

# 0/64-0/60 系列模块化内混型喷嘴 Module System Range 0/64-0/60 with Internal Mixing

## 可选材质

- 耐酸不锈钢
- 耐热不锈钢
- 客户指定材料

## Materials

- Acid resistant stainless steel
- Heat resistant stainless steel
- Custom materials available on request



雾化面积大，  
压缩空气消耗量小

*Extremely homogenous spray behaviour for maximum surface coverage with minimal energy consumption*

关键部件的表面粗糙度小于0.8

*Functional components with a surface quality of Ra < 0.8*

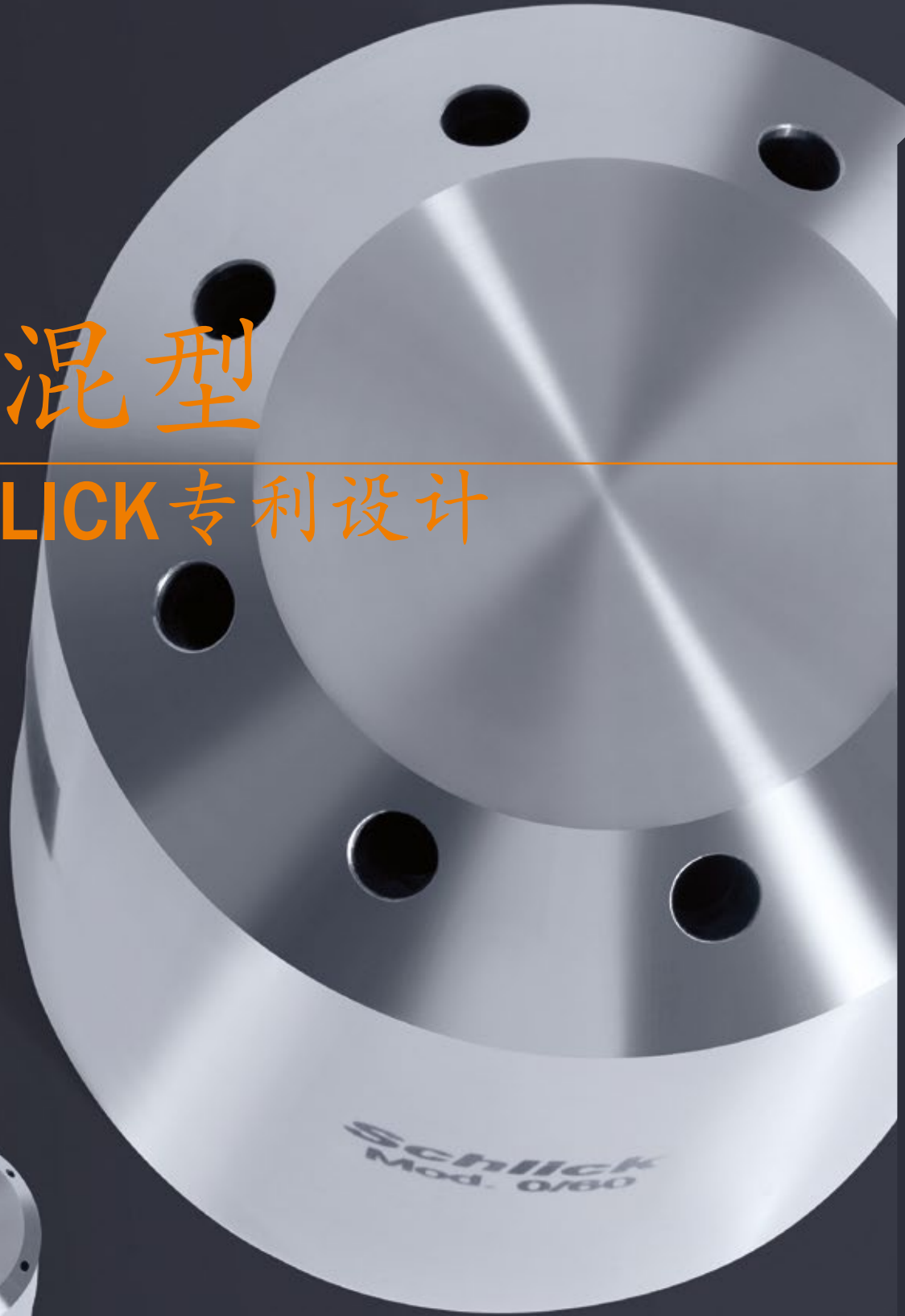
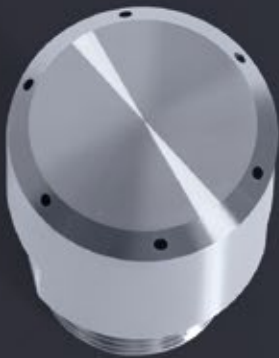
通过更换风帽，任何外混型喷嘴都能很容易被改造成专利内混型喷嘴

*Plug & Spray: By simply changing the air cap any external-mixing two-substance nozzle can be converted to the SCHLICK patented internal-mixing model*

喷嘴模块化结构有助于应用在各种场合，确保雾化效果的一致性

*The SCHLICK modular system allows for diverse application options and ensures reproducible results*

# 内混型 SCHLICK专利设计



产品目录  
Product Overview

两液体喷嘴  
Two-Substance  
Nozzles

防飞溅/专业包袋材料技术  
ABC/PCA Technique

三/四液体喷嘴  
Three-/Four-  
Substance Nozzles

多喷头技术  
Multispray

喷射杆  
Insertion Pipes

喷嘴头  
Nozzle Heads

实心锥喷嘴  
Full Cone Nozzles

空心锥喷嘴  
Hollow Cone Nozzles

硬质合金喷嘴  
Carbide Nozzles

扁平喷嘴  
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Smooth-Jet Nozzles

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Mixing Nozzles

拉瓦尔喷嘴  
Laval Nozzles

清洗喷嘴  
Cleaning Nozzles

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# 0/64-0/60系列模块化内混型喷嘴

## Module System Range 0/64-0/60 with Internal Mixing



### 新内混型两流体喷嘴 — Schlick专利技术

工业喷涂正变得越来越重要，能源和原材料成本的上涨只是其中一个因素，对喷涂越来越高的要求，也促进了喷嘴技术的提升和进步。

这也是为什么SCHLICK能够开发出专利新风帽的原因

SCHLICK认为专业的、好的喷嘴要能做到以下几点

- 最大的雾化宽度和雾化面积
- 最小的物料消耗、雾化液滴尽可能细小和均匀
- 以较小的能源消耗获得均匀的雾化速度
- 雾化出的液滴分布均匀
- 即使高粘度、多固体，喷嘴也能正常雾化

### New design of internal-mixing two-substance nozzles – SCHLICK patented

Professional industrial spraying is becoming increasingly important. The rising costs of energy or raw materials are not the only factors here. Higher quality requirements also stimulate demand for alternative processes and new options.

This is why SCHLICK has developed a new air cap and have applied for a patent.

SCHLICK has the following exactly defined requirements:

- Maximum scatter cone width and area coverage
- Minimal droplet diameter **with limited use of an atomisation medium in order to save energy**
- Even speed distribution **with limited penetrating power of the scatter cone**
- Even distribution of liquid
- Unhindered use of the nozzle with high viscosities and high solid contents

	雾化形状	实心圆锥形
	雾化角度	70°, 90°, 130°
	液滴大小	10 - 150 µm
	处理量	0,1 - 40,0 l/min
	标准喷嘴孔径: 0.5-13.5毫米 定制情况下，最小可以做到0.3毫米， 可选择以0.1的倍数增加的孔径	

	Spray pattern:	circular full-cone
	Spray angle:	70°, 90°, 130°
	Droplet size:	10 - 150 µm
	Capacity:	0.1 - 40.0 l/min
	Standard orifices: 0.5 mm - 13.5 mm Customized bore sizes are possible starting from 0.3 mm upwards in 0.1 mm steps	

神奇的SCHLICK雾化技术  
— 专为雾化解决方案而存在  
从设备设计规划到实际批量生产,  
SCHLICK 都能提供完美的技术解决方案

**Clever SCHLICK technology –  
Living for Solutions**

SCHLICK know-how: from planning to installation. We would be delighted to assist in the optimisation of your technical and operational results.

SCHLICK 新的专利喷嘴设计, 也考虑到了如何简单、低成本地将现有喷嘴改造成新设计的可行性

*An easy and therefore cost-effective modification to the existing nozzle systems was also decisive for the new SCHLICK design.*

插入即雾化: 通过简单更换风帽就能实现SCHLICK专利内混喷嘴的改造

*Plug & Spray: The SCHLICK patented internal-mixing model can be updated by simply changing the air cap.*

雾化气体和雾化液体在SCHLICK专利内混风帽内进行充分混合

*Intensive mixing of the atomisation medium and the liquid within the SCHLICK patented internal-mixing air cap.*

所有喷嘴都能增加加热或冷却夹套套

*All designs can be delivered with heating and cooling jackets.*



插入即雾化

专利产品0/60

*The patented  
SCHLICK Mod. 0/60*

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# 0/64-0/60系列模块化内混型喷嘴

## Module System Range 0/64-0/60 with Internal Mixing

Mod. 0/64-0/60

### SCHLICK专利内混型两流体喷嘴的工作原理

基于液体的粘度、密度和表面张力不同，液体可采用压力或者重力差进液

液体射流通过中心孔进入风帽混合区域后，被旋转的雾化气体分解成单个小液滴

雾化成小液滴的液体和气体一起喷出喷嘴孔，即使喷出速度非常低，0/64-0/60系列喷嘴也能达到大致70°的雾化角度

下图揭示了SCHLICK专利内混型风帽如何实现雾化液滴最小化以及雾化面积最大化

内混型两流体喷嘴优点  
- 能达到70°的雾化角度  
- 最大化的雾化面积  
- 雾化液滴细小且均匀

- 雾化喷射速度低，能源节约  
- 低冲击力  
- 防堵设计

### The principle of the SCHLICK patented internal-mixing two-substance nozzle

Depending on the viscosity, density and surface tension the liquid can be fed over a gradient or under pressure.

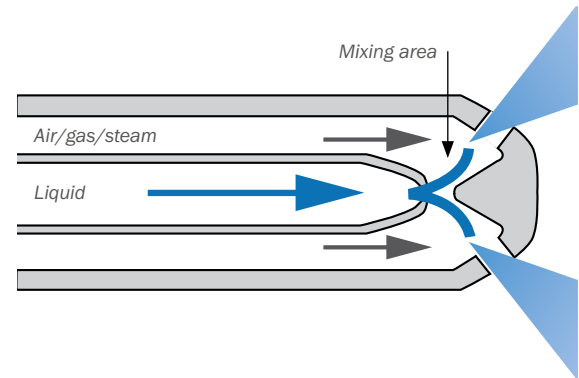
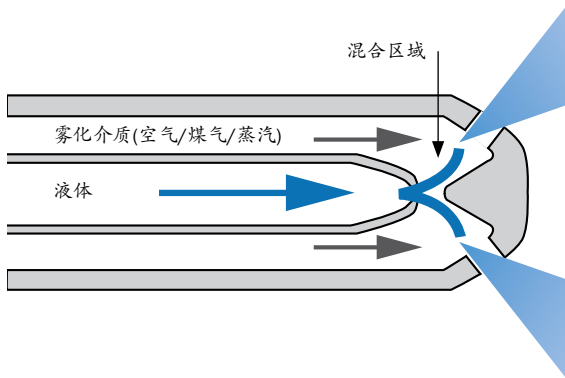
The liquid jet flows through the central hole into an optimised mixing chamber. When this reaches the specially devised cone it is distributed and is broken down into single droplets by the swirled atomised air.

The two-phase mix then leaves the air cap through the customer-specified bore holes. Despite a very low speed impulse the SCHLICK model series 0/64-0/60 can achieve a scatter cone of approx. 70° through the specific hole arrangement.

That's how the SCHLICK patented internal mixing cap achieves a very fine atomisation and offers greater area coverage than comparable models.

### Characteristics of internal-mixing two-substance nozzles

- A wider scatter cone of approx. 70°
- Maximum surface coverage
- Very fine droplet diameter and completely homogenous spray
- Lower speed impulse thereby saving energy
- Limited penetrating power
- Blockage resistant



如有技术变更，恕不另行通知。

双流体喷嘴/全锥形/内混型

Two-Substance Nozzles / Full-Cone / Internal Mixing

神奇的SCHLICK雾化技术

- 安装拆卸简单
- 最大化的雾化面积
- 适用于高粘度流体的雾化
- 通过提升雾化效果来降低能耗

Clever SCHLICK technology

- Extremely easy installation/de-installation
- Maximum area coverage
- Suitable for highly viscous media
- Energy-saving through improved spray quality



为了满足从0.1升/分钟到40升/分钟的流体流量，0/60-0/64系列内混型专利喷嘴，有多种孔径可供选择

In order to achieve a performance of 0.1-40.0 l/min the SCHLICK patented internal mixing cap 0/60-0/64 is fitted with a variable number of specified bore holes.

myschlick.com

## 0/64-0/60系列模块化内混型喷嘴

*Module System Range 0/64-0/60 with Internal Mixing*

Mod. 0/64-0/60



双流体喷嘴/全锥形/内混型

Two-Substance Nozzles / Full-Cone / Internal Mixing

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## 应用

- 吸附
- 包衣
- 燃烧
- 精整
- 流化床技术
- 制粒
- 混合
- 脱硫脱硝
- 石油、酒精回收
- 工艺工程
- 污水焚烧
- 喷雾干燥
- 增稠
- 烟草工业

## Applications

- Adsorption
- Coating
- Combustion
- Finishing
- Fluid bed technology
- Granulating
- Mixing
- NO<sub>x</sub>-Reduction (SCR-/SNCR-technologies)
- Oil, alcohol recovery
- Process engineering
- Sewage incineration
- Spray drying
- Thickening
- Tobacco industry (casing, flavouring)



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# 0/64-0/60系列模块化内混型喷嘴

## Module System Range 0/64-0/60 with Internal Mixing



### Form 0

此系列是基本型喷嘴，没有流量控制针阀也没有防堵通针，用于雾化压力较小的场合

*Basic model with dummy plug. Designed for the atomisation of liquids that are either siphoned or fed by gravity at a slight gradient.*

盲堵  
Blind plug



### Form 3

此系列喷嘴，配有防堵通针，可在生产过程中实现清洁喷芯(防堵)，此类喷嘴用于高粘度或者不洁净液体的雾

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

防堵通针  
Cleaning needle



### Form 4

此系列喷嘴，配有液体流量控制针阀，用于流量经常变化的雾化场合

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

流量控制针阀  
Liquid flow control needle



### Form 6

此系列喷嘴，从喷杆中心直接进液，用于高粘度溶液，如糊料等的雾化

*With straight (central) liquid feed, for atomisation of highly viscous solutions, pastes, etc.*

液体从中心进液  
Central liquid feed



神奇的SCHLICK雾化技术  
 一专为雾化解决方案而存在  
 从设计到安装,  
 SCHLICK都能提供专业的技术支持  
 和解决方案

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 Living for Solutions**

SCHLICK know-how: from planning to installation. We  
 would be delighted to assist in the optimisation of your  
 technical and operational results.

## Form 7-1

此系列喷嘴, 通过单独的控制阀,  
 可以在雾化气体突然关闭的情况下,  
 驱动通针关闭喷芯 (停止喷液),  
 尤其适用于蚀刻、标记、  
 循环喷涂等需要避免滴液的应用场合

With pneumatic control through a separate attachment  
 for control air (atomisation air does not need to be shut  
 off). The nozzle needle (also available as cleaning 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.

**100%** 无漏滴  
**drip-free**

针阀气动控制  
 Pneumatically  
 controlled by control air



### 具体技术参数/尺寸

#### Technical details/dimensions

型号 Model	0/64	0/63	0/62	0/61	0/60
流量(以水为例, 升/小时)h Water flow rate in l/h	10	80	300	800	2400
喷芯孔径(mm) Bore diameter liquid insert in mm	max. 1.2	max. 2.3	max. 4.0	max. 8.0	max. 13.5
液体连接口尺寸 Liquid inlet port	G 1/8	G 3/8	G 1/2	G 3/4	G 1
雾化气体连接口尺寸 Air inlet port	G 1/8	G 3/8	G 1/2	G 3/4	G 1 1/2
控制气体连接口尺寸(仅指7-1类型喷嘴) Control air inlet port (Form 7-1)	G 1/8	G 1/4	G 1/4	G 1/4	-
杆子长度 Shaft length	依客户要求 Individual	依客户要求 Individual	依客户要求 Individual	依客户要求 Individual	依客户要求 Individual

# 具体技术参数 Technical Details



## 内混型和外混型喷嘴雾化面积的比较

### Comparison of internal and external mixing in terms of surface coverage

	型号	外混型	内混型	雾化气的消耗量 (4bar时, 立方/小时)	流量(以水为例, 升/小时)	雾化直径 (mm)	雾化面积 (平方米)	内混型比外混型 雾化面积增加 比例
	Model	External mixing	Internal mixing	Atomising air consumption at 4 bar (g) in Nm/h	Water flow rate in l/h	Spray diameter in mm	Spray area in m <sup>2</sup>	Increase of area external/internal mixing
雾化距离300mm的位置 Spray distance 300 mm	940	•		23		106	0,020	
	0/63		•	20	30	280	0,062	+ 310 %
	0/4	•		67		160	0,020	
	0/62		•	52	110	340	0,091	+ 455 %
	0/5	•		160		160	0,020	
	0/61		•	145	230	420	0,138	+ 693 %
	0/5 S14	•		450		160	0,020	
0/60		•	403	550	480	0,1,81	+ 904 %	
雾化距离600mm的位置 Spray distance 600 mm	940	•		23		320	0,080	
	0/63		•	20	30	420	0,138	+ 173 %
	0/4	•		67		320	0,080	
	0/62		•	52	110	480	0,181	+ 226 %
	0/5	•		160		320	0,080	
	0/61		•	145	230	540	0,229	+ 286 %
	0/5 S14	•		450		320	0,080	
0/60		•	403	550	660	0,342	+ 428 %	

## 0/62喷嘴的雾化 Spray Model 0/62



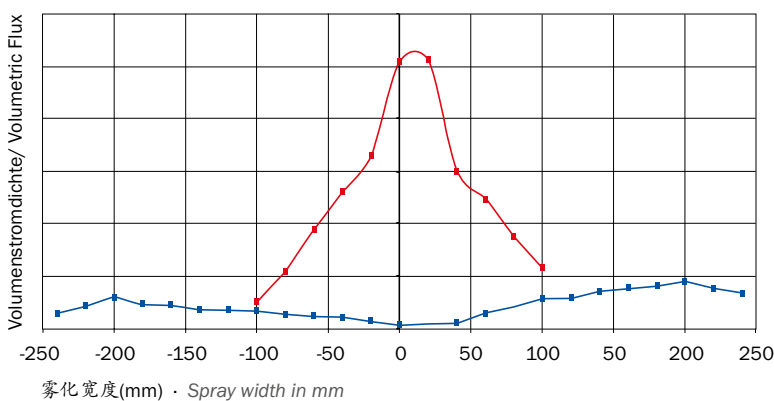
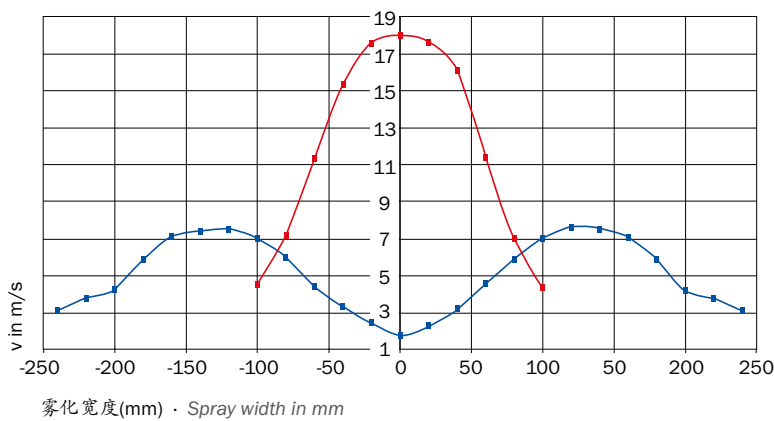
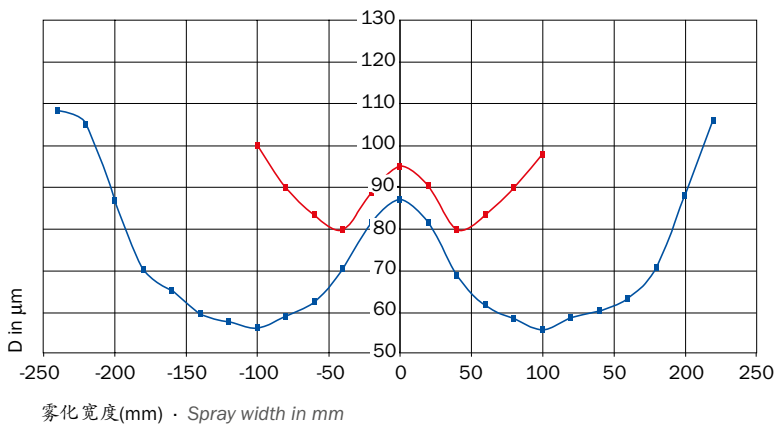
如有技术变更, 恕不另行通知。

相位多普勒测量技术  
-雾化效果可测量

SCHLICK测量系统采用双相位激光多普勒测试原理(5瓦氩离子激光器),能精准测量雾化液滴特性和其流动性

PDA measurement technology –  
measurable success

SCHLICK uses a drop measurement device designed according to the dual PDA principle (Phase-Doppler Anemometry), with a 5-watt (argon-ionic) continuous wave laser.



## 客户定制设计 *Customized Designs*

### 可按客户要求小批量定制

作为一家全球领先的喷嘴制造商，SCHLICK一直为客户提供高质量的标准解决方案。

当然，凭借高精度的制造能力以及丰富的研发经验，SCHLICK也可根据客户的特殊要求进行设计、开发。

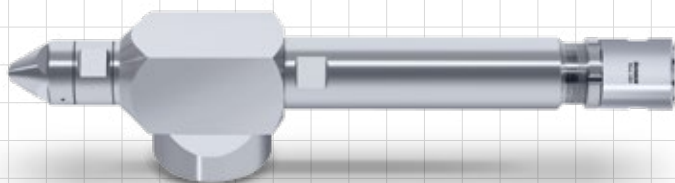
即使需求数量少、交期紧。。

### **Custom and individual designs, small series**

*As a leading nozzle manufacturer, high quality standardised solutions are business-as-usual for SCHLICK.*

*However, thanks to the breadth of its manufacturing capacities and comprehensive expertise, SCHLICK can also produce custom and individual designs for specific applications.*

*No matter how small the series or short the timeframe.*


**Mod. 0/62 Form 7-1**

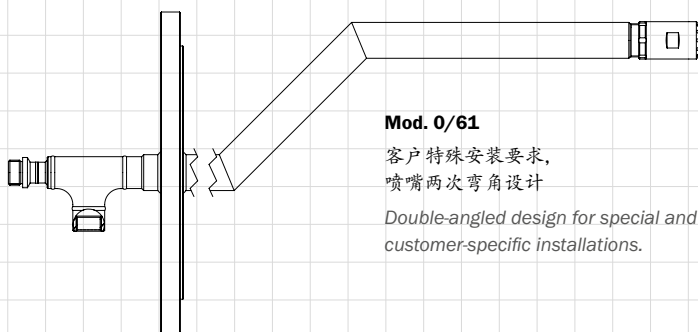
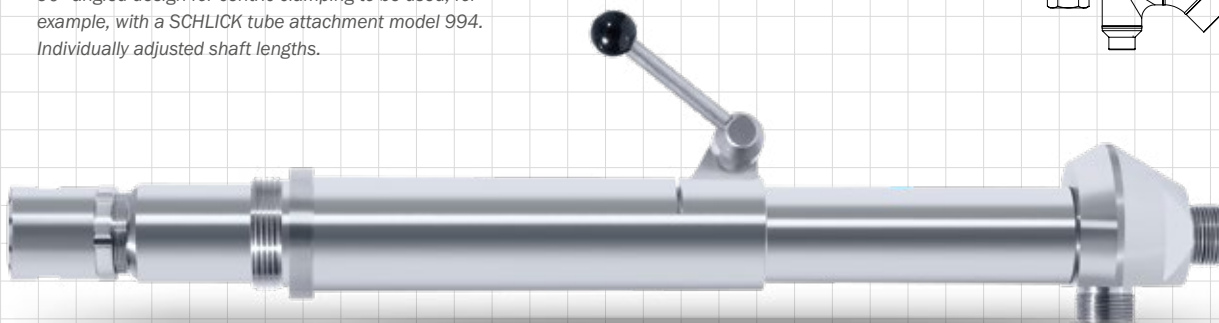
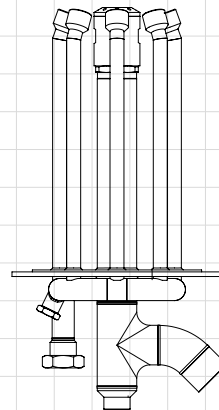
中间接气接液的90°设计，  
可与994系列连接杆连接，  
长度可按客户要求调整

90° angled design for centric clamping to be used, for example, with a SCHLICK tube attachment model 994. Individually adjusted shaft lengths.

**Mod. 0/60 S2**

中间为两流体喷嘴，  
外围四周压力式喷嘴  
(雪花状)

Central two-substance nozzle with an externally arranged rim of pressure nozzles (snow canon).


**Mod. 0/61**

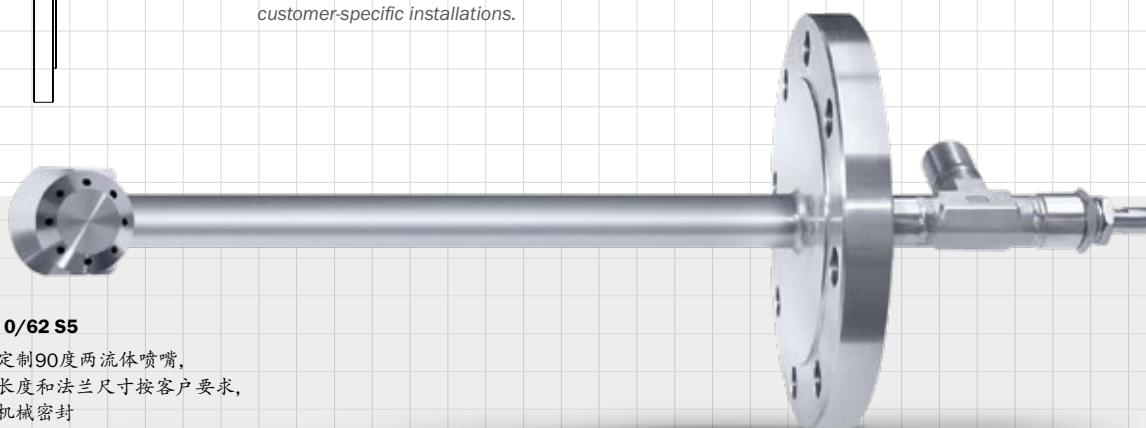
客户特殊安装要求，  
喷嘴两次弯角设计

Double-angled design for special and customer-specific installations.

**Mod. 0/61 Form 6**

自带夹紧装置，  
杆子长度可依客户要求，  
也可改为法兰或者其他夹紧方式

Model with clamping unit. Individual shaft lengths. Clamping also possible with a flange or other plant fittings.


**Mod. 0/62 S5**

客户定制90度两流体喷嘴，  
杆子长度和法兰尺寸按客户要求，  
采用机械密封

Custom design of a 90° angled SCHLICK two-substance nozzle. Shaft length and flange set-up based on individual customer specifications. Version with gland seal.

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