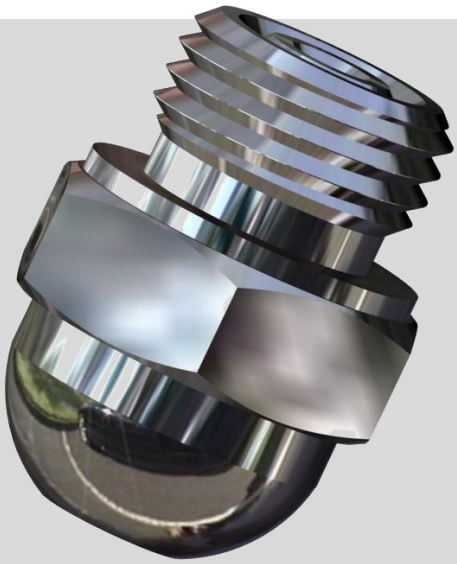


SCHLICK-Hollow-Cone Nozzle Model 121V (D1.888 Version 1.0)

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Safety-Technical Data Sheet

Important Information for Operators, Users and Fitters

Introduction: This nozzle has been developed using the latest state of technology and accomplishes the current national and international safety requirements. This nozzle offers a high degree of operational reliability, thanks to experience of many years in the field, research and development and to a permanent quality control provided in our company**. In normal operation the nozzle is safe.** Nevertheless and in particular if certain operational parameters are not met, there are some potential sources of danger to personnel, material and for the optimal sequence of the operation.

So, these operating instructions are comprising basic safety instructions which are to be observed with regard to the configuration, the operation and the assembling and disassembling of the nozzle. They have to be studied by the operator, user and fitter before assembling or disassembling the nozzle and have steadily to be at the disposal of the aforesaid persons.

General safety requirements:

- The nozzles have to be used only as per their usage to the intended purpose. Any changes of the operational conditions are to be clarified with the manufacturer.
- A usage to the intended purpose includes also the observance of the various information and instructions of this safety-technical data sheet and of those given in the operating and assembling instructions, as well as the observance of all the regulations of the Employer's Liability Insurance Association.
- The operators have to be familiarized with the method of function and with the handling of the nozzle.
- Installation, configuration, putting-into-operation and disassembling or assembling are to be carried out only by experienced and skilled personnel.
- Operation of the nozzle only by experienced resp. authorized users.
- Conversions and changes of the nozzle to be made only by authorized skilled personnel and after having consulted the manufacturer. Each and every conversions or changes made by other persons or conversions and changes, which have not been agreed with the manufacturer, will lead to a complete exclusion of liability.
- Prior to every putting-into-operation, the following has to be carried out, resp. to be observed:
  - functional test
  - checking, that all the nozzle connections are fitted firmly and tightly
  - labour safety

- The nozzles are exposed to the following kinds of wear and tear:
  - Chemical
  - Thermal
  - mechanical
- Therefore, the nozzles have to be checked regularly and if necessary, to be replaced. **Operation of the nozzles only in a technical perfect condition.**



Do not ever direct the liquid jet or the spray towards persons or electrical appliances. Risk of injury by chemical additives, high pressures, solid agents, current strike. **ATTENTION: In case of media like gas, air or steam, the spray jet is hardly visible.**



The danger exists, that the spray jet will be inhaled. In particular when chemicals or other noxious substances are atomized, remedial measures are to be taken by appropriate steps and devices (e.g. exhaustion, suitable breathing protection). The working area has to be adequately identified by suitable warning symbols.



During the atomizing process, the temperature of the medium/the media to be atomised is to be taken into consideration. The risk of burns or frostbite exists – remedy: suitable protective clothing to be worn.



If media are atomized which are detrimental to health, appropriate protective clothing has to be worn during assembling or disassembling of the nozzle.

- For adjustment, assembling and disassembling of the nozzle, only suitable tools shall be used.
  ATTENTION: For adjustment, assembling or disassembling of the nozzle, all the pipes have to be depressurized and emptied.
- Before assembling, the connections have to be cleaned.

In case of a non-professional and/or material appropriate handling of the nozzle, any claim on guarantee is cancelled.

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Operating Instructions for SCHLICK Hollow-Cone Nozzle Model 121V (D1.888 Version 1.0)

Design characteristics:
The nozzle exhibited static charge. The design, construction and inspection of the nozzle has been carried out in accordance with Directive 2014/68/EU and the AD-2000 (article 4 paragraph 3) legislative body.

Assembly of the connecting pipes:
- Before connecting the nozzle, the connecting pipes have to be cleaned or to be blown through.
- By means of a suitable wrench (# 17= width across flats), the nozzle with the connecting thread (G ¼" outside thread) and using a suitable seal has to be screwed tightly into the pipe respectively into the connecting socket.
- Make sure, that the nozzle is connected completely tightly.

Operating conditions:
The necessary minimum pre-pressure of the liquid under which the nozzle works – depending on its nominal bore diameter – can be seen on the performance diagram on page 11 (performance diagram for water). In case of liquids other than water (higher viscosity, surface tension, density etc.), the necessary minimum pre-pressure might be higher.
An increase of the pre-pressure of the liquid means an increase of the throughput and the degree of atomization is becoming finer and vice versa. Throughputs of liquid (water) in dependence on the nominal bore diameter and on the pressure: see performance diagrams on pages 11 + 12.

In order to prevent blockages of the nozzles, the liquid has to be filtered accordingly finely, depending on the nominal bore diameter of the nozzle:

Nominal Bore Diameter	Sieve-Number
0.1 – 0.3 mm	250
0.4 – 1.1 mm	180
1.2 – 2.5 mm	110

Determination of the characteristic curves of liquids other than water:
for Newtonian liquids:
1. The nozzle has to be charged under a constant pre-pressure with the medium to be sprayed.
2. Collect the passed liquid in a measuring cap and record the collecting time with a stop-watch.
3. Convert the collected volume of liquid into the unit "litre per minute" (l/min).
4. Record the found throughput on one of the throughput diagrams on the pages 11 + 12.
5. By drawing a parallel through this point to the characteristic lines for water already available, one obtains a characteristic line of the throughput of the sprayed liquid, in dependence on the pressure and on the nominal bore diameter of the nozzle.

for non-Newtonian liquids:
The steps 1 – 4 described above have to be repeated for various pressures and one obtains a characteristic curve of the throughput of the sprayed liquid, in dependence on the pressure and on the nominal bore diameter of the nozzle.

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Maintenance and cleaning of the nozzle:
In appropriate cycles, depending on the spraying medium, the nozzle has to be checked for any damages, to be cleaned and to be greased slightly. As detergents, cleaning solvents, cleaning rags, plastic spatula, ultrasonic cleaner or similar means shall be used. No hard objects! Wearing parts (e.g. O-rings and/or seals) have to be examined optically and exchanged if necessary, while cleaning the nozzle.

To avoid nozzle leakage, we recommend that dynamically loaded O-rings and seals are replaced at least every 6 months and that statically loaded sealing elements are replaced at least every 12 months.
In addition, the sealing elements should be visually checked by the operator during regular nozzle maintenance. The operating life of these components can be considerably reduced as a result of additional loads such as the influence of the medium being sprayed (viscosity, solids content, temperature, etc.), other environmental influences, and / or demanding operating conditions.

Use only suitable tools!

Note:
Due to technical reasons, nozzles having a spraying cone differing from the standard spraying cone, have to be designed with a smaller or a bigger orifice bore. The relevant throughput, however, corresponds to that of the nominal bore diameter.

Before assembly, all threads have to be greased slightly with a suitable lubricant.

Suitable lubricants are available at SCHLICK! Ask for our advice.

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Recommended accessories:



SCHLICK-Lubricant Paraliq GTE 703; **Item-Number 76738 (FDA approved, up to 150°C / 300°F)**



Lubricant OKS 250; **Item-Number 54249 (up to 1400°C / 2550°F)**

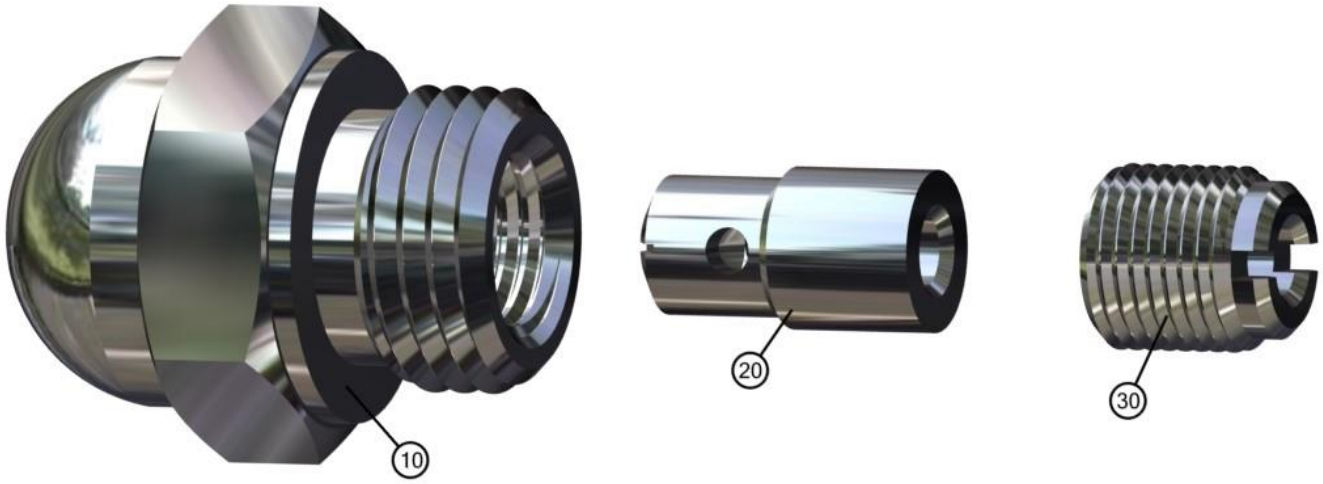




incl. special tool for gentle and nearly nondestructive disassembly of O-Rings

SCHLICK-Nozzle Cleaning Set; **Item-Number 53066-2**

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ID	Quantity	Name
10	1	Nozzle Body
20	1	Twist Insert
30	1	Short Screw

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Assembly Instructions for SCHLICK Hollow-Cone Nozzle Model 121V (D1.888 Version 1.0)

Disassembly:
CAUTION! If the nozzle shows any external pollution, it has to be cleaned unconditional before disassembly.
(Recommendation: Use an Ultrasonic-Cleaner)

Figures in squared brackets represent the parts number of the detail drawing on page 7.

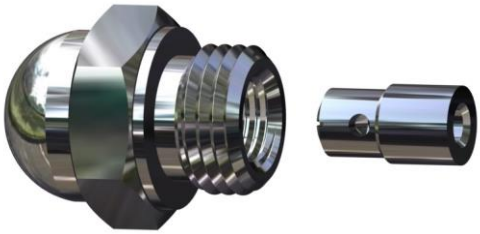
All threads are right-handed threads!

Required Tools:
Vice with protective jaws made of plastic material
Slotted Screwdriver

1. Chuck the nozzle at the body [10] into a vice with protective jaws made of plastic material (short screw [30] to show upwards).



2. Unscrew short screw [30] by means of a suitable slotted screwdriver.



3. Remove twist insert [20] from nozzle by hand.

ATTENTION: Handle the twist insert with care, because damages to the tangential slots will effect changes in the throughput and in the spray pattern!
When re-assembling, take care, that the twist insert is correctly assembled, with the tangential slots to show to the orifice bore.

Use only suitable tools!
Do not clean the nozzle with any hard objects, use only plastic spatula, cleaning solvents, cleaning rags, ultrasonic cleaner, etc.

For **re-assembly** of the nozzle the steps 1. – 3. have to be carried out in reversed order.

Before assembly, all threads have to be greased slightly with a suitable lubricant.

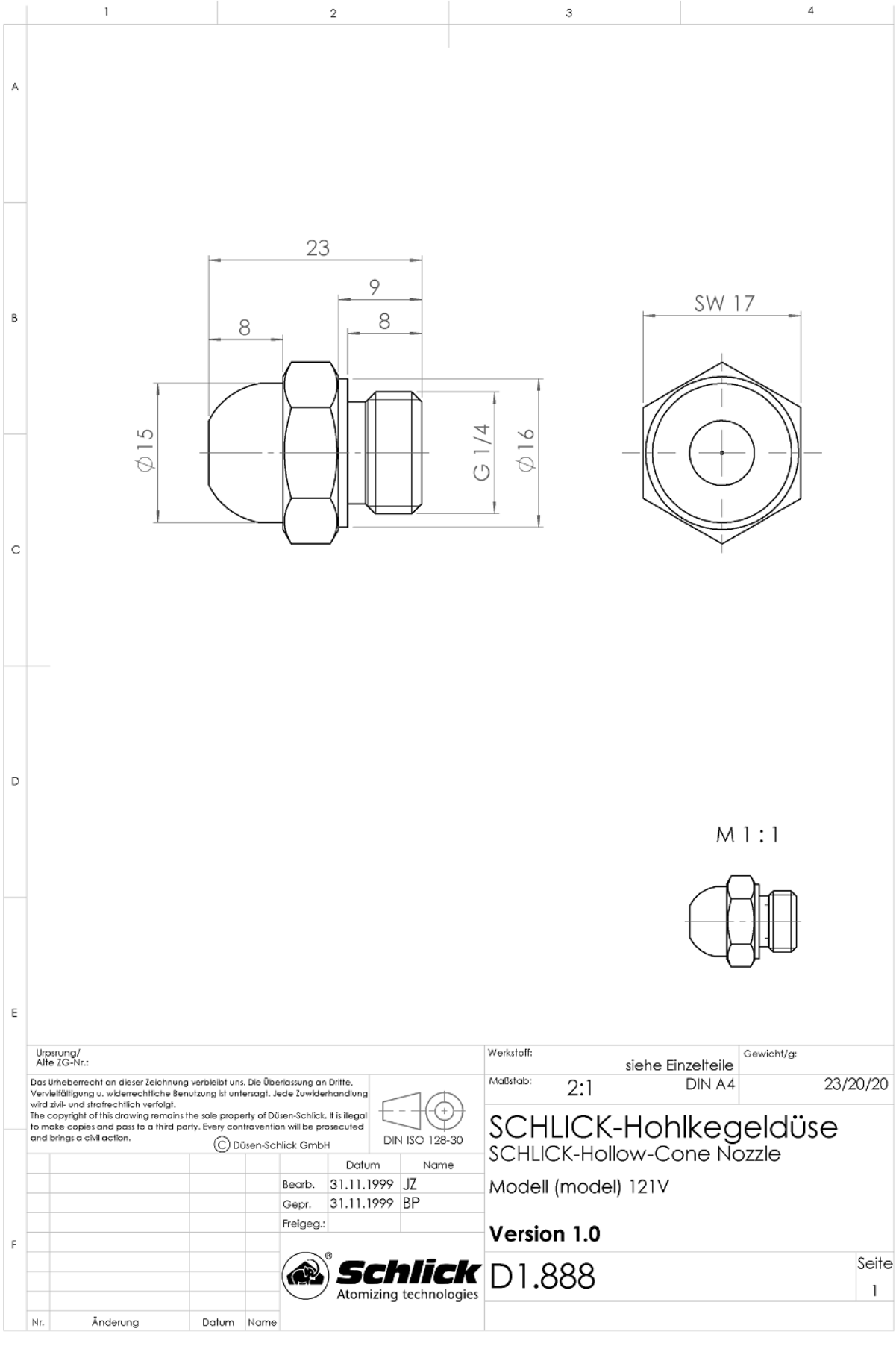
Suitable lubricants are available at SCHLICK! Ask for our advice.

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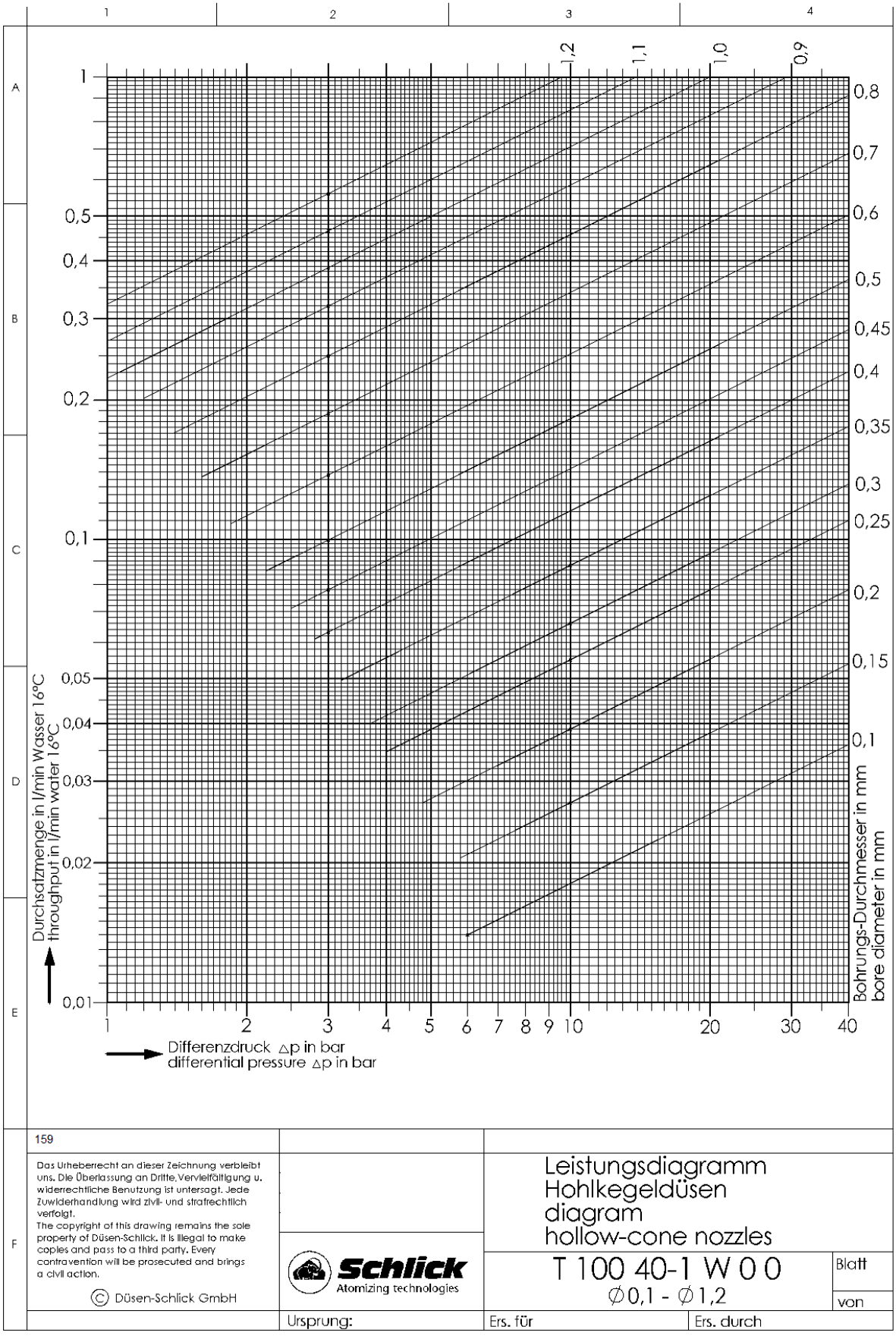
Error-Checklist:

Problem	Reason	Elimination
Spray pattern shows strings, is uneven and/or nominal capacity data can not be reached	Bore of the body and/or slots of the screw-in part polluted	Cleaning of the body and/or screw-in part
	Bore of the body and /or slots of the screw-in part damaged (scratches, deformation, abrasion etc.)	Replace complete nozzle

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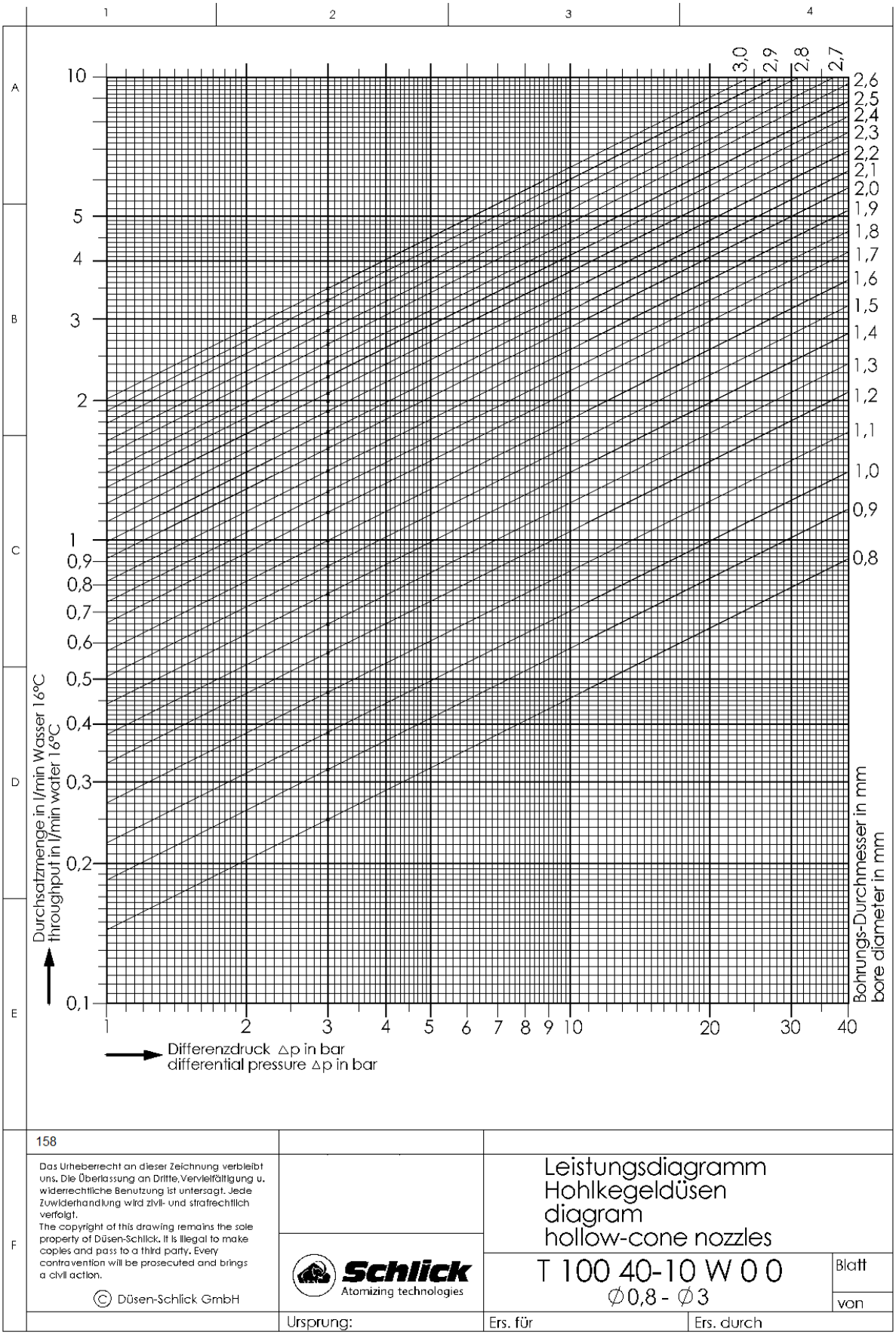
Leistungsdiagramm
Hohlkegeldüsen
diagram
hollow-cone nozzles

T 100 40-1 W 0 0
∅0,1 - ∅1,2

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Schlick Atomizing technologies

Leistungsdiagramm
Hohlkegeldüsen
diagram
hollow-cone nozzles

T 100 40-10 W 0 0
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Please contact us

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