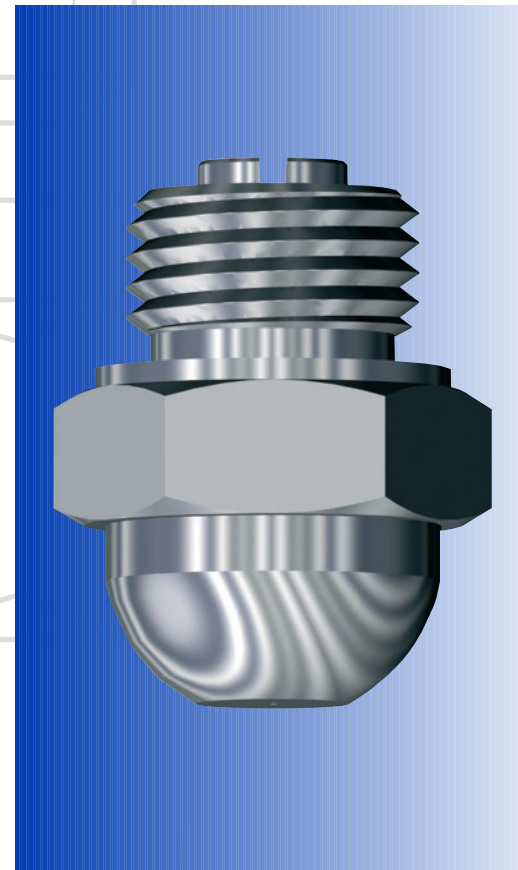


Schlick Series 121-123 Kreisl Spray Nozzles



Applications:

- Air conditioners
- Atomising grease
- Combustion
- Direct lubrication
- Fabric moisturising
- Gas cooling
- Granulating equipment
- Humidifying
- Mixing
- Process engineering
- Pulp moisturising
- Spray drying
- Superheated steam cooling
- Tobacco moisturising

Schlick vaporising nozzles

- Vaporising nozzles are three-part nozzles consisting of the nozzle head, the centrifugal insert, and the screw fitting.
- The liquid is fed to the nozzle under pressure and enters the swirl chamber through tangential slits.
- In the swirl chamber the energy in the pressurised liquid is converted into rotational energy.
- A centrifugal film of rotating liquid forms a hollow cone. After overcoming surface tension, the cone disperses into a myriad of fine droplets.
- **Droplet size**
The quality of the spray and the droplet spectrum are related to the diameter of the orifice, pressure, spray angle, density, viscosity, and surface tension.
- **Spray angle**
The normal spray angle is approximately
60° for orifices of 0.1 to 0.5 mm diameter
70° for orifices of 0.5 to 1.6 mm diameter
78° for orifices of 1.6 to 2.5 mm diameter
Other spray angles of 15°, 30°, 45°, 60°, 90° and 120° can be supplied.
Only the normal spray angle can be supplied for orifices of 0.1 to 0.25 mm.

Nozzle designs

Model 121 – Hollow-cone spray nozzle

Standard, with strainer



Fig. 04001

Model 121 V – Hollow-cone spray nozzle

Shortened design, without strainer

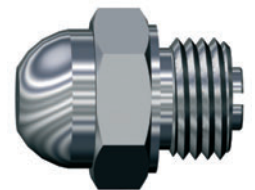


Fig. 04002

Model 121 K – Hollow-cone spray nozzle

With threaded front end



Fig. 04003

Model 121 VK – Hollow-cone spray nozzle

Shortened design, with threaded front end

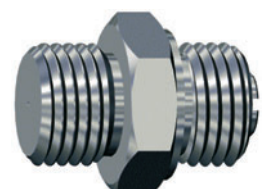


Fig. 04004

Nozzle designs

Model 121 V Form 7-1 – Hollow-cone spray nozzle

Pneumatically controlled. A needle closes the outlet abruptly when the control air is shut off. Especially suitable for etching, marking, cyclic spraying and above all for liquids under pressure where drips are to be avoided.

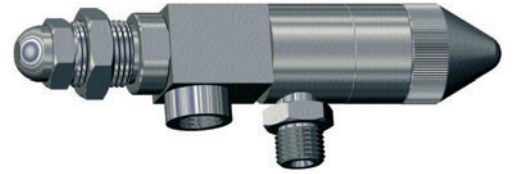


Fig. 04005

Model 121 V Form 8 – Hollow-cone spray nozzle

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.

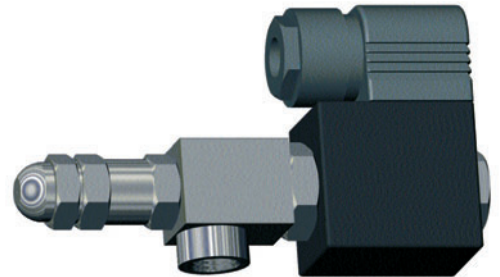


Fig. 04006

Model 123 – Hollow-cone spray nozzle

Size 1: Orifice from 0.5 to 1.6 mm
Connector G 1/4
Size 2: Orifice from 2.0 to 3.2 mm
Connector G 3/8
Suitable for spraying liquids of higher viscosity at lower or higher pressures; low clogging factor.
Spray angle: 30°, 45°, 60°, 78°, 90°, and 120°

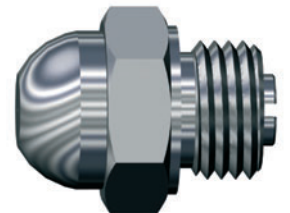
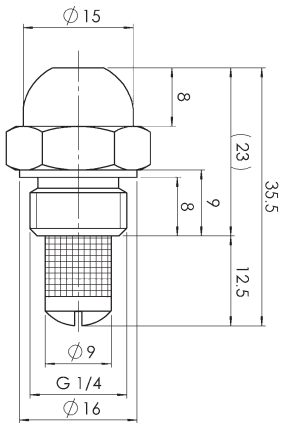


Fig. 04007

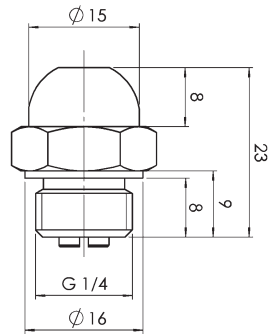
Materials

- | | | | |
|----------------------------------|--------------------|--------|---|
| - Brass | - Tantalum | - PVC | - RCH 1000 |
| - Acid resistant stainless steel | - HASTELLOY | - PVDF | |
| - Heat resistant stainless steel | - INCONEL | - PP | Custom products from other materials available on request |
| - Titanium | - Platinum-Iridium | - PTFE | |

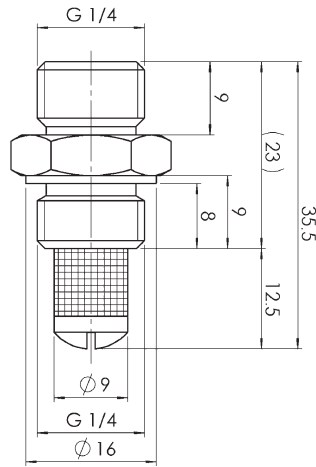
Dimensions



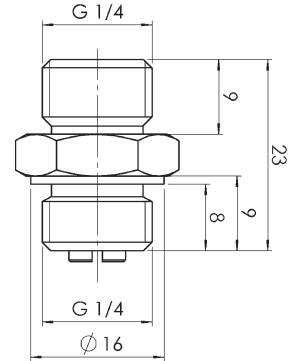
Model 121



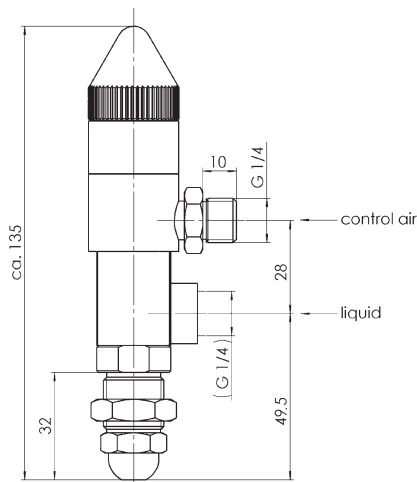
Model 121 V



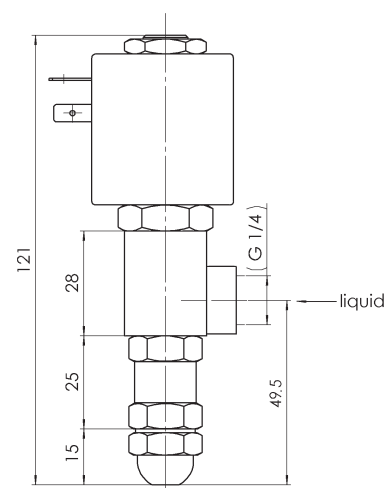
Model 121 K



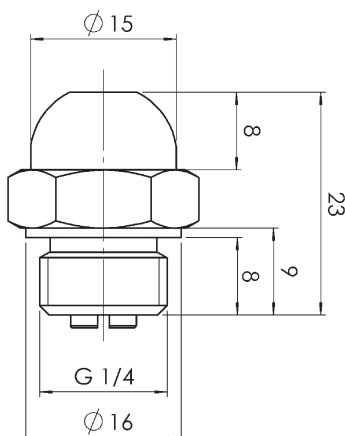
Model 121 VK



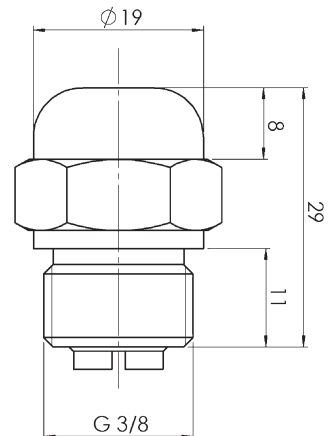
Model 121 V Form 7-1
With pneumatic control



Model 121 V Form 8
With solenoid valve



Model 123 Form 1



Model 123 Form 2

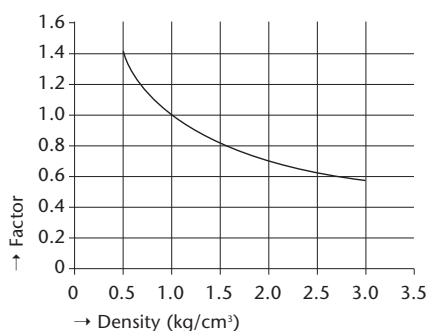
Performance specification

Models 121-123 – Hollow-cone spray nozzles

Orifice Ø in mm	Flow in l/min at									
	1 bar	2 bar	3 bar	4 bar	6 bar	8 bar	10 bar	15 bar	20 bar	30 bar
0.10					0.014	0.016	0.018	0.022	0.025	0.031
0.15					0.021	0.024	0.027	0.033	0.038	0.047
0.20					0.030	0.034	0.038	0.047	0.055	0.067
0.25					0.042	0.048	0.054	0.066	0.076	0.094
0.30					0.050	0.057	0.064	0.076	0.090	0.111
0.35			0.0478	0.055	0.067	0.078	0.087	0.106	0.123	0.151
0.40			0.0625	0.072	0.088	0.102	0.114	0.139	0.161	0.197
0.45			0.0790	0.091	0.112	0.129	0.144	0.176	0.203	0.249
0.50			0.0976	0.112	0.138	0.159	0.178	0.218	0.252	0.308
0.55		0.096	0.1180	0.136	0.169	0.192	0.215	0.263	0.304	0.373
0.60		0.115	0.141	0.163	0.199	0.230	0.257	0.315	0.364	0.445
0.70		0.156	0.191	0.220	0.270	0.312	0.348	0.427	0.493	0.603
0.80		0.204	0.250	0.288	0.353	0.408	0.456	0.559	0.645	0.790
0.90		0.258	0.316	0.365	0.447	0.516	0.577	0.706	0.815	0.999
1.00	0.226	0.319	0.391	0.451	0.553	0.638	0.713	0.874	1.009	1.236
1.10	0.273	0.386	0.473	0.546	0.668	0.772	0.863	1.057	1.221	1.495
1.20	0.325	0.460	0.563	0.650	0.796	0.919	1.027	1.258	1.453	1.780
1.30	0.381	0.538	0.660	0.762	0.933	1.077	1.205	1.475	1.704	2.087
1.40	0.442	0.652	0.766	0.884	1.083	1.251	1.398	1.712	1.977	2.422
1.50	0.507	0.717	0.879	1.015	1.243	1.435	1.604	1.965	2.269	2.779
1.60	0.577	0.816	1.000	1.154	1.414	1.633	1.825	2.236	2.581	3.162
1.70	0.652	0.922	1.129	1.303	1.596	1.843	2.061	2.524	2.915	3.570
1.80	0.731	1.033	1.266	1.462	1.790	2.067	2.312	2.830	3.268	4.003
1.90	0.814	1.151	1.410	1.628	1.994	2.302	2.574	3.152	3.640	4.458
2.00	0.902	1.276	1.563	1.805	2.210	2.552	2.853	3.494	4.035	4.942
2.10	0.995	1.407	1.723	1.989	2.436	2.831	3.145	3.852	4.448	5.448
2.20	1.091	1.543	1.890	2.182	2.672	3.086	3.450	4.226	4.879	5.976
2.30	1.193	1.687	2.067	2.387	2.923	3.375	3.773	4.621	5.336	6.536
2.40	1.299	1.837	2.250	2.598	3.182	3.674	4.107	5.031	5.809	7.115
2.50	1.409	1.993	2.441	2.818	3.452	3.986	4.456	5.458	6.302	7.719

- Flow referred to water at 16 °C – see conversion table for liquids of other densities.
- Orifice diameters are given in $1/10$ mm on the individual nozzles.
- For technical reasons, spray nozzles with a spray angle that deviates from the standard are provided with a smaller or larger outlet orifice. The individual flow rates, however, correspond to the standard orifice.

Conversion factor for density

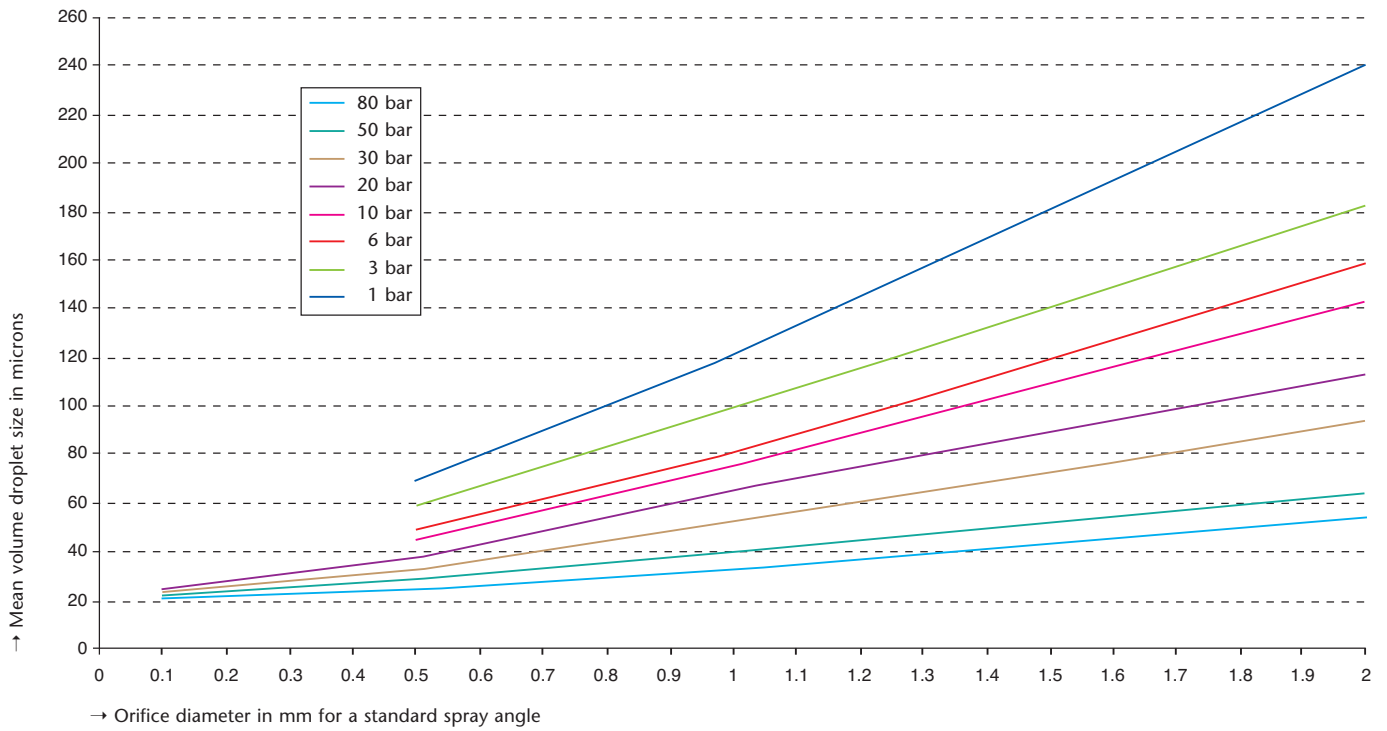


- Flow rates differ for liquids of densities deviating from that of water.
- Use the conversion factors on the left to determine flow rates.
- To convert the flow rate, simply multiply the value referring to water from the table above by the respective conversion factor.
- The influence of viscosity cannot be calculated. The flow rate must be determined experimentally for values differing largely from water.

Droplet size

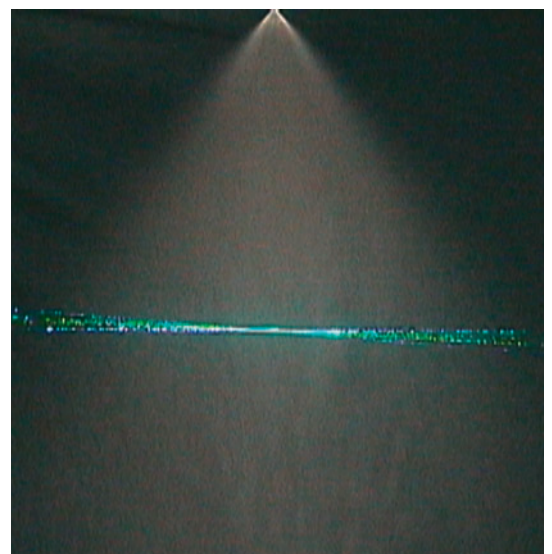
Hollow-cone spray nozzles

Mean volume droplet size in microns



Laser measurement of a Model 112 V spray angle

0.7 mm orifice with standard spray angle at a liquid differential pressure of 8 bar



Custom versions

Model 121 V S51 – Kreisl spray nozzle

With extended shaft



Fig. 04008

Model 121 V S59 – Kreisl spray nozzle

Shortened version, 15 mm long



Fig. 04009

Model 121 V S60 – Mixer nozzle

For mixing two liquids



Fig. 04010

Custom designs/specialities

Model 121 V S52 – Kreisl spray nozzle

With heating system and flanged mounting

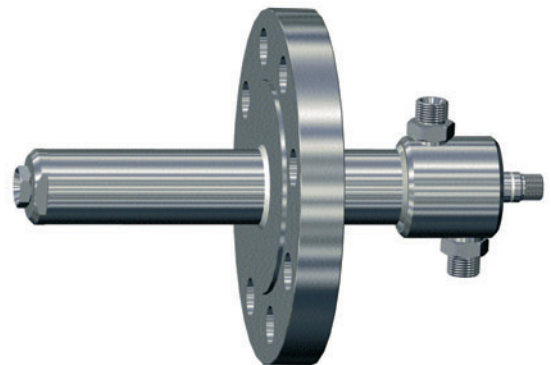


Fig. 04011

Model 121 V S63 – Kreisl spray nozzle

With shaft and ball-and-socket joint

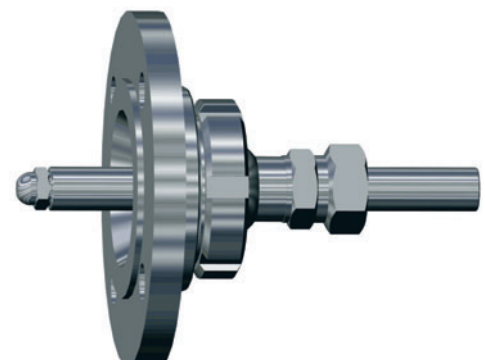


Fig. 04012

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.



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