Schlick
Atomizing technologies

Schlick Series 930-933 Two-Substance Nozzles

Applications:

- Coating
- Disinfecting
- Finishing
- Lining
- Metering
- Mixing
- Moisturising
- Process engineering

Technical information 17/01

Schlick two-substance nozzles

- With the help of an atomising medium, two-substance nozzles Series 930-933 can atomise liquid to get a large specific surface.
- The atomising medium can be compressed air, gas, or steam at 0.5 bar upwards.
- External mix nozzles allow independent control of flow rate and droplet fineness.
- The nozzle's spray pattern is an elliptical flat jet.
- The opening angle of the flat jet can be set with the adjusting screw on the side of the nozzle body. If the screw is turned in to the stop, the result is a round jet of approximately 10°. As the screw is slowly turned out, the 10° round jet turns into a flat jet. Any angle up to a maximum of 90° can be set.
- All individual parts are available as spares. This ensures performance repeatability.
- Depending on viscosity, the liquid can be siphoned, fed over a slight gradient or under pressure. Within certain limits, the nozzles in this series also function as injectors.
- The liquid pressure differential can be used to control the flow rate on all versions. On versions with a control needle the needle setting can also be used to control the flow rate.
- Depending on viscosity, flow rate, density, and surface tension this series is also available
  - with control needle
  - with cleaning needle
- **Atomised spray pattern:**
  Elliptical flat jet of 10° to 90°
- **Type of atomisation:**
  - fog, down to very fine
  - droplet size less than 50 – 150 microns

Design forms

Model 930
Borehole in liquid insert:
0.3 – 0.8 mm

Model 931
Borehole in liquid insert:
1.0 – 1.2 mm

Standard Model 932
Borehole in liquid insert:
1.5 – 1.8 mm

Model 933
Borehole in liquid insert:
2.0 – 2.3 mm

Fig. 17001

All nozzle forms are available with lengthened liquid inserts.

Fig. 17002

Nozzle designs

Form 0
Basic model (with blind plug).
Designed for the atomisation of liquids that are either siphoned or fed by gravity at a slight gradient.

Fig. 17003

Form 1
With blind plug and swirl chamber.
Designed for fine atomisation of liquids under pressure. Especially suitable for integration in textile web moisturising equipment.

Fig. 17004

Form 3
Supplied with cleaning needle. For fast nozzle orifice cleaning during operation. Designed for the atomisation of sticky, impure, or highly viscous liquids, etc.

Fig. 17005

Nozzle designs

Form 4
Supplied with a liquid flow control needle for atomising tasks having highly variable flow rates.

Fig. 17006

Form 5
As Form 4, but with a scale etched on the liquid control needle for fine setting of the flow rate, designed for experiments, laboratories, etc.

Fig. 17007

Form 6
With straight (centrical) liquid feed, for atomisation of highly viscous solutions, pastes, etc.

Fig. 17008

Form 7
Pneumatically controlled using the atomising air. The nozzle needle closes the orifice automatically and abruptly when the atomising air is shut off. Especially suitable for etching, marking, cyclic spraying and above all for liquids under pressure where drips are to be avoided.

Fig. 17009

Form 7-1
As Form 7, but with control by control air, with special connector (atomising air can carry on blowing).

Fig. 17010

Form 8
With solenoid valve.
Standard design: 220 V, 50 Hz, 100 % ED.
Ambient temperature: max. 55 °C, enclosure protection IP 65.
Cycling frequency limited only by the changeover time.

Fig. 17011

Materials

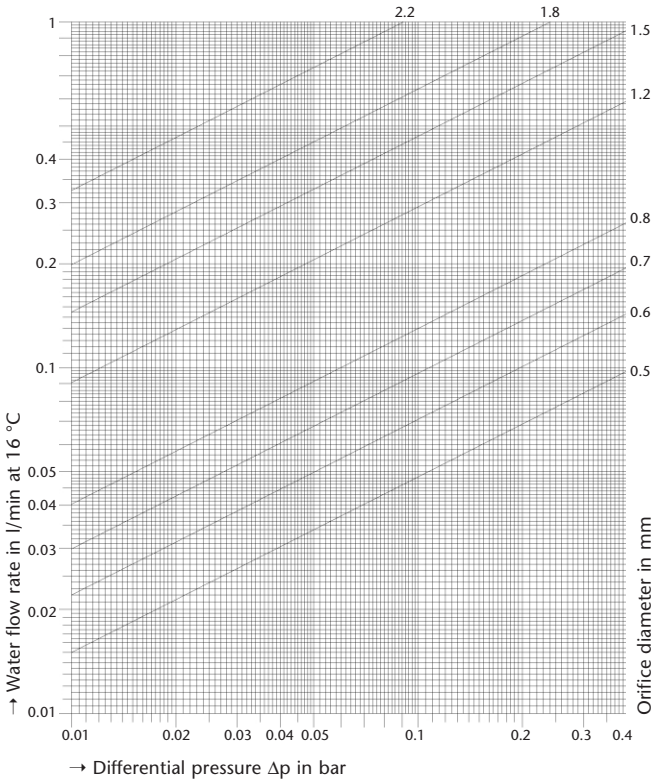
- Acid resistant stainless steel
- Brass
- Titanium
- HASTELLOY

Custom products from other materials available on request

Performance specification

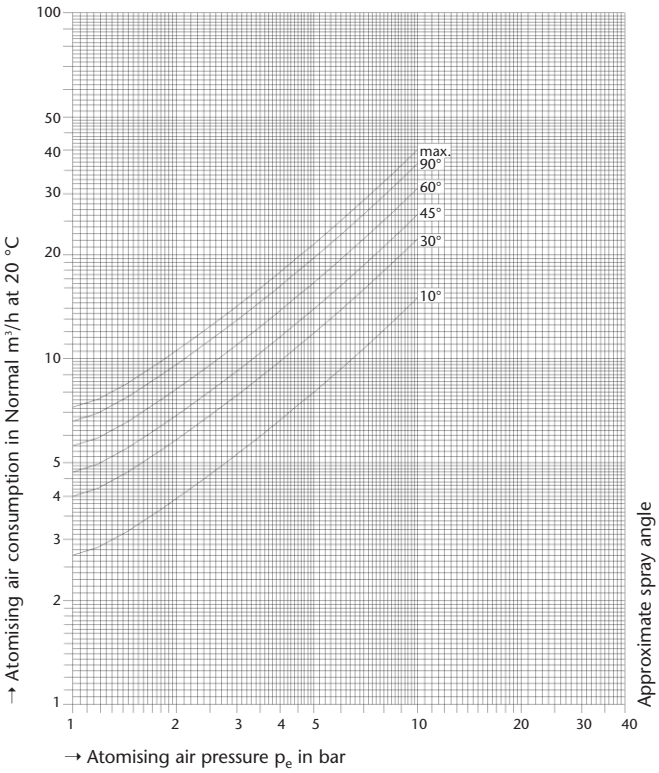
Model 930-933 Form 7-1 – Two-substance nozzle

Water flow rate in l/min at 16 °C



Model 930-933 – Two-substance nozzle

Atomising air consumption in Normal m³/h at 20 °C



Model 930-933 – Two-substance nozzle

Model	Borehole in liquid insert in mm	Atomising air pressure in bar	Atomising air consumption in Normal m³/h	Max. siphon volume in l/min, Form 0, siphon height in mm			Angle
				50	150	300	
930	0.8	0.5	4.2	0.020	–	0.040	Flat jet 90°
		1.0	6.5	0.040	0.038	0.050	
		1.5	8.1	0.055	0.045	0.090	
		2.0	10.6	0.075	0.060	0.110	
931	1.2	0.5	4.2	0.100	0.070	0.060	
		1.0	6.5	0.140	0.120	0.110	
		1.5	8.1	0.160	0.135	0.160	
		2.0	10.6	0.175	0.150	0.185	
932	1.8	0.5	4.2	0.150	0.100	0.070	
		1.0	6.5	0.190	0.150	0.140	
		1.5	8.1	0.240	0.200	0.250	
		2.0	10.6	0.270	0.230	0.300	
933	2.3	0.5	4.2	0.170	0.120	0.085	
		1.0	6.5	0.215	0.270	0.180	
		1.5	8.1	0.260	0.400	0.220	
		2.0	10.6	0.300	0.450	0.250	

Model 930-933 – Two-substance nozzle

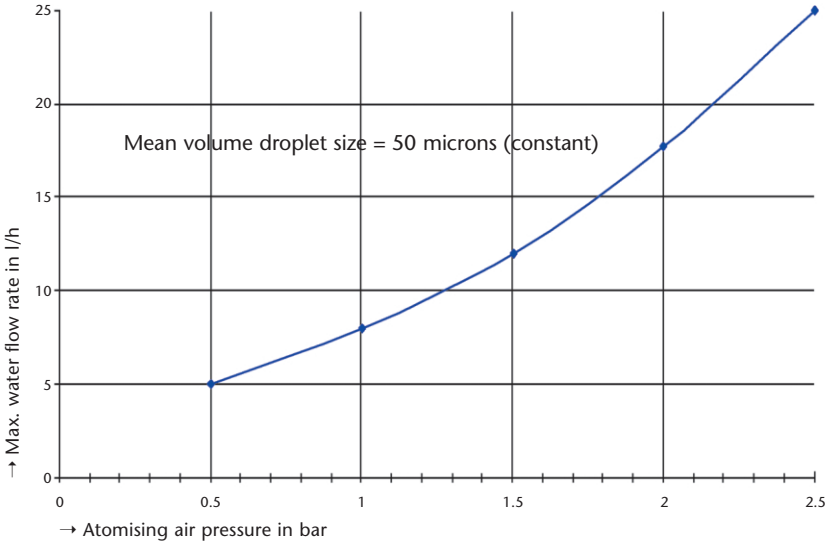
Atomising air pressure in bar	Air consumption in Normal m³/h	Max. water flow rate in l/h	kg air/ kg water
0.5	4.6	5.0	1.10
1.0	6.6	8.0	0.95
1.5	8.0	12.0	0.79
2.0	9.5	18.0	0.63
2.5	11.0	25.0	0.53

The values quoted in the table above are the maximum flow rates at which a fine atomisation with a mean volume droplet size of 50 microns is ensured.

Droplet size

Model 930 – Two-substance nozzle

Droplet size



Custom versions

Model 930 Form 7-1 S35 – Two-substance nozzle

- Custom version S35 is characterised by its compact design and simple construction.
- In comparison to the standard design it consists of fewer components. This simplifies installation, removal, and the cleaning of individual components.
- The function and spray pattern correspond to the standard version.
- All individual parts are available from stock.
- The nozzle can be fitted with a liquid return and a fixing block.
- In comparison to the standard design, however, the versatility is less.
- The nozzle is easily installed with the help of the fixing block.

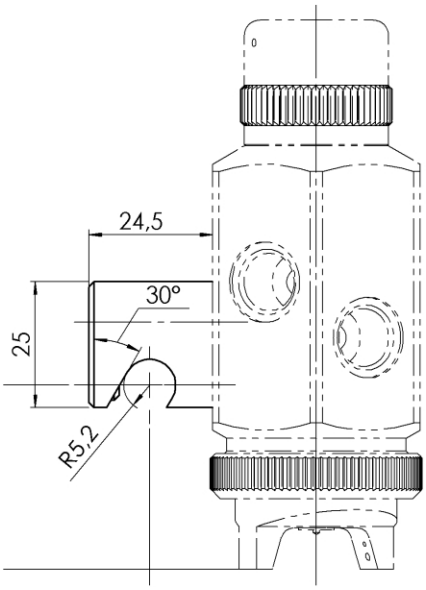


Fig. 17012

Custom versions

Model 930 Form 7-1 S35 – Two-substance nozzle with ABC (anti-bearding cap)

- Because of its novel geometry the so-called anti-bearding flat jet cap causes practically no build-up of medium or clogging.
- It is thus highly suited to continuous operation.
- A seperate pattern air pressure regulates the spray cone angle.
- The spray characteristics are comparable with the standard design of Model 930, but the spray width is a little less.
- The nozzle is available with a fixing block.

Fig. 17013

Model 930 Form 7-1 S14 – Two-substance nozzle
With fixing block

Fig. 17014

Model 930 Form 7-1 S22 – Two-substance nozzle
With separate flat jet air connection for exact setting of the spray angle using the pressure of the air applied

Fig. 17015

Model 930 Form 7-1 S 38 – Two-substance nozzle
With scale for fine setting of liquid flow rate

Fig. 17016

Custom designs/specialities

Model 930 Form 7-1 – Two-substance nozzle
With heater/chiller sleeve

Fig. 17017

PCA
(Professional coating arm)
With five Model 930 Form 7-1 nozzles

Fig. 17018

Header spray pipe with Model 930 Form 7-1 nozzles
For spraying textile webs or large surfaces

Fig. 17019

Schlick
Atomizing technologies

Service spectrum

Pilot test laboratory
Before any new spray nozzles are used we subject them to comprehensive trials in our own test laboratory – if need be to your operational parameters. During these tests, we precisely determine droplet size, velocities and flow densities with our modern DUAL PDA laser-measuring equipment.

Test nozzles
Schlick spray nozzles are world renowned for highest precision. We can offer you the best and most lasting solution to your requirements. And, if you want, we can supply you with test nozzles in advance – just contact us.

Engineering
Take advantage of our comprehensive expertise – from design to installation – the conception of new products or the optimisation of existing plant. We would be glad to help you improve the success of your operation.

Repair service
As well as competent advice and its inception, you can profit from an efficient after-sales service that guarantees long-term supply of all products. We carry out both repair and conversion of Schlick spray nozzles, and in emergency, we can supply spare parts quickly and reliably.

Onsite service
If required we will investigate and develop an optimal solution to suit individual requirements onsite. We will advise you and give you support during installation and initial start-up of the plant. A further plus is the help available from our worldwide technical field service network.

Custom products
As one of the leading spray nozzle manufacturers in Europe, we can offer both high quality standard solutions and are in the position of developing customised products for individual tasks as fast as possible, even for small production runs.

Documentation to the customer's requirements
Reliability and quality are the basis for successful cooperation with our international customers. This applies both to our products and to our service. If you wish, we will supply you with all necessary documentation such as technical handbooks for the nozzles (drawings, flow diagrams, installation and operating instructions) together with factory and material specifications.

All specifications are subject to change (flow rates/dimensions).
The performance/flow rate specifications quoted are descriptive or product identities and can vary by up to ±5 percent on delivery.

Certified by
to DIN EN ISO 9001: 2000

Düsen-Schlick GmbH
Hutstraße 4
96253 Untersiemau
Germany
Tel. +49 95 65 94 81 0
Fax +49 95 65 28 70
info@duesen-schlick.de

www.duesen-schlick.de
www.duesen-schlick.com

d-LH-02.03