

ENGINEERING
YOUR SPRAY SOLUTION



➤➤ AIR NOZZLES
and accessories

GENERAL INDUSTRY



LECHLER AIR NOZZLES – QUIETLY EFFICIENT

Lechler is a world leader in nozzle technology. For over 140 years, we have pioneered numerous groundbreaking developments in the field of nozzle technology. Comprehensive nozzle engineering know-how is combined with a deep understanding of application-specific requirements to create products that offer outstanding performance and reliability.



Leading nozzle technology for compressed air

In many industrial and craft fields, compressed air is an essential aid for drying, cooling, cleaning, transporting, loosening, mixing as well as a host of other tasks. At the same time, the use of compressed air also creates costs and high noise emissions. The critical factor here is the type of nozzle used.

Industries

- Metalworking industry
- Food industry
- Packaging industry
- Electronics industry
- Semiconductor industry
- Plastics industry
- Printing/coating/painting, etc.

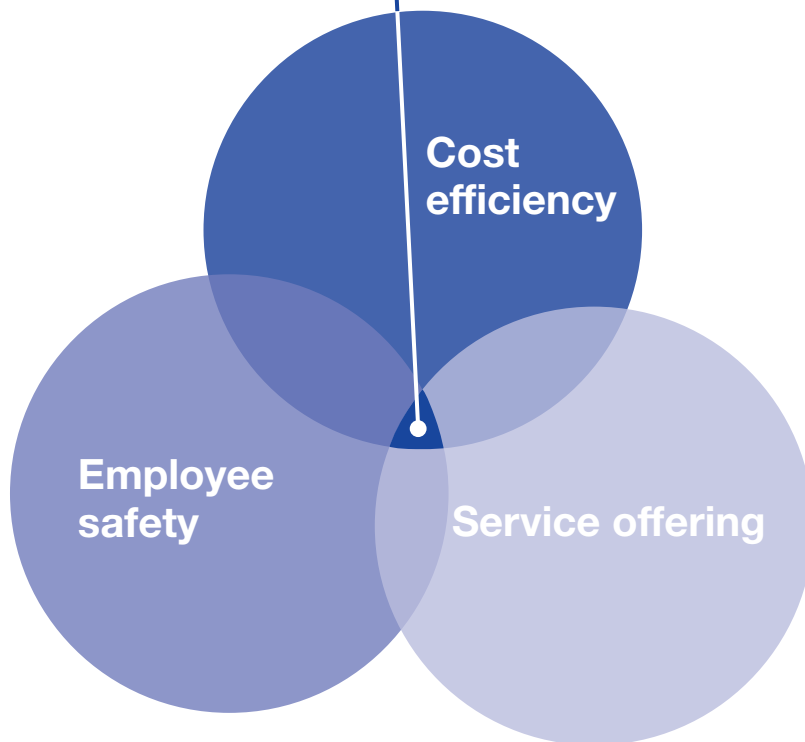
Your competent partner – worldwide

With subsidiaries in Hungary, the USA, England, India, China, France, Belgium, Sweden, Finland, Spain and Italy as well as qualified agents in over 40 countries, Lechler is represented all over the globe. We will help you solve your compressed air tasks – wherever you are in the world.

Your advantages

- Reduced noise level
- Lower operating air pressure with same blowing force
- Lower air consumption
- Improved blowing efficiency over larger distances
- Lower operating costs

THREE ADVANTAGES FOR YOU



Cost efficiency

Lechler nozzles make it possible to reduce compressed air consumption by up to 45 %, in comparison with open pipes. Furthermore, increasing energy costs and the growing range of applications for compressed air become more evident for the impressive potential savings possible in this area. This is a competitive benefit that has a direct positive impact for your business.

Employee safety

The unique design of our nozzles allows the noise level to be verifiably reduced by up to 25 % in comparison with conventional solutions. This also reduces noise-related stress for your employees. Since concentration falls as a result of increased stress, use of low-noise nozzles has a positive effect on production quality.

Service offering

A perfect solution must be optimally tailored to the exact requirements. We will therefore gladly advise you in person about the use of compressed air nozzles and introduce you to new possibilities. Contact us and let us define the best possible solution together for improved quality and optimized process reliability.

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LECHLER AIR NOZZLES HAVE PROVEN THEMSELVES IN MANY AREAS OF INDUSTRY

Cleaning/blowing off

Lechler Whisperblast® nozzles are preferred over conventional air nozzles due to their low noise levels. The nozzles are very frequently used for blowing off debris. Both permanently installed solutions or a connection to a compressed air gun are possible.



Cooling

In addition to cooling by water, surfaces can also be cooled by air and other gases. The noise level can be reduced even further by means of multi-channel air nozzles. The width of the multi-channel nozzles means that air can be supplied more uniformly to the surface when the nozzles are correspondingly positioned, e.g. for cooling components after ultrasonic welding.



Drying

Whisperblast® nozzles remove unnecessary liquid drops, e.g. from bottle necks, so that the attached marking can be applied optimally.



Selecting/sorting

Air nozzles can also be used for selecting and sorting applications by operation with short pulses. The picture shows an example from the food industry. Here, bakery buns that do not pass requirements are being rejected.



Ionizing

Air nozzles are used in the semiconductor industry to supply ionized air to the manufacturing process. This prevents the buildup of static electricity.



Air curtain

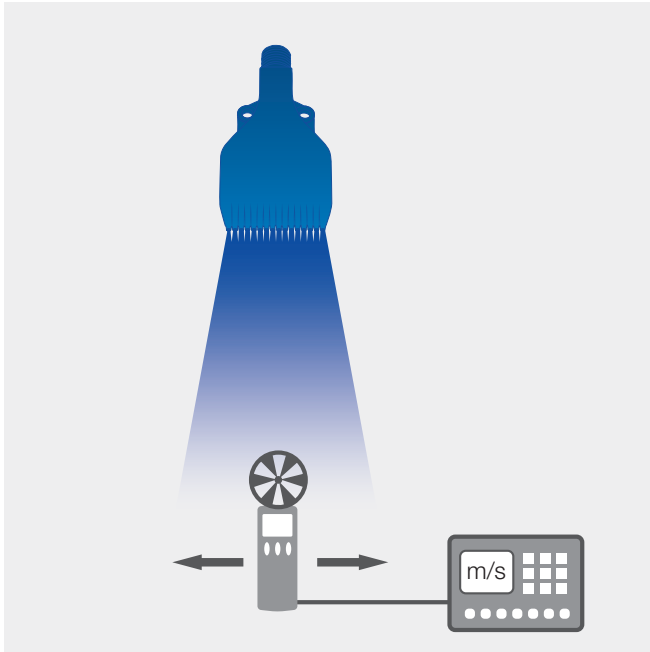
If Whisperblast® nozzles are arranged closely together, it is possible to create a closed air curtain. The illustrated test with water clearly shows gap-free swirling at the surface. In short, this means that dust and other fine particles can be kept away from a certain area.



These are just a few of the possible applications. If your specific application is not listed, please contact us. We will gladly advise you.

MODERN NOZZLE TECHNOLOGY FOR GREATER EFFICIENCY AND LESS NOISE

Jet pattern measurement



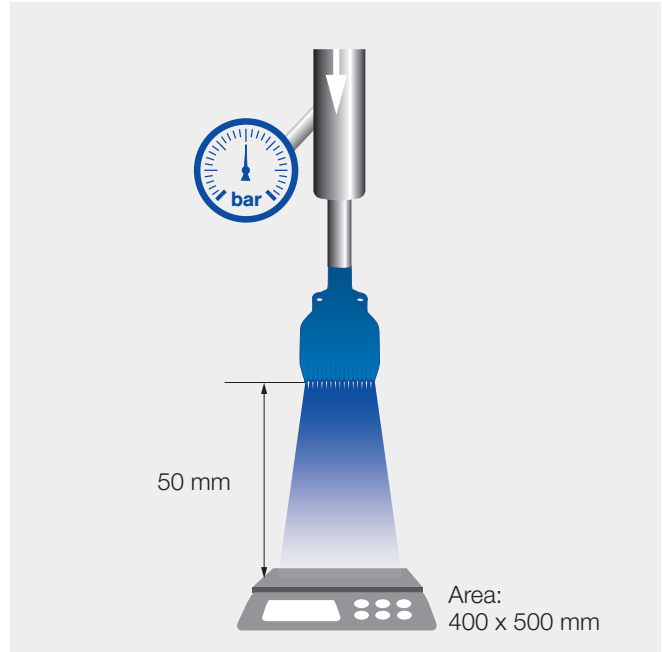
Larger measurable jet pattern

For the jet pattern measurement, the nozzles are clamped in a fixture specially designed for this purpose. An anemometer (windmeter) moves through the air jet at right angles to the jet direction at previously defined distances and at different pressures. The wind speeds measured here define the jet (as specified on the product

pages). An air speed of 2.5 m/s was defined as the limit value on the basis of experience and flow calculations (CFD).

The compact design and unique form of our air nozzles allow for extremely high speeds in the near range as well as larger throw distances.

Blowing force

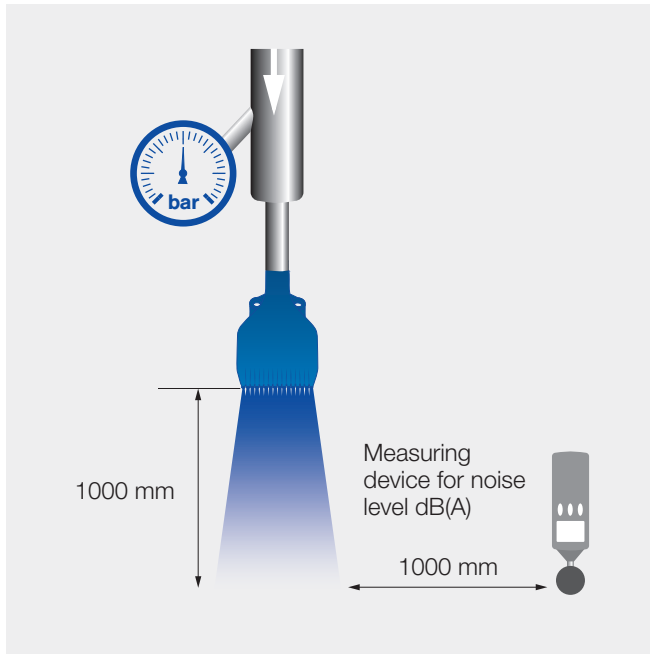


Higher measurable blowing force

In practice, the available blowing force is critical. Our measurements show that Lechler multi-channel nozzles achieve a high blowing force even at large distances. Thanks to this benefit, our

nozzle technology opens up new applications for use with compressed air. Compared with conventional solutions, the competitive advantage that can be realized with Lechler nozzles is evident again.

Noise level

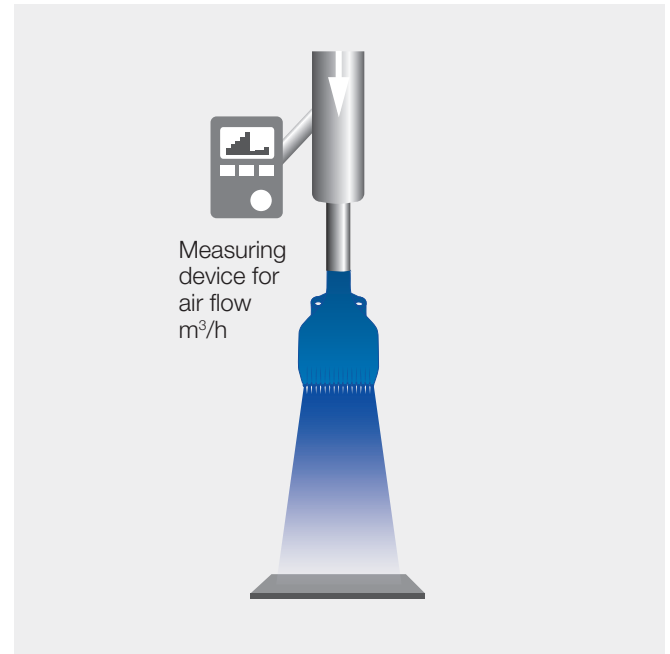


Less measurable noise

Conventional air nozzles simply blow air through a hole. The resulting turbulence generates unpleasant, loud hissing noises. Such noises can trigger stress reactions among employees even at relatively low sound pressure levels, thereby impairing both concentration and performance.

Regulations such as those on determination of occupational noise exposure (DIN EN ISO 9612) are designed to protect employees. Testing of our compressed air nozzles in accordance with this standard is one reason why the German Employers' Liability Insurance Associations recommend Lechler air nozzles as a valuable aid to combat noise.

Air consumption



Lower measurable air consumption

The generation of compressed air requires energy. Since the energy costs account for an increasingly large share of the overall costs of manufacturing a product, considerable savings can be achieved through the right nozzle selection.

Nozzles from Lechler are designed so that they need less compressed air than conventional nozzles, without the need to compromise on performance. As a result, our products help to make production processes more efficient and more environmentally friendly.

WHAT YOU SHOULD KEEP IN MIND WHEN PLANNING

- ① **The difference between standard volume flow and operating volume flow**
- ② **Difference between blowers and compressors**
- ③ **Jet pattern of air nozzles**
- ④ **Innovative nozzle design**
- ⑤ **Materials and connections**
- ⑥ **Gases**
- ⑦ **Operating medium steam**
- ⑧ **Cost savings and noise reduction in comparison to an open pipe**

① The difference between standard volume flow and operating volume flow

The term „standard volume flow“ refers to a unit quantity of a gas based on a standard reference. These standard conditions are used in nozzle technology, process engineering and other areas to compare gases on the basis of quantity information. If reference is made to standard volume flows in relation to nozzle technology, Lechler always bases its values on **DIN EN ISO 1343**. DIN EN ISO 1343 is a standard that is commonly used in

pneumatics. This standard specifies a unit of measure, the so-called standard volume, to describe a quantity of gas on the basis of reference conditions (pressure and temperature).

The standard conditions for pressure and temperature are as follows:

Absolute pressure:

$p_n = 101325 \text{ Pa} // [1,01325 \text{ bar(a)}]$

Temperature:

$T_n = 273,15 \text{ K} // [0 \text{ } ^\circ\text{C}]$

In contrast, the term „operating volume flow“ describes the volume of the corresponding gas under the

actual operating/application conditions. Since these normally differ from the standard conditions, pressure and temperature must always be clearly defined. If an operating volume is delivered in a certain time, this results in the operating volume flow.

In order to avoid mistakes or misunderstandings, mass flows are used in practice and for calculation since the mass of a substance is independent of pressure and temperature.

Figure 1 shows the relationship between standard and operating volume flows at different pressures with constant temperature. Since the influence of temperature on the volume of a substance is comparatively small, this diagram can be used for approximate determination of the respective volume.

The following formula can be used for exact calculation:

$$V_{\text{Operating}} = \frac{T}{p} \times 0,00371 \times V_{\text{Standard}}$$

p: Absolute pressure (atmosphere + system pressure = 1,013 bar + p_s)
T: Absolute temperature (273,15 K + T_{Medium})

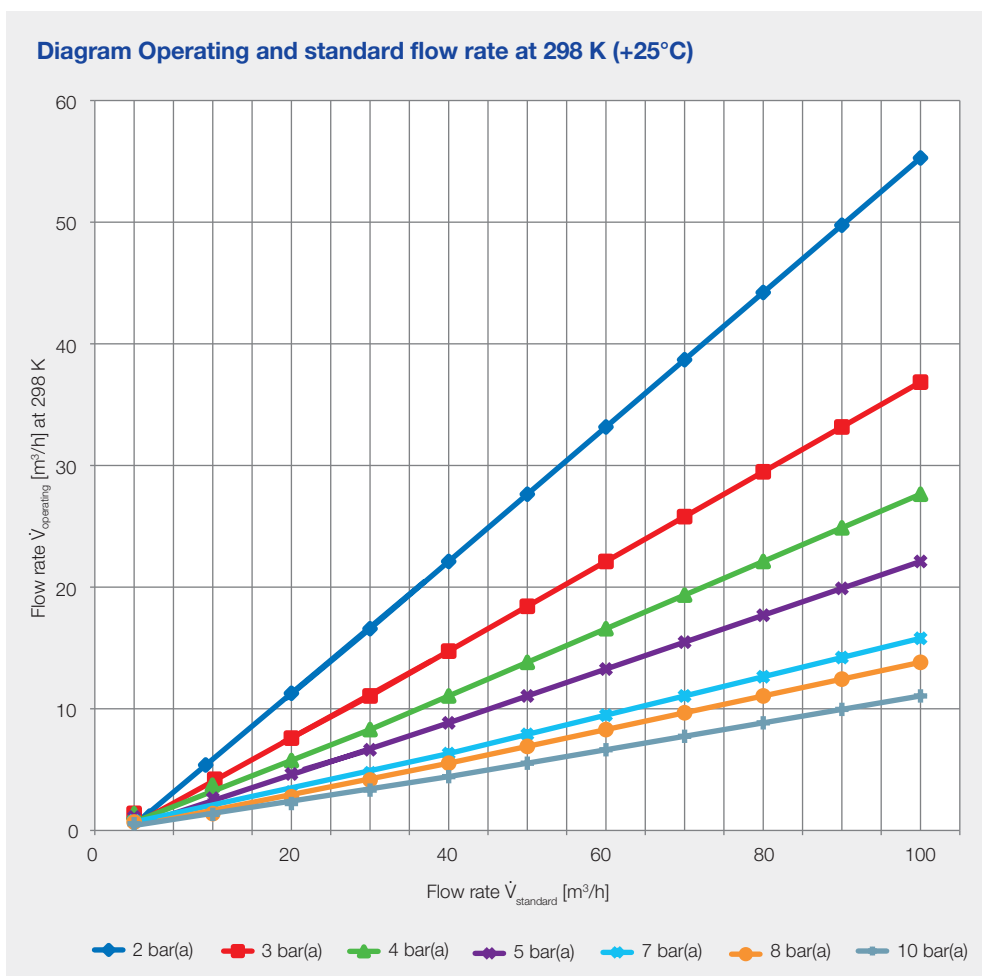


Figure 1: Relationship between standard volume flow and operating volume flow

② Difference between blowers and compressors

If the term BLOWER is used in fan technology, this normally describes equipment that delivers large gas quantities at low pressures. In contrast, a COMPRESSOR delivers low volume flows at high pressures.

Blowers are often used to make extraction and ventilation processes more efficient, e.g. to guarantee the supply of oxygen in combustion processes. In contrast, compressors are frequently used in everyday life. Whether it is inflating car tires or blowing off metal chips on a drill, compressors are used in a host of applications.

Lechler air nozzles make it possible to perform many different blowing-off and cleaning operations easily, efficiently and with low noise.

③ Jet pattern of air nozzles

Air nozzles are used for concentrated, targeted delivery of air or other gases. The nozzles used are normally flat jet or round jet nozzles. Air is also discharged at a specific angle. However, this is not comparable with that of liquids.

Air expands when it is discharged from the nozzle orifice, which leads to expansion of the jet. The spray angle is normally approx. 20°.

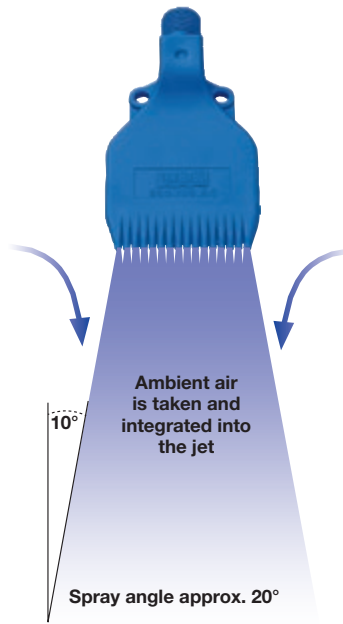


Figure 2: Jet expansion of an air nozzle

④ Innovative nozzle design

With conventional air nozzles, air is simply blown through a hole. The produced turbulence creates loud hissing noises. With our specially designed multi-channel air nozzles, we are able to focus and reduce this turbulence. The specially

shaped orifices guide the supplied air uniformly into arranged air channels to ensure optimum flow behavior. This produces a uniform, aligned and powerful air stream. The decrease in turbulence results in lower noise emissions and also measurably reduces air consumption.

⑤ Materials and connections

Our standard materials for metal nozzles are brass and stainless steels: 303 SS, 316L SS or 316Ti SS.

Standard nozzles made of plastic are usually made from PP, PVDF or POM.

It is also important to choose the optimum material for seals. Viton, PTFE, EPDM or EWP are used, depending on the application.

Nozzles are manufactured primarily with threads according to ISO 228, DIN EN 10226 and NPT. A distinction is also made between sealing and non-sealing threads. In the case of non-sealing threads, PTFE tape or thread paste is used for sealing.

Lechler nozzles meet many different requirements of international organizations – including food grade compatibility and occupational safety.



The FDA, the U.S. Food & Drug Administration, is a federal agency

which oversees those two industries. Materials used in making Lechler products are compliant with the requirements of FDA regulation 21 CFR for use in food applications.



The regulation (EC) No. 1935/2004 of the European Parliament regulates

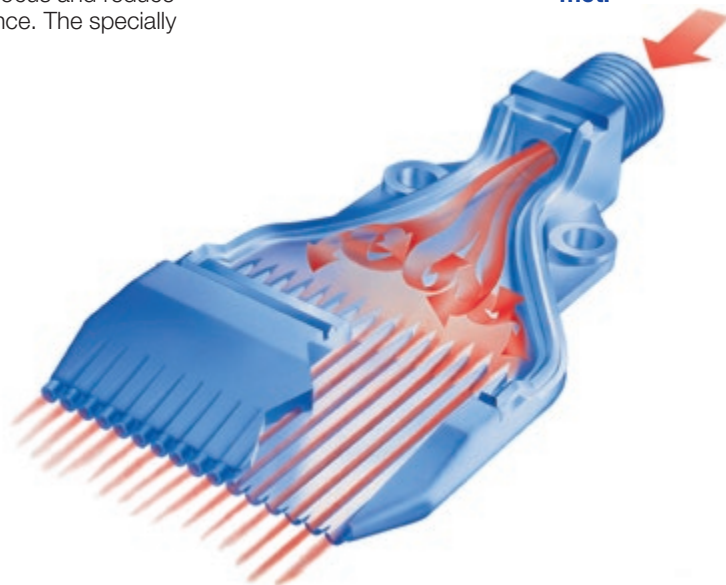
general safety requirements to all food and beverage contact materials.

Within this regulation, it is additionally stipulated that plastics must comply with (EU) 10/2011.



The Occupational Safety and Health Administration (OSHA) is a US federal authority for prevention of accidents at work.

The respective logo on the product pages indicates which requirements are met.



WHAT YOU SHOULD KEEP IN MIND WHEN PLANNING

⑥ Gases

The output of gases (e.g. air) is fundamentally different to the output of liquids. Gases are compressible fluids, whereas liquids are considered as incompressible fluids.

Gases can be supplied with practically all nozzles that can also be used for atomizing liquids. However, due to the compressibility and lower density of gases, gas jets cannot be formed in the same way as with liquids. Gases tend to generate a significantly increased noise level under certain conditions (pressure and nozzle design).

The development of multi-channel nozzles with specially shaped nozzle orifices makes it possible to considerably reduce the turbulence in the nozzle that causes noise. In addition, this nozzle design increases blowing force while at the same time reducing air consumption.

The speeds of gases can be very high under certain conditions. If a specific pressure difference is applied to a nozzle, speeds of approx. 320 m/s can often occur in the smallest cross section. This speed can even increase shortly after the gas leaves the nozzle. The illustration below shows the speed characteristic in a flow simulation.

⑦ Operating medium steam

In general, steam must be considered as a gas. But in certain cases, it must be treated differently to e.g. air, especially with regards to flow characteristics. Since water is actually liquid under normal conditions, it changes its state of aggregation only subject to certain prerequisites; this means that the flow and thermodynamic properties of steam differ from those of gases. For example, the throughput of steam is always specified as a mass flow in practice. In contrast, gas throughputs are often specified as volume flows. However, one of the most

important properties of steam is its density, i.e. maintenance of its gaseous state. If steam is pressurized, it can quickly lose its gaseous state at a given temperature and change to liquid state. This can already take place at moderate pressures and temperatures.

Particular attention must be paid to this and other physical-chemical properties if it is desired to use steam as a medium for nozzles.

⑧ Cost savings and noise reduction in comparison to an open pipe

The use of compressed air has long been standard in companies. Whether for blowing off debris, sorting out defective parts or simply for drying products after washing. Companies frequently use simple pipes for this purpose. These are often purchased inexpensively and then individually shaped and aligned for the specific application.

However, this seemingly inexpensive solution is usually very uneconomical in the long run. Thanks to their individual design, the air consumption and noise level of Lechler air nozzles are significantly lower than for comparable open pipes with equivalent bore diameter. The use of Lechler air nozzles is not only a cost savings but it also protects the health and safety of your employees.

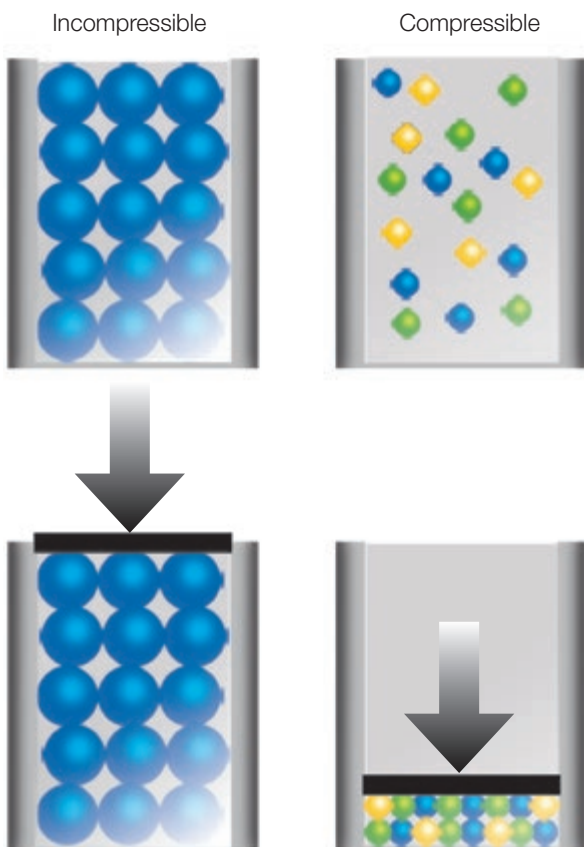


Figure 3: Compressibility behavior: Left water / right air

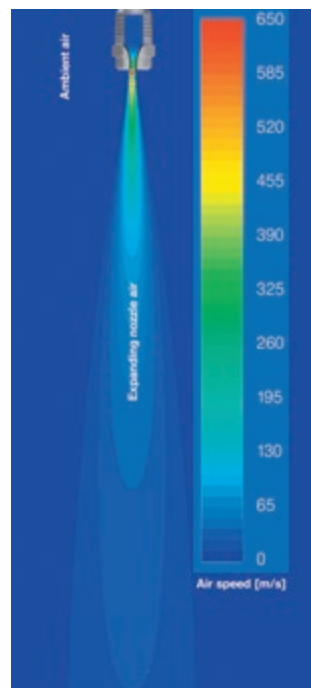
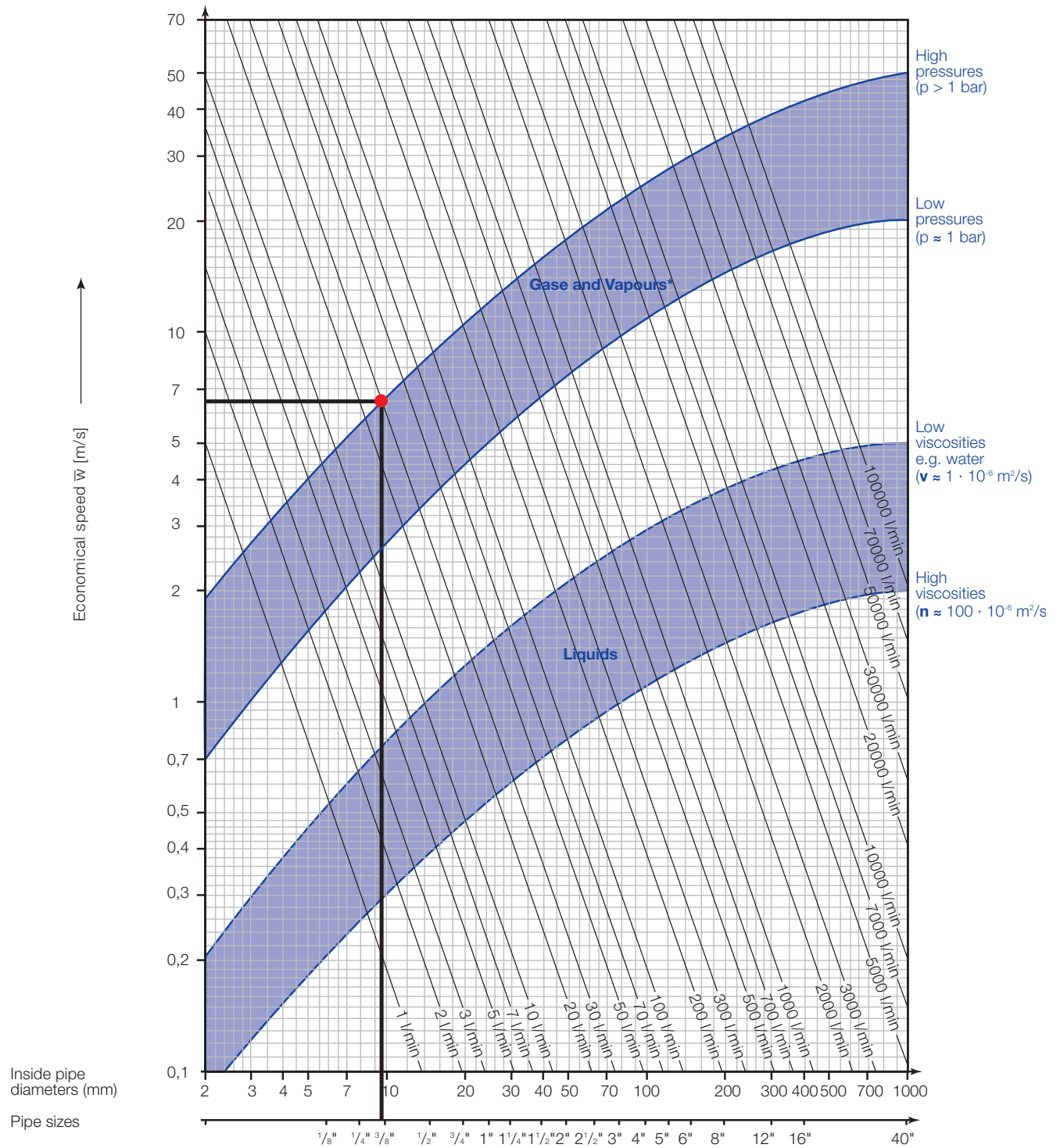


Figure 4: Representation of the speed curve of outflowing air

DETERMINATION OF PIPE DIAMETERS



* Flow rates of gas and vapours in operating condition

Example: You want to deliver 30 l air per minute at a pressure > 1 bar. You must therefore find the intersection point of the corresponding pressure curve and volume flow line in the above diagram. You can read off the correct pipe internal diameter or pipe size and the economically efficient speed at the coordinates of this point.

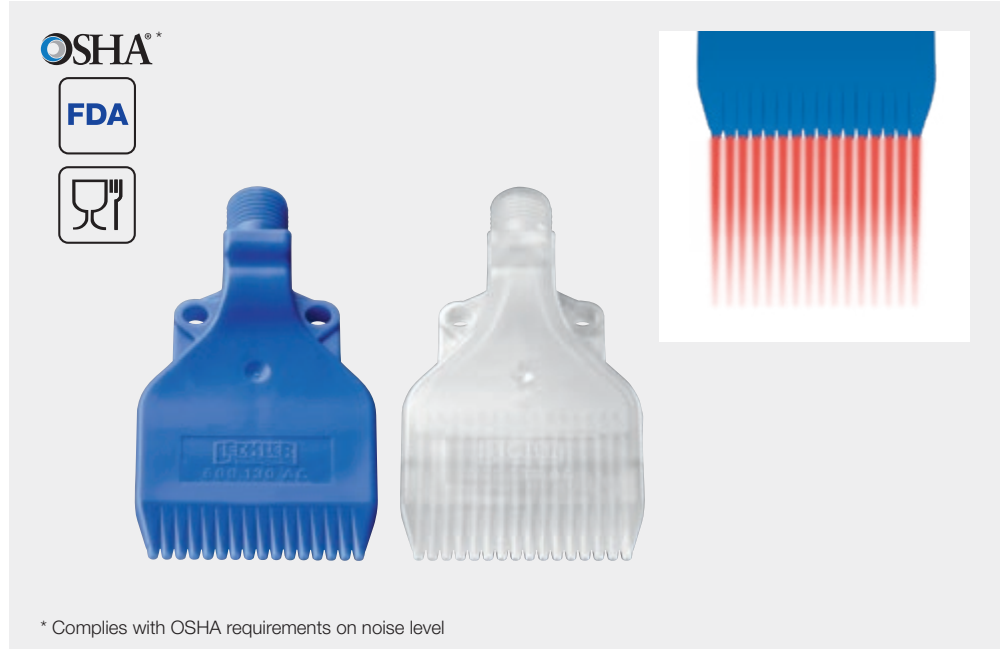


Multi-channel flat jet nozzles for air Whisperblast®, plastic versions Series 600.130.S2/56

**Extremely
silent!**

Series 600.130.S2/56

The multi-channel flat jet nozzles of the 600.130 series generate a continuous powerful air stream. The noise level and air consumption remain low even at higher air pressures. Since the nozzles are made completely of POM or natural PP, they are also suitable for applications in the food industry or electroplating sector.



* Complies with OSHA requirements on noise level



Cost savings

21 %



Noise reduction

24 %



Materials
Natural PP and POM



Blowing force
2 N at 2 bar



Noise level
70 db(A) at 2 bar



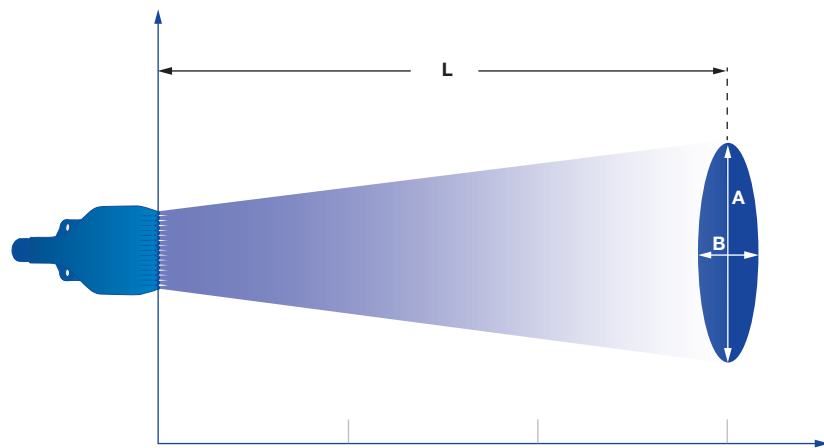
Air consumption
 $V_{LN} = 16 \text{ m}^3/\text{h}$ at 2 bar



Pressure
 $p_{\text{max}} = 6 \text{ bar}$



Max. temperature
PP nature: 60 °C
POM: 50 °C

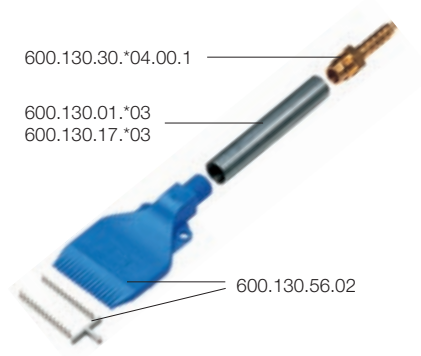
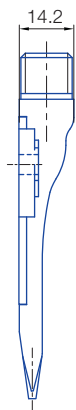
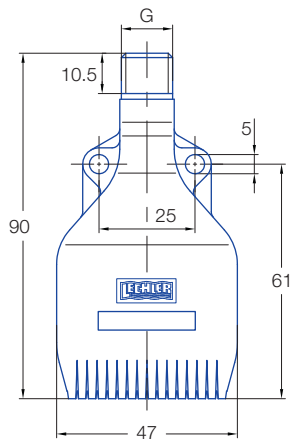


Jet pattern of 600.130 nozzle series

Pressure:	1 bar	3 bar	5 bar
Distance L [mm]:	600	900	900

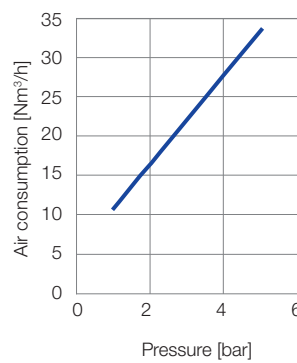
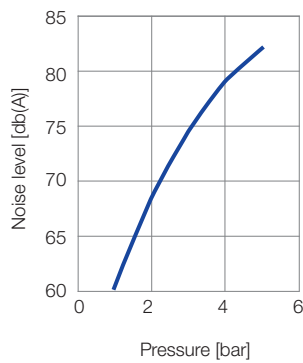
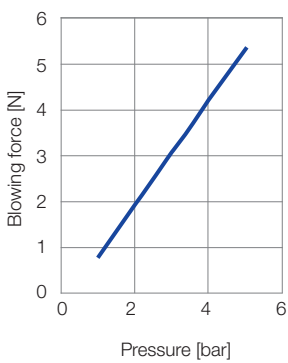
Jet dimensions at L

A [mm]:	140	240	260
B [mm]:	130	185	220



600.130.56.01 with accessories
 *01 = 1.0711 / 17 = 316Ti SS / 30 = Brass

Technical data



Ordering no.				
Type	Mat. no.		Code	
	S2	56	1/4 BSPP	1/4 NPT
	Natural PP	POM		
600.130	<input type="radio"/>	<input type="radio"/>	AC	BC
600.130 with cover strip	-	<input type="radio"/>	02	-
600.130 with cover strip, Hose barb (D = 8 mm) and Extension tube (L = 85 mm)	-	<input type="radio"/>	01	-

Example of ordering: Type + Mat. no. + Code = Ordering no.
 600.130. + 56 + AC = 600.130.56.AC

Note: The cover strip allows to customize the jet width by closing individual holes.



Multi-channel flat jet nozzles for air Whisperblast®, plastic versions Series 600.332.56

**Extremely
silent!**

NEW

Series 600.332.56

The multi-channel flat jet nozzles of the 600.332 series generate a continuous powerful air jet. The noise level and air consumption remain low even at higher air pressures. The projecting tips at the nozzle outlet prevent air penetration into human skin. These nozzles comply with the OSHA standards.



Cost savings

26 %



Noise reduction

21 %



Material
POM



Blowing force
2 N at 2 bar



Noise level
70 db(A) at 2 bar



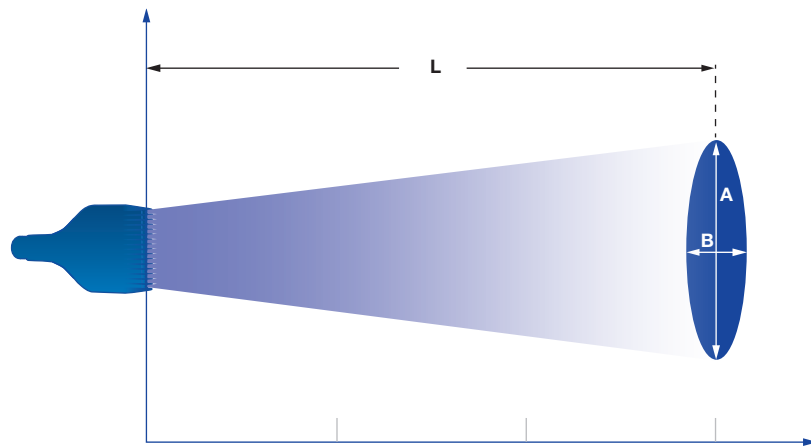
Air consumption
 $V_{LN}=15 \text{ m}^3/\text{h}$ at 2 bar



Pressure
 $p_{max}=6 \text{ bar}$



Max. temperature
50 °C

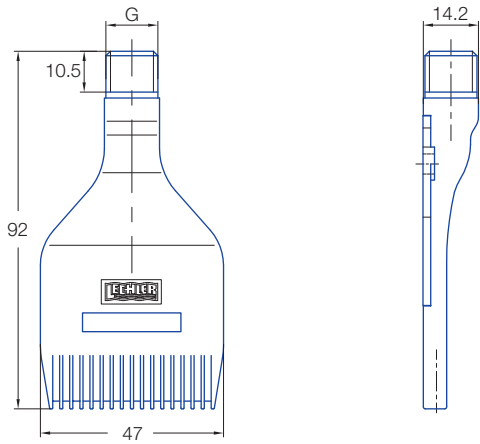


Jet pattern of 600.332 nozzle series

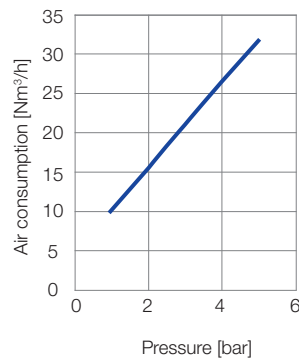
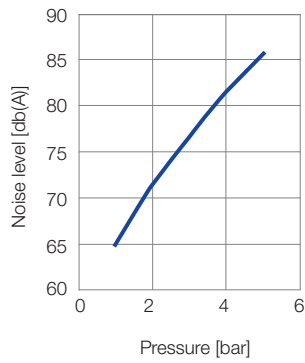
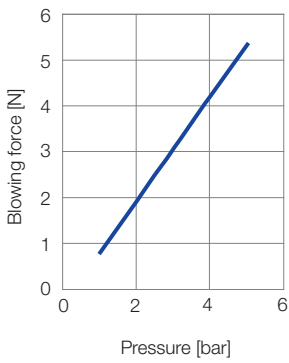
Pressure:	1 bar	3 bar	5 bar
Distance L [mm]:	625	900	900

Jet dimensions at L

A [mm]:	125	200	230
B [mm]:	125	200	230



Technical data



Ordering no.			
Type	Mat. no.	Code	
		56	
	POM	1/4 BSPP	1/4 NPT
600.332	○	AC	BC

Example of ordering: **Type** + **Mat. no.** + **Code** = **Ordering no.**
600.332. + **56** + **AC** = **600.332.56.AC**

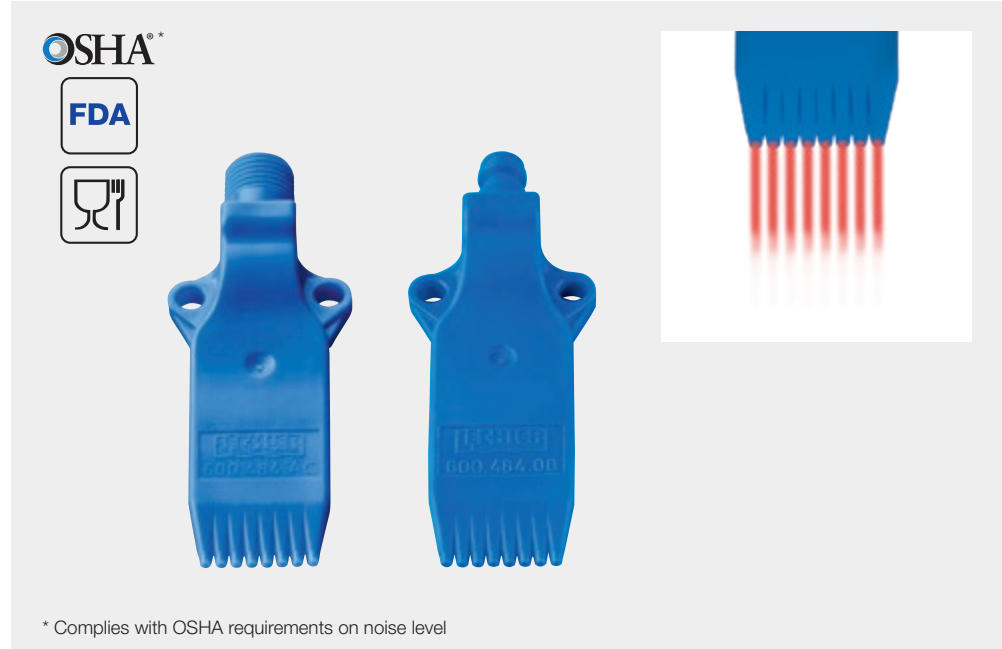


Multi-channel flat jet nozzles for air Whisperblast®, plastic versions Series 600.484.56

**Extremely
silent!**

Series 600.484.56

The multi-channel flat jet nozzles of the 600.484 series generate a compact, powerful air jet. Thanks to its narrow design, this nozzle outperforms with its low air consumption and low noise level. Since they are made completely of POM, these nozzles are also suitable for applications in the food industry.



Cost savings

22%



Noise reduction

22%



Material
POM



Blowing force
0.8 N at 2 bar



Noise level
65 db(A) at 2 bar



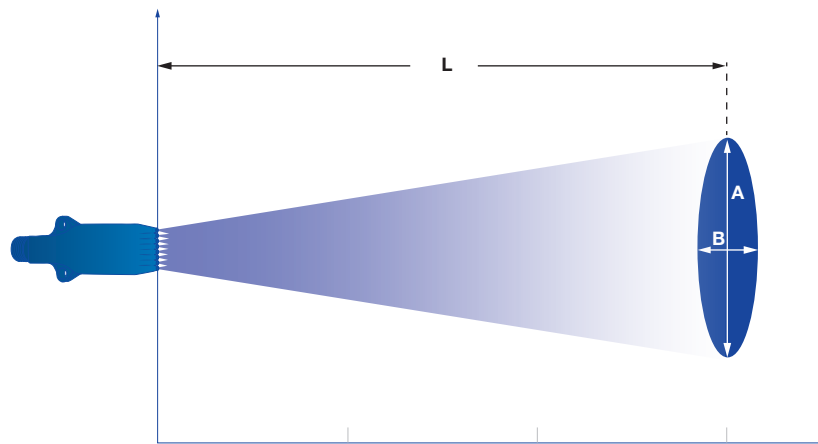
Air consumption
 $V_{LN} = 7.5 \text{ m}^3/\text{h}$ at 2 bar



Pressure
 $p_{max} = 6 \text{ bar}$



Max. temperature
50 °C

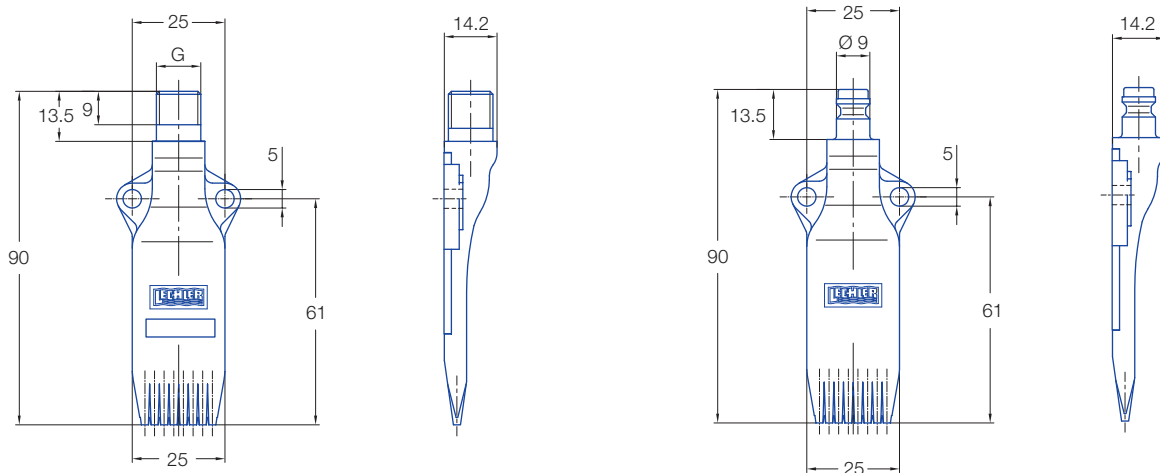


Jet pattern of 600.484 nozzle series

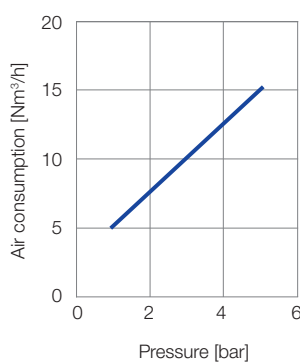
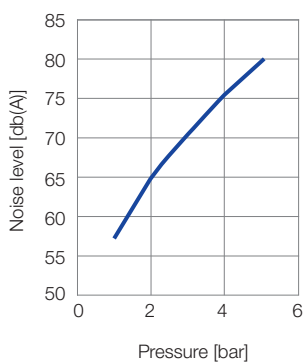
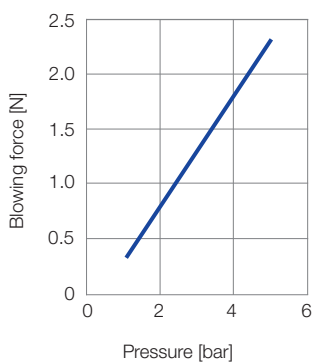
Pressure:	1 bar	3 bar	5 bar
Distance L [mm]:	350	600	850

Jet dimensions at L

A [mm]:	110	170	220
B [mm]:	80	120	170



Technical data



Ordering no.					
Type	Mat. no.	Code			
		56			
	POM	1/4 BSPP	1/4 NPT	M12 x 1.25	Quick connect coupling NW 5
600.484	○	AC	BC	HG	00

Example of ordering: Type + Mat. no. + Code = Ordering no.
 600.484. + 56 + AC = 600.484.56.AC

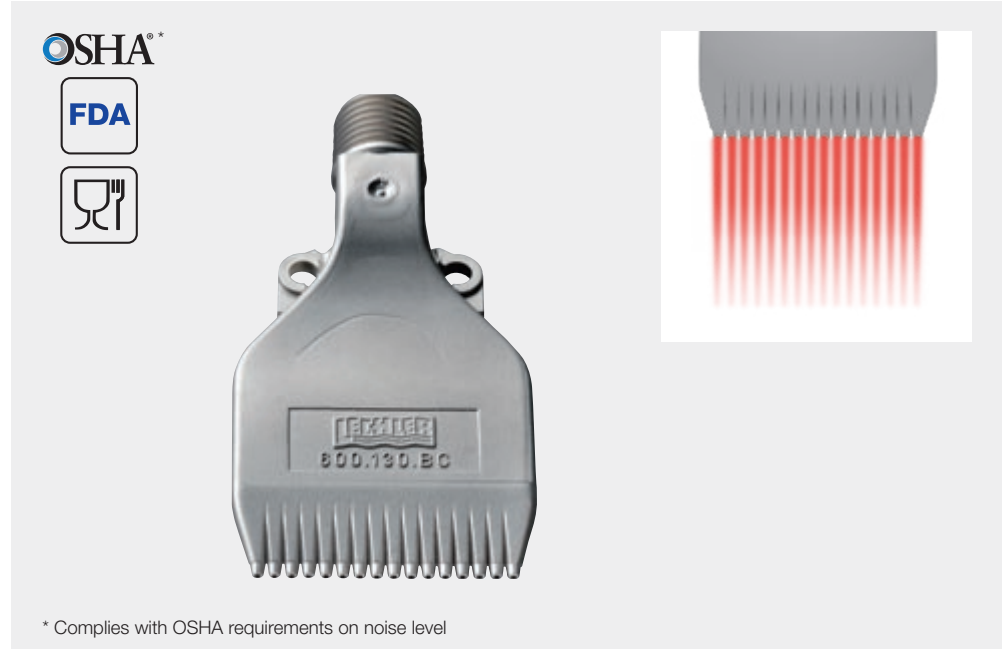


Multi-channel flat jet nozzles for air Whisperblast®, metallic versions Series 600.130.1Y

**Extremely
silent!**

Series 600.130.1Y

The multi-channel flat jet nozzles of the 600.130 series generate a planar, powerful air jet. The noise level and air consumption remain low even at higher air pressures. In the stainless steel version (316L SS), these nozzles can therefore be used in applications with the highest loads.



Cost savings



24%



Noise reduction



22%



Material

Stainless steel
316L SS



Blowing force

2 N at 2 bar



Noise level

70 db(A) at 2 bar



Air consumption

$V_{LN}=12 \text{ m}^3/\text{h}$ at 2 bar



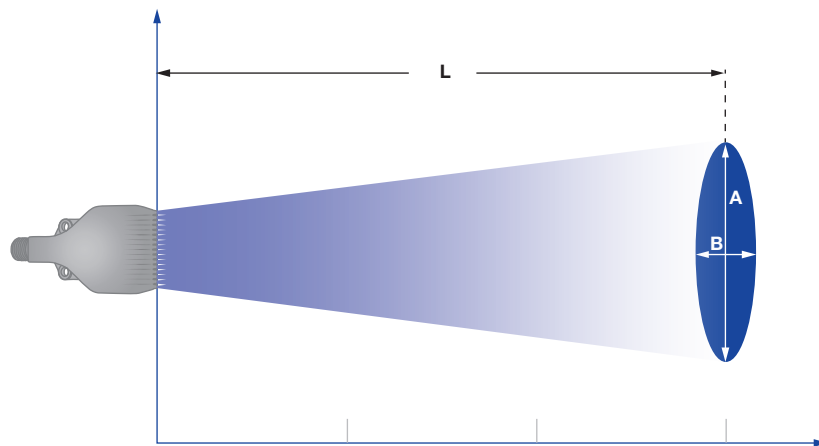
Pressure

$p_{\text{max}}=10 \text{ bar}$



Max. temperature

550 °C

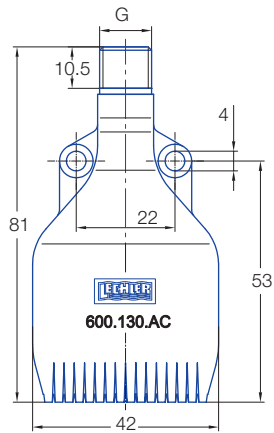


Jet pattern of 600.130 nozzle series

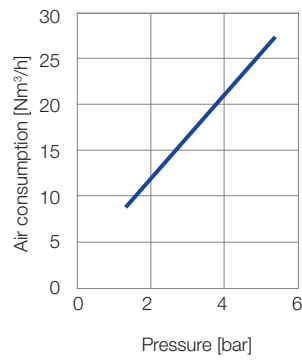
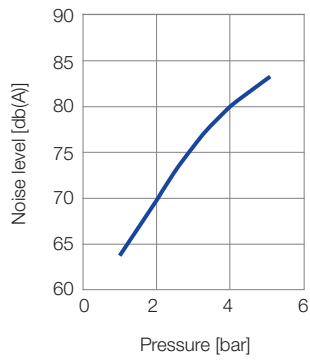
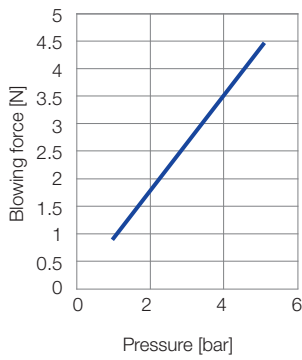
Pressure:	1 bar	3 bar	5 bar
Distance L [mm]:	300	425	600

Jet dimensions at L

A [mm]:	100	140	170
B [mm]:	55	80	110



Technical data



Ordering no.			
Type	Mat. no.	Code	
	Stainless steel 316L SS	1Y	1/4 BSPP
600.130	○	AC	BC

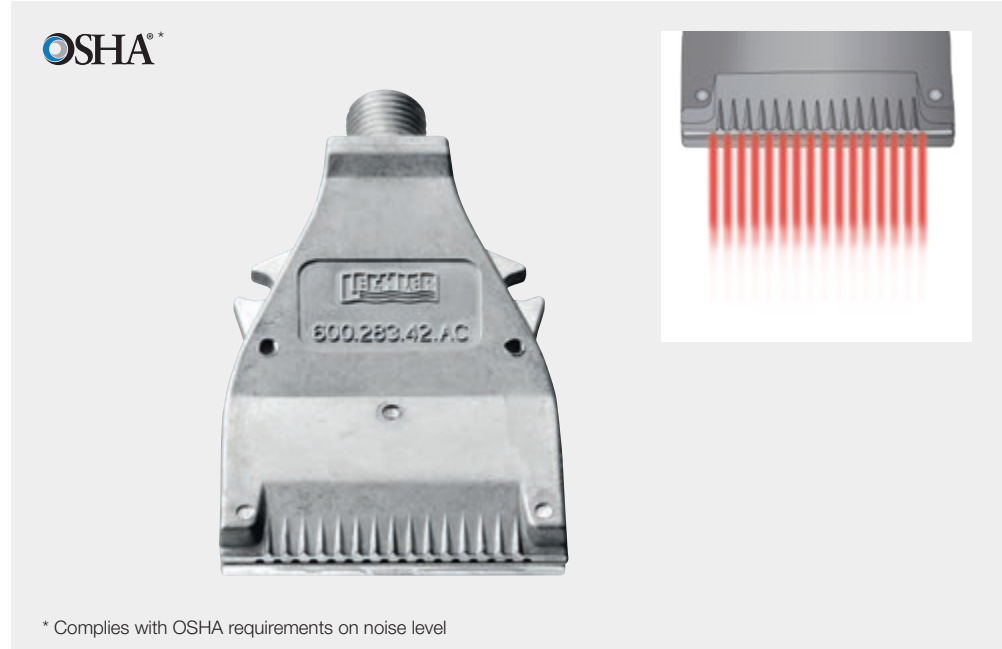
Example Type + Mat. no. + Code = Ordering no.
of ordering: 600.130. + 1Y + AC = 600.130.1Y.AC



Multi-channel flat jet nozzles for air Whisperblast®, metallic versions Series 600.283.42

Series 600.283.42

The multi-channel flat jet nozzles of the 600.283 series are made of aluminum and are capable of withstanding significantly higher thermal and mechanical loads than comparable air nozzles made of plastic. In addition, the blowing force also increases at higher air pressures, making this series suitable for very demanding applications.



* Complies with OSHA requirements on noise level



Cost savings

19%



Noise reduction

18%



Material
Aluminum



Blowing force
2.4 N at 2 bar



Noise level
76 db(A) at 2 bar



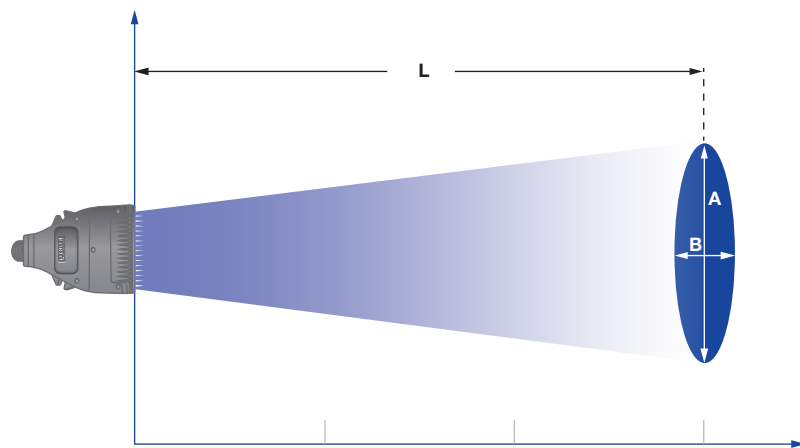
Air consumption
 $V_{LN}=18 \text{ m}^3/\text{h}$ at 2 bar



Pressure
 $p_{max}=10 \text{ bar}$



Max. temperature
200 °C

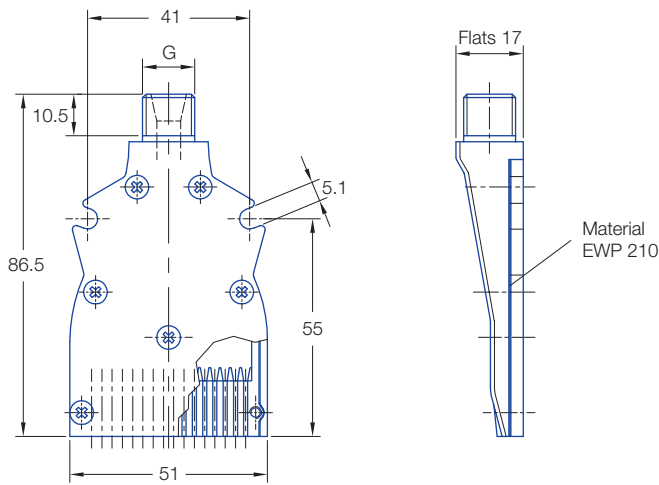


Jet pattern of 600.283 nozzle series

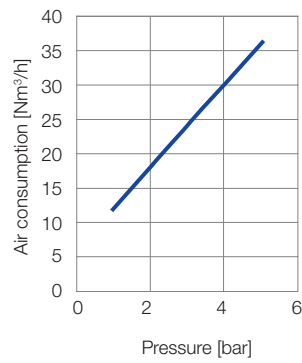
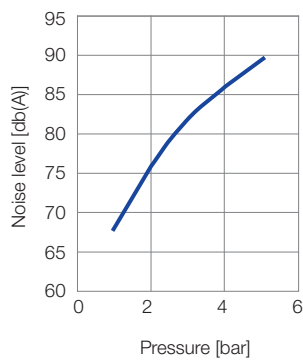
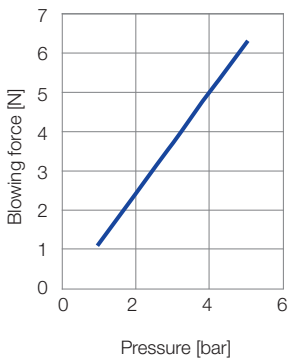
Pressure:	1 bar	3 bar	5 bar
Distance L [mm]:	750	900	900

Jet dimensions at L

A [mm]:	170	210	240
B [mm]:	150	180	210



Technical data



Ordering no.			
Type	Mat. no.	Code	
	Aluminum	42	1/4 BSPP
600.283	○	AC	BC

Example of ordering: Type + Mat. no. + Code = Ordering no.
 600.283. + 42 + AC = 600.283.42.AC

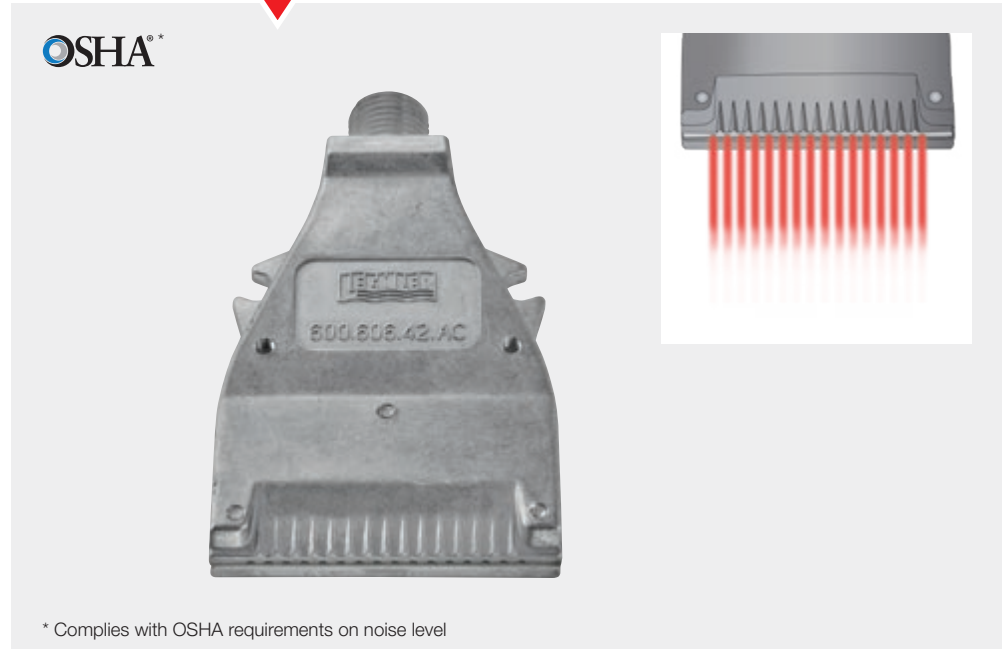


Multi-channel flat jet nozzles for air Whisperblast®, metallic versions Series 600.606.42

NEW

Series 600.606.42

The multi-channel flat jet nozzles of the 600.606 series are made of aluminum and are capable of withstanding significantly higher thermal and mechanical loads than comparable air nozzles made of plastic. In addition, the blowing force also increases at higher air pressures, making this series suitable for demanding applications.



* Complies with OSHA requirements on noise level



Cost savings

21 %



Noise reduction

18 %



Material
Aluminum



Blowing force
1.4 N bei 2 bar



Noise level
68.5 db(A) at 2 bar



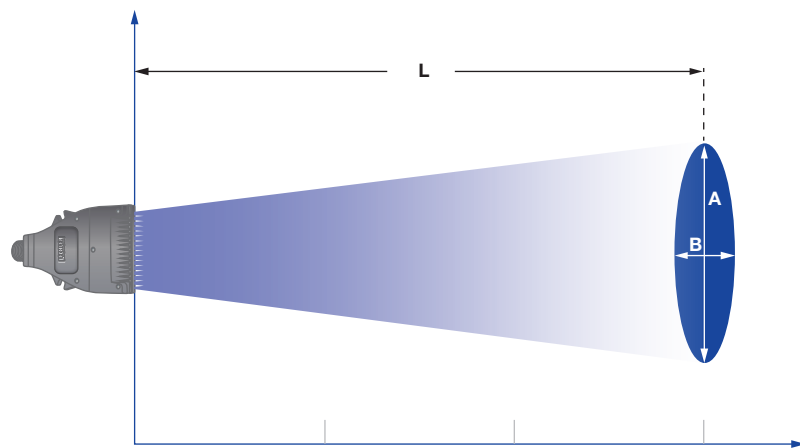
Air consumption
 $V_{LN}=12 \text{ m}^3/\text{h}$ at 2 bar



Pressure
 $p_{\text{max}}=10 \text{ bar}$



Max. temperature
200 °C

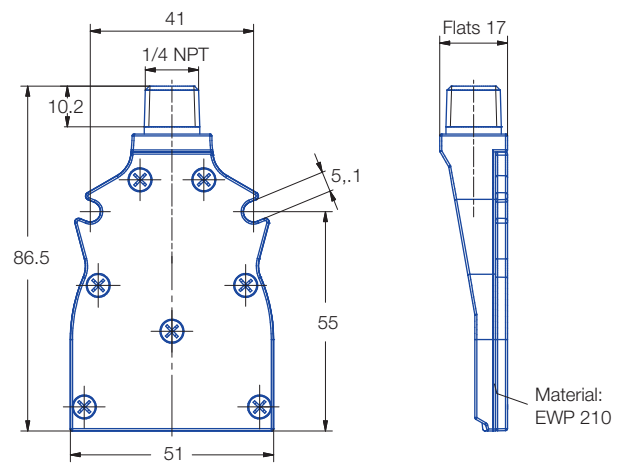
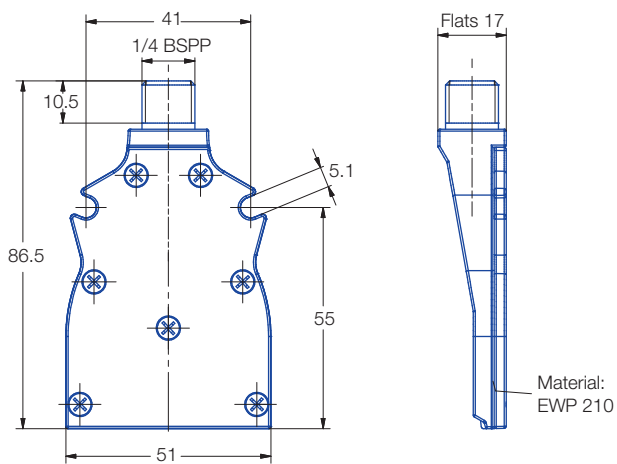


Jet pattern of 600.606 nozzle series

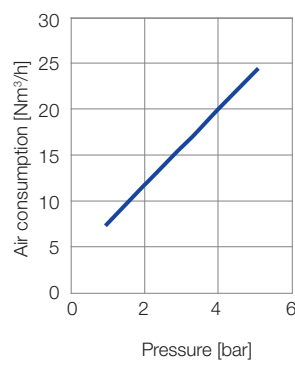
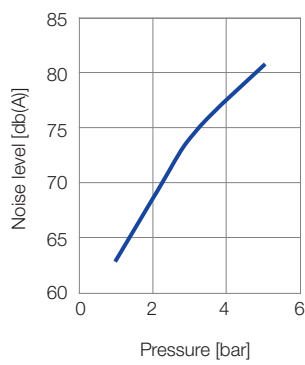
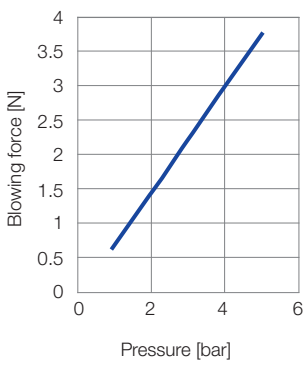
Pressure:	1 bar	3 bar	5 bar
Distance L [mm]:	625	900	925

Jet dimensions at L

A [mm]:	145	210	210
B [mm]:	125	185	225



Technical data



Ordering no.		
Type	Mat. no.	Code
	Aluminum	1/4 BSPP
600.606	○	AC

Example of ordering: Type + Mat. no. + Code = Ordering no.
 600.606. + 42 + AC = 600.606.42.AC

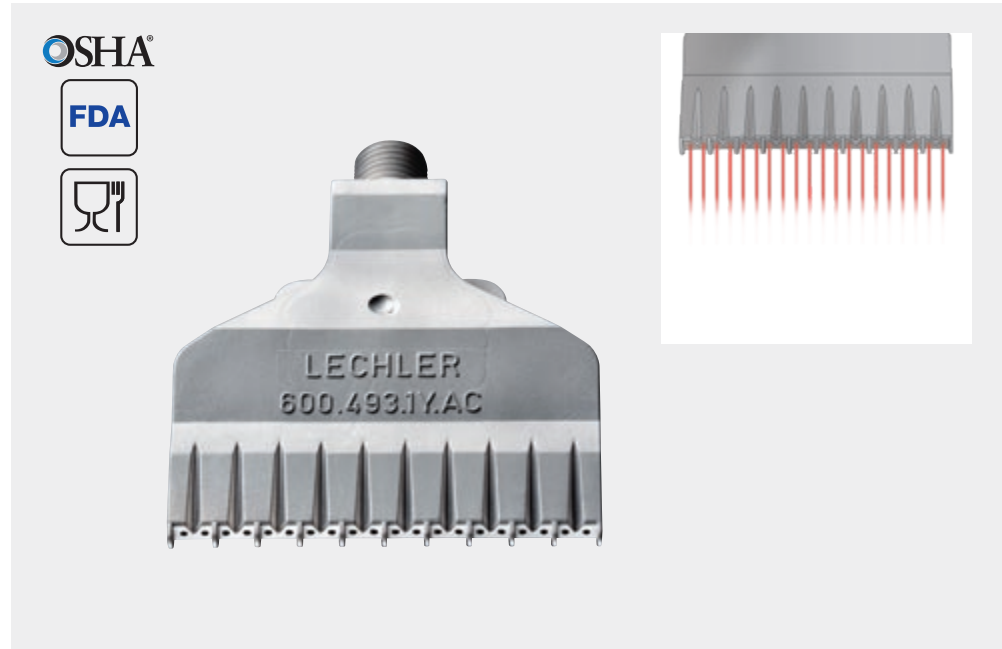


Multi-channel flat jet nozzles for air Whisperblast®, metallic versions Series 600.493.1Y

**Extremely
silent!**

Series 600.493.1Y

The multi-channel flat jet nozzles of the 600.493 series generate an extremely wide, powerful air jet. Since this nozzle is made completely of stainless steel (316L SS), it meets even the highest thermal requirements. The projecting tips at the nozzle outlet prevent air penetration into human skin. These nozzles comply with the OSHA standards.



Cost savings

34%



Noise reduction

21%



Material

Stainless steel
316L SS



Blowing force

4.2 N at 2 bar



Noise level

78 db(A) at 2 bar



Air consumption

$V_{LN}=30 \text{ m}^3/\text{h}$ at 2 bar



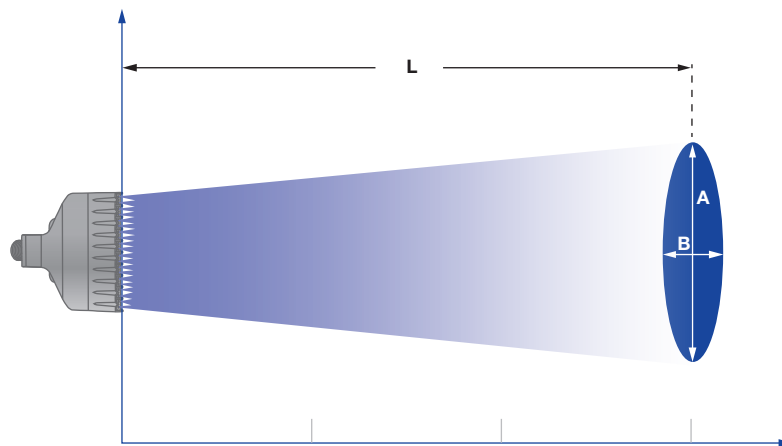
Pressure

$p_{max} = 30 \text{ bar}$



Max. temperature

550 °C

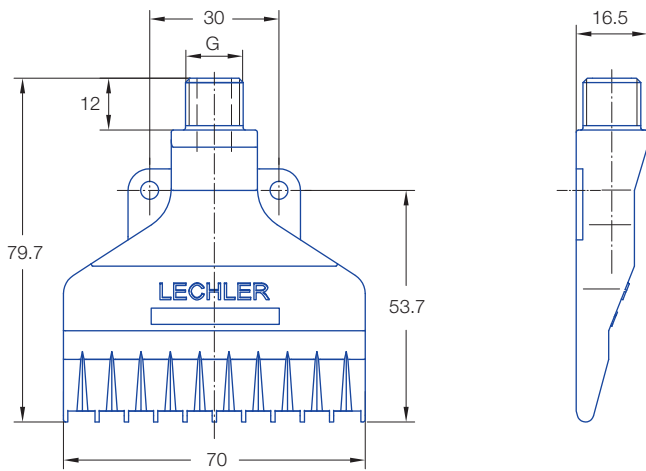


Jet pattern of 600.493 nozzle series

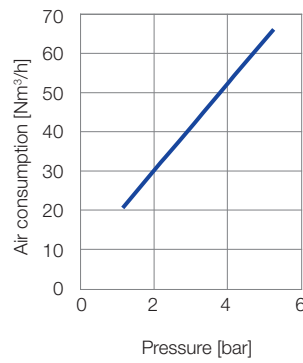
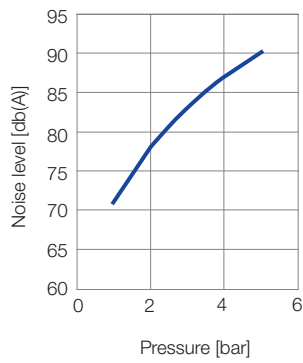
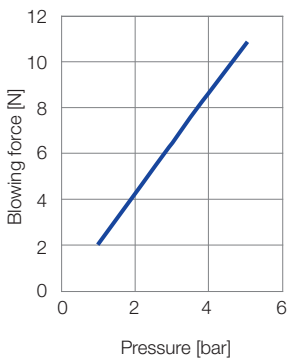
Pressure:	1 bar	3 bar	5 bar
Distance L [mm]:	900	900	900

Jet dimensions at L

A [mm]:	210	240	270
B [mm]:	210	210	280



Technical data



Ordering no.			
Type	Mat. no.	Code	
	Stainless steel 316L SS	1Y	1/4 BSPP
600.493	○	AC	BC

Example of ordering: Type + Mat. no. + Code = Ordering no.
600.493. + 1Y + AC = 600.493.1Y.AC

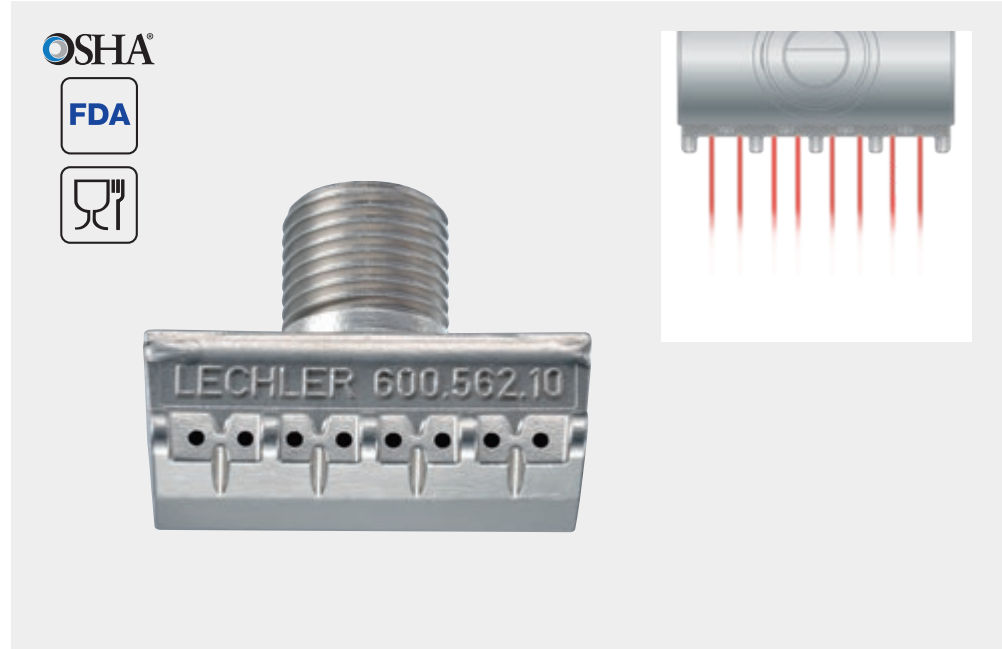


Multi-channel flat jet nozzles for air Whisperblast®, metallic versions Series 600.562.1Y

Series 600.562.1Y

The multi-channel flat jet nozzles of the 600.562 series are ideal for applications with restricted space. In addition, the nozzle material (316L SS) makes them resistant to increased pressures and temperatures.

The projecting tips at the nozzle outlet prevent air penetration into human skin. These nozzles comply with the OSHA standards.



Cost savings

8%



Noise reduction

14%



Material

Stainless steel
316L SS



Blowing force

1.2 N at 2 bar



Noise level

71 db(A) at 2 bar



Air consumption

$V_{LN}=9 \text{ m}^3/\text{h}$ at 2 bar



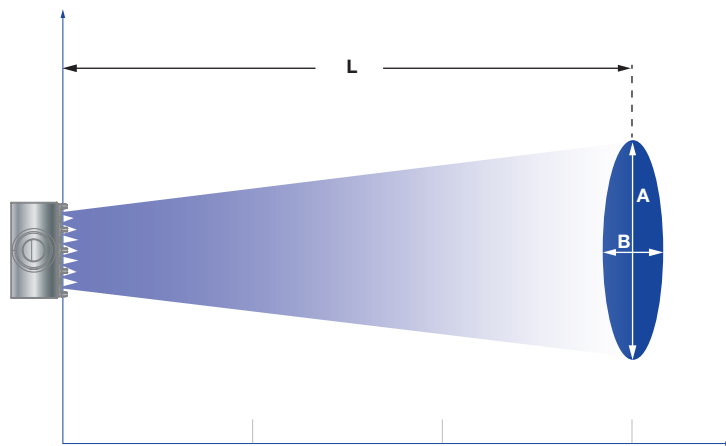
Pressure

$p_{max} = 30 \text{ bar}$



Max. temperature

550 °C

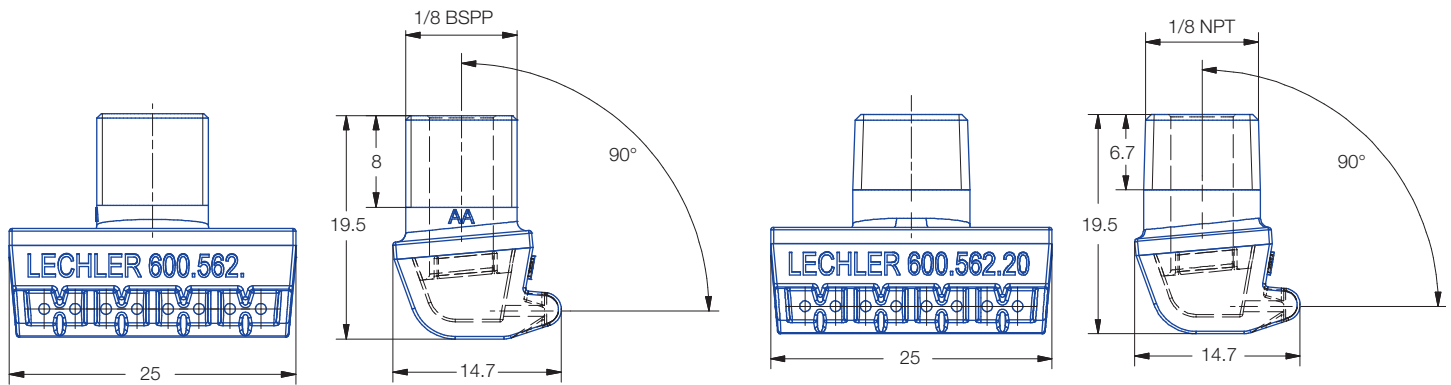


Jet pattern of 600.562 nozzle series

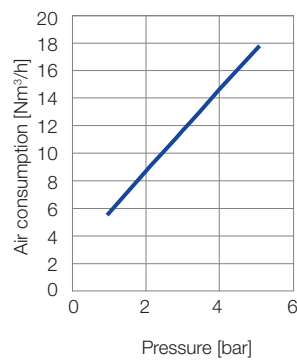
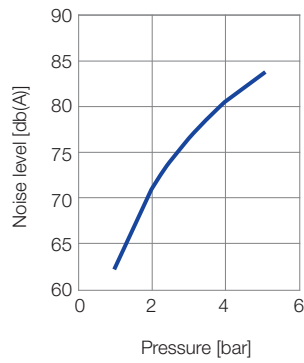
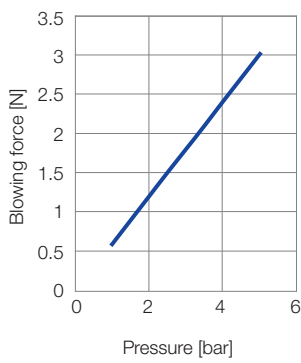
Pressure:	1 bar	3 bar	5 bar
Distance L [mm]:	510	850	900

Jet dimensions at L

A [mm]:	114	200	230
B [mm]:	100	155	190



Technical data



Ordering no.			
Type	Mat. no.	Code	
	1Y Stainless steel 316L SS	1/8 BSPP	1/8 NPT
600.562.	○	10	–
600.562.	○	–	20

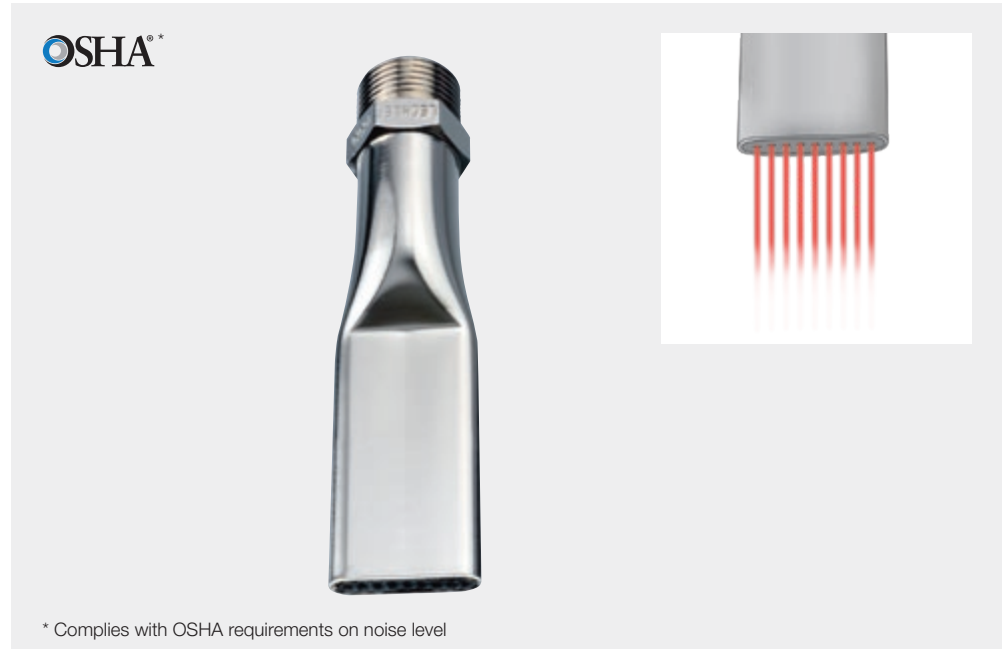
Example Type + Mat. no. + Code = Ordering no.
of ordering: 600.562. + 1Y + 10 = 600.562.1Y.10



Mini multi-channel flat jet nozzles for air Series 600.382.35

Series 600.382.35

The mini multi-channel flat jet nozzles of the 600.382 series generate a narrow, powerful air jet. Very accurate and economical operation is possible thanks to the narrow orifice.



Cost savings

15%



Noise reduction

12%



Materials

Brass nickel plated,
PVC



Blowing force

2.3 N at 2 bar



Noise level

77.5 db(A) at 2 bar



Air consumption

$V_{LN}=15 \text{ m}^3/\text{h}$ at 2 bar



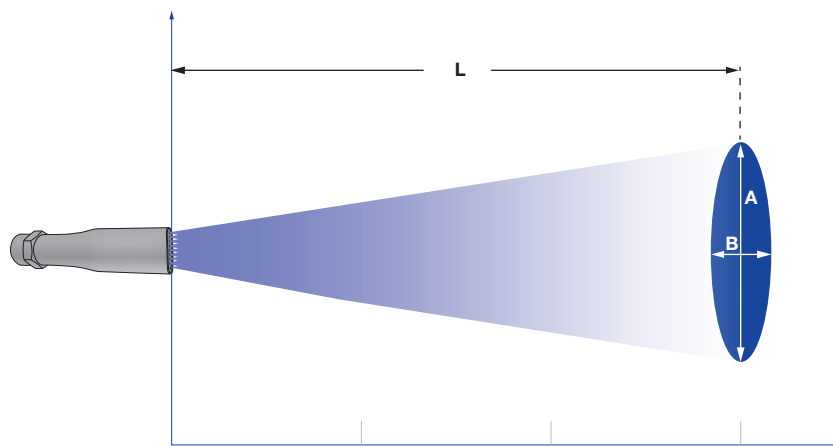
Pressure

$p_{max}=10 \text{ bar}$



Max. temperature

50 °C

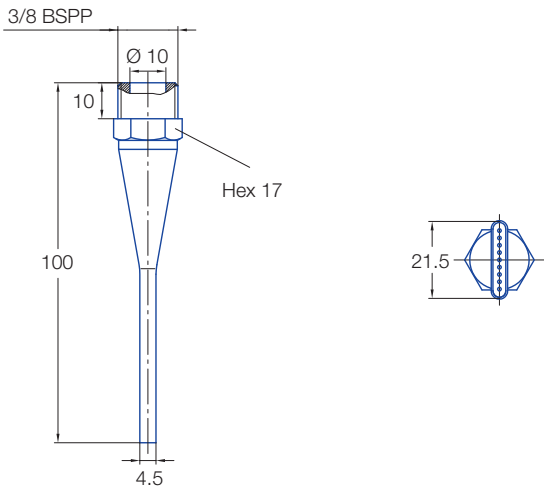


Jet pattern of 600.382.35 nozzle series

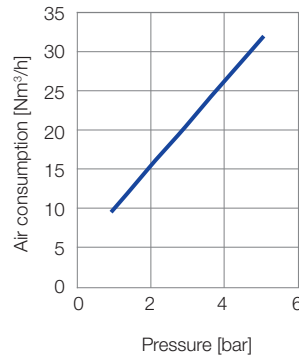
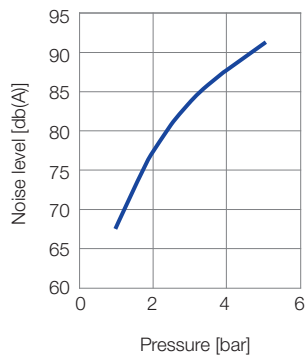
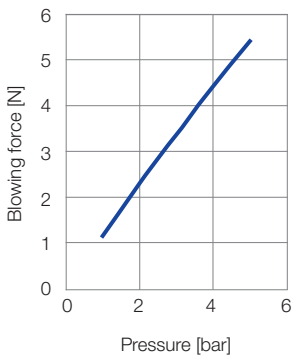
Pressure:	1 bar	3 bar	5 bar
Distance L [mm]:	475	825	900

Jet dimensions at L

A [mm]:	110	170	200
B [mm]:	85	140	180



Technical data



Ordering no.		
Type	Mat. no.	Code
	35	
	Brass nickel plated/ PVC	
		3/8 BSPP
600.382.35.AE	○	AE

Example of ordering: Type + Mat. no. + Code = Ordering no.
 600.382. + 35 + AE = 600.382.35.AE



Intensive multi-channel flat jet nozzles for air

Series 600.383.35

Series 600.383.35

The intensive multi-channel flat jet nozzles of the 600.383 series generate a concentrated, powerful air jet. Due to the flattened design, the jet depth of this nozzle always remains constant even at changing pressures. This permits precise operation even under changing conditions.



Cost savings

8%



Noise reduction

10%



Materials

Brass nickel plated,
PVC



Blowing force

4.3 N at 2 bar



Noise level

86 db(A) at 2 bar



Air consumption

$V_{LN}=31 \text{ m}^3/\text{h}$ at 2 bar



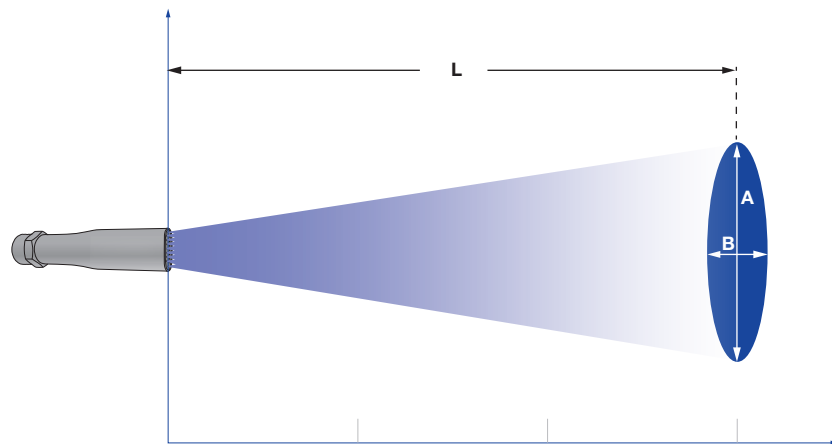
Pressure

$p_{\text{max}}=10 \text{ bar}$



Max. temperature

50 °C

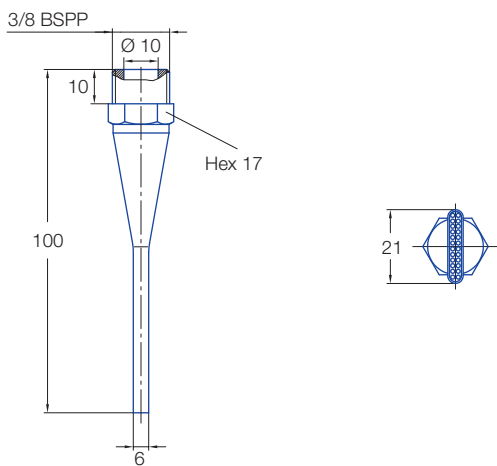


Jet pattern of 600.383.35 nozzle series

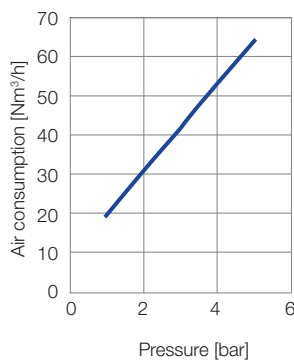
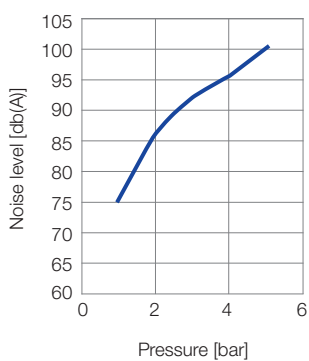
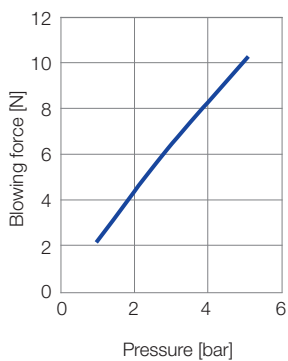
Pressure:	1 bar	3 bar	5 bar
Distance L [mm]:	900	900	900

Jet dimensions at L

A [mm]:	200	425	510
B [mm]:	230	230	230



Technical data



Ordering no.		
Type	Mat. no.	Code
	35	
	Brass nickel plated / PVC	
		3/8 BSPP
600.383.	○	AE

Example of ordering: Type + Mat. no. + Code = Ordering no.
 600.383. + 35 + AE = 600.383.35.AE



Compact multi-channel flat jet nozzles for air Series 600.386.01

Series 600.386.01

The compact multi-channel flat jet nozzles of the 600.386 series generate a concentrated, powerful air jet. The compact design of this series makes the nozzles particularly suitable for use in locations that are difficult to access. This permits precise operation in very small spaces.



Cost savings

45%



Noise reduction

15%



Materials

Steel zinc-coated,
PVC



Blowing force

3.7 N at 2 bar



Noise level

83.5 db(A) at 2 bar



Air consumption

$V_{LN}=27 \text{ m}^3/\text{h}$ at 2 bar



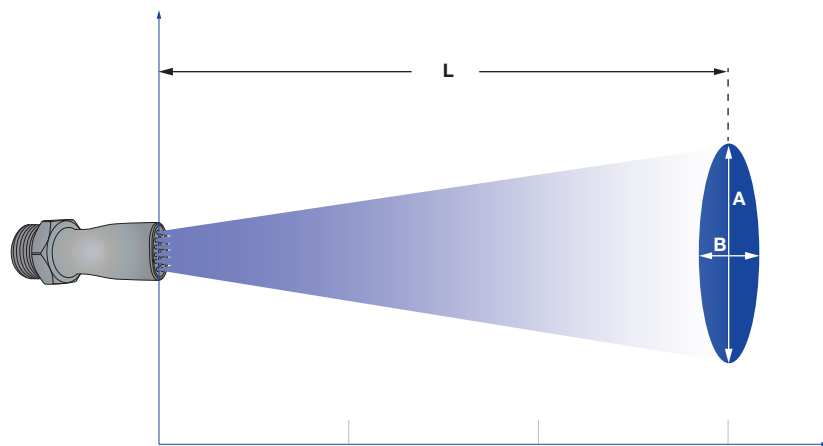
Pressure

$p_{max}=10 \text{ bar}$



Max. temperature

50 °C

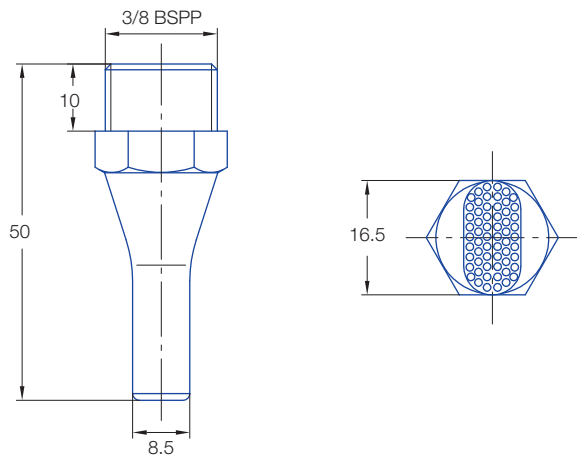


Jet pattern of 600.386.01 nozzle series

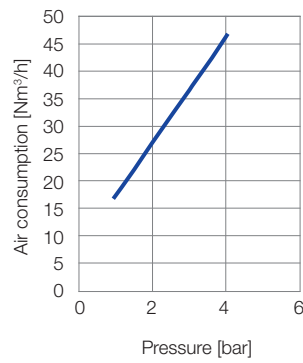
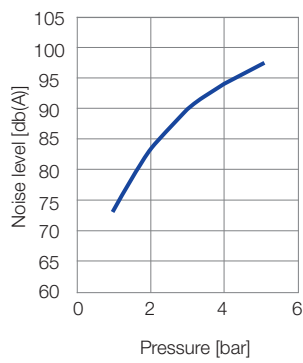
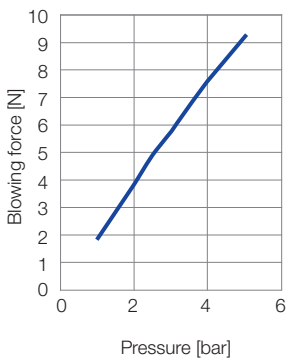
Pressure:	1 bar	3 bar	5 bar
Distance L [mm]:	825	900	900

Jet dimensions at L

A [mm]:	160	300	460
B [mm]:	215	215	215



Technical data



Ordering no.		
Type	Mat. no.	Code
	01	
	Steel/ PVC	3/8 BSPP
600.386.	<input type="radio"/>	AE

Example of ordering: Type + Mat. no. + Code = Ordering no.
 600.386. + 01 + AE = 600.386.01.AE



Maxi multi-channel flat jet nozzles for air

Series 600.385.35

Series 600.385.35

The maxi multi-channel flat jet nozzles of the 600.385 series generate a continuous very powerful air jet. Due to the large nozzle cross-section, this nozzle focuses large quantities of air into a concentrated jet that has a powerful impact even over large distances. Despite this, the noise level still remains low.



Cost savings

28 %



Noise reduction

15 %



Materials

Brass nickel plated,
PVC



Blowing force

11.5 N at 2 bar



Noise level

91.5 db(A) at 2 bar



Air consumption

$V_{LN}=100 \text{ m}^3/\text{h}$ at 2 bar



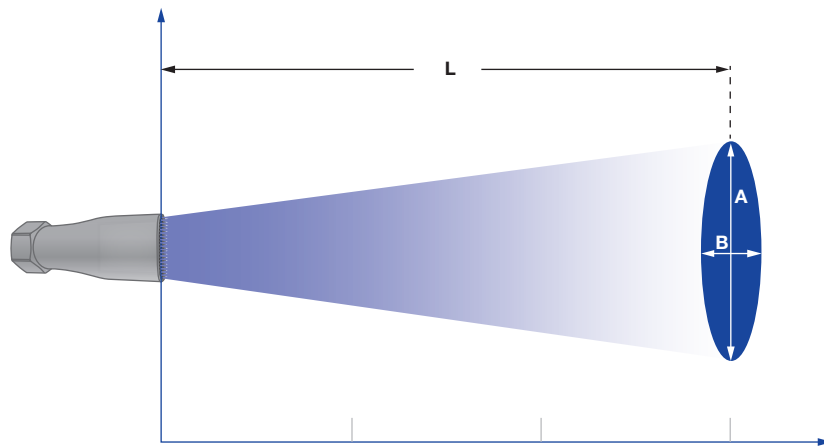
Pressure

$p_{max}=10 \text{ bar}$



Max. temperature

50 °C

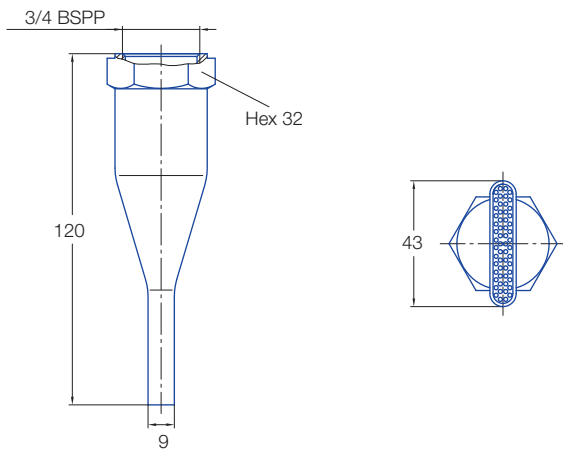


Jet pattern of 600.385.35 nozzle series

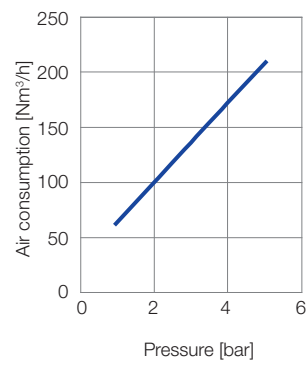
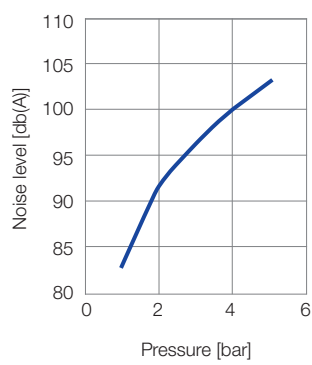
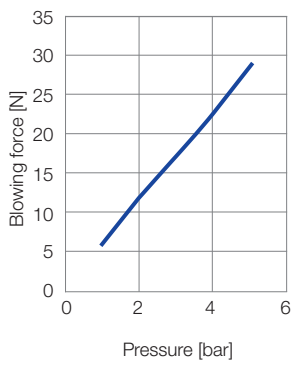
Pressure:	1 bar	3 bar	5 bar
Distance L [mm]:	775	775	775

Jet dimensions at L

A [mm]:	205	255	270
B [mm]:	200	245	270



Technical data



Ordering no.		
Type	Mat. no.	Code
	35	
	Brass nickel plated/PVC	
		3/4 BSPP
600.385.	○	AL

Example of ordering: Type + Mat. no. + Code = Ordering no.
 600.385. + 35 + AL = 600.385.35.AL



Flat jet slotted nozzle tips for air or saturated steam Series 679

Series 679

The flat jet nozzle tips of the 679 series are characterized by their wide, powerful air jet. Due to the special nozzle design, the jet angle is approx. 70° – 90°. Mounting with a retaining nut allows for an easy installation and alignment of the nozzles.



Materials
Stainless steel
316Ti SS,
Brass



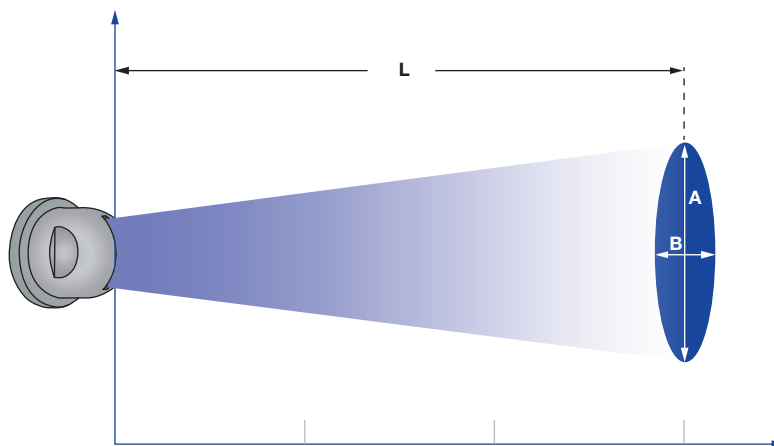
Noise level
67-92 db(A) at 2 bar



Air consumption
see table



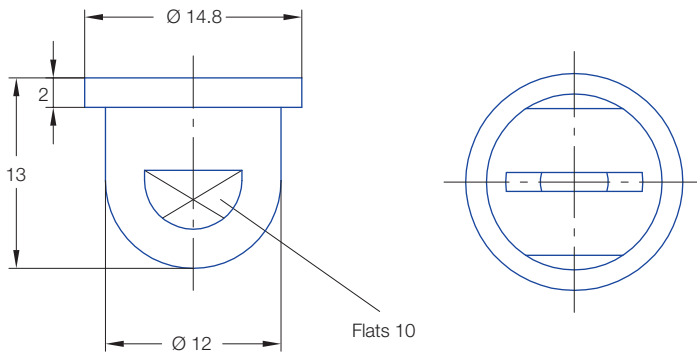
Pressure
 $p_{\max} = 10$ bar




Jet pattern of 679 nozzle series

Pressure:		1 bar	3 bar	5 bar
679.037	Distance L [mm]:	50	100	150
	A [mm]:	110	260	380
	B [mm]:	25	35	45
679.117	Distance L [mm]:	50	125	150
	A [mm]:	100	250	310
	B [mm]:	25	30	35
679.255	Distance L [mm]:	375	500	500
	A [mm]:	90	190	280
	B [mm]:	90	90	90

Pressure:		1 bar	3 bar	5 bar
679.415	Distance L [mm]:	675	900	900
	A [mm]:	160	300	460
	B [mm]:	215	215	215
679.495	Distance L [mm]:	900	900	900
	A [mm]:	200	425	510
	B [mm]:	230	230	230



 Spray angle	Ordering no.		A Ø [mm]	\dot{V}_n Air [m³/h]				\dot{M} Saturated steam [kg/h]				
	Type	Mat. no.		p [bar]				p [bar]				
		17		30	0.5		2.0		5.0		10.0	
		316T SS		Brass	0.5	2.0	5.0	10.0	0.5	2.0	5.0	10.0
approx. 70°–90°	679.037	-	○	1.2	1.50	3.00	6.00	11.00	1.20	2.30	4.60	8.30
	679.085	○	○	1.3	2.00	4.00	8.00	14.70	1.60	3.10	6.10	11.10
	679.117	○	○	1.5	2.10	4.20	8.40	15.40	1.70	3.30	6.50	11.70
	679.165	○	○	1.8	2.60	5.10	10.30	18.80	2.00	4.10	8.00	14.30
	679.255	○	○	2.1	3.60	7.30	14.50	26.60	2.80	5.70	11.20	20.20
	679.365	○	○	2.8	6.30	12.70	25.40	46.50	5.00	10.00	19.60	35.30
	679.415	○	○	3.6	10.20	20.30	40.70	74.60	8.00	16.00	31.40	56.70
	679.495	○	○	4.3	15.60	31.10	62.20	114.00	12.40	24.80	48.50	87.60

A = Equivalent bore diameter

Example	Type	+	Mat. no.	=	Ordering no.
of ordering:	679.037.	+	30	=	679.037.30.00



Flat jet tongue-type nozzles for air or saturated steam Series 686

Series 686

The flat jet tongue-type nozzles of the 686 series are suitable for short blowing distances. The compact design allows for large jet widths even for small spaces. The versions in brass and stainless steel 303 SS can also be used with high ambient temperatures.



Materials
Stainless steel
303 SS, Brass



Noise level
73-84 db(A) at 2 bar



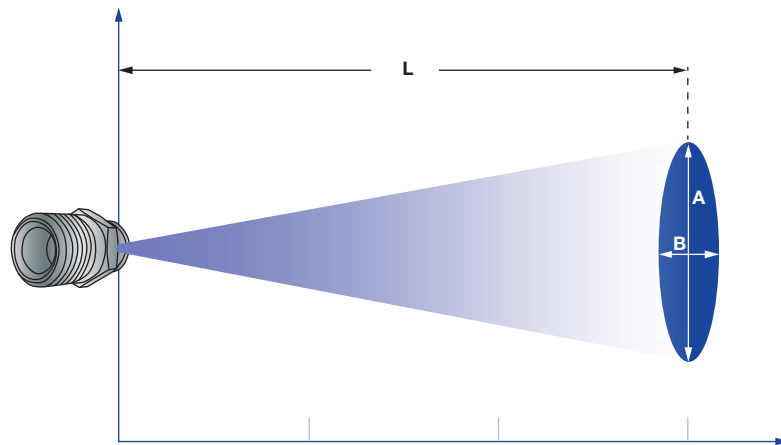
Air consumption
see table



Pressure
 $p_{max} = 30 \text{ bar}$



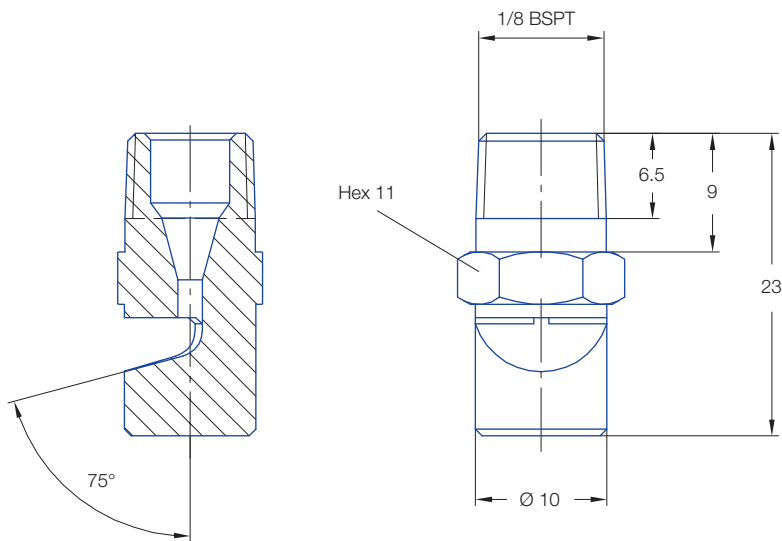
Max. temperature
550 °C (Stainless steel)
240 °C (Brass)




Jet pattern of 686 nozzle series

Pressure:		1 bar	3 bar	5 bar
686.408	Distance L [mm]:	40	80	125
	A [mm]:	35	50	60
	B [mm]:	15	40	50
686.528	Distance L [mm]:	60	100	150
	A [mm]:	75	140	210
	B [mm]:	20	40	50
686.608	Distance L [mm]:	90	175	250
	A [mm]:	145	230	350
	B [mm]:	25	45	55

Pressure:		1 bar	3 bar	5 bar
686.688	Distance L [mm]:	150	400	525
	A [mm]:	230	560	740
	B [mm]:	40	80	100
686.728	Distance L [mm]:	180	230	375
	A [mm]:	170	360	530
	B [mm]:	50	50	70



Spray angle 	Ordering no.				B Ø [mm]	η	\dot{V}_n Air [m³/h]				\dot{M} Saturated steam [kg/h]			
	Type	Mat. no.		Code			p [bar]				p [bar]			
		16	30				1.0	2.0	5.0	10.0	1.0	2.0	5.0	10.0
27°-47°	686.408	○	○	CA	1.0	75°	1.07	1.60	3.20	5.86	0.88	1.31	2.57	4.64
	686.488	○	○	CA	1.3	75°	1.76	2.64	5.29	9.69	1.46	2.17	4.25	7.67
approx. 70°	686.528	○	○	CA	1.5	75°	2.20	3.31	6.61	12.13	1.83	2.71	5.31	9.59
	686.568	○	○	CA	1.7	75°	2.73	4.09	8.19	15.01	2.27	3.36	6.57	11.87
	686.608	○	○	CA	1.9	75°	3.35	5.02	10.04	18.40	2.78	4.11	8.06	14.55
	686.688	○	○	CA	2.4	75°	5.45	8.18	16.36	30.00	4.53	6.71	13.14	23.72
	686.728	○	○	CA	2.7	75°	6.88	10.33	20.65	37.86	5.71	8.46	16.58	29.94
	686.808	○	○	CA	3.4	75°	10.89	16.33	32.66	59.87	9.04	13.28	26.22	47.35

B = bore diameter

Example of ordering: Type + Mat. no. + Code = Ordering no.
686.408 + 16 + CA = 686.408.16.CA



Multi-channel round jet nozzles for air Series 600.326.5K

Series 600.326.5K

The multi-channel round jet nozzles of the 600.326 series generate a powerful, circular air jet. The noise level and air consumption remain low even at higher air pressures. The special geometry at the nozzle outlet prevents air penetration into human skin. These nozzles comply with the OSHA standards.



Cost savings

9 %



Noise reduction

17 %



Material
ABS



Blowing force
2.2 N at 2 bar



Noise level
74 db(A) at 2 bar



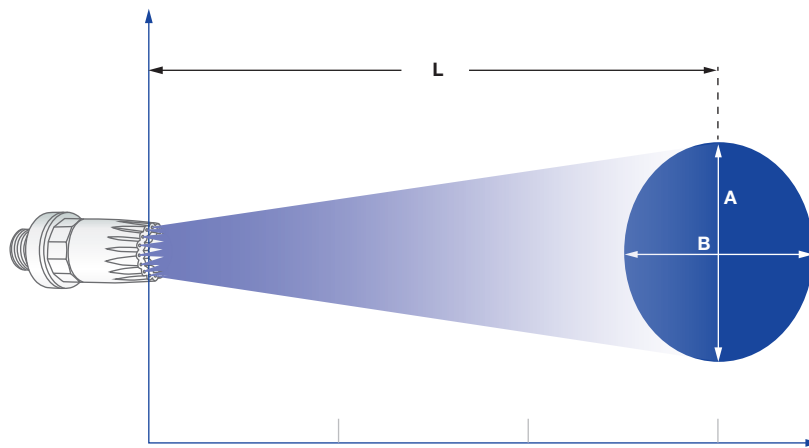
Air consumption
 $V_{LN}=15 \text{ m}^3/\text{h}$ at 2 bar



Pressure
 $p_{\text{max}}=6 \text{ bar}$



Max. temperature
50 °C

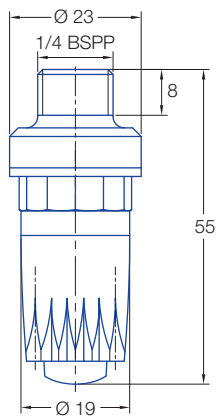


Jet pattern of 600.326.5K nozzle series

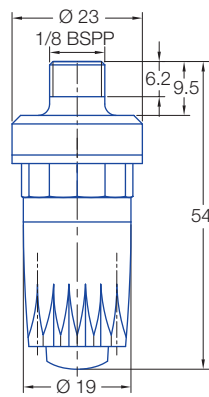
Pressure:	1 bar	3 bar	5 bar
Distance L [mm]:	700	900	900

Jet image dimensions at L

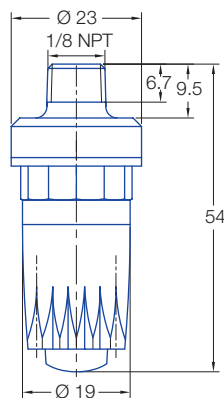
A [mm]:	160	220	260
B [mm]:	160	220	260



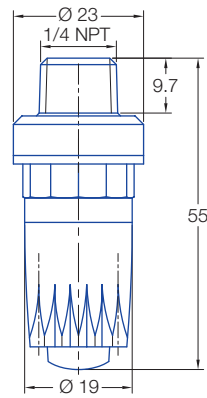
Code AC



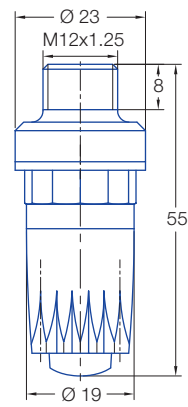
Code AA



Code BA

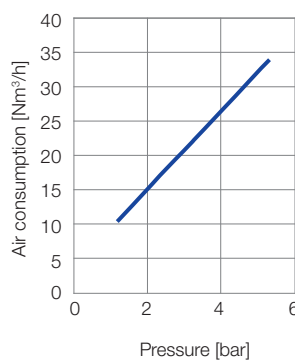
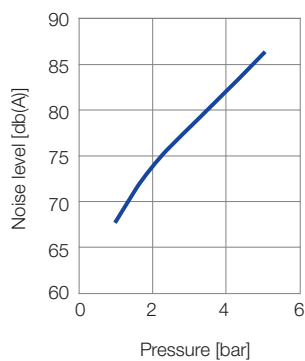
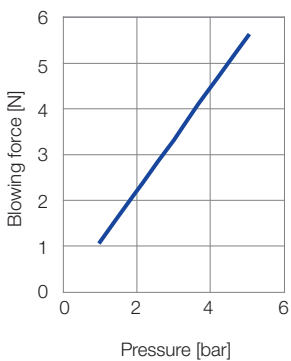


Code BC



Code HG

Technical data



Ordering no.		Connection thread
Type	Code	
600.326.5K (Material: ABS)	AC	1/4 BSPP
	AA	1/8 BSPP
	BA	1/8 NPT
	BC	1/4 NPT
	HG	M12 x 1.25

Example	Type	+	Code	=	Ordering no.
of ordering:	600.326.5K	+	AC	=	600.326.5K.AC



Multi-channel round jet nozzles for air Series 600.326.3W

Series 600.326.3W

The multi-channel round jet nozzles of the 600.326 series generate a powerful, circular air jet. The noise level and air consumption remain low even at higher air pressures. The zinc version permits use at increased pressure and temperature. The special geometry at the nozzle outlet prevents air penetration into human skin. These nozzles comply with the OSHA standards.



Cost savings

8 %



Noise reduction

17 %



Material

Zinc



Blowing force

2.1 N at 2 bar



Noise level

79 db(A) at 2 bar



Air consumption

$V_{LN}=15 \text{ m}^3/\text{h}$ at 2 bar



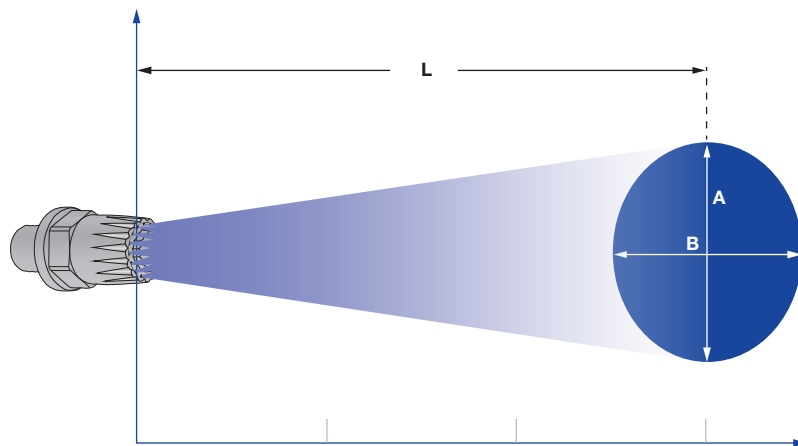
Pressure

$p_{\text{max}}=10 \text{ bar}$



Max. temperature

90 °C

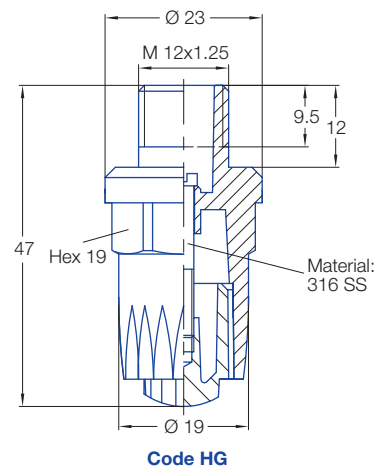
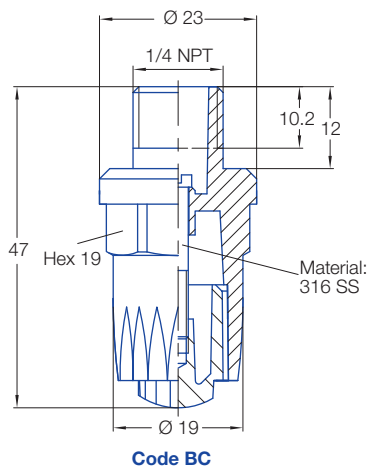
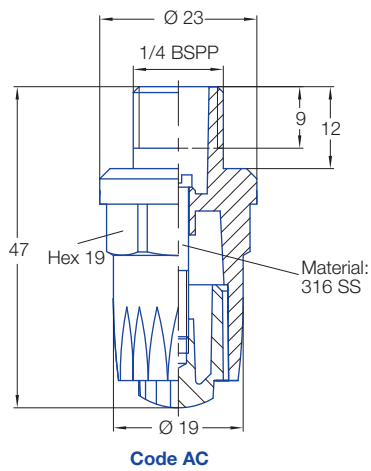


Jet pattern of 600.326.3W nozzle series

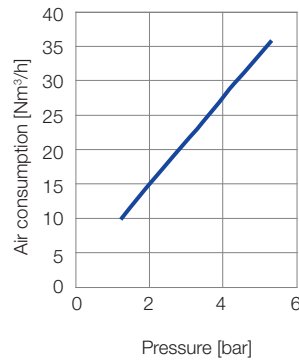
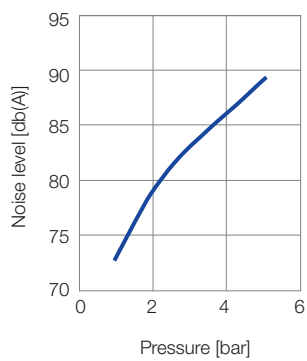
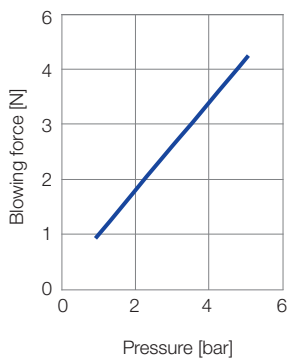
Pressure:	1 bar	3 bar	5 bar
Distance L [mm]:	700	900	900

Jet dimensions at L

A [mm]:	160	220	260
B [mm]:	160	220	260



Technical data



Ordering no.		Connection thread
Type	Code	
600.326.3W (Material: Zinc GD-Z410)	AC	1/4 BSPP
	BC	1/4 NPT
	HG	M 12x1.25

Example of ordering: Type **600.326.3W** + Code **AC** = Ordering no. **600.326.3W.AC**

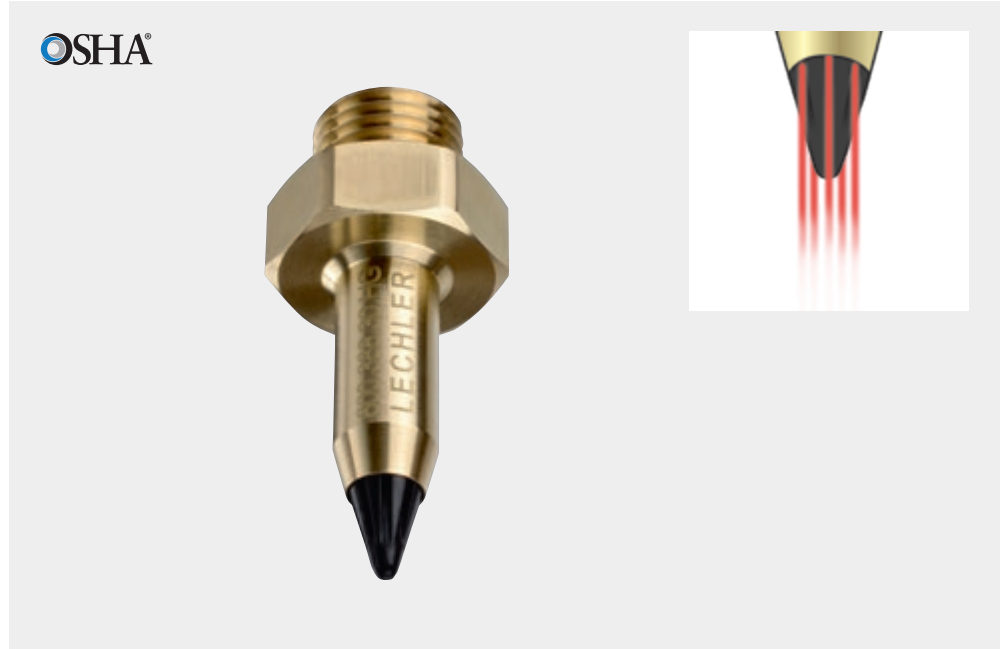
Also as a high-temperature version of brass available on request.



Mini multi-channel round jet nozzles for air Series 600.388.30

Series 600.388.30

The mini multi-channel round jet nozzles of the 600.388 series generate a point of concentrated air even at large distances. The compact design of this series makes the nozzles particularly suitable for use in locations that are difficult to reach. The special design at the nozzle outlet prevents air penetration into human skin. These nozzles comply with the OSHA standards.



Cost savings

7%



Noise reduction

8%



Materials
Brass, POM



Blowing force
1.1 N at 2 bar



Noise level
77 db(A) at 2 bar



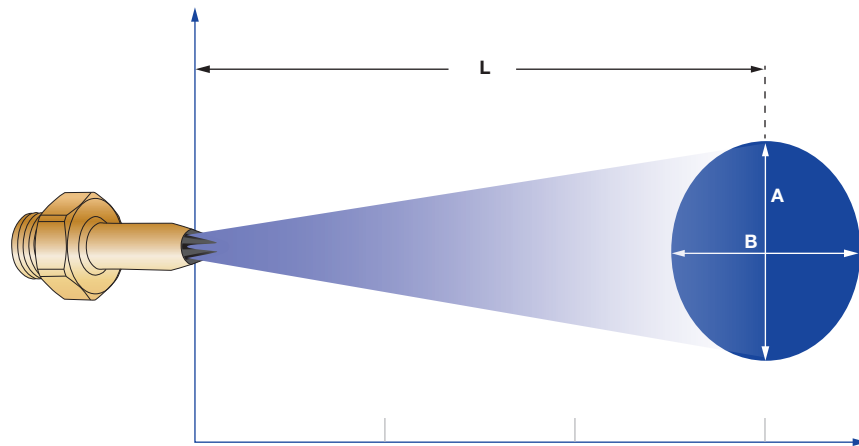
Air consumption
 $V_{LN}=8 \text{ m}^3/\text{h}$ at 2 bar



Pressure
 $p_{\text{max}}=10 \text{ bar}$



Max. temperature
50 °C

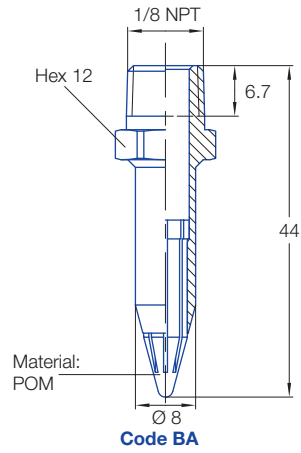
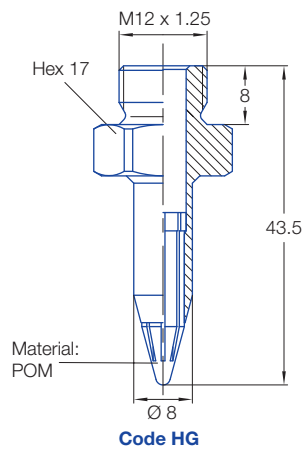
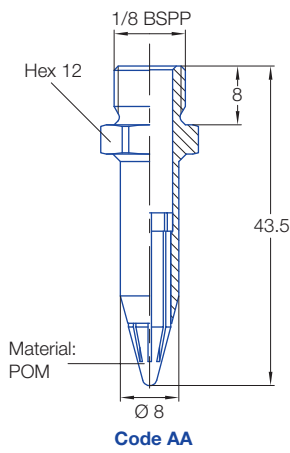


Jet pattern of 600.388 nozzle series

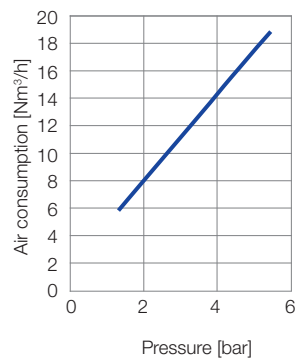
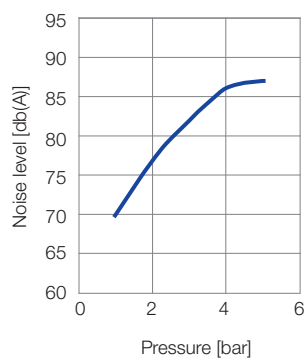
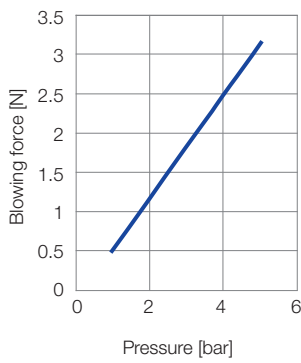
Pressure:	1 bar	3 bar	5 bar
Distance L [mm]:	500	750	900

Jet image dimensions at L

A [mm]:	130	185	260
B [mm]:	130	185	260



Technical data



Ordering no.		Connection thread
Type	Code	
600.388.30 (Material: Brass/POM)	AA	1/8 BSPP
	HG	M 12 x 1.25
	BA	1/8 NPT

Example	Type	+	Code	=	Ordering no.
of ordering:	600.388.30	+	AA	=	600.388.30.AA

Also as a high-temperature version of stainless steel 316L SS available on request.

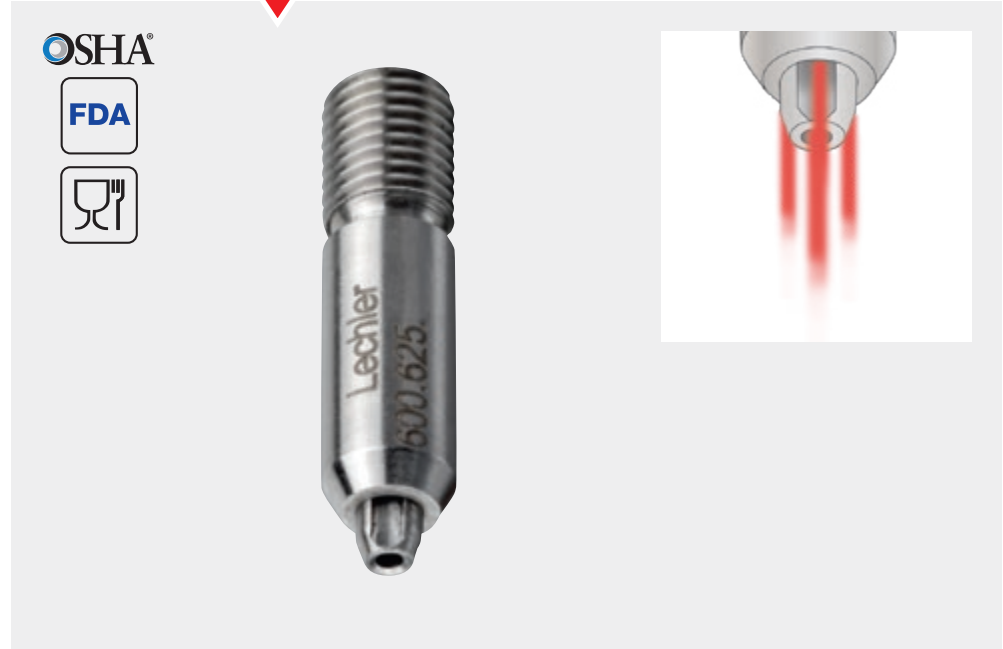


Micro multi-channel round jet nozzles for air Series 600.625.1Y

NEW

Series 600.625.1Y

The micro multi-channel round jet nozzles of the 600.625 series generate a powerful, point of air jet. Thanks to its ultra-compact design, this nozzle is particularly suitable for use in locations that are difficult to reach. Since this nozzle is made completely of stainless steel 316L SS, it meets even the highest thermal requirements. The special design at the nozzle outlet prevents air penetration into human skin. These nozzles comply with the OSHA standards.



Cost savings

10 %



Noise reduction

6 %



Material

Stainless steel
316L SS



Blowing force

0.4-0.7 N at 2 bar



Noise level

63-70 db(A) at 2 bar



Air consumption

$V_{LN}=2.0-4.2 \text{ m}^3/\text{h}$
at 2 bar



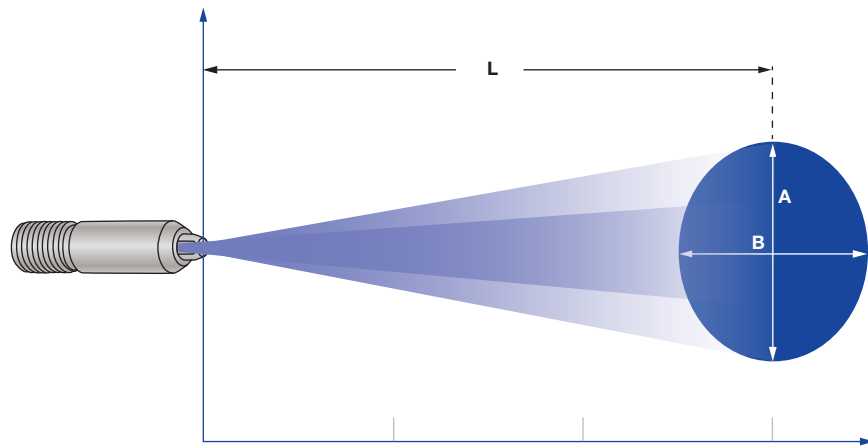
Pressure

$p_{max} = 5 \text{ bar}$



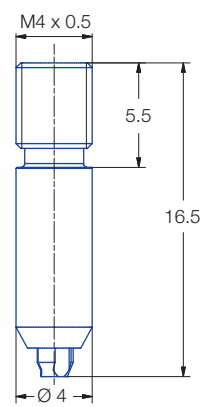
Max. temperature

550 °C

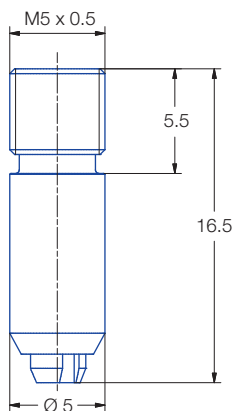


Jet pattern of 600.625 nozzle series

Pressure:		1 bar	3 bar	5 bar
600.625.1Y.00	Distance L [mm]:	225	400	500
	A [mm]:	60	85	110
	B [mm]:	60	85	110
600.625.1Y.10	Distance L [mm]:	350	600	825
	A [mm]:	80	110	155
	B [mm]:	80	110	155

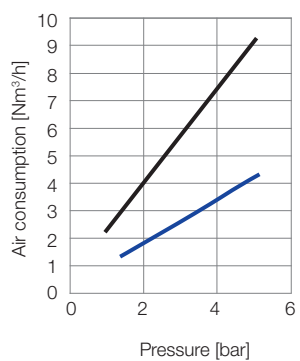
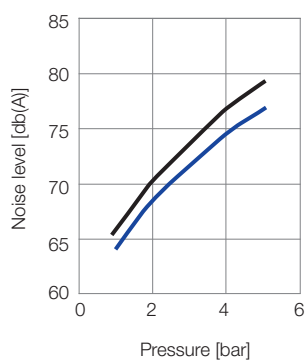
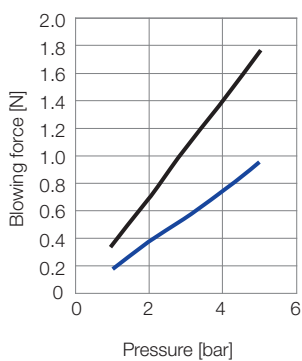


600.625.1Y.00



600.625.1Y.10

Technical data



— 600.625.1Y.00
— 600.625.1Y.10

Ordering no.		Connection thread	
Type	Mat. no.		
	1Y Stainless steel 316L SS	M4 x 0.5	M5 x 0.5
600.625.	<input type="radio"/>	00	-
600.625.	<input type="radio"/>	-	10

Example of ordering: Type + Mat. no. + Code = Ordering no.
600.625 + 1Y + 00 = 600.625.1Y.00



Maxi multi-channel round jet nozzles for air

Series 600.387.35

Series 600.387.35

The maxi multi-channel round jet nozzles of the 600.387 series generate a circular, very powerful air jet. Due to the large nozzle cross-section, these nozzles focus large quantities of air into a concentrated jet that has a powerful impact even over large distances. In spite of this, the noise level still remains low.



* Complies with OSHA requirements on noise level



Cost savings

15%



Noise reduction

16%



Materials

Brass nickel plated,
PVC



Blowing force

12.8 N at 2 bar



Noise level

93 db(A) at 2 bar



Air consumption

$V_{LN}=157 \text{ m}^3/\text{h}$ at 2 bar



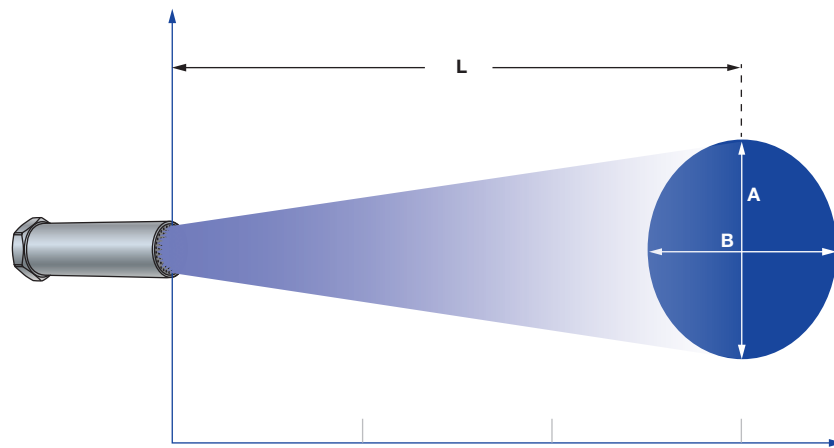
Pressure

$p_{max} = 6 \text{ bar}$



Max. temperature

50 °C

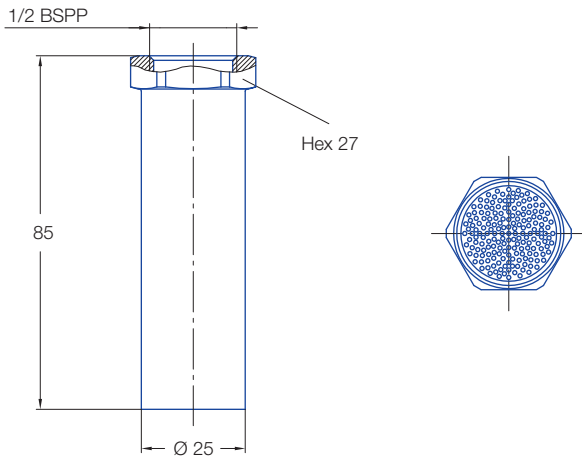


Jet pattern of 600.387 nozzle series

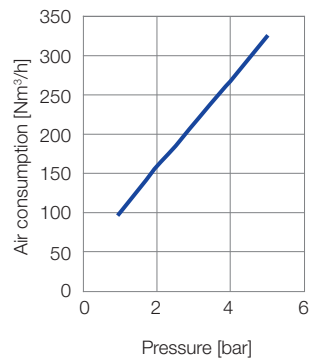
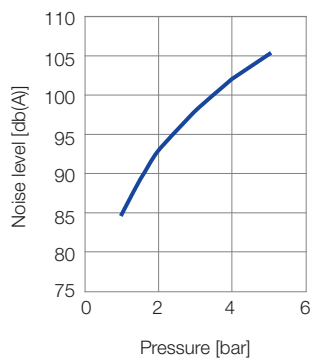
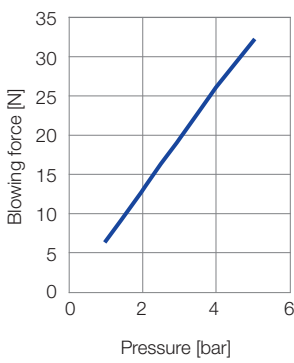
Pressure:	1 bar	3 bar	5 bar
Distance L [mm]:	800	800	800

Jet dimensions at L

A [mm]:	220	255	310
B [mm]:	220	255	310



Technical data



Ordering no.		
Type	Mat. no.	Code
	35 Brass nickel plated, PVC	1/2 BSPP
600.387.	○	AH

Example **Type** + **Mat. no.** + **Code** = **Ordering no.**
of ordering: 600.387. + 35 + AH = 600.387.AH.00



Solid jet nozzles for air or saturated steam

Series 544

Series 544

The solid jet nozzles of the 544 series generate a targeted solid jet of air. These nozzles are from Lechler's standard range, which offer a large choice of different performance ratings. The stainless steel version of this series also permits use at higher temperatures.



Material
Stainless steel
303 SS



Blowing force
0.25-2.9 N at 2 bar



Noise level
65-90 db(A) at 2 bar



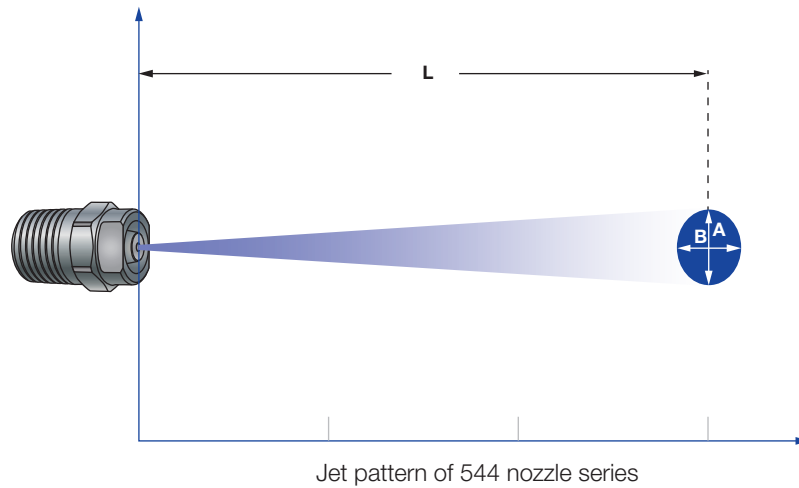
Air consumption
see table



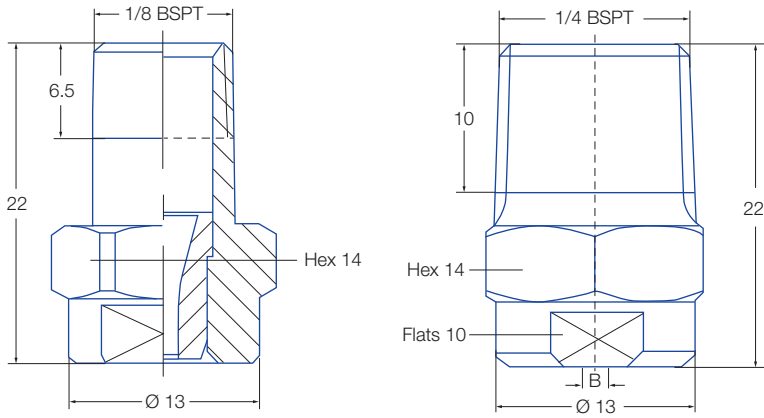
Pressure
 $p_{max} = 30 \text{ bar}$



Max. temperature
550 °C



Pressure:		1 bar	3 bar	5 bar
544.360	Distance L [mm]:	175	325	400
	A [mm]:	50	75	100
	B [mm]:	50	75	100
544.480	Distance L [mm]:	250	400	475
	A [mm]:	70	120	150
	B [mm]:	70	120	150
544.640	Distance L [mm]:	400	650	825
	A [mm]:	105	175	225
	B [mm]:	105	175	225
544.800	Distance L [mm]:	750	900	900
	A [mm]:	180	260	280
	B [mm]:	180	260	280



Ordering no.				B Ø [mm]	\dot{V}_n Air [m³/h]				\dot{M} Saturated steam [kg/h]			
Type	Mat. no.	Code			p [bar]				p [bar]			
	16	1/8 BSPT	1/4 BSPT		1	2	3	5	1	2	3	5
	303 SS											
544.360	○	CA	CC	1.05	0.93	1.40	1.92	2.88	0.77	1.14	1.64	2.42
544.400	○	CA	CC	1.30	1.43	2.14	2.94	4.41	1.18	1.75	2.51	3.71
544.480	○	CA	CC	1.33	1.67	2.51	3.42	5.13	1.39	2.06	2.92	4.23
544.560	○	CA	CC	1.69	2.58	3.87	5.27	7.90	2.14	3.18	4.50	6.66
544.640	○	CA	CC	2.09	4.33	6.50	8.81	13.22	3.60	5.33	7.52	11.13
544.720	○	CA	CC	2.66	6.85	10.27	14.00	21.02	5.68	8.42	11.96	17.70
544.800	○	CA	CC	3.30	10.75	16.12	21.87	32.81	8.92	13.21	18.66	27.63

B = bore diameter

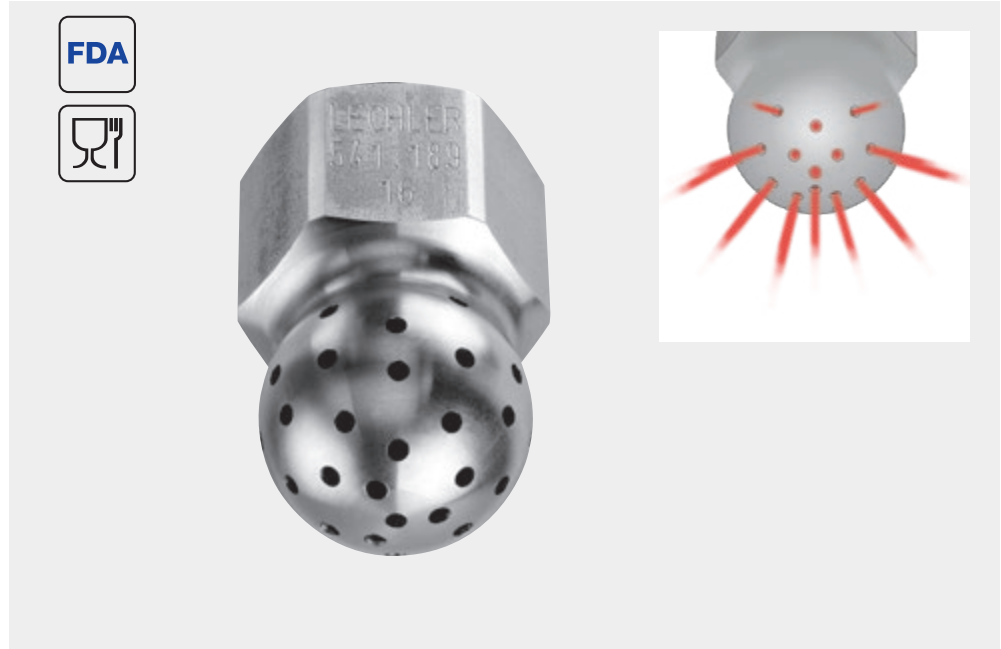
Example **Type** + **Mat. no.** + **Code** = **Ordering no.**
of ordering: 544.360 + 16 + CA = 544.360.16.CA



Multiple solid stream nozzles for air or saturated steam Series 540 / 541

Series 540 / 541

The multiple solid stream nozzles of the 540/541 allow delivery of gases and other media at an angle of approx. 240° through 40 individual holes. Thanks to their robust design, these nozzles can be used under difficult conditions, including being immersed in liquid media.



Material
Stainless steel
303 SS



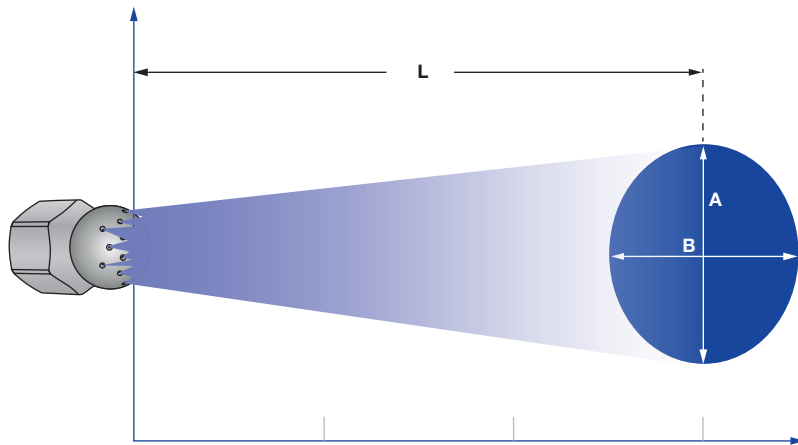
Air consumption
see table



Pressure
 $p_{\max} = 10 \text{ bar}$

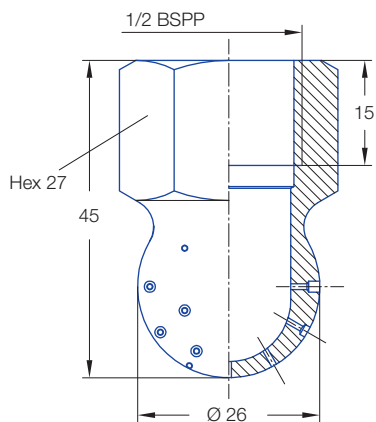



Max. temperature
550 °C



Jet pattern of 540 / 541 nozzle series

Pressure:		1 bar	3 bar	5 bar
540.909	Distance L [mm]:	375	725	850
	A [mm]:	80	160	170
	B [mm]:	80	160	170
541.109	Distance L [mm]:	800	800	800
	A [mm]:	195	290	325
	B [mm]:	195	290	325
541.239	Distance L [mm]:	800	800	800
	A [mm]:	220	225	260
	B [mm]:	220	225	260



Spray angle 	Ordering no.		B Ø [mm]	\dot{V}_n Air [m³/h]				\dot{M} Saturated steam [kg/h]			
	Type	Mat. no.		p [bar]				p [bar]			
		16		1	2	3	5	1	2	3	5
		303 SS									
approx. 240°	540.909	○	0.8	22.80	34.20	45.50	68.30	18.10	26.90	35.50	52.70
	540.989	○	1.0	35.50	53.30	71.00	106.50	28.20	41.70	55.10	81.70
	541.109	○	1.5	83.30	124.90	166.50	249.80	66.00	97.70	129.20	191.60
	541.189	○	2.0	129.70	194.50	259.30	389.00	103.00	152.60	201.70	299.10
	541.239	○	2.3	167.20	250.80	334.30	501.50	133.20	197.30	260.80	386.60

B = bore diameter

Example of ordering:	Type	+	Mat. no.	=	Ordering no.
	540.909	+	16	=	540.909.16

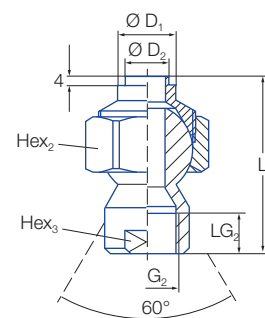
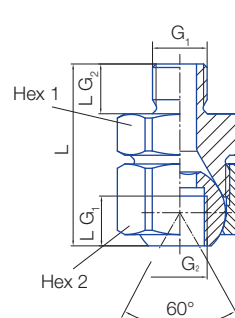
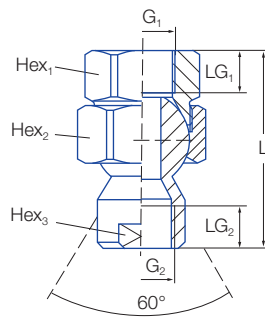


Accessories Ball joints / Nipple

Ball joints

For swivel mounting, Lechler ball joints can be used with low-noise flat jet and round jet nozzles. 30° swivel range in all directions. No wearing seals, long-term problemfree operation, even with frequent adjustment.

$p_{max} = 25 \text{ bar}$



Connection	Ordering no.					Dimensions [mm]										Weight (Brass)
	Type	Mat. no.			Code	D ₁	D ₂	G ₁ BSPP	G ₂ BSPP	L _{G1}	L _{G2}	L	Hex ₁	Hex ₂	Hex ₃	
		16 303 SS/ 316Ti SS	16 303 SS	30 Brass												
Ball joints with thread connection	① 092.020	-	○	○	AD	-	-	1/4	1/4	12.0	11.5	60.3	27	27	17	60 g
	① 092.021	-	○	○	AF	-	-	3/8	1/4	12.0	11.5	58.3	27	27	17	80 g
	② 092.024	-	○	○	AC	-	-	1/4	1/4	12.0	12.0	44.0	27	27	-	140 g
	② 092.030	-	○	○	AE	-	-	3/8	3/8	12.0	12.0	44.0	27	30	-	160 g
Ball joints with welding connection	③ 092.020	○	-	-	SD	20.0	15.0	-	1/4	-	11.5	64.3	-	27	17	60 g
	③ 092.030	○	-	-	SF	22.0	15.0	-	3/8	-	12.0	58.7	-	30	19	80 g

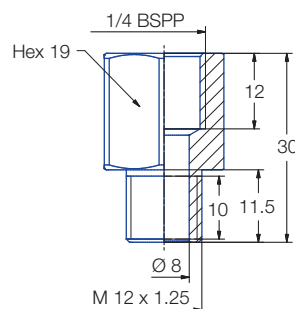
Example of ordering: Type + Mat. no. + Code = Ordering no.
092.020 + 16 + AD = 092.020.16.AD

Nipple

095.016.30.14.23.0

The nipple made of brass allows for connection of nozzles with compressed air guns. Suitable for the series:

- 600.130
- 600.283
- 600.332
- 600.606
- 600.493
- 600.484
- 600.326
- 544

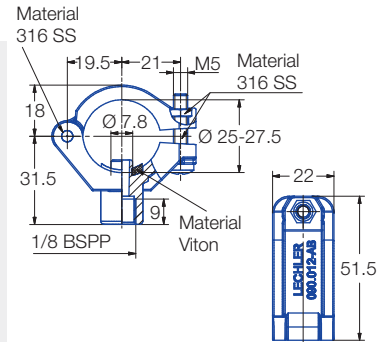
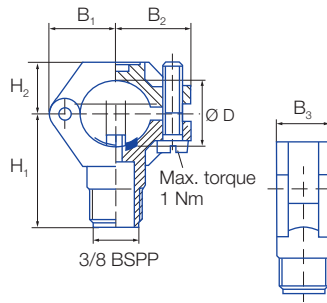




Accessories

Eyelet clamps / Double nipples / Nuts

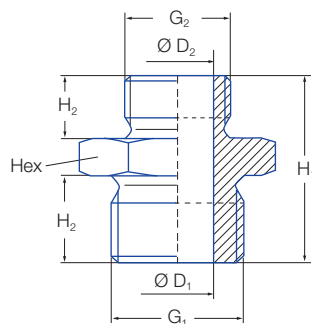
Eyelet clamps



Ordering no.	Mat. no.			Screw	Dimensions [mm]								Weight (Polyamid)	
	51	53	5E		Pipe Ø	D Ø	B _R * Ø	B** Ø	B ₁	B ₂	B ₃	H ₁		H ₂
Type	Polyamid	Polypropylene	PVDF											
090.053	○	○	○	Material 304 SS	3.8"	16.5-18.0	6.0	6.2 - 6.4	19.0	22.0	18.5	34.5	14.5	20 g
090.003	○	○	○		1/2"	20 - 22.0	6.0	6.2 - 6.4	21.2	23.8	18.5	36.5	16.5	20 g
090.013	○	○	○		3/4"	25 - 27.5	7.6	7.8 - 8.0	24.5	26.5	22.0	39.5	17.5	25 g
090.023	○	○	○		1"	32 - 34.5	10.6	10.8 - 11.0	30.0	31.0	22.0	44.0	21.0	32 g
090.033	○	○	○		1 1/4"	40 - 43.0	12.6	12.8 - 13.0	34.0	35.5	25.0	48.0	25.0	38 g
090.012	-	-	○	316 SS	3/4"	25 - 27.5	7.8	8.0 - 8.2	19.5	21.0	22.0	31.5	18.0	40 g

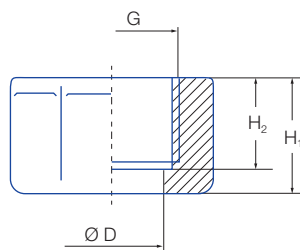
*B_R Ø = Spigot diameter
 **B Ø = Recommended bore diameter

Double nipples



Ordering no.	Mat. no.		Dimensions [mm]							Weight (Brass)
	17	30	G ₁ BSPP	G ₂ BSPP	H ₁	H ₂	D ₁	D ₂	Hex	
Type	316Ti SS	Brass								
065.215	○	○	3/8	1/4	25	10	10	7	22	30 g
065.211	○	○	3/8	3/8	25	10	11.5	-	22	25 g

Retaining nuts



Ordering no.	Mat. no.					Dimensions [mm]					Weight (Brass)
	16	17	30	56	5E	G BSPP	H ₁	H ₂	D	Hex	
Type	303 SS	316Ti SS	Brass	POM	PVDF						
065.200	○	○	○	-	-	3/8	13.0	10.0	12.8	22	25 g
065.200	-	-	-	○	○	3/8	14.5	11.5	12.8	22	25 g

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