If the supply is still faulty, you can pierce the nozzle opening with a 1 mm needle or bit. Then check the distribution again.

If this does not work, you can send the resonator nozzle to Besteman Techno Support B.V.
We will revise your resonator nozzle and send it back to you for an amount of 45 euro per resonator nozzle.

The metal parts are not included in the revision costs. In case of damage they will be calculated separately.



Mounting height and pressure are indicated on the sticker on the rear of the resonator nozzle.
This is the setting for the finest spray of the resonator nozzle with a capacity of ± 2 litres per hour.
If the resonator nozzle is set at a lower pressure than indicated on the sticker, this will have an adverse effect on the droplet size.
It will also reduce the capacity.
Usually the working pressure is between 4,5 and 6 bar.
A filter is optional but not necessary, since clogging of the resonator nozzle is not likely to occur.

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