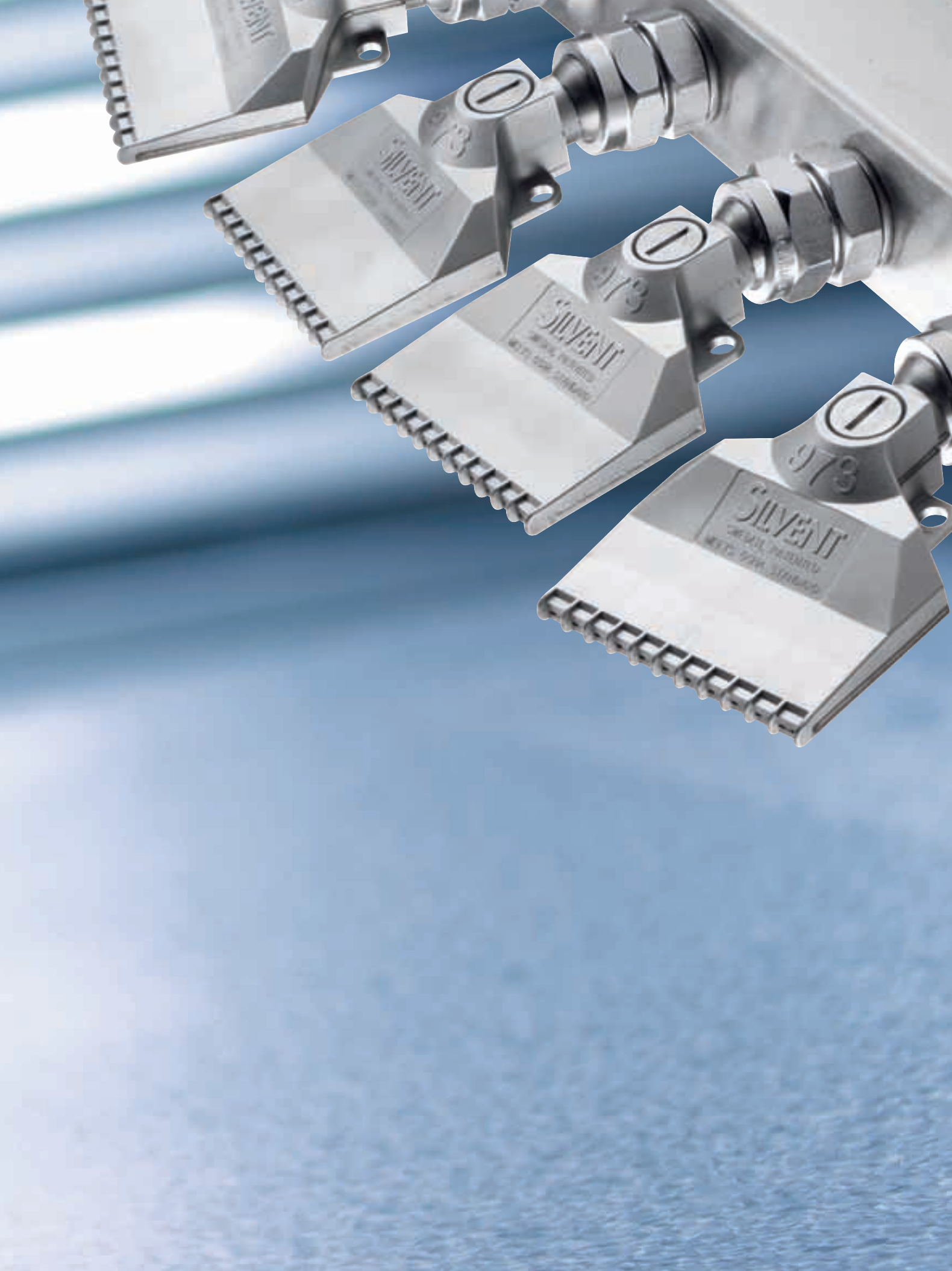
SILVENT®Ⓟ

ADVANCED AIR NOZZLE TECHNOLOGY


Together we can
change the world...

Contents:


...and make it a quieter and safer place.


SILVENT
SILVENT
SILVENT
SILVENT


www.silvent.com

All of these companies are already steady users of Silvent's products

BMW	**Alcoa**	**Renault**	**Hoechst**
Kimberly-Clark	**Denso**	**Ford**	**Caterpillar**
Baosteel	**Tuborg**	**Anshan Steel**	**SKF**
Tetra Pak	**Porsche**	**Mitsubishi**	**Goodyear**
Sandvik	**Georgia Pacific**	**M-real**	**Weyerhaeuser**
Coca-Cola	**SSAB**	**Alunorf**	**ISG**
Corus	**Hasselblad**	**Boeing**	**Sony**
General Motors	**Pratt & Whitney**	**Orrefors**	**Honda**
Nippon Steel	**SAAB**	**Ericsson**	**Pfizer**
SCA	**General Electric**	**Procter & Gamble**	**Boise Cascade**
ABB	**Siemens**	**BASF**	**Schick**
Toyota	**Irving Tissue**	**Grundig**	**Stelco**
Volvo	**Bayer AG**	**Favretto**	**and others…**

Why?

Silvent offers unique solutions

Energy savings in the European automotive industry

Several years ago a prominent European carmaker conducted a study of energy saving and noise reducing compressed air guns. They compared the Silvent 500 safety gun with a conventional gun. The company did extensive testing at more than 1300 work stations. *The results showed conclusively that an investment in Silvent air guns reduced compressed air consumption by up to 57%.* Return on Investment (ROI) was less than one year.

Improved working environment at an American paper mill

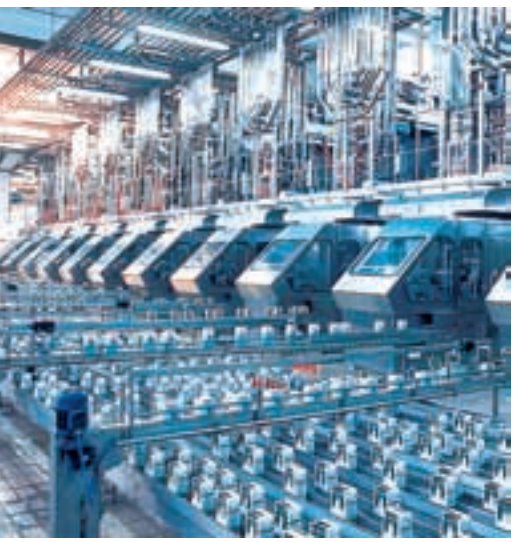
The world's leading paper manufacturer is today a steady user of Silvent's unique and patented air bazooka. The extreme blowing forces required in this industry have previously involved considerable risk for operators because no efficient and safe product has been available. *The unique design of the bazooka, which features a dead-man's-grip and infinitely adjustable blowing force, has eliminated the risk of injury and provided significant improvements in the operators' working environment.*

Better quality in the Chinese steel industry

One of the world's largest steel producers has its headquarters in China. In close cooperation with Silvent's application engineers they have succeeded in improving the quality of their steel in several of their most demanding production lines. Silvent's highly efficient and safe air nozzles have become a standard feature in their facilities. *Collaboration with Silvent has meant that this steelmaker has solved production and quality problems and that the company can now supply the market with premium products.*

"The results showed that an investment in Silvent air guns reduced compressed air consumption by up to 57%."

Excerpt from a study conducted by a leading European car manufacturer



Unique expertise helped a well-known packaging company

The best known supplier of packaging in the world is famous for their innovative thinking and ambition to always make use of the latest technology. Many years ago the company's engineers discovered Silvent's solutions. Today our application engineers are often involved from the initial stages of the design work on their new machines. *This cooperation has not only improved the quality of the company's machines, but has reduced the operating costs for these machines as well.*

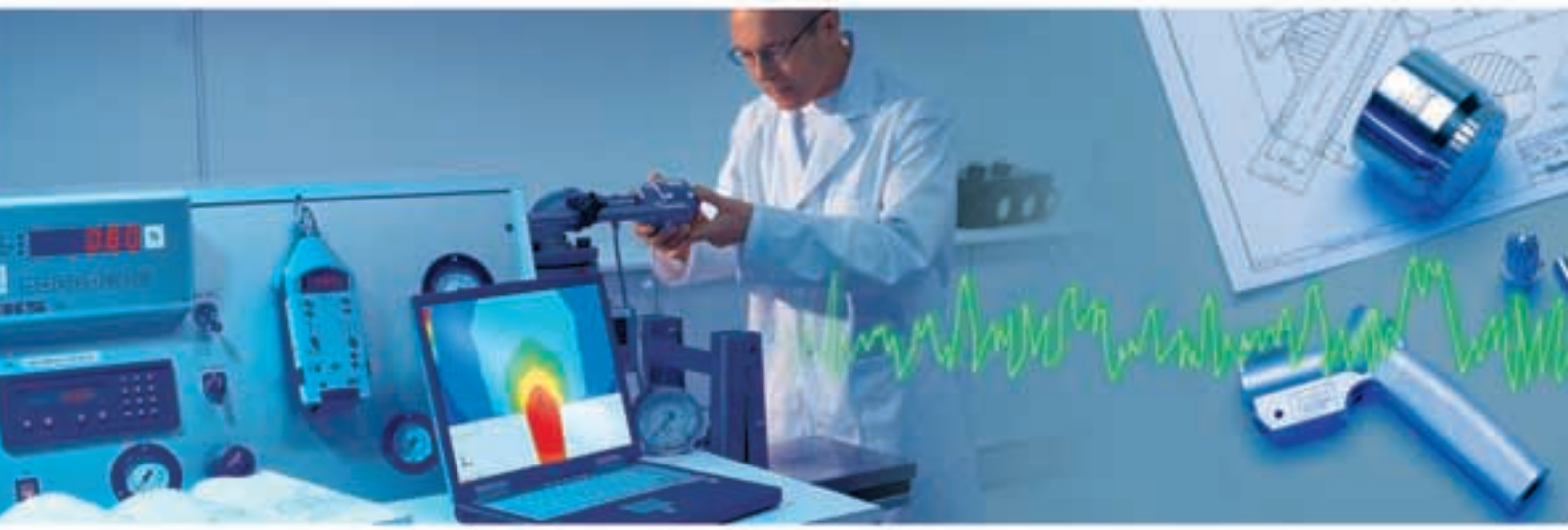
Noise abatement in the Swedish manufacturing industry

An internationally renowned high-tech engineering and manufacturing group with many advanced products to their credit had, like many similar companies, problems with harmful noise levels at their work stations. Their primary aim was to reduce the noise at its source. Today they use Silvent's compressed air nozzles and safety guns. *Switching to Silvent's products has provided a noise reduction of more than 50% at many of the work stations.*

Numerous benefits for the leading beverage company

The company that produces the world's most well known and classic soft drink has extremely automated production facilities. Their engineers must take many factors into consideration when selecting machines and spare parts. They use Silvent flat nozzles and air knives in their plants throughout the world to dry bottles and cans. *This lowers the sound level, reduces energy consumption and increases the efficiency of the drying process.*

Advanced air nozzle technology



People in many different industries seem to think compressed air is more or less free of cost. Nothing could be further from the truth. Compressed air is among our most expensive sources of energy.

An investment in Silvent products quickly pays for itself in reduced energy costs. In addition, you get more efficient blowing, lower noise levels and a safer working environment for your operators.

Silvent has invested heavily in research and development and today we offer the most advanced air nozzle technology in the world.

Blowing with compressed air

Blowing with compressed air is extremely common in most industries. Often an ordinary piece of pipe is installed to do the job. The dimension of the pipe can vary, from a few millimeters up to an inch in diameter. In many cases the pipe is bent or flattened to attain the blowing angle or blowing pattern required. Blowing with compressed air serves many purposes, such as:

- **Cleaning**
- **Drying**
- **Cooling**
- **Transporting**
- **Sorting**

The problems

In most cases the installation of open pipe is not preceded by any sort of formal technical dimensioning and since theoretical knowledge of aerodynamics is often limited, efficiency is insufficient. By over-dimensioning, open pipe blowing does work, but its drawbacks include:

- **Excessive turbulence that generates harmful noise**
- **Inordinate energy consumption, i.e. waste of expensive compressed air**
- **A hazardous working environment with, for example, the risk of embolism**

Silvent technology provides the solution

Years of research have led to the development of the renowned, patented Silvent technology. Its basic principle is creating a uniform, steady and straight or so-called laminar air stream rather than the turbulent and noisy stream generated by open pipe. Every Silvent nozzle features an optimal combination of high blowing force, low noise level and low energy consumption. Replacing open pipe installations with Silvent compressed air nozzles normally means:

- **Lowering the sound level by 50%**
- **Reducing air consumption by at least 30%**
- **Complying with authorities' safety requirements**

Cutting energy costs with Silvent

Open pipe vs. Silvent air nozzles

Compare the considerable differences between open pipe and Silvent air nozzles

Pipe inside Ø		Sound level	Air consumption		Replace with Silvent	Noise level reduction		Air savings	Annual savings
mm	*inch*	*dB(A)*	*Nm³/h*	*scfm*	air nozzle	*dB(A)*	*%*	*%*	*USD*
2	**5/64"**	84	8	4.7	**MJ4**	8	43%	50%	**$42**
2.5	**3/32"**	87	12	7.1	**MJ5**	8	43%	17%	**$21**
3	**1/8"**	90	17	10.0	**MJ6**	8	43%	18%	**$32**
4	**5/32"**	95	30	17.7	**512**	16	67%	37%	**$116**
5	**3/16"**	99	47	27.7	**700 M**	15	65%	47%	**$232**
6	**1/4"**	102	67	39.5	**920 A**	21	77%	55%	**$391**
7	**9/32"**	105	92	54.2	**973**	19	73%	37%	**$359**
8	**5/16"**	108	118	69.5	**404 L**	24	81%	42%	**$528**
10	**3/8"**	112	185	109.0	**705**	20	75%	49%	**$950**
12	**1/2"**	116	266	156.7	**707 L**	22	78%	55%	**$1 542**
14	**9/16"**	119	363	213.8	**710**	20	75%	40%	**$1 552**
16	**5/8"**	122	474	279.2	**412 L**	34	89%	57%	**$2 851**
17	**11/16"**	123	536	315.7	**715 C**	23	80%	42%	**$2 376**
18	**23/32"**	124	599	352.8	**715 L**	20	75%	48%	**$3 031**
20	**3/4"**	126	740	435.9	**720**	22	78%	43%	**$3 379**
25	**1"**	131	1159	682.7	**730 C**	26	84%	45%	**$5 523**

The table is based on 220 eight hour working days per year and a 40% degree of utilization. The cost of 1Nm³ (35.3 scf) at 500 kPa (71.5 psi) is calculated at 1.5¢ (USD).

The example below illustrates the advantages:
Annual cost reduction: $950 USD (49%)
Noise level reduction: 20 dB(A) (75%)
Safety: Meets OSHA and the EU Machine Directive requirements

Open pipe, Ø10 mm (3/8")

Blowing with compressed air, e.g. for cleaning or drying, with a Ø 10 mm (3/8") open pipe at a pressure of 5 bars (71.5 psi) generates a noise level of 112 dB(A) and uses 185 Nm³/h (109 scfm).

Example:

220 workdays x 8 hrs. x 40% degree of utilization
= 704 hrs per year

Air consumption for Ø 10 mm pipe = 185 Nm³/hr
Cost for 1 Nm³/hr = 1.5¢ (USD)

185 Nm³/hr x 1.5¢ (USD) x 704 hrs
= $1953.60 USD

Annual operating cost = $1953 USD

Replaced with SILVENT 705

A SILVENT 705 will perform the same job as a Ø 10 mm (3/8") pipe but with a sound level of 92 dB(A) and an air consumption of 95 Nm³/hr (55.9 scfm).

Example:

220 workdays x 8 hrs. x 40% degree of utilization
= 704 hrs per year

Air consumption for SILVENT 705 = 95 Nm³/hr
Cost for 1 Nm³/hr = 1.5¢ (USD)

95 Nm³/hr x 1.5¢ (USD) x 704 hrs
= $1003.20 USD

Annual operating cost = $1003 USD

Silvent - the company

Noise is a problem

In 1978 the manufacturing industry in Sweden had had it. They realized that something needed to be done about the noise situation in Swedish factories. The frequency of hearing impairment resulting from excessive noise levels was skyrocketing. Representatives from internationally known export companies, trade unions and the Ministry of Labor sat down together to make a number of historic decisions that would dramatically improve working conditions throughout Swedish industry. Numerous studies were conducted that indicated that 70-80% of all hearing loss within the manufacturing industry was directly related to the use of compressed air. The primary cause of these injuries was the extreme noise levels generated by the turbulence created by open pipe blowing.

Silvent in the vanguard

Since its founding, Silvent, whose name is an abbreviation of the Latin "Silencium Ventum" or "silent wind", has devoted all its research, development and engineering know-how to designing efficient products that lower sound levels, conserve energy and meet increasingly stringent safety requirements. The company's policy is to consciously improve working conditions for those people who work with compressed air on a daily basis. No investment in new products is too great as long as this goal is attained. Silvent air nozzles and the Silvent technology have become a well established concept throughout the world.

Our catalog – a handbook

Every day industries all over the world make use of our knowledge. Silvent's catalog, in combination with the Silvent website, provide an enormous source of information for companies that want to create an action plan to combat noise, get more information about the risks associated with compressed air blowing or find out what the law has to say about the use of air guns. All this and more can be found in our main catalog and at our website: www.silvent.com. Several universities and colleges have even ordered our catalogs for use in their instruction.

Today Silvent is represented in more than 40 countries throughout the world with our own sales companies and distributors. Our products are used by international corporations with world-famous trademarks.

Silvent in the world

At present Silvent is represented with its own sales companies and distributors in more than 40 countries. Our headquarters is located in Sweden, where all research and development takes place. Today Silvent offers the widest selection of air nozzles, safety air guns and safety silencers in the world – all with unique, patented advantages. Our products are used by multinational corporations with well-known brand names such as General Motors, Coca-Cola, Toyota, Sandvik, Tetra Pak, Baosteel and Kimberly-Clark.

The company and the people

Over the years Silvent's skilled staff has acquired unique, cutting edge competence in the field of compressed air blowing. This know-how, together with Silvent's patented products, not only helps companies to save enormous amounts of expensive compressed air, it improves the working environment for operators all over the world – an unbeatable combination according to many of Silvent's satisfied customers. Our application engineers are ready to give you advice and tips on how you can apply Silvent technology at your company as well. Welcome to Silvent!

Silvent's highly trained staff has unique cutting edge competence in the field of compressed air blowing.

All our research and development is conducted at our headquarters. No investment to further refine Silvent technology is too costly.

Silvent's headquarters is located in Sweden. Here distributors and personnel from all over the world meet for training.

Assembly and inspection of all the products in our range takes place at our facilities in Sweden prior to dispatch.

Safety air nozzles

1

Overview

The most frequently used method for compressed air blowing is an open pipe. The dimension of the pipe may vary from just a few millimetres up to an inch in diameter.

The compressed air nozzles on these pages are divided into groups according to the dimensions of the open pipe they replace.

ø 2 mm (5/64")

Replaces open pipe of Ø 2 mm (5/64")

Silvent **MJ4**
See page 25

ø 2.5 mm (3/32")

Replaces open pipe of Ø 2.5 mm (3/32")

Silvent **MJ5**
See page 26

ø 3 mm (1/8")

Replaces open pipe of Ø 3 mm (1/8")

Silvent **MJ6**
See page 27

ø 4 mm (5/32")

Replaces open pipe of Ø 4 mm (5/32")

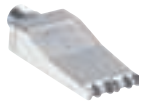
Silvent **209 L** New!
See page 28

Silvent **512**
See page 30

Silvent **011**
See page 32

Silvent **701**
See page 33

Silvent **811**
See page 34



Silvent **921**
See page 35

Silvent **961** New!
See page 36

Silvent **971**
See page 37

Silvent **209**
See page 38

ø 5 mm (3/16")

Replaces open pipe of Ø 5 mm (3/16")

Silvent **700 M**
See page 40

Silvent **1011**
See page 41

ø 6 mm (1/4")

Replaces open pipe of Ø 6 mm (1/4")

Silvent **920 A**
See page 42

ø 7 mm (9/32")

Replaces open pipe of Ø 7 mm (9/32")

Silvent **973**
See page 45

Silvent **703**
See page 46

ø 8 mm (5/16")

Replaces open pipe of Ø 8 mm (5/16")

Silvent **404 L**
See page 47

New!

ø 10 mm (3/8")

Replaces open pipe of Ø 10 mm (3/8")

Silvent **2005**
See page 48

Silvent **705**
See page 49

Silvent **705 L**
See page 50

New!

ø 12 mm (1/2")

Replaces open pipe of Ø 12 mm (1/2")

Silvent **707 L**
See page 51

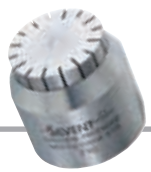
New!

Silvent **407 L**
See page 52

New!

ø 14 mm (9/16")

Replaces open pipe of Ø 14 mm (9/16")



Silvent **710**
See page 53

ø 16 mm (5/8")

Replaces open pipe of Ø 16 mm (5/8")

Silvent **412 L**
See page 54

New!

ø 17 mm (11/16")

Replaces open pipe of Ø 17 mm (11/16")

Silvent **715 C**
See page 55

ø 18 mm (23/32")

Replaces open pipe of Ø 18 mm (23/32")

Silvent **715 L**
See page 56

ø 20 mm (3/4")

Replaces open pipe of Ø 20 mm (3/4")

Silvent **720**
See page 57

ø 25 mm (1")

Replaces open pipe of Ø 25 mm (1")

Silvent **730 C**
See page 58

Silvent **735 L**
See page 59

New!

Air knives

Silvent **366**
See page 62

New!

Silvent **396**
See page 63

Silvent **378**
See page 64

Air curtains

Silvent **306 L**
See page 61

New!

Custom

Silvent **300 Special**
See page 65

Silvent **300 Special**
See page 65

Special

Silvent **910**
See page 69

Silvent **915**
See page 70

Silvent **952**
See page 71

Special

New!

Silvent **453**
See page 72

New!

Silvent **464**
See page 73

New!

Silvent **475 L**
See page 74

Choosing the right air nozzle

It is important to choose the correct air nozzle to ensure that your application will be efficient, quiet, safe and, not least, economical. Every blowing operation is unique, but by considering the factors described on the following page it is easy to optimize any blowing application.

Replacement table for open pipe

Without a doubt, the most frequently used method for compressed air blowing is open pipe. The dimensions of the pipe can vary from a few millimeters up to one inch in diameter. Normally no technical dimensioning precedes an installation. People simply choose a pipe they are certain will be big enough to handle the blowing operation. In some cases the opening of the pipe is flattened. Practical experience and application tests have allowed us to compile a table that shows what nozzles perform the same work as various diameters of open pipe.

Pipe inside Ø		Sound level	Air consumption		Replace with Silvent nozzle	Sound level reduction		Compressed air savings
mm	*Inch*	*dB(A)*	*Nm³/h*	*scfm*		*dB(A)*	*%*	*%*
2	**5/64"**	84	8	4.7	**MJ4**	8	43%	50%
2.5	**3/32"**	87	12	7.1	**MJ5**	8	43%	17%
3	**1/8"**	90	17	10.0	**MJ6**	8	43%	18%
4	**5/32"**	95	30	17.7	***512, 209 L, 011, 701, 811, 921, 961, 971, 209**	16	67%	37%
5	**3/16"**	99	47	27.7	***700 M, 1011**	15	65%	47%
6	**1/4"**	102	67	39.5	**920 A**	21	77%	55%
7	**9/32"**	105	92	54.2	***973, 703**	19	73%	37%
8	**5/16"**	108	118	69.5	**404 L**	24	81%	42%
10	**3/8"**	112	185	109.0	***705 L, 2005, 705**	20	75%	49%
12	**1/2"**	116	266	156.7	***707 L, 407 L**	22	78%	55%
14	**9/16"**	119	363	213.8	**710**	20	75%	40%
16	**5/8"**	122	474	279.2	**412 L**	34	89%	57%
17	**11/16"**	123	536	315.7	**715 C**	23	80%	42%
18	**23/32"**	124	599	352.8	**715 L**	20	75%	48%
20	**3/4"**	126	740	435.9	**720**	22	78%	43%
25	**1"**	131	1159	682.7	***730 C, 735 L**	26	84%	45%

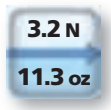
* Values may vary somewhat depending on the nozzle.

www.silvent.com

On our website you will find complete product information and our "online selection guidelines", where you can easily compare our different air nozzles.

1 Blowing force

Selecting the right blowing force is crucial, as insufficient force will not get the job done and over-dimensioning will not utilize Silvent's technology optimally.



Expresses blowing force in Newtons (N) and ounces (oz)

2 Blowing pattern

Depending upon the work the nozzle must perform, choose one of the following blowing patterns.

Generates a broad air stream

Generates a concentrated, centered air stream

Generates a supersonic core stream surrounded by a protective sheath of air

Generates a large conical air stream

Unusual blowing patterns, e.g. back-blow, dispersed etc.

3 Material

The choice of material in the air nozzle is affected by the ambient temperature, the degree of exposure to mechanical wear and corrosion etc.

Withstands high ambient temperatures, mechanical wear, aggressive and corrosive environments and meets hygienic requirements. From -20° to +400° C (-4° to +752° F)

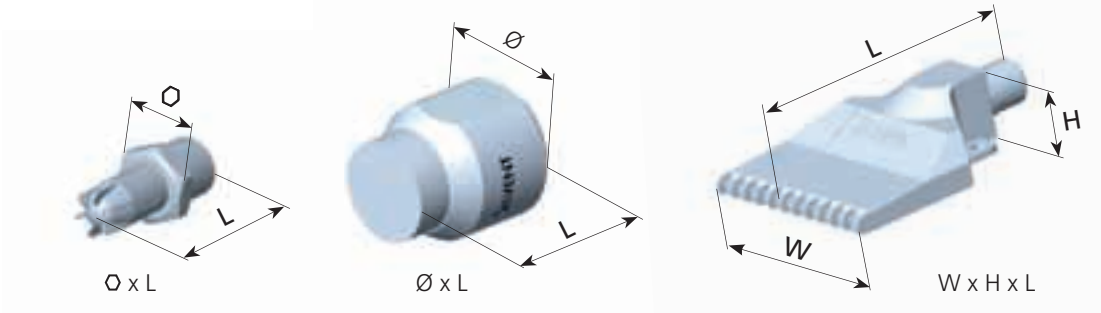
Suitable for applications with low ambient temperatures and limited mechanical wear. From -20° to +70° C (-4° to +158° F)

Unusual materials, e.g. PEEK.

4 Dimensions

In certain cases the physical size of the nozzle may be of importance, for example, if it will be used in a tight space. All values are expressed in mm unless otherwise stated.

Complete information on the dimensions of all our nozzles is available at www.silvent.com



0 - 6 N 0 - 1.3 lbs

Blowing force: 0 – 6 N (0 - 1.3 lbs)

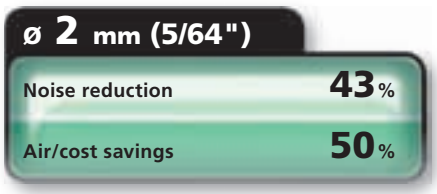
Silvent offers the world's widest selection of compressed air nozzles. Our products are divided into four categories:

1 Air nozzles 0 – 6 N (0 - 1.3 lbs)
2 High force air nozzles 6 – 130 N (1.3 - 28.7 lbs)
3 Air knives and air curtains
4 Special air nozzles

The category air nozzles 0 – 6 N (0 - 1.3 lbs) contains all our nozzles with blowing forces of up to 6 N (1.3 lbs). These nozzles, sometimes referred to as standard nozzles, are suitable for most applications, such as: cleaning, drying, cooling, transport or sorting. They are used in all types of manufacturing industries.

Silvent MJ4

SILVENT MJ4: micro-nozzle of stainless steel with a central hole surrounded by slots. Generates a concentrated air stream while limiting both sound level and air consumption to a minimum. Small dimensions make this nozzle suitable for incorporation into most machine designs. Meets EU Machine Directive stipulations on airborne noise in machines. Patented.



When replacing open pipe of this diameter.

Order no: **MJ4**

Blowing force	0.9 N	(3.2 oz)
Air consumption	4 Nm³/h	(2.4 scfm)
Sound level	76 dB(A)	
Air pattern	Concentrated	
Connection	M4x0.5	
Dimensions	Ø4x16.5	(Ø0.16x0.65")
Material	Stainless steel	

For accessories, see page 76.
For more technical information, see page 152 or visit our website at www.silvent.com.

Silvent MJ5

SILVENT MJ5: micro-nozzle of stainless steel with a central hole surrounded by slots. Generates a concentrated air stream while limiting both sound level and air consumption to a minimum. Small dimensions make this nozzle suitable for incorporation into most machine designs. Meets EU Machine Directive stipulations on airborne noise in machines. Patented.

Order no: **MJ5**

Blowing force	1.8 N	(6.4 oz)
Air consumption	10 Nm³/h	(5.9 scfm)
Sound level	79 dB(A)	
Air pattern	Concentrated	
Connection	M5x0.5	
Dimensions	Ø5x17	(Ø0.20x0.67")
Material	Stainless steel	

1.8 N
6.4 oz
CONC.
STAIN-LESS

For accessories, see page 76.
For more technical information, see page 152 or visit our website at www.silvent.com.

ø 2.5 mm (3/32")
Noise reduction 43 %
Air/cost savings 17 %

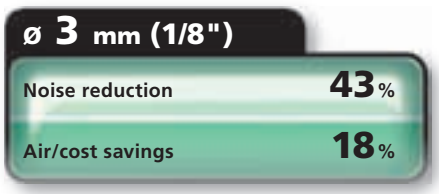
When replacing open pipe of this diameter.

On our website you will find complete product information and our "online selection guidelines", where you can easily compare our different air nozzles.

www.silvent.com

Silvent MJ6

SILVENT MJ6: micro-nozzle of stainless steel with a central hole surrounded by slots. Generates a concentrated air stream while limiting both sound level and air consumption to a minimum. Small dimensions make this nozzle suitable for incorporation into most machine designs. Meets EU Machine Directive stipulations on airborne noise in machines. Patented.



When replacing open pipe of this diameter.

Order no: **MJ6**

Blowing force	2.5 N	(8.8 oz)
Air consumption	14 Nm³/h	(8.2 scfm)
Sound level	82 dB(A)	
Air pattern	Concentrated	
Connection	M6x0.75	
Dimensions	Ø6x17	(Ø0.24x0.67")
Material	Stainless steel	

2.5 N
8.8 oz
CONC.
STAIN-LESS

For accessories, see page 76.
For more technical information, see page 152 or visit our website at www.silvent.com.

Application

The picture shows an application where Silvent MJ6s are used for spot cooling and blow-off when soldering circuit boards. For more information on applications, visit our website at www.silvent.com.

Silvent 209 L

SILVENT 209 L is part of a new generation of patented Laval nozzles. It is a refinement of Silvent's 208 and 209 nozzle series and represents an entirely new phase in blowing technology. The effect is achieved by surrounding a core jet moving at supersonic speed with a protective sheath of air running parallel to the direction of the central stream. There is a mix of divergent slots and holes around the Laval orifice that generates a quiet, powerful and laminar air flow. This nozzle provides extremely efficient blowing that utilizes your compressed air optimally. Fully complies with OSHA safety standards and the noise limitations of the EU Machine Directive. Patented.

Order no: **209 L**

Blowing force	3.4 N	(12.0 oz)
Air consumption	17 Nm³/h	(10.0 scfm)
Sound level	78 dB(A)	
Air pattern	Laval	
Connection	1/4" BSP	1/4"-18 NPT
Dimensions	Ø19x44	(Ø0.75x1.73")
Material	Zinc	

3.4 N
12.0 oz
LAVAL
ZINC

For accessories, see page 76.
For more technical information, see page 152 or visit our website at www.silvent.com.

ø 4 mm (5/32")
Noise reduction 69 %
Air/cost savings 43 %

When replacing open pipe of this diameter.

Alternatives

Order no: **208 L**

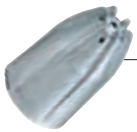
SILVENT 208 L: made of zinc with 1/4" female male thread. Otherwise, the same performance as 209 L.

Order no: **209 L-S**

SILVENT 209 L-S: made of stainless steel with 1/4" male thread. Withstands high ambient temperatures and suitable for applications involving mechanical wear. Otherwise, the same performance as 209 L.

Order no: **208 L-S**

SILVENT 208 L-S: made of stainless steel with 1/4" female thread. Otherwise, the same performance as 209 L.



Order no: **2120 L**

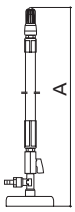
SILVENT 2120 L: made of zinc with 1/4" female thread. A somewhat shorter version of 209 L for applications where space is limited. Otherwise, the same performance as 209 L.

Order no: **2120 L-S**

SILVENT 2120 L-S: made of stainless steel with 1/4" female thread. A somewhat shorter version of 209 L for applications where space is limited. Otherwise, the same performance as 209 L.

Order no: **220 L - 280 L**

SILVENT 220 L-280 L: nozzle mounted on a bendable FlexBlow hose that maintains the desired position, even at high pressures. Silvent's FlexBlow hoses are available in 6 standard lengths with 1/4" male connection thread. Otherwise, the same performance as 209 L.



A mm	200	300	400	500	600	800
A inch	7.87	11.81	15.75	19.69	23.62	31.50
Order no:	**220 L**	**230 L**	**240 L**	**250 L**	**260 L**	**280 L**

Order no: **221 L - 281 L**

SILVENT 221 L - 281 L: allows quick and easy adjustment to the correct blowing angle. Maintains the desired position, even at high pressures. Available in 6 standard lengths. Otherwise, the same performance as 209 L.

A mm	290	390	490	590	690	890
A inch	11.42	15.35	19.29	23.23	27.17	35.04
Order no:	**221 L**	**231 L**	**241 L**	**251 L**	**261 L**	**281 L**

Order no: **222 L - 282 L**

SILVENT 222 L - 282 L: with double FlexBlow hoses. In other respects, the same performance as 221 L - 281 L.

Order no: **293 L**

SILVENT 293 L: nozzle mounted on a Flexarm for applications that require continuous adjustment of the blowing angle. Supplied complete with magnetic base. Otherwise, the same performance as 209 L.

Silvent 512

SILVENT 512: slot nozzle that generates a directed air jet. Suitable for all-purpose blowing and blowing in confined spaces. Compact size makes this nozzle a popular choice for use in machines and tools where clearance is limited. Combines advantages of low noise level and low air consumption with high blowing force. Meets OSHA safety regulations stipulating that air pressure in direct contact with skin must not exceed 210 kPa (30 psi). Also meets EU Mashine Directive noise restrictions. Patented.

Order no: **512**

Blowing force	3.2 N	(11.3 oz)
Air consumption	19 Nm³/h	(11.2 scfm)
Sound level	79 dB(A)	
Air pattern	Concentrated	
Connection	1/8" BSP	1/8"-27 NPT
Dimensions	Ø12x30.3	(Ø0.47x1.19")
Material	Zinc	

3.2 N
11.3 oz
CONC.
ZINC

ø 4 mm (5/32")
Noise reduction 67%
Air/cost savings 37%

When replacing open pipe of this diameter.

For accessories, see page 76.
For more technical information, see page 152 or visit our website at www.silvent.com.

Alternatives

Order no: **511**

SILVENT 511: length 55.8 mm (2.19"). Same performance as 512.

Order no: **5001**

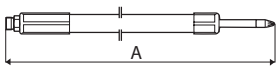
SILVENT 5001: with female connection thread M7x0.75. Same performance as 512. Dimensions: Ø8x18.3 (Ø0.31x0.72").

Order no: **5003**

SILVENT 5003: with male connection thread M7x0.75. Same performance as 512. Dimensions: Ø8x23.3 (Ø0.31x0.92").

Order no: **620 - 680**

SILVENT 620 - 680: nozzle mounted on a bendable FlexBlow hose that keeps the desired position, even when blowing at high pressure. Available in 6 different standard lengths. The FlexBlow hose has a 1/8" male connection thread. Blowing force 2.9 N (10.2 oz).



A mm	200	300	400	500	600	800
A inches	7.87	11.81	15.75	19.69	23.62	31.50
Order no:	**620**	**630**	**640**	**650**	**660**	**680**

Order no: **291**

SILVENT 291: nozzle mounted on a Flexarm for applications that require continuous resetting or adjustment of the blowing angle. The Flexarm is supplied complete with a magnetic base. Otherwise, same performance as 512.

Tips on accessories!

SILVENT PSK 18 is an adjustable swivel joint for regulating the air cone. This joint makes it possible to readjust the blowing angle without affecting fixed equipment. Correct setting of the blowing angle means both lower noise levels and increased efficiency.
Accessories: see page 76.

Silvent 011

SILVENT 011: a robust stainless steel nozzle. Stainless steel is necessary in applications involving e.g. high ambient temperatures, the food processing industry, or intensive mechanical nozzle wear. Noise level is halved and energy savings are considerable in comparison with "open pipe blowing". Withstands tough conditions and fulfills OSHA safety requirements limiting air pressure in direct contact with skin to 210 kPa (30 psi). Also meets EU Machine Directive noise restrictions. Patented.

Order no: **011**

Blowing force	3.2 N	(11.3 oz)
Air consumption	19 Nm³/h	(11.2 scfm)
Sound level	81 dB(A)	
Air pattern	Concentrated	
Connection	1/8" BSP	1/8"-27 NPT
Dimensions	Ø12x39.5	(Ø0.47x1.56")
Material	Stainless steel	

3.2 N
11.3 oz
CONC.
STAIN-LESS

ø 4 mm (5/32")
Noise reduction 62%
Air/cost savings 37%

When replacing open pipe of this diameter.

For accessories, see page 76.
For more technical information, see page 152 or visit our website at www.silvent.com.

Alternatives

Order no: **0071**

SILVENT 0071: with female connection thread M7x0.75. Same performance as 011. Dimensions: Ø8x27.5 (Ø0.31x1.08").

Order no: **0073**

SILVENT 0073: with male connection thread M7x0.75. Same performance as 011. Dimensions: Ø8x32.5 (Ø0.31x1.28").

Order no: **292**

SILVENT 292: nozzle mounted on a Flexarm for applications that require continuous resetting or adjustment of the blowing angle. The Flexarm is supplied complete with a magnetic base. Otherwise, same performance as 011.

Silvent 701

SILVENT 701: specially made entirely of stainless steel with aerodynamic slots to allow optimal utilization of compressed air while keeping the noise level to a minimum. The high ambient temperatures of a glass works or the stringent hygienic requirements of the food processing industry are examples of typical areas of application. Blowing force of 3.2 N (11.3 oz). Part of SILVENT's 700 series, together with 703, 705, 710 and 720. Fully meets OSHA safety regulations and EU Machine Directive noise restrictions. Patented.

ø 4 mm (5/32")

Noise reduction	60 %
Air/cost savings	30 %

When replacing open pipe of this diameter.

Order no: **701**

Blowing force	3.2 N	(11.3 oz)
Air consumption	21 Nm³/h	(12.4 scfm)
Sound level	82 dB(A)	
Air pattern	Wide	
Connection	1/2" BSP	1/2"-14 NPT
Dimensions	Ø25x29	(Ø0.98x1.14")
Material	Stainless steel	

3.2 N
11.3 oz
WIDE
STAIN-LESS

For accessories, see page 76.
For more technical information, see page 152 or visit our website at www.silvent.com.

Alternatives

Order no: **701 A**

SILVENT 701 A: an adjustable variation of 701. Adjustable blowing angle allows up to 30° regulation from the centerline. The time required for installation and fine tuning of the blowing angle is decreased considerably as no fixed pipes need to be moved for adjustment. Regulation of the blowing angle is often necessary in machines where the same manufacturing process is used to produce different parts. Otherwise, the same performance as 701.

Silvent 811

SILVENT 811: "PEEK" nozzle with a central orifice. Withstands aggressive chemical environments, corrosive cutting fluids and temperatures of up to 260° C (500° F). Protects sensitive products against scratching and impact. 1/8" male connection thread. Additional technical specifications are provided in the table below. Fully complies with EU Machine Directive noise limitations and OSHA safety regulations.

Order no: **811**

Blowing force	2.7 N	(9.5 oz)
Air consumption	15.2 Nm³/h	(8.9 scfm)
Sound level	80 dB(A)	
Air pattern	Concentrated	
Connection	1/8" BSP	1/8"-27 NPT
Dimensions	Ø12x32	(Ø0.47x1.26")
Material	PEEK	

2.7 N
9.5 oz
CONC.
MISC.

For accessories, see page 76.
For more technical information, see page 152 or visit our website at www.silvent.com.

ø 4 mm (5/32")

Noise reduction	65 %
Air/cost savings	50 %

When replacing open pipe of this diameter.

Alternatives

Order no: **8001**

SILVENT 8001: with M7x0.75 female connection thread. Same performance as 811. Dimensions: Ø8x20 (Ø0.31x0.79").

Silvent 921

SILVENT 921: flat nozzle that generates a broad and efficient air cone. Outstanding for use wherever a wide but thin striking surface is required. Flat nozzles are suitable for most areas of application, such as: drying, transporting, cooling, cleaning etc. Often used in manifold systems, providing silent and highly efficient air knives. Made of zinc with 1/8" male connection thread. The exhaust ports are protected from external forces by fins. Fully complies with EU Machine Directive noise limitations and OSHA safety regulations. Patented.

ø 4 mm (5/32")

Noise reduction	65%
Air/cost savings	43%

When replacing open pipe of this diameter.

Order no: **921**

Blowing force	3.0 N	(10.6 oz)
Air consumption	17 Nm³/h	(10.0 scfm)
Sound level	80 dB(A)	
Air pattern	Flat	
Connection	1/8" BSP	1/8"-27 NPT
Dimensions	23.9x11x55	(0.94x0.43x2.17")
Material	Zinc	

3.0 N
10.6 oz
FLAT
ZINC

For accessories, see page 76.
For more technical information, see page 152 or visit our website at www.silvent.com.

Tips on accessories!

SILVENT FV 18 is a flow valve that enables you to fine-tune the blowing force and thereby lower the noise level and conserve compressed air. The flow can be regulated from 5% to 100% of full flow.
Accessories: see page 76.

Silvent 961

SILVENT 961: a small, angled flat nozzle that generates a broad but thin air cone. Small mounting dimensions make it especially suitable for machine designs where space limitations are a problem. In many cases mounting is facilitated by the fact that the blowing angle is perpendicular to the plane of the threads. Can also be mounted in a manifold array, creating compact, quiet and efficient air knives. Made of zinc. The outlet orifices are protected against external forces by fins. SILVENT 961 fulfills the requirements the EU Machine Directive stipulates regarding airborne noise from machines and fully meets OSHA safety regulations. Patented.

Order no: **961**

Blowing force	3.3 N	(11.6 oz)
Air consumption	19.5 Nm³/h	(11.5 scfm)
Sound level	81.5 dB(A)	
Air pattern	Flat	
Connection	1/8" BSP	1/8"-27 NPT
Dimensions	23.9x23.5x13.4	(0.94x0.93x0.53")
Material	Zinc	

3.3 N
11.6 oz
FLAT
ZINC

For accessories, see page 76.
For more technical information, see page 152 or visit our website at www.silvent.com.

ø 4 mm (5/32")

Noise reduction	60 %
Air/cost savings	33 %

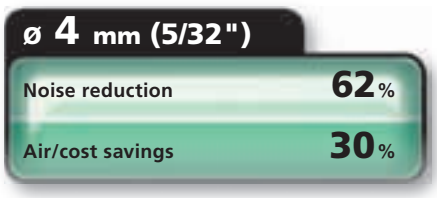
When replacing open pipe of this diameter.

Silvent 971

SILVENT 971: flat nozzle of stainless steel. Meets virtually every demand industry places upon a modern air nozzle. The design of the nozzle creates an air stream with a broader striking surface - clearly an advantage when wide objects must be dried, sorted or cleaned. Capable of withstanding high ambient temperatures and corrosive chemical environments, as well as satisfying the hygienic requirements of the food processing industry. Fully complies with OSHA safety regulations and EU Machine Directive noise limitations. Patented.

Order no: **971**

Blowing force	3.8 N	(13.4 oz)	3.8 N / 13.4 oz
Air consumption	21 Nm³/h	(12.4 scfm)	
Sound level	81 dB(A)		
Air pattern	Flat		FLAT
Connection	1/8" BSP	1/8"-27 NPT	
Dimensions	23.6x17x70	(0.93x0.67x2.76")	
Material	Stainless steel		STAIN-LESS



When replacing open pipe of this diameter.

For accessories, see page 76.
For more technical information, see page 152 or visit our website at www.silvent.com.

Alternatives

Order no: **971 F**

SILVENT 971 F: with built-in flow regulation. Allows optimal utilization of compressed air. Adjusting the blowing force minimizes both energy consumption and the noise level. Otherwise, the same performance as 971.

Tips on accessories!

SILVENT PSK 18 is an adjustable swivel joint for regulating the air cone. This joint makes it possible to readjust the blowing angle without affecting fixed equipment. Correct setting of the blowing angle means both lower noise levels and increased efficiency.

Accessories: see page 76.

Silvent 209

SILVENT 209: used in most types of applications. Made of zinc with 1/4" male connection thread. These nozzles have been installed in thousands of different applications throughout the world - applications where the noise level has been cut in half and energy consumption drastically reduced. The protective fins prevent direct contact between skin and the exhaust ports. With this design, the nozzle fulfills the OSHA requirements of a dead-end static pressure of 210 kPa (30 psi) and EU Machine Directive noise limitations.

Order no: **209**

Blowing force	3.5 N	(12.4 oz)
Air consumption	19 Nm³/h	(11.2 scfm)
Sound level	80 dB(A)	
Air pattern	Wide	
Connection	1/4" BSP	1/4"-18 NPT
Dimensions	Ø19x47	(Ø0.75x1.85")
Material	Zinc	

3.5 N
12.4 oz
WIDE
ZINC

For accessories, see page 76.
For more technical information, see page 152 or visit our website at www.silvent.com.

ø 4 mm (5/32")
Noise reduction 65%
Air/cost savings 37%

When replacing open pipe of this diameter.

Alternatives

Order no: **208**

SILVENT 208: with 1/4" female connection thread. Same performance as 209.

Order no: **210**

SILVENT 210: made of aluminum to withstand somewhat higher ambient temperatures than zinc. 1/4" female connection thread. Same performance as 209.

Order no: **211**

SILVENT 211: made of aluminum to withstand somewhat higher ambient temperatures than zinc. 1/4" male connection thread. Same performance as 209.

Order no: **215**

SILVENT 215: made of aluminum and surface treated with chemical nickel to handle tough environments. 1/4" female connection thread. Same performance as 209. Blowing force 3.2 N (11.3 oz).

Order no: **216**

SILVENT 216: made of aluminum and surface treated with chemical nickel to handle tough environments. 1/4" male connection thread. Same performance as 209. Blowing force 3.2 N (11.3 oz).

Order no: **217**

SILVENT 217: made of zinc and coated with Rilsan plastic to protect sensitive products from scratching. 1/4" female connection thread. Same performance as 209. Blowing force 3.2 N (11.3 oz).

Order no: **218**

SILVENT 218: made of zinc and coated with Rilsan plastic to protect sensitive products from scratching. 1/4" male connection thread. Same performance as 209. Blowing force 3.2 N (11.3 oz).

Order no: **2120**

SILVENT 2120: just 29 mm (1.14") long with 1/4" female connection thread. Same performance as 209.

Order no: **209-S1**

SILVENT 209-S1: with center slot for stronger and more concentrated blowing force. Warning! Does not meet OSHA safety standards. Blowing force 5.5 N (19.4 oz).

Order no: **200**

SILVENT 200: with nozzle mounted on a bendable 8 mm (5/16”) copper pipe to facilitate installation. Otherwise, the same performance as 209.

Silvent 700 M

SILVENT 700 M: specially made entirely of stainless steel with aerodynamic slots to allow optimal utilization of compressed air while keeping the noise level to a minimum. Hexagonal design fits a 14 mm (0.55") wrench. Features smaller dimensions than other nozzles in SILVENT's 700 series and therefore the right choice for applications where clearance is a problem. Designed for conditions where SILVENT's standard nozzles may display certain limitations, e.g. high ambient temperatures, hygienic requirements, mechanical wear, etc. Meets OSHA safety regulations and EU Machine Directive noise restrictions. Patented.

Order no: **700 M**

Blowing force	4.2 N	(14.8 oz)
Air consumption	25 Nm³/h	(14.7 scfm)
Sound level	84 dB(A)	
Air pattern	Concentrated	
Connection	1/8" BSP	1/8"-27 NPT
Dimensions	Ø14x25	(Ø0.55x0.98")
Material	Stainless steel	

4.2 N
14.8 oz
CONC.
STAIN-LESS

For accessories, see page 76.
For more technical information, see page 152 or visit our website at www.silvent.com.

ø 5 mm (3/16")

Noise reduction	65 %
Air/cost savings	47 %

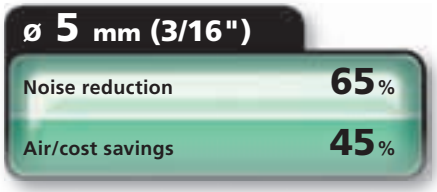
When replacing open pipe of this diameter.

On our website you will find complete product information and our "online selection guidelines", where you can easily compare our different air nozzles.

www.silvent.com

Silvent 1011

SILVENT 1011: stainless steel Laval nozzle with 1/8" male thread. The Laval hole in the center creates a concentrated, supersonic jet of air. Surrounding the hole there are a number of diverging slots that generate a powerful, quiet and laminar air stream. This combination utilizes compressed air optimally. Halves the noise level and reduces air consumption dramatically, while maintaining the force of "open pipe blowing". The nozzle and the surrounding fins prevent dead end static pressure from exceeding 210 kPa (30 psi). Fully complies with EU Machine Directive noise limitations and OSHA safety regulations. Patented.



When replacing open pipe of this diameter.

Order no: **1011**

Blowing force	4.4 N	(15.5 oz)
Air consumption	26 Nm³/h	(15.3 scfm)
Sound level	84 dB(A)	
Air pattern	Laval	
Connection	1/8" BSP	1/8"-27 NPT
Dimensions	Ø12x27	(Ø0.47x1.06")
Material	Stainless steel	

For accessories, see page 76.
For more technical information, see page 152 or visit our website at www.silvent.com.

Alternatives

Order no: **1001**

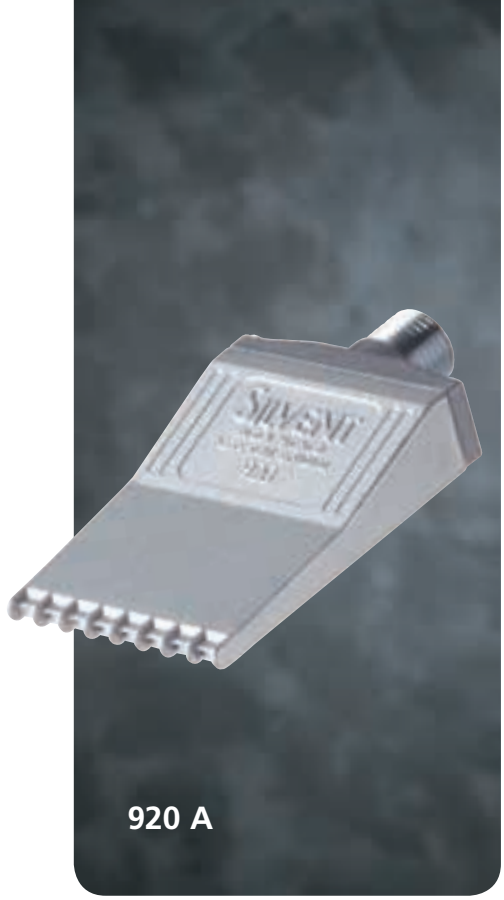
SILVENT 1001: M7x0.75 female connection thread. Same performance as 1011. Dimensions: Ø8x15 (Ø0.31x0.59").

Order no: **1003**

SILVENT 1003: M7x0.75 male connection thread. Same performance as 1011. Dimensions: Ø8x20 (Ø0.31x0.79").

Silvent 920 A

SILVENT 920 A: flat nozzle that generates a broad and efficient air cone. Outstanding for use wherever a wide but thin striking surface is required. Flat nozzles are suitable for most areas of application, such as: drying, transporting, cooling, cleaning etc. Often used in manifold systems, providing silent and highly efficient air knives. Made of zinc with 1/4" male connection thread. The exhaust ports are protected from external forces by fins. Fully complies with EU Machine Directive noise limitations and OSHA safety regulations. Patented.



Order no: **920 A**

Blowing force	5.5 N	(19.4 oz)
Air consumption	30 Nm³/h	(17.7 scfm)
Sound level	81 dB(A)	
Air pattern	Flat	
Connection	1/4" BSP	1/4"-18 NPT
Dimensions	46.3x14.3x80	(1.82x0.56x3.15")
Material	Zinc	

5.5 N
19.4 oz
FLAT
ZINC

For accessories, see page 76.
For more technical information, see page 152 or visit our website at www.silvent.com.

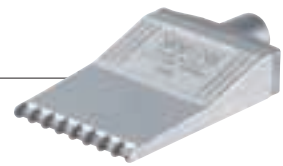
ø 6 mm (1/4")
Noise reduction 77%
Air/cost savings 55%

When replacing open pipe of this diameter.

Alternatives

Order no: **920 B**

SILVENT 920 B: with 1/8" female connection thread. Same performance as 920 A.

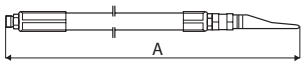


Order no: **920 R**

SILVENT 920 R: made of zinc and coated with Rilsan to avoid damaging sensitive products. Male 1/4" connection thread. Blowing force 5.0 N (17.7 oz).

Order no: **220 F - 280 F**

SILVENT 220 F - 280 F: nozzle mounted on a bendable FlexBlow hose. Keeps desired position even at high pressure. Available in 6 different standard lengths. The FlexBlow hose has a 1/4" male connection thread. Same performance as 920 A.



A mm	242	342	442	542	642	842
A inch	9.53	13.46	17.40	21.34	25.28	33.15
Order no:	**220 F**	**230 F**	**240 F**	**250 F**	**260 F**	**280 F**

Order no: **294**

SILVENT 294: nozzle mounted on a Flexarm for applications that require continuous resetting or adjustment of the blowing angle. The Flexarm is supplied complete with a magnetic base. Otherwise, same performance as 920 A.

Tips on accessories!

SILVENT FV 14 is a flow valve that enables you to fine-tune the blowing force and thereby lower the noise level and conserve compressed air. The flow can be regulated from 5% to 100% of full flow.

SILVENT PSK 14 is an adjustable swivel joint for regulating the air cone. This joint makes it possible to readjust the blowing angle without affecting fixed equipment. Correct setting of the blowing angle means both lower noise levels and increased efficiency.

Accessories: see page 76.

6 - 130 N 1.3 - 28.7 lbs

High blowing force 6 – 130 N (1.3 - 28.7 lbs)
Silvent offers the world's widest selection of air nozzles. Our products are divided into four categories:

1 Air nozzles 0 – 6 N (0 - 1.3 lbs)
2 High force air nozzles 6 – 130 N (1.3 - 28.7 lbs)
3 Air knives and air curtains
4 Special air nozzles

The category air nozzles 6 – 130 N (1.3 - 28.7 lbs) contains all our nozzles with blowing forces ranging from 6 N (1.3 lbs) up to 130 N (28.7 lbs). All of these nozzles feature very high blowing force and they are commonly used in, for example, machine shops, paper mills and steel mills. Despite their high blowing forces, noise levels and energy consumption are low – a combination long thought impossible.

Silvent 973

SILVENT 973: extra-broad flat nozzle of stainless steel. Meets virtually every demand industry places upon a modern air nozzle. The design of the nozzle creates an air stream with a broader striking surface - clearly an advantage when wide objects must be dried, sorted or cleaned. Capable of withstanding high ambient temperatures and corrosive chemical environments, as well as satisfying the hygienic requirements of the food processing industry. Fully complies with OSHA safety regulations and EU Machine Directive noise limitations. Patented.

ø 7 mm (9/32")

Noise reduction	**73** %
Air/cost savings	**37** %

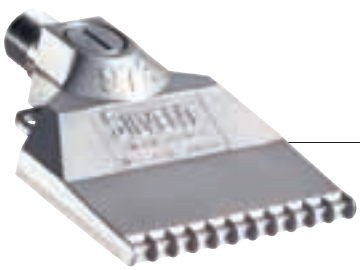
When replacing open pipe of this diameter.

Order no: **973**

Blowing force	9.5 N	(33.5 oz)
Air consumption	58 Nm³/h	(34.1 scfm)
Sound level	86 dB(A)	
Air pattern	Flat	
Connection	1/4" BSP	1/4"-18 NPT
Dimensions	61x19.1x80	(2.40x0.75x3.15")
Material	Stainless steel	

9.5 N
33.5 oz
FLAT
STAIN-LESS

For accessories, see page 76.
For more technical information, see page 152 or visit our website at www.silvent.com.



Alternatives

Order no: **973 F**

SILVENT 973 F: with built-in flow regulation. Allows optimal utilization of compressed air. Adjusting the blowing force minimizes both energy consumption and the noise level. Otherwise, the same performance as 973.

Silvent 703

SILVENT 703: specially made entirely of stainless steel with aerodynamic slots to allow optimal utilization of compressed air while keeping the noise level to a minimum. The high ambient temperatures of a glass works, the extreme blowing forces used in a steel mill or the stringent hygienic requirements of the food processing industry are examples of typical areas of application. Blowing force approx. 3 times stronger than SILVENT 701 (9.6 N (33.9 oz)). Part of SILVENT's 700 series, together with 701, 705, 710 and 720. Fully meets OSHA safety regulations and EU Machine Directive noise restrictions. Patented.

Order no: **703**

Blowing force	9.6 N	(33.9 oz)
Air consumption	57 Nm³/h	(33.5 scfm)
Sound level	89 dB(A)	
Air pattern	Wide	
Connection	1/2" BSP	1/2"-14 NPT
Dimensions	Ø25x29	(Ø0.98x1.14")
Material	Stainless steel	

9.6 N
33.9 oz

WIDE

STAIN-LESS

For accessories, see page 76.
For more technical information, see page 152 or visit our website at www.silvent.com.

ø 7 mm (9/32")

Noise reduction	67%
Air/cost savings	38%

When replacing open pipe of this diameter.

Alternatives

Order no: **703 A**

SILVENT 703 A: adjustable variation of 703. Allows up to 30° blowing angle regulation from the centerline. Time required for installation and fine tuning of the blowing angle is decreased considerably. Same performance as 703.

Order no: **295**

SILVENT 295: nozzle mounted on a Flexarm for applications that require continuous resetting or adjustment of the blowing angle. The Flexarm is supplied complete with a magnetic base. Otherwise, same performance as 703.

Silvent 404 L

SILVENT 404 L: for a broader air cone and high blowing force. Perfect for ejection of parts from punch presses and molds. Drying, cleaning, transport and cooling are other areas of application for this product. Meets OSHA safety standards and the noise limitations of the EU Machine Directive. Patented.

ø 8 mm (5/16")

Noise reduction	81 %
Air/cost savings	42 %

When replacing open pipe of this diameter.

Order no: **404 L**

Blowing force	13.6 N	(48.0 oz)
Air consumption	68 Nm³/h	(40.0 scfm)
Sound level	84 dB(A)	
Air pattern	Wide	
Connection	3/8" BSP	3/8"-18 NPT
Dimensions	Ø55x63	(Ø2.17x2.48")
Material (nozzle)	Zinc	

13.6 N
48.0 oz
WIDE
ZINC

For accessories, see page 76.
For more technical information, see page 152 or visit our website at www.silvent.com.

Alternatives

Order no: **1104 L**

SILVENT 1104 L: with a valve grip and push button to lock the valve at max. force. For both stationary and manual applications. Otherwise, the same performance as 404 L.

Order no: **1204 L**

SILVENT 1204 L: with a grip and a robust ball valve that permits regulation and fine tuning of the blowing force. For both stationary and manual applications. Otherwise, the same performance as 404 L.

Silvent 2005

SILVENT 2005: an aluminum nozzle with aerodynamic slots. Produces a strong, quiet and effective air stream. The blowing force is approx. 5 times that of SILVENT's 209 and 511 nozzles. Despite its powerful force, both the sound level and energy consumption are low in comparison with 10 mm (3/8") open pipe blowing. Fully complies with EU Machine Directive noise limitations and OSHA safety regulations. Patented.

Order no: **2005**

Blowing force	14.5 N	(51.2 oz)
Air consumption	98 Nm³/h	(57.7 scfm)
Sound level	93.5 dB(A)	
Air pattern	Wide	
Connection	3/8" BSP	3/8"-18 NPT
Dimensions	Ø19x46	(Ø0.75x1.81")
Material	Aluminum	

14.5 N
51.2 oz
WIDE
MISC.

For accessories, see page 76.
For more technical information, see page 152 or visit our website at www.silvent.com.

ø 10 mm (3/8")

Noise reduction	71 %
Air/cost savings	47 %

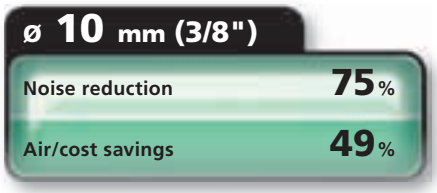
When replacing open pipe of this diameter.

Tips on accessories!

SILVENT PSK 38 is an adjustable swivel joint for regulating the air cone. This joint makes it possible to readjust the blowing angle without affecting fixed equipment. Correct setting of the blowing angle means both lower noise levels and increased efficiency. Accessories: see page 76.

Silvent 705

SILVENT 705: specially made entirely of stainless steel with aerodynamic slots to allow optimal utilization of compressed air while keeping the noise level to a minimum. Blowing force approx. 5 times stronger than SILVENT 701 (15 N (53.0 oz)). Used in industries that require high blowing forces, e.g. steel mills. Withstands high ambient temperatures. Part of SILVENT's 700 series, together with 701, 703, 710 and 720. Fully meets OSHA safety regulations and EU Machine Directive noise restrictions. Patented.



When replacing open pipe of this diameter.

Order no: **705**

Blowing force	15.0 N	(53.0 oz)	15.0 N / 53.0 oz
Air consumption	95 Nm³/h	(55.9 scfm)	
Sound level	92 dB(A)		
Air pattern	Wide		WIDE
Connection	1/2" BSP	1/2"-14 NPT	
Dimensions	Ø25x29	(Ø0.98x1.14")	
Material	Stainless steel		STAIN-LESS

For accessories, see page 76.
For more technical information, see page 152 or visit our website at www.silvent.com.

Alternatives

Order no: **705 A**

SILVENT 705 A: adjustable variation of 705. Allows up to 30° blowing angle regulation from the centerline. Time required for installation and fine tuning of the blowing angle is decreased considerably. Same performance as 705.

Order no: **296**

SILVENT 296: nozzle mounted on a Flexarm for applications that require continuous resetting or adjustment of the blowing angle. The Flexarm is supplied complete with a magnetic base. Otherwise, same performance as 705.

Silvent 705 L

SILVENT 705 L: a stainless steel Laval nozzle. Compressed air is utilized optimally in this nozzle, and its introduction constitutes a new dimension in blowing technology. The effect is achieved by surrounding a core of air traveling at supersonic speed with a protective film of air moving parallel to the central air jet. The central stream of air in the Silvent 705 L is generated by a Laval nozzle. The design of the nozzle converts all of the energy stored in the compressed air into kinetic energy without permitting the air jet to expand laterally after leaving the nozzle. The protective sheath of air prevents the core stream from being slowed down by the surrounding air and allows it to be utilized at full effect. This hinders the creation of turbulence and thereby lowers the sound level. The nozzle is made of stainless steel, which makes it suitable for use in virtually any environment where extra high blowing forces are required, e.g. within the paper and manufacturing industries, steel mills and chemical plants. Fully meets the EU Machine Directive's noise limitation requirements and OSHA's safety regulations. Patented.

ø 10 mm (3/8")

Noise reduction	73 %
Air/cost savings	49 %

When replacing open pipe of this diameter.

Order no: **705 L**

Blowing force	17.0 N	(60.0 oz)
Air consumption	95 Nm³/h	(55.9 scfm)
Sound level	93 dB(A)	
Air pattern	Laval	
Connection	1/2" BSP	1/2"-14 NPT
Dimensions	Ø25x29	(Ø0.98x1.14")
Material	Stainless steel	

17.0 N
60.0 oz
LAVAL
STAIN-LESS

For accessories, see page 76.
For more technical information, see page 152 or visit our website at www.silvent.com.

Tips on accessories!

SILVENT PSKM 12 is an adjustable swivel joint for regulating the air cone. This joint makes it possible to readjust the blowing angle without affecting fixed equipment. Correct setting of the blowing angle means both lower noise levels and increased efficiency.
Accessories: see page 76.

Silvent 707 L

SILVENT 707 L: a stainless steel Laval nozzle. Compressed air is utilized optimally in this nozzle and its introduction constitutes a new dimension in blowing technology. The effect is achieved by surrounding a core of air traveling at supersonic speed with a protective film of air moving parallel to the central air jet. The central stream of air in the Silvent 707 L is generated by a Laval nozzle. The design of the nozzle converts all of the energy stored in the compressed air into kinetic energy without permitting the air jet to expand laterally after leaving the nozzle. The protective sheath of air prevents the core stream from being slowed down by the surrounding air and allows it to be utilized at full effect. This hinders the creation of turbulence and thereby lowers the sound level. The nozzle is made of stainless steel, which makes it suitable for use in virtually any environment where extra high blowing forces are required, e.g. within the paper and manufacturing industries, steel mills and chemical plants. Fully meets the EU Machine Directive's noise limitation requirements and OSHA's safety regulations. Patented.

ø 12 mm (1/2")

Noise reduction	**78** %
Air/cost savings	**55** %

When replacing open pipe of this diameter.

Order no: **707 L**

Blowing force	21.0 N	(74.1 oz)	**21.0 N** / **74.1 oz**
Air consumption	120 Nm³/h	(70.6 scfm)	
Sound level	94 dB(A)		
Air pattern	Laval		**LAVAL**
Connection	1/2" BSP	1/2"-14 NPT	
Dimensions	Ø25x29	(Ø0.98x1.14")	
Material	Stainless steel		**STAIN-LESS**

For accessories, see page 76.
For more technical information, see page 152 or visit our website at www.silvent.com.

Alternatives

Order no: **707 C**

SILVENT 707 C: with aerodynamic slots to optimize compressed air consumption and minimize the noise level. The extra slot nozzle in the center accelerates air velocity and increases the blowing force. Suitable for applications that require a greater concentration of force in the center of the object to be cleaned, dried etc. Blowing force 19.2 N (67.8 oz). Air consumption 120 Nm³/h (70.7 scfm). Sound level 93 dB(A). Otherwise, the same performance as 707 L.

Silvent 407 L

SILVENT 407 L: for operations that require high blowing force and longer blowing range. Typical areas of application include use in steel mills, paper mills and foundries for cleaning, cooling, drying etc. Fully complies with the noise limitations of the EU Machine Directive and OSHA safety standards. Patented.

Order no: **407 L**

Blowing force	23.8 N	(84.0 oz)
Air consumption	119 Nm³/h	(70.0 scfm)
Sound level	86 dB(A)	
Air pattern	Wide	
Connection	1/2" BSP	1/2"-14 NPT
Dimensions	Ø67x66	(Ø2.64x2.60")
Material (nozzle)	Zinc	

23.8 N
84.0 oz
WIDE
ZINC

For accessories, see page 76.
For more technical information, see page 152 or visit our website at www.silvent.com.

ø 12 mm (1/2")
Noise reduction 88 %
Air/cost savings 55 %

When replacing open pipe of this diameter.

Alternatives

Order no: **1107 L**

SILVENT 1107 L: with a valve grip and push button to lock the valve at max. force. For both stationary and manual applications. Otherwise, the same performance as 407 L.

Order no: **1207 L**

SILVENT 1207 L: with a grip and a robust ball valve that permits regulation and fine tuning of the blowing force. For both stationary and manual applications. Otherwise, the same performance as 407 L.

Silvent 710

SILVENT 710: specially made entirely of stainless steel with aerodynamic slots to allow optimal utilization of compressed air while keeping the noise level to a minimum. Blowing force approx. 10 times stronger than SILVENT 701 (30.0 N (105.9 oz)). The high ambient temperatures of a glass works, the extreme blowing forces used in a steel mill or the stringent hygienic requirements of the food processing industry are examples of typical areas of application. Part of SILVENT's 700 series, together with 701, 703, 705 and 720. Fully meets OSHA safety regulations and EU Machine Directive noise restrictions. Patented.

ø 14 mm (9/16")

Noise reduction	75 %
Air/cost savings	41 %

When replacing open pipe of this diameter.

Order no: **710**

Blowing force	30.0 N	(105.9 oz)
Air consumption	216 Nm³/h	(127.1 scfm)
Sound level	99 dB(A)	
Air pattern	Wide	
Connection	3/4" BSP	3/4"-14 NPT
Dimensions	Ø42x42	(Ø1.65x1.65")
Material	Stainless steel	

30.0 N
105.9 oz
WIDE
STAIN-LESS

For accessories, see page 76.
For more technical information, see page 152 or visit our website at www.silvent.com.

Alternatives

Order no: **710 A**

SILVENT 710 A: adjustable variation of 710. Allows up to 30° blowing angle regulation from the centerline. Same performance as 710.

Order no: **1710**

SILVENT 1710: a blowing tool fitted with a stainless steel slot nozzle and a manual valve that allows infinitely variable adjustment of the blowing force. Made of aluminum with plastic insulation on the handle.

Order no: **2710**

SILVENT 2710: nozzle mounted on a blowing tool with a ball valve.

New!

Silvent 412 L

SILVENT 412 L: for operations that require high blowing force and longer blowing range. Typical areas of application include use in steel mills, paper mills and foundries for cleaning, cooling, drying etc. Fully complies with the noise limitations of the EU Machine Directive and OSHA safety standards. Patented.

Order no: **412 L**

Blowing force	40.8 N	(144.0 oz)
Air consumption	204 Nm³/h	(120.1 scfm)
Sound level	88 dB(A)	
Air pattern	Wide	
Connection	3/4" BSP	3/4"-14 NPT
Dimensions	Ø92x69	(Ø6.62x2.72")
Material (nozzle)	Zinc	

40.8 N
144.0 oz
WIDE
ZINC

ø 16 mm (5/8")

Noise reduction	89%
Air/cost savings	57%

When replacing open pipe of this diameter.

For accessories, see page 76.
For more technical information, see page 152 or visit our website at www.silvent.com.

Alternatives

Order no: **1112 L**

SILVENT 1112 L: with a valve grip and push button to lock the valve at max. force. For both stationary and manual applications. Otherwise, the same performance as 412 L.

Order no: **1212 L**

SILVENT 1112 L: with a grip and a robust ball valve that permits regulation and fine tuning of the blowing force. For both stationary and manual applications. Otherwise, the same performance as 412 L.

Silvent 715 C

SILVENT 715 C: with aerodynamic slots to allow optimal utilization of compressed air while keeping the noise level to a minimum. Blowing force approx. 15 times stronger than SILVENT 701 (45.0 N (158.9 oz)). For applications requiring more concentrated force on the center of the object to be cleaned, dried, cooled, transported etc. The extra slot nozzle in the middle increases air velocity and thereby blowing force, while retaining the air cone pattern of a SILVENT 710. Specially made entirely of stainless steel. Part of SILVENT's 700 C series, together with 707 C and 730 C. Fully meets OSHA safety regulations and EU Machine Directive noise restrictions. Patented.

ø 17 mm (11/16")

Noise reduction	**80** %
Air/cost savings	**42** %

When replacing open pipe of this diameter.

Order no: **715 C**

Blowing force	45.0 N	(158.9 oz)
Air consumption	311 Nm³/h	(183.0 scfm)
Sound level	100 dB(A)	
Air pattern	Concentrated	
Connection	3/4" BSP	3/4"-14 NPT
Dimensions	Ø42x49	(Ø1.65x1.93")
Material	Stainless steel	

45.0 N
158.9 oz
CONC.
STAIN-LESS

For accessories, see page 76.
For more technical information, see page 152 or visit our website at www.silvent.com.

Silvent 715 L

SILVENT 715 L: stainless steel Laval nozzle. Compressed air is utilized optimally in this nozzle, and its introduction constitutes a new dimension in blowing technology. The effect is achieved by surrounding a core of air traveling at supersonic speed with a protective film of air moving parallel to the central air jet. The central stream of air in the SILVENT 715 L is generated by a Laval nozzle. The design of the nozzle converts all of the energy stored in the compressed air into kinetic energy without permitting the air jet to expand laterally after it has passed through the nozzle. The protective sheath of air prevents the core stream from being slowed down by the surrounding air and allows it to be utilized at full effect. Turbulence is minimized, thereby lowering the sound level. The entire nozzle is made of stainless steel, making it suitable for use in virtually any environment where extra high blowing forces are required, e.g. within the paper and manufacturing industries, steel mills and chemical plants. Fully complies with EU Machine Directive noise limitations and OSHA safety regulations. Patented.

ø 18 mm (23/32")*

Noise reduction	75 %
Air/cost savings	48 %

When replacing open pipe of this diameter.

Order no: **715 L**

Blowing force	54.0 N	(190.6 oz)
Air consumption	312 Nm³/h	(183.6 scfm)
Sound level	104 dB(A)	
Air pattern	Laval	
Connection	3/4" BSP	3/4"-14 NPT
Dimensions	Ø42x42	(Ø1.65x1.65")
Material	Stainless steel	

54.0 N
190.6 oz
LAVAL
STAIN-LESS

For accessories, see page 76.
For more technical information, see page 152 or visit our website at www.silvent.com.

On our website you will find complete technical information on all of our products and the very latest on new products.

www.silvent.com

Silvent 720

SILVENT 720: specially made entirely of stainless steel with aerodynamic slots to allow optimal utilization of compressed air while keeping the noise level to a minimum. Blowing force approx. 20 times stronger than SILVENT 701 (68.0 N (240.0 oz)). The high ambient temperatures of a glass works, the extreme blowing forces used in a steel mill or the stringent hygienic requirements of the food processing industry are examples of typical areas of application. Part of SILVENT's 700 series, together with 701, 703, 705 and 710. Fully meets OSHA safety regulations and EU Machine Directive noise restrictions. Patented.

ø 20 mm (3/4")

Noise reduction	**78** %
Air/cost savings	**43** %

When replacing open pipe of this diameter.

Order no: **720**

Blowing force	68.0 N	(240.0 oz)
Air consumption	420 Nm³/h	(247.2 scfm)
Sound level	104 dB(A)	
Air pattern	Wide	
Connection	1" BSP	1"-11 1/2 NPT
Dimensions	Ø64x52	(Ø2.48x2.05")
Material	Stainless steel	

68.0 N
240.0 oz
WIDE
STAIN-LESS

For accessories, see page 76.
For more technical information, see page 152 or visit our website at www.silvent.com.

Alternatives

Order no: **720 A**

SILVENT 720 A: an adjustable variation of 701. Adjustable blowing angle allows up to 30° regulation from the centerline. The time required for installation and fine tuning of the blowing angle is decreased considerably as no fixed pipes need to be moved for adjustment. Regulation of the blowing angle is often necessary in machines where the same manufacturing process is used to produce different parts. Otherwise, the same performance as 720.

Silvent 730 C

SILVENT 730 C: with aerodynamic slots to allow optimal utilization of compressed air while keeping the noise level to a minimum. Blowing force approx. 30 times stronger than SILVENT 701 (98.0 N (345.9 oz)). For applications requiring more concentrated force on the center of the object to be cleaned, dried, cooled, transported etc. The extra slot nozzle in the middle increases air velocity and thereby blowing force, while retaining the air cone pattern of a SILVENT 720. Specially made entirely of stainless steel. Part of SILVENT's 700 C series, together with 707 C and 715 C. Fully meets OSHA safety regulations and EU Machine Directive noise restrictions. Patented.

730 C

Order no: **730 C**

Blowing force	98.0 N	(345.9 oz)
Air consumption	636 Nm³/h	(374.3 scfm)
Sound level	105 dB(A)	
Air pattern	Concentrated	
Connection	1" BSP	1"-11 1/2 NPT
Dimensions	Ø64x59	(Ø2.52x2.32")
Material	Stainless steel	

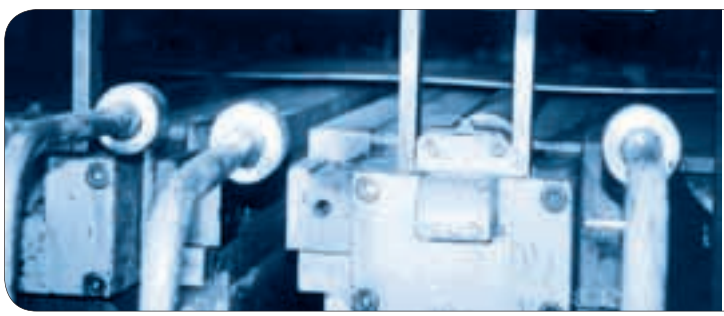
98.0 N
345.9 oz
CONC.
STAIN-LESS

For accessories, see page 76.
For more technical information, see page 152 or visit our website at www.silvent.com.

ø 25 mm (1")

Noise reduction	84 %
Air/cost savings	45 %

When replacing open pipe of this diameter.



Application

Here SILVENT 730 C is used at a steel mill to blow off oxide scale. For more information on applications, visit our website at www.silvent.com.

Silvent 735 L

SILVENT 735 L: with a stainless steel Laval nozzle. Compressed air is utilized optimally in this nozzle, and its introduction constitutes a new dimension in blowing technology. The effect is achieved by surrounding a core of air traveling at supersonic speed with a protective film of air moving parallel to the central air jet. The central stream of air in the SILVENT 735 L is generated by a Laval nozzle. The design of the nozzle converts all of the energy stored in the compressed air into kinetic energy without permitting the air jet to expand laterally after it has passed through the nozzle. The protective sheath of air prevents the core stream from being slowed down by the surrounding air and allows it to be utilized at full effect. Turbulence is minimized, thereby lowering the sound level. The entire nozzle is made of stainless steel, making it suitable for use in virtually any environment where extra high blowing forces are required, e.g. within the paper and manufacturing industries, steel mills and chemical plants. Fully complies with EU Machine Directive noise limitations and OSHA safety regulations. Patented.

ø 25 mm (1")

Noise reduction	**78** %
Air/cost savings	**34** %

When replacing open pipe of this diameter.

Order no: **735 L**

Blowing force	127.0 N	(448.3 oz)
Air consumption	768 Nm³/h	(452.0 scfm)
Sound level	109 dB(A)	
Air pattern	Laval	
Connection	1" BSP	1"-11 1/2 NPT
Dimensions	Ø64x59	(Ø2.52x2.32")
Material	Stainless steel	

127.0 N
448.3 oz
LAVAL
STAIN-LESS

For accessories, see page 76.
For more technical information, see page 152 or visit our website at www.silvent.com.

Air knives and air curtains

Air knives and air curtains

Silvent offers the world's widest selection of air nozzles, air knives and air curtains. Our products are divided into four categories:

1 Air nozzles 0 – 6 N (0 - 1.3 lbs)
2 High force air nozzles 6 – 130 N (1.3 - 28.7 lbs)
3 Air knives and air curtains
4 Special air nozzles

The category air knives and air curtains contains a wide range of air knives and air curtains in standard versions for various applications. Silvent also offers tailor-made air knives. Contact Silvent's application engineers if you are not certain about what air knife is most suitable for your particular needs.

Silvent 306 L

SILVENT 306 L: with six 209 L nozzles. For applications that require a curtain of air across a broad surface. Typical areas of application include air cleaning, curtains around doors and entrances, paint drying, cleaning of conveyor belts, plywood sheets etc. Custom lengths are available upon request. SILVENT 306 L provides an air cone width of 340 mm (13.39") at a distance of 150 mm (6"). Fully complies with OSHA safety standards and the noise limitations of the EU Machine Directive. Patented.

ø 10 mm (3/8")

Noise reduction	85%
Air/cost savings	45%

When replacing open pipe of this diameter.

Order no: **306 L**

Blowing force	20.4 N	(72.0 oz)	20.4 N / 72.0 oz
Air consumption	102 Nm³/h	(60.0 scfm)	
Sound level	85 dB(A)		
Air pattern	Flat		FLAT
Connection	3/8" BSP	3/8"-18 NPT	
Dimensions	297x23x70	(11.69x0.90x2.76")	
Material (nozzle)	Zinc		ZINC

For accessories, see page 76.
For more technical information, see page 152 or visit our website at www.silvent.com.

Alternatives

Order no: **302 L**

SILVENT 302 L: with two 209 L nozzles. Air cone width 140 mm (5.51") at a distance of 150 mm (6"). Blowing force 7.0 N (24.7 oz). Length 97 mm (3.82").

Order no: **304 L**

SILVENT 304 L: with four 209 L nozzles. Air cone width 240 mm (9.45") at a distance of 150 mm (6"). Blowing force 14.0 N (49.4 oz). Length 197 mm (7.76").

Order no: **302 L-S - 306 L-S**

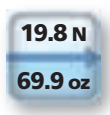
All our air curtains can be fitted with stainless steel nozzles. SILVENT 302, 304 and 306 L-S come with 209 L-S nozzles of 100% stainless steel. Otherwise, the same performance as 302, 304 and 306 L.

Silvent 366

SILVENT 366: a quiet and efficient air knife with six angled SILVENT 961 flat nozzles and a specially designed aluminum manifold. The small mounting dimensions make these air knives suitable for machine designs where space is limited. Generates a broad but flat air cone and combines the advantages of low noise level, low air consumption and high blowing efficiency. SILVENT 366 creates an air cone spread of 225 mm (8.86") at a distance of 150 mm (6"). Blowing force = 19.8 N (69.9 oz). Fully meets OSHA safety regulations and the demands the EU Machine Directive makes on the amount of airborne noise generated by machines. Patented.

Order no: **366**

Blowing force	19.8 N	(69.9 oz)
Air consumption	117 Nm³/h	(68.9 scfm)
Sound level	89.5 dB(A)	
Air pattern	Flat	
Connection	3/8" BSP	3/8"-18 NPT
Dimensions	172x38.5x23	(6.77x1.52x0.90")
Material (nozzle)	Zinc	



For accessories, see page 76.
For more technical information, see page 152 or visit our website at www.silvent.com.

When replacing open pipe of this diameter.

Alternatives

Order no: **362**

SILVENT 362: with two 961s. Variation of 366 used to attain a smaller air cone diameter. Creates a cone spread of 125 mm (4.92") at a distance of 150 mm (6"). Blowing force = 6.6 N (23.3 oz). Length 72 mm (2.83").

Order no: **364**

SILVENT 364: with four 961s. Variation of 366 used to attain a smaller air cone diameter. Creates a cone spread of 175 mm (6.89") at a distance of 150 mm (6"). Blowing force = 13.2 N (46.6 oz). Length 122 mm (4.80").

Silvent 396

SILVENT 396: air knife with six 920 A flat nozzles and a specially designed aluminum manifold. Air knives have been installed in a wide range of industrial applications. Cooling rollers, drying tobacco, dispersion of powdered paint, blow-off of emulsions, etc. are but a few. Creates an air cone spread of 370 mm (14.57") at a distance of 150 mm (6"). Blowing force = 33.0 N (116.5 oz). Fully complies with OSHA safety regulations and EU Machine Directive noise limitations. Patented.

ø 12 mm (1/2")

Noise reduction	85%
Air/cost savings	32%

When replacing open pipe of this diameter.

Order no: **396**

Blowing force	33.0 N	(116.5 oz)	33.0 N / 116.5 oz
Air consumption	180 Nm³/h	(105.9 scfm)	
Sound level	89 dB(A)		
Air pattern	Flat		FLAT
Connection	3/8" BSP	3/8"-18 NPT	
Dimensions	297x23x95	(11.69x0.90x3.74")	
Material (nozzle)	Zinc		ZINC

For accessories, see page 76.
For more technical information, see page 152 or visit our website at www.silvent.com.

Alternatives

Order no: **392**

SILVENT 392: variation of 396 with two 920 As to attain a smaller air cone diameter. Creates a cone spread of 170 mm (6.69") at a distance of 150 mm (6"). Blowing force = 11.0 N (38.8 oz). Length 97 mm (3.82").

Order no: **394**

SILVENT 394: variation of 396 with four 920 As to attain a smaller air cone diameter. Creates a cone spread of 270 mm (10.63") at a distance of 150 mm (6"). Blowing force = 22.0 N (77.7 oz). Length 197 mm (7.76").

Silvent 378

SILVENT 378: robust stainless steel air knife with eight 973 nozzles and a specially designed manifold. Made entirely of stainless steel and thereby suitable for even the most demanding applications, such as those involving aggressive chemical environments, high ambient temperatures or the stringent requirements of the food processing industry. Creates a cone spread of 595 mm (23.43") at a distance of 150 mm (6"). Blowing force = 76.0 N (268.3 oz). Fully complies with OSHA safety regulations and EU Machine Directive noise limitations. Patented.

Order no: **378**

Blowing force	76.0 N	(268.3 oz)
Air consumption	464 Nm³/h	(273.1 scfm)
Sound level	95 dB(A)	
Air pattern	Flat	
Connection	3/4" BSP	3/4"-14 NPT
Dimensions	529x40x110	(20.82x1.57x4.33")
Material (nozzle)	Stainless steel	

76.0 N
268.3 oz
FLAT
STAIN-LESS

For accessories, see page 76.
For more technical information, see page 152 or visit our website at www.silvent.com.

ø 20 mm (3/4")
Noise reduction **80 %**
Air/cost savings **37 %**

When replacing open pipe of this diameter.

Alternatives

Order no: **372**

SILVENT 372: creates a cone spread of 205 mm (8.07") at a distance of 150 mm (6"). Blowing force = 19.0 N (67.1 oz). Length 139 mm (5.47").

Order no: **374**

SILVENT 374: creates a cone spread of 335 mm (13.19") at a distance of 150 mm (6"). Blowing force = 38.0 N (134.1 oz). Length 269 mm (10.59").

Order no: **372 F - 378 F**

SILVENT 372 F, 374 F and 378 F feature built-in flow regulation on each individual nozzle. By adjusting the blowing force you can minimize both your energy consumption and the noise level. Otherwise, the same performance as 372, 374 and 378.

Silvent 300 Special

SILVENT 300 SPECIAL: Silvent produces air knives and air curtains that are tailored to customers' own applications and needs. Silvent's enormous range of products, together with the extensive know-how of our application engineers, allow us to offer the most optimal solutions. Moreover, we supply cost-free application assistance in the form of blueprints etc. if you wish to make your own air knives with Silvent air nozzles. On this page we show a number of examples of custom-made air knives and air curtains. On pages 66-67 you will find information on how to dimension air knives and air curtains. There are additional examples and further information on our website at www.silvent.com.

Examples

SILVENT 300 SPECIAL with 920 A

Silvent designed an air knife with 24 SILVENT 920 A nozzles for one of Europe's leading producers of special and commercial steel. The air knife is 1.7 m (5.6 ft) long and has a blowing force of 132 N (466.0 oz). The company has installed two of these air knives in a wheel abrator.

SILVENT 300 SPECIAL with 973

Silvent developed an air knife with ten SILVENT 973s for a company that is the world-leading supplier of piston rings for ship engines with large cylinder diameters. The air knife was tailor-made for installation in one of the company's existing surface grinders.

SILVENT 300 SPECIAL with 961

Silvent manufactured a mini-air knife with 13 SILVENT 961s for a world-leading manufacturing corporation. They chose the SILVENT 961 because of space limitations in their machine. All of the nozzles were angled to drive oil film off the surface of the work piece as efficiently as possible.

▶▶ Dimensioning of air knives and air curtains: see pages 66-67

Things to consider when dimensioning air knives and air curtains

Decades of experience have provided us with the know-how required to properly dimension air knives and air curtains. The following factors must be taken into consideration when tailoring an air knife or air curtain to a customer's particular application.

1 Type of air nozzle

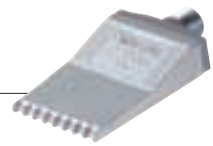
The choice of nozzle for an air knife or air curtain is based on:

Blowing force – what work must the air knife/air curtain perform?
Material – what type of environment will the air knife/air curtain be used in?
Dimensions – are there any restrictions due to space?

Any of Silvent's nozzles can be used in air knives and air curtains. The following are most frequently chosen:

Accessories: see page 76.

Silvent **920 A**



Its design utilizes compressed air optimally and generates an air cone with "scraper effect".

Silvent **973**

Generates stronger blowing force than SILVENT 920 A and made of stainless steel, making it suitable for higher temperatures and mechanical wear.

Silvent **961**

Used where space is limited.

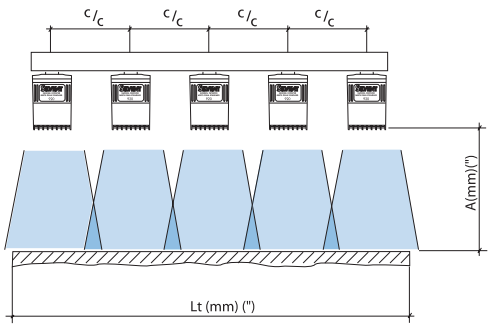
Silvent **209 L**

Especially suitable when blowing force is of secondary importance, e.g. air curtains in entrance ways. Allows minimal air consumption.

Silvent **705**

Whenever high blowing force is required, e.g. in steel mills. Silvent also has air nozzles with extremely high blowing forces, like SILVENT 707 C, SILVENT 710 and SILVENT 720, that may be more suitable in certain demanding applications.

Air cone width and blowing distance



Nozzle values

Nozzle type	Lo mm	inch	Angle α °	Limitation
920 A	60	2.36	11.3	Amin=30 mm (1.2")
973	81	3.19	11.3	Amin=30 mm (1.2")
961	41	1.61	11.3	Amin=30 mm (1.2")
209 L	10	0.39	14.5	
705	92.5	3.64	13.35	Amin=100 mm (4")

Number of nozzles/line

Supply line inside Ø mm	6.4	9.5	12.7	19.1	25.4	38.1	50.8
inch							
920 A	1	3	6	14	25	57	101
973	1	2	4	9	16	36	64
961	3	6	11	24	44	99	177
209 L	3	5	10	22	40	90	159
705	0	1	2	4	8	18	32

Manifold

Model	Material	Dimensions □	Connection
TUB 300	Aluminum	□ 23x23 (0.9"x0.9")	3/8"
SMP 370	Stainless steel	□40x40 (1.57"x1.57")	3/4"
AMP 380	Aluminum	□40x40 (1.57"x1.57")	1"

2 Number of nozzles

To calculate how many nozzles are necessary, you need the following information:

Width of the air cone (Lt)
The width that needs to be covered varies from case to case. Normally a custom-designed air knife is needed for widths greater than 500 mm (19.69").

Blowing distance (A)
The distance at which an air knife is mounted directly affects the number of nozzles you will need to use.

Short distance – yields concentrated blowing force that covers a smaller surface. This means that you will need to use a larger number of nozzles.
Long distance – yields less blowing force and covers a larger area.

With the information above you can calculate how many nozzles you will need and the distance between the nozzles.

$$\text{Number of nozzles (n)} = \frac{Lt}{7/8(2A\ \tan\alpha + Lo)}$$

$$\text{Distance between nozzles (c/c)} = \frac{Lt - 7/8(2A\ \tan\alpha + Lo)}{n-1}$$

3 Air supply

To assure that your air knife/air curtain will function optimally, you must make certain that the air supply is large enough. If it is insufficient, the blowing force may be uneven.

The table on the left shows the number of nozzles that can be supplied by a single line, i.e. with feed from just one side.

Silvent offers three different types of manifolds in custom lengths. The table on the left shows materials and dimensions. Additional manifolds are available upon request.

▶▶ For more information, see www.silvent.com or contact Silvent's application engineers.

Special air nozzles

Special air nozzles

Silvent offers the world's widest selection of compressed air nozzles and special air nozzles. Our products are divided into four categories:

1 Compressed air nozzles 0 – 6 N (0 - 1.3 lbs)
2 High force air nozzles 6 – 130 N (1.3 - 28.7 lbs)
3 Air knives and air curtains
4 Special air nozzles

The category special air nozzles contains all our nozzles that generate entirely unique blowing patterns. These nozzles are designed for special applications where ordinary open pipe or standard nozzles will not effectively perform the blowing operation. Contact Silvent's application engineers if you are not certain about what special nozzle is most suitable for your particular needs.

Silvent 910

SILVENT 910: back-blow nozzle used for blowing clean inside pipes or channels. Cleaning out pipe during and after tooling has always been a problem. Blowing clean using conventional methods is impossible as chips are blown further into the pipe rather than out. SILVENT 910 can handle blow-out of pipe with diameters from 25 mm (1") up to 100 mm (4"). The nozzles are based upon and manufactured in accordance with SILVENT's patents, which means that both noise level and air consumption are kept to a minimum. Fully complies with EU Machine Directive noise limitations and OSHA safety regulations.

ø 6 mm (1/4")

Noise reduction	73%
Air/cost savings	59%

When replacing open pipe of this diameter.

Order no: **910**

Blowing force	5.5 N	(19.4 oz)
Air consumption	38 Nm³/h	(22.4 scfm)
Sound level	86 dB(A)	
Air pattern	Misc.	
Connection	1/4" BSP	1/4"-18 NPT
Dimensions	Ø18x17.5	(Ø0.71x0.69")
Material	Stainless steel	

5.5 N
19.4 oz
MISC.
STAIN-LESS

For accessories, see page 76.
For more technical information, see page 152 or visit our website at www.silvent.com.

Alternatives

Order no: **912**

SILVENT 912: larger variation of 910. Manages blow-out of pipe with diameters from 75 mm (3") up to 400 mm (16"). 1" female connection thread. Blowing force 13.2 N (46.6 oz).

Silvent 915

SILVENT 915: dispersion nozzle that generates a broad and circular air cone pattern. Designed for applications where air must be spread over a greater area at a short blowing distance. Works best when the blowing distance does not exceed 150 mm (6"). When blowing inside pipe and ducts the inside diameter should be between Ø 25 - 100 mm (1" - 4"). The standard exhaust angle is 45°. However, the design of the nozzle permits the angle of the exhaust holes to be modified. Upon request, angles of 90° or 135° are available. Low noise level and air consumption. Fully complies with EU Machine Directive noise limitations and OSHA safety regulations.

Order no: **915**

Blowing force	5.5 N	(19.4 oz)
Air consumption	38 Nm³/h	(22.4 scfm)
Sound level	86 dB(A)	
Air pattern	Misc.	
Connection	1/4" BSP	1/4"-18 NPT
Dimensions	Ø20x27	(Ø0.79x1.06")
Material	Stainless steel	

5.5 N
19.4 oz
MISC.
STAIN-LESS

For accessories, see page 76.
For more technical information, see page 152 or visit our website at www.silvent.com.

ø 6 mm (1/4")

Noise reduction	67 %
Air/cost savings	43 %

When replacing open pipe of this diameter.

Alternatives

Order no: **915-90**

SILVENT 915-90: with an outlet angle of 90°. Otherwise, the same performance as 915.

Order no: **915-135**

SILVENT 915-135: with an outlet angle of 135°. Otherwise, the same performance as 915.

Silvent 952

SILVENT 952: self-rotating nozzle designed to provide efficient and even blow-off of large areas. For example, wide polishing machines used in the wood working industry make use of rotating nozzles to achieve even and efficient blow-off of the entire wood surface. Conventional open pipe blow-off results in spotty blowing that fails to cover the whole surface and, therefore, uneven quality. An integrated dust removal system is normally used in connection with the rotating nozzles in these wide polishing machines, disposing of waste in an efficient and environmentally sound manner. As the nozzles rotate at high speed and force, the accompanying safety instructions must be followed during installation and use. SILVENT will gladly supply these safety regulations upon request, as well as in conjunction with initial delivery. Fully complies with EU Machine Directive noise limitations. Patented.

ø 6 mm (1/4")

Noise reduction	73 %
Air/cost savings	43 %

When replacing open pipe of this diameter.

Order no: **952**

Blowing force	6.4 N	(22.6 oz)
Air consumption	38 Nm³/h	(22.4 scfm)
Sound level	83 dB(A)	
Air pattern	Misc.	
Connection	M27x2	
Dimensions	160x34x125	(6.30x1.34x4.92")
Material (nozzle)	Zinc	

6.4 N
22.6 oz
MISC.
ZINC

For accessories, see page 76.
For more technical information, see page 152 or visit our website at www.silvent.com.

Application

The picture shows a number of SILVENT 952s mounted in a wide polishing machine to blow wood sheets clean. For more information on applications, visit our website at www.silvent.com.

New!

Silvent 453

SILVENT 453 is the smallest version of Silvent's doughnut nozzles. With just an inner ring of nozzles, it is part of our most commonly used doughnut series. Finding the blowing pattern that is most suitable for the majority of blow-off processes is the result of years of experience with previous generations of doughnut nozzles. These nozzles are designed for continuous production and the cleaning or drying of cables, sections, pipes, hoses etc. The SILVENT 453 allows problem-free insertion and removal of material with diameters of 5 mm to 25 mm (0.2"-1.0"). There are attachment lugs for easy and safe mounting. Fully complies with the noise limitations of the EU Machine Directive and OSHA safety standards. Patented.

ø 10 mm (3/8")

Noise reduction	78 %
Air/cost savings	38 %

When replacing open pipe of this diameter.

Order no: **453**

Blowing force	20.0 N	(70.6 oz)
Air consumption	114 Nm³/h	(67.1 scfm)
Sound level	90 dB(A)	
Air pattern	Misc.	
Connection	1/2" BSP	1/2"-14 NPT
Dimensions	113x120x38	(4.45x4.72x1.50")
Material (nozzle)	Zinc	

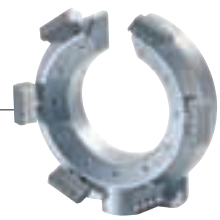
20.0 N
70.6 oz
MISC.
ZINC

For accessories, see page 76.
For more technical information, see page 152 or visit our website at www.silvent.com.

Alternatives

Order no: **454**

SILVENT 454: with just an outer ring of flat nozzles for minimal sound level and air consumption. Perfect for blow-off of light particles or small amounts of liquid on material passing through the nozzle at moderate speeds. Blowing force 16.0 N (56.5 oz).



Order no: **455**

SILVENT 455: a unique double nozzle system for optimal results. The outer ring provides initial cleaning and prepares the surfaces for the inner system, which then completes the drying or cleaning process. Blowing force 36.0 N (127.1 oz).

Silvent 464

SILVENT 464: a doughnut nozzle with just an outer ring of flat nozzles that offers the very lowest noise level and air consumption. Perfectly adequate for the removal of lightweight matter and lesser amounts of liquid. Provides plenty of blowing force for applications such as drying or cleaning of cable, pipe, hose or sections passing through the doughnut at moderate speeds. Efficient and uniform 360° coverage is guaranteed - even at the opening in the doughnut, where extra powerful nozzles are mounted at the optimal blowing angle. SILVENT 464 allows problem-free insertion and removal of material with diameters of 25 to 105 mm (1.0" – 4.1") through the opening in the doughnut. There are attachment lugs for easy and safe mounting. Fully complies with the noise limitations of the EU Machine Directive and OSHA safety standards. Patented.

ø 16 mm (5/8")

Noise reduction	88%
Air/cost savings	51%

When replacing open pipe of this diameter.

Order no: **464**

Blowing force	32.0 N	(113.0 oz)
Air consumption	234 Nm³/h	(137.7 scfm)
Sound level	92 dB(A)	
Air pattern	Misc.	
Connection	3/4" BSP	3/4"-14 NPT
Dimensions	235x205x56	(9.25x8.07x2.20")
Material (nozzle)	Zinc	

32.0 N
113.0 oz
MISC.
ZINC

For accessories, see page 76.
For more technical information, see page 152 or visit our website at www.silvent.com.

Alternatives

Order no: **463 L**

SILVENT 463 L: with an inner ring of 2120 L nozzles and suitable for most applications. Our most frequently used doughnut nozzle type. Blowing force 42.0 N (148.3 oz).

Order no: **465 L**

SILVENT 465 L: with a unique double nozzle system. Two different blowing patterns unite to achieve maximum results. The outer ring provides initial cleaning and prepares the surfaces for the inner system, which then completes the drying or cleaning process. Blowing force 76.0 N (268.3 oz).

Silvent 475 L

SILVENT 475 L, with its double nozzle ring, is entirely unique. Two different blowing patterns unite to achieve maximum results. The outer ring provides initial cleaning and prepares the surfaces for the inner system, which then completes the drying or cleaning process. The system is designed to clean or dry cables, pipes, sections, hoses, etc. that require extra high blowing force or pass through the doughnut at high speed. Efficient and uniform 360° coverage is guaranteed - even at the opening in the doughnut, where extra powerful nozzles are mounted at the optimal blowing angle. SILVENT 475 L allows problem-free insertion and removal of material with diameters of 100 to 205 mm (4" – 8.1") through the opening in the doughnut. It features robust attachment lugs for easy and safe mounting. Fully complies with the noise limitations of the EU Machine Directive and OSHA safety standards. Patented.

Order no: **475 L**

Blowing force	148.9 N	(525.6 oz)
Air consumption	948 Nm³/h	(558.0 scfm)
Sound level	104 dB(A)	
Air pattern	Misc.	
Connection	3/4" BSP	3/4"-14 NPT
Dimensions	365x336x78	(14.37x13.23x3.07")
Material (nozzle)	Zinc & Aluminum	

148.9 N
525.6 oz

MISC.

MISC.

For accessories, see page 76.
For more technical information, see page 152 or visit our website at www.silvent.com.

ø 25 mm (1")

Noise reduction	85 %
Air/cost savings	18 %

When replacing open pipe of this diameter.

Alternatives

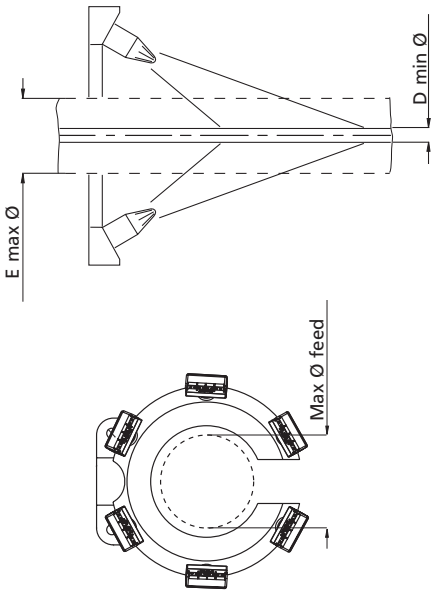
Order no: **473 L**

SILVENT 473 L: with only an inner ring of 2120 L & 2005 nozzles. Suitable for most applications. The design of its blowing profile is the result of many years of experience. Our most frequently used doughnut nozzle type. Blowing force 97.0 N (342.4 oz).

Order no: **474**

SILVENT 474: with just an outer ring of flat nozzles for minimal sound level and air consumption. Perfect for blow-off of light particles or small amounts of liquid on material passing through the nozzle at moderate speeds. Blowing force 61.0 N (215.3 oz).

Air cone patterns for the doughnut nozzles

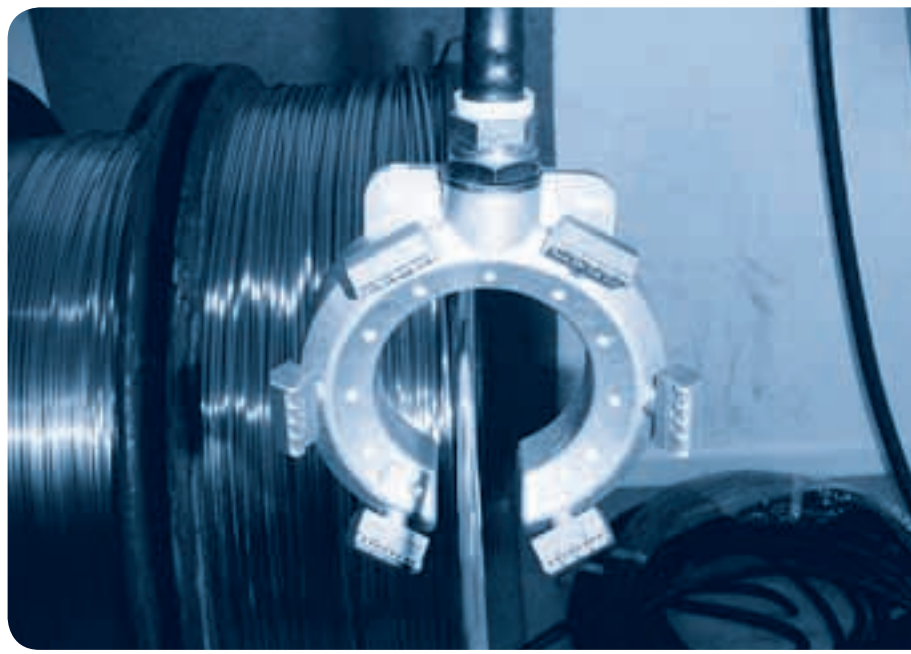


The nozzles cover material within these intervals:

MODEL	D min Ø		E max Ø	
	mm	″	mm	″
453, 454, 455	5	0.2	25	1
464, 463 L, 465 L	25	1	105	4.1
475 L, 473 L, 474	100	4	205	8.1

MODEL	Max Ø feed	
	mm	″
454	55	2.2
464	140	5.5
474	270	10.6

SILVENT 454
Here a doughnut nozzle with an outer ring of flat nozzles is used to dry wire after quenching.
For more applications see www.silvent.com.



Accessories air nozzles

Accessories

Silvent offers the world's widest selection of air nozzles, air knives, air curtains and special air nozzles. This category contains products that are used together with Silvent's air nozzles, air knives and air curtains.

In many cases these products facilitate installation. There are also accessories that allow fine tuning of the blowing angle without affecting fixed installation. Correct adjustment of the blowing angle results in both lower noise levels and increased efficiency.

PSK

PSKM

Adjustable swivel joints

Adjustable ball joints for regulating the air cone. These joints make it possible to readjust the blowing angle without affecting fixed equipment. Correct setting of the blowing angle means both lower noise levels and increased efficiency. Available in 4 different sizes. Seals of Nitrile. Material: stainless steel.

Order no: **PSK 18**

Connection	1/8" BSP	1/8"-27 NPT
Dimensions	Ø22x31	(Ø0.87x1.22")

Order no: **PSK 14**

Connection	1/4" BSP	1/4"-18 NPT
Dimensions	Ø24x33	(Ø0.94x1.30")

Order no: **PSK 38**

Connection	3/8" BSP	3/8"-18 NPT
Dimensions	Ø27x40	(Ø1.06x1.57")

Order no: **PSK 12**

Connection	1/2" BSP	1/2"-14 NPT
Dimensions	Ø32x45	(Ø1.26x1.77")

Order no: **PSKM 12**

Connection	1/2" BSP	1/2"-14 NPT
Dimensions	Ø32x60	(Ø1.26x2.36")

Universal ball joint

An adjustable joint especially designed for the 400, 700, 1100 and 1200 series. Since the joint permits adjustment to any angle, fixed installations can be set at the most efficient blowing angle. The desired position can then be locked with an Allen set screw. Seals of Nitrile. Material: aluminum.

Order no: **UBJ 34**

Connection	3/4" BSP	3/4"-14 NPT
Dimensions	Ø56x117	(Ø2.23x4.61")

Flow valves

Flow valves that enable you to fine-tune the blowing force and thereby lower the noise level and conserve compressed air. The flow can be regulated from 5% to 100% of full flow. Available in 2 sizes. Seals of Nitrile. Material: stainless steel.

Order no: **FV 18**

Connection	1/8" BSP	1/8"-27 NPT
Dimensions	Ø17x40	(Ø0.67x1.57")

Order no: **FV 14**

Connection	1/4" BSP	1/4"-18 NPT
Dimensions	Ø17x40	(Ø0.67x1.57")

Magnetic base

The magnetic base is available in two versions for single and double FlexBlow hoses. The powerful magnet allows both horizontal and vertical attachment. Connection 3/8" hose fitting. Material: steel.

Order no: **2211**

Dimensions	Ø85x98	(Ø3.35x3.85")

Order no: **2222**

Dimensions	Ø85x130	(3.35x5.10")

Flexarm joint

Complete joint with knob for Silvent Flexarms. Available in 3 different sizes. Material: steel.

Order no: **2901**

Dimensions	Ø10 / Ø8	(Ø0.4 / Ø0.32")

Order no: **2902**

Dimensions	Ø14 / Ø14	(Ø0.55 / Ø0.55")

Order no: **2903**

Dimensions	Ø22 / Ø14	(Ø0.87 / Ø0.55")

Mounting plate

In cases where magnetic attachment is not suitable, the magnetic base for FlexHoses or a Flexarm can be replaced with a mounting plate for fixed attachment. Material: steel.

Order no: **2911**

Connection	M10x1.5	
Dimensions	100x60x12	(3.94x2.36x0.47")

Connection sleeve for 952

Connection sleeve for single mounting of Silvent 952. Material: Aluminum.

Order no: **2252**

Connection	1/4" BSP	
Dimensions	Ø30x70	(Ø1.18x2.76")

Ball valves

Available in 5 different sizes. Seals of Teflon and Nitrile. Material: brass. Temperature range -40°C to +200°C (-41°F to +396°F).

Order no: **KV 18**

Connection	1/8" BSP	
Dimensions	Ø21x39	(Ø0.83x1.54")

Order no: **KV 14**

Connection	1/4" BSP	
Dimensions	Ø21x39	(Ø0.83x1.54")

Order no: **KV 38**

Connection	3/8" BSP	
Dimensions	Ø21x42	(Ø0.83x1.65")

Order no: **KV 12**

Connection	1/2" BSP	
Dimensions	Ø25x47	(Ø0.98x1.85")

Order no: **KV 34**

Connection	3/4" BSP	
Dimensions	Ø30x54	(Ø1.18x2.13")

Mounting brackets

Mounting brackets for aluminum manifolds. For use with Silvent's air knives and air curtains. The brackets are mounted at both ends of the manifold and squeezed between the plug and the outer wall of the manifold.

Order no: **3302**

Connection	Ø17	(Ø0.67")
Dimensions	23x25x45	(0.90x0.98x1.77")
Material	Stainless steel	

Order no: **3372**

Connection	Ø27	(Ø1.06")
Dimensions	40x40x75	(1.57x1.57x2.95")
Material	Stainless steel	

Order no: **3382**

Connection	Ø34	(Ø1.34")
Dimensions	40x40x75	(1.57x1.57x2.95")
Material	Stainless steel	

OGV valve

A complete OGV valve for variable adjustment of the blowing force from 0 to max. flow. There is also a locking function in the max. position.

Order no: **OGV**

Connection	3/4" BSP	3/4"-14 NPT
Dimensions	Ø40x204	(Ø1.57x8.03")
Material	Aluminum	

FlexBlow hose 1/4"

FlexBlow hose with 1/4" thread at both ends. Available in 6 different lengths.

Order no: **820**

Connection	1/4" BSP	1/4"-18 NPT
Dimensions	Ø19x158	(Ø0.75x6.22")

Order no: **830**

Connection	1/4" BSP	1/4"-18 NPT
Dimensions	Ø19x258	(Ø0.75x10.16")

Order no: **840**

Connection	1/4" BSP	1/4"-18 NPT
Dimensions	Ø19x358	(Ø0.75x14.09")

Order no: **850**

Connection	1/4" BSP	1/4"-18 NPT
Dimensions	Ø19x458	(Ø0.75x18.03")

Order no: **860**

Connection	1/4" BSP	1/4"-18 NPT
Dimensions	Ø19x558	(Ø0.75x21.97")

Order no: **880**

Connection	1/4" BSP	1/4"-18 NPT
Dimensions	Ø19x758	(Ø0.75x29.84")

FlexBlow hose 1/8"

FlexBlow hose with 1/8" thread at both ends. Available in 6 different lengths.

Order no: **862**

Connection	1/8" BSP	1/8"-27 NPT
Dimensions	Ø15x176	(Ø0.59x6.93")

Order no: **863**

Connection	1/8" BSP	1/8"-27 NPT
Dimensions	Ø15x276	(Ø0.59x10.87")

Order no: **864**

Connection	1/8" BSP	1/8"-27 NPT
Dimensions	Ø15x376	(Ø0.59x14.63")

Order no: **865**

Connection	1/8" BSP	1/8"-27 NPT
Dimensions	Ø15x476	(Ø0.59x18.52")

Order no: **866**

Connection	1/8" BSP	1/8"-27 NPT
Dimensions	Ø15x576	(Ø0.59x22.41")

Order no: **868**

Connection	1/8" BSP	1/8"-27 NPT
Dimensions	Ø15x776	(Ø0.59x30.19")

High-flow regulators

Silvent's range of high-flow regulators provides optimal utilization of Silvent's air nozzles. Using regulators in the Silvent system makes it possible to attain precisely the blowing force required, and thereby minimize the sound level and air consumption. These piston regulators allow extremely high flow in relation to their compact size.

Order no: **SR-21-C2**

Connection	1/4" BSP	1/4"-18 NPT
Dimensions	67x83x102	(2.65x3.25x4.00")

Order no: **SR-21-C3**

Connection	3/8" BSP	3/8"-18 NPT
Dimensions	67x83x102	(2.65x3.25x4.00")

Order no: **SR-21-C4**

Connection	1/2" BSP	1/2"-14 NPT
Dimensions	67x83x102	(2.65x3.25x4.00")

Order no: **SR-21-C6**

Connection	3/4" BSP	3/4"-14 NPT
Dimensions	67x83x102	(2.65x3.25x4.00")

Order no: **SR-31-C8**

Connection	1" BSP	1"-11 1/2 NPT
Dimensions	111x67x132	(4.37x2.65x5.25")

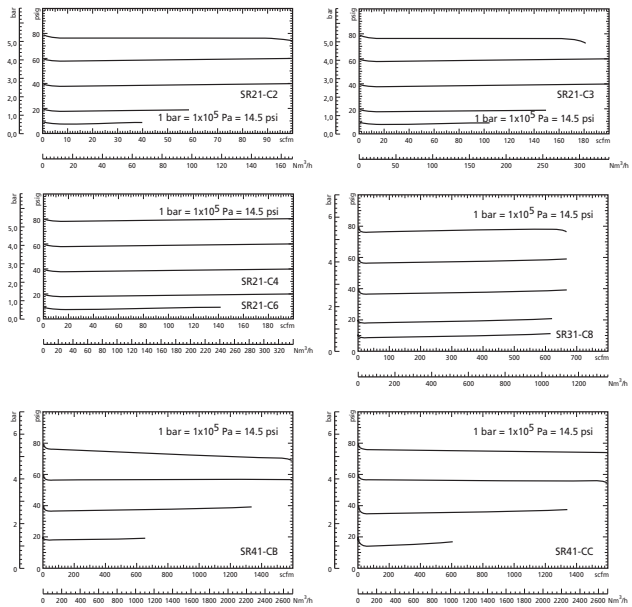
Order no: **SR-41-CB**

Connection	1 1/2" BSP	1 1/2"-11 1/2 NPT
Dimensions	135x92x174	(5.31x3.62x6.87")

Order no: **SR-41-CC**

Connection	2" BSP	2"-11 1/2 NPT
Dimensions	135x92x174	(5.31x3.62x6.87")

Flow characteristic charts for high-flow regulators

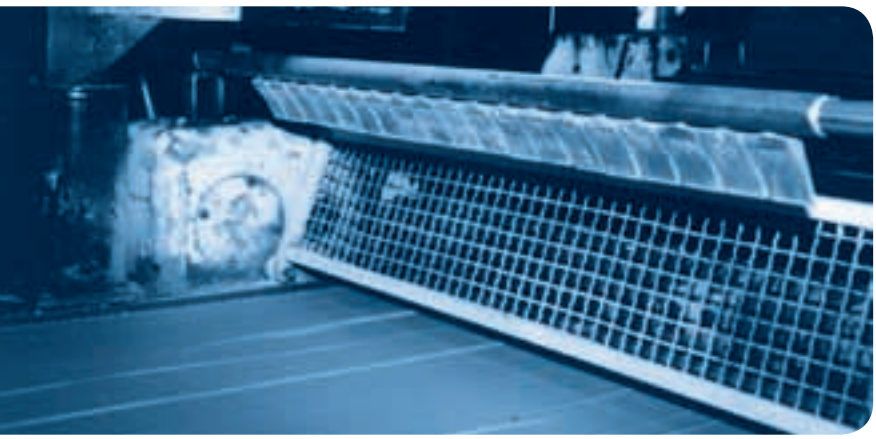


Note! The design of the regulators entails a slight constant air bleed (0.024 Nl/s (0.05 scfm) at an inlet pressure of 7 bars (100 psi) and an outlet pressure of 5.5 bars (80 psi)).

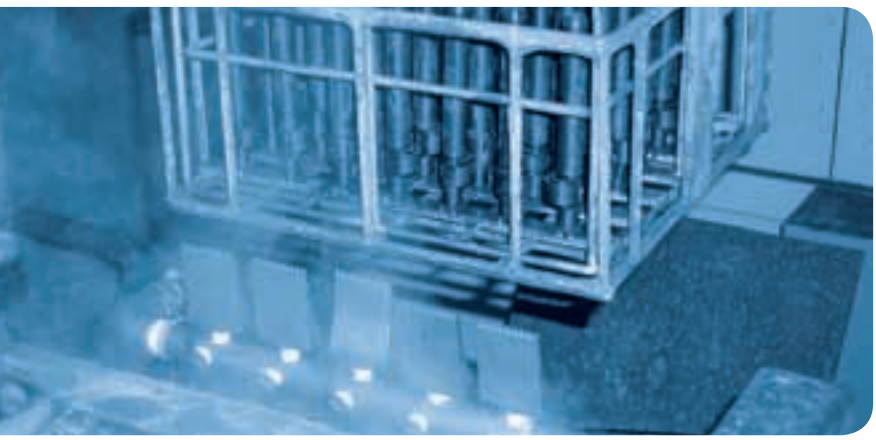
All the charts are based on an inlet pressure of 7 bars (100 psi).

Max. temp: 79°C (178°F)
Max. operating pressure: 2.1 MPa (300 psi)

Applications



Cleaning
In this application a custom air knife with 19 flat nozzles is used to keep the production line free of cracker crumbs.



Drying
Here Silvent's 920 A nozzle is used to dry parts. This compressor manufacturer has installed nearly 300 SILVENT 920 As to reduce the noise level.

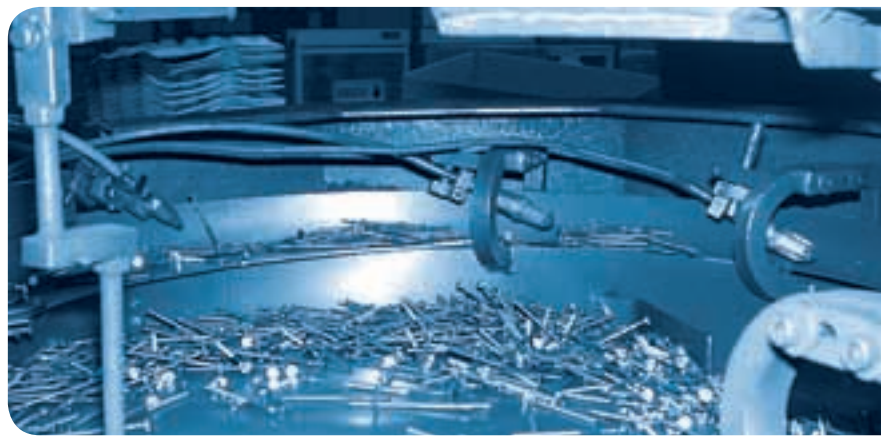
Cooling
Silvent's air nozzles are ideal for cooling in production processes. Here SILVENT 209s are used to cool the electrolyte at an aluminum mill.

www.silvent.com

In the application database on our website you will find more examples and additional information on how Silvent's products are used.

Transport
SILVENT 973 Fs, flat nozzles made entirely of stainless steel with built-in flow regulation, are used both to move bread along the production line and to separate the bread from the baking sheet.

Sorting
Compressed air blowing can be used to sort parts in production processes. In this application nails are sorted with Silvent nozzles.



Blow-off
Many operations at steel mills require blowing with compressed air. Here high-force Silvent nozzles are used to blow off water and oxide scale from newly made steel.


97
SILVENT
SWEDEN. PATENTED
METTS OSHA STANDARD

Safety air guns

2

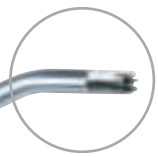
Overview

Safety air guns
These products are divided into five different series and a category for special guns. Each series is based on grip type, with special functions and different materials. There is a large selection of nozzles with different blowing forces and blowing patterns for each grip. All our guns can also be fitted with extension pipes of various lengths to further enhance user-friendliness.

You will find everything you need to know to choose the right safety gun on pages 88-89.

The 007 series

Safety air guns with unique advantages



Silvent **007-L**
See page 90

Silvent **007-P**
See page 92

Silvent **007-MJ4**
See page 93

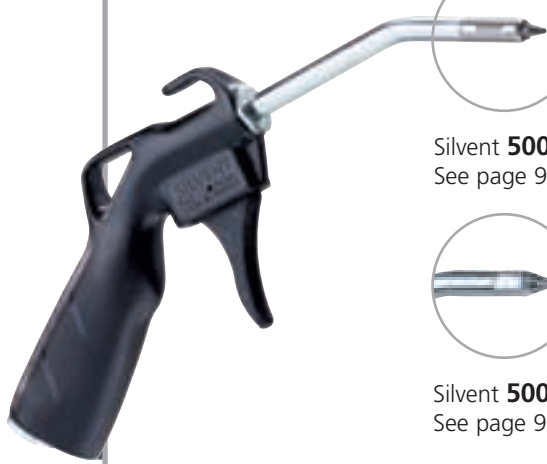
New!

Silvent **008-L**
See page 94

Silvent **0971**
See page 95

The 500 series

Safety air guns with short triggers that are easy on the hand

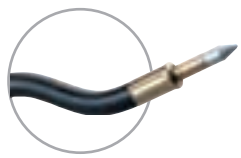


Silvent **500-S**
See page 96

Silvent **500-Z**
See page 98

New!

Silvent **501 L-H**
See page 99



Silvent **520**
See page 100

Silvent **5920**
See page 101

The 2000 series

High force safety air guns entirely of aluminum

Silvent **2055-A**
See page 102

Silvent **2973**
See page 104

Silvent **2050-S**
See page 105

The 750 series

Robust safety air guns for aggressive environments

New!

Silvent **755-L**
See page 106

New!

Silvent **757-L**
See page 108

Silvent **753-S**
See page 109

The 4000 series

Extremely powerful blowing tools for long distances

New!

Silvent **4015-LF**
See page 110

New!

Silvent **4020-LF**
See page 112

Silvent **4010-S**
See page 113

Special

Safety air guns for more unusual applications

Silvent **BG-007**
See page 114

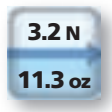
Silvent **100**
See page 115

Choosing the right safety air gun

It is important to choose the correct safety air gun to ensure that your application will be efficient, quiet, safe and, not least, economical. Every blowing operation is unique, but by considering the factors described below, it is easy to optimize any blowing application.

1 Blowing force

Selecting the right blowing force is crucial, as insufficient force will not get the job done and over-dimensioning will not utilize Silvent's technology optimally.



Expresses blowing force in Newtons (N) and ounces (oz).

2 Blowing pattern

Depending upon the work the nozzle must perform, choose one of the following blowing patterns.

Generates a broad air stream.

Generates a large conical air stream.

Generates a concentrated, centered air stream.

Generates a supersonic core stream surrounded by a protective sheath of air.

Unusual blowing patterns e.g. back-blow, dispersed etc.

3 Nozzle material

The choice of material in the air nozzle is primarily affected by the degree of exposure to mechanical wear, which is very often high where air guns are used.

STAIN-LESS *Withstands high ambient temperatures, mechanical wear, aggressive and corrosive environments and meets hygienic requirements.*

ZINC *Suitable for applications with low ambient temperatures and limited mechanical wear.*

MISC. *Unusual materials, e.g. PEEK.*

4 Air gun model

The choice of air gun model depends on the demands for ergonomics and the technical functionality required, e.g. alternative connection options, both variable force and booster positions and the type of environment the guns will be used in.

5 Extra equipment

In principle, every Silvent safety air gun can be fitted with extension pipes of any desired length. This is both a practical and a safety issue. There are also plastic safety shields and air shields to make the blowing operation as safe as possible.

www.silvent.com

On our website you will find complete product information and our "online selection guidelines", where you can easily compare our different safety air guns.

Silvent 007-L

SILVENT 007 with a Laval nozzle is the most commonly chosen alternative. A stainless steel Laval nozzle mounted onto the 007 grip handles nearly any blowing application. A Laval orifice in the center of the nozzle creates a highly concentrated air stream that moves at supersonic speed. Around the Laval hole there are a number of diverging slots that generate a powerful, quiet and laminar airflow. The combination provides superior cleaning performance and optimal utilization of the compressed air. Fins prevent direct contact between skin and the outlet holes. Fully complies with OSHA safety regulations and EU Machine Directive noise limitations. Patented.

ø 4 mm (5/32")

Noise reduction	60 %
Air/cost savings	27 %

When replacing air guns without a nozzle with this pipe diameter.

For accessories, see page 116.
For more technical information, see page 152 or visit our website at www.silvent.com

Order no: **007-L**

Booster position:		
Blowing force	3.5 N	(12.4 oz)
Air consumption	22 Nm³/h	(12.9 scfm)
Sound level	82 dB(A)	
Variable position:		
Blowing force	1.6 N	(5.6 oz)
Air consumption	11 Nm³/h	(6.5 scfm)
Sound level	75 dB(A)	
Air pattern	Laval	
Connection	1/4" BSP	1/4"-18 NPT
Nozzle	1001	
Material (nozzle)	Stainless steel	

3.5 N
12.4 oz
LAVAL
STAIN-LESS

Alternatives

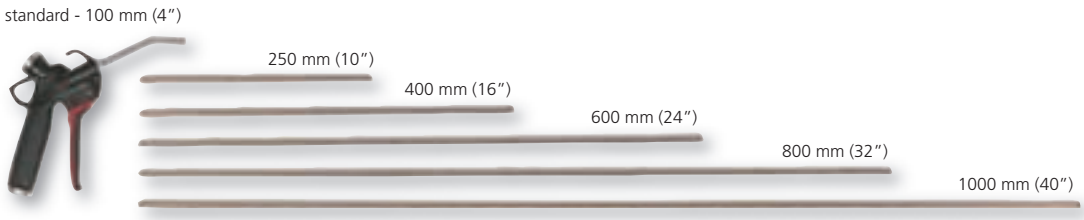
Order no: **007-S**

SILVENT 007-S: with a stainless steel nozzle. Suitable for really tough conditions. The solid stainless steel nozzle tip is designed to withstand intensive mechanical wear. Blowing force 2.8 N (9.9 oz).

Order no: **007-Z**

SILVENT 007-Z: with a zinc slot nozzle that efficiently utilizes the surrounding air. Provides powerful, quiet and efficient cleaning. For general-purpose blowing in environments where the nozzle is exposed to minimal mechanical wear. Blowing force 3.0 N (10.6 oz).

Extension pipes in 6 lengths



Our 007 safety air gun series is available with six different extension pipe lengths. The pipes are made of galvanized steel. When ordering safety guns with extension pipes that are longer than 100 mm (4"), specify the pipe length last in the order number. Safety gun-extension pipe length: e.g. **007-L-1000**.

Safety air gun with entirely unique advantages

Softgrip handle
The 007 safety gun has an ergonomically designed Softgrip handle of synthetic rubber that is highly durable and oil resistant. The material insulates well against heat and cold, and the handle is easy on the hand and wrist.

Top and bottom connection
The grip offers two connection possibilities – both top and bottom air supply connection. From the viewpoint of safety, as well as ergonomics, top connection is the best alternative. Safety valves at the connections eliminate the risk of injury.

Two-step system
The 007 grip features a unique valve design with a two-step system that considerably reduces both noise levels and energy consumption. The first step, variable position, allows variable adjustment of the blowing force and is more than adequate for most types of work. It generates a low sound level and permits energy savings of up to 50%. The gun's second step, the "booster position", delivers twice the blowing force for the most demanding operations.

Silvent 007-P

SILVENT 007-P: with a PEEK nozzle that prevents unnecessary scratching. The PEEK nozzle has been specially developed for sensitive applications where expensive tools and machines absolutely may not be damaged. The nozzle is fitted on a flexible PA 12 pipe that provides additional protection against scratches caused by mechanical impact. PEEK is a unique plastic material with properties that meet the rigorous quality and safety requirements of, for example, the aerospace industry. It is extremely impact resistant and is capable of handling aggressive chemical environments, strong cutting fluids and temperatures of up to 260°C (500°F). The nozzle is designed with a central hole that generates a concentrated air stream. At the same time, the sound level is low and air consumption is reduced. The PEEK guns are available with three different extension pipe lengths. Fully complies with OSHA safety regulations and EU Machine Directive noise limitations.

Order no: **007-P**

Booster position:		
Blowing force	2.4 N	(8.5 oz)
Air consumption	14 Nm³/h	(8.2 scfm)
Sound level	79 dB(A)	
Variable position:		
Blowing force	1.8 N	(6.4 oz)
Air consumption	11 Nm³/h	(6.5 scfm)
Sound level	75 dB(A)	
Air pattern	Concentrated	
Connection	1/4" BSP	1/4"-18 NPT
Nozzle	8001	
Material (nozzle)	PEEK	

2.4 N
8.5 oz
CONC.
MISC.

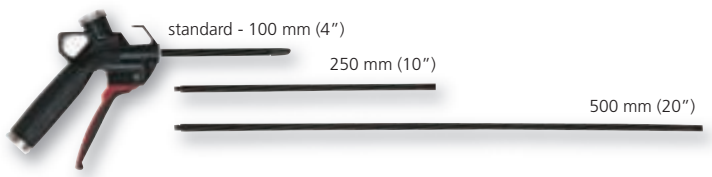
For accessories, see page 116.
For more technical information, see page 152 or visit our website at www.silvent.com.

ø 4 mm (5/32")

Noise reduction	67 %
Air/cost savings	53 %

When replacing air guns without a nozzle with this pipe diameter.

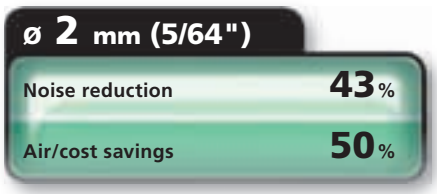
Extension pipes in 3 lengths



PEEK guns are available with three different extension pipe lengths. When ordering safety guns with longer pipes than standard, specify the length last in the order number. Safety gun-extension pipe length, e.g **007-P-250**.

Silvent 007-MJ4

SILVENT 007-MJ4: with a micro-nozzle for high precision and low energy consumption. By combining the 007 grip's valve construction and a stainless steel micro-nozzle, you can blow exactly the amount of air required. A central hole in combination with surrounding slots makes the nozzle extremely efficient and quiet. Compared with conventional air guns without a nozzle, a SILVENT micro-nozzle permits you to reduce compressed air consumption by up to 75% and, at the same time, keep the noise level under 76 dB(A). The blowing force is approx. 25% of that of a standard gun. Meets the noise limitation requirements of the EU Machine Directive. Patented.



When replacing air guns without a nozzle with this pipe diameter.

Order no: **007-MJ4**

Booster position:		
Blowing force	0.9 N	(3.2 oz)
Air consumption	4 Nm³/h	(2.4 scfm)
Sound level	76 dB(A)	
Variable position:		
Blowing force	0.9 N	(3.2 oz)
Air consumption	4 Nm³/h	(2.4 scfm)
Sound level	76 dB(A)	
Air pattern	Concentrated	
Connection	1/4" BSP	1/4"-18 NPT
Nozzle	MJ4	
Material (nozzle)	Stainless steel	

0.9 N
3.2 oz
CONC.
STAIN-LESS

For accessories, see page 116.
For more technical information, see page 152 or visit our website at www.silvent.com. Extension pipes, see page 91.

Alternatives

Order no: **007-MJ5**

SILVENT 007-MJ5: an alternative to 007-MJ4 if you need a little more blowing force. The blowing force is 1.8 N (6.4 oz) or approx. 50% of that of a standard air gun.

Order no: **007-MJ6**

SILVENT 007-MJ6: an alternative to 007-MJ4 if you need a little more blowing force. The blowing force is 2.5 N (8.8 oz) or approx. 75% of that of a standard air gun.

Silvent 008-L

SILVENT 008 L: fitted with a new generation of zinc Laval nozzle. A mix of divergent slots and holes surround the central Laval orifice, providing quiet, powerful and laminar air flow. This safety air gun is especially suitable for sweeping large areas or general-purpose cleaning of parts and machines. The fin design of the nozzle prevents direct contact with skin. Fully complies with the noise limitations of the EU Machine Directive and OSHA safety standards. Patented.

Order no: **008-L**

Booster position:			2.9 N / 10.2 oz
Blowing force	2.9 N	(10.2 oz)	
Air consumption	15.2 Nm³/h	(8.9 scfm)	
Sound level	77.5 dB(A)		
Variable position:			LAVAL
Blowing force	1.6 N	(5.6 oz)	
Air consumption	11 Nm³/h	(6.5 scfm)	
Sound level	75 dB(A)		
Air pattern	Laval		
Connection	1/4" BSP	1/4"-18 NPT	ZINC
Nozzle	2120 L		
Material (nozzle)	Zinc		

ø 4 mm (5/32")

Noise reduction 69%

Air/cost savings 50%

When replacing air guns without a nozzle with this pipe diameter.

For accessories, see page 116.
For more technical information, see page 152 or visit our website at www.silvent.com.

Alternatives

Order no: **008-L-S**

SILVENT 008-L-S: with a stainless steel Laval nozzle that will withstand considerably more mechanical wear than a conventional zinc nozzle. Otherwise, the same performance as 008 L.

Order no: **008**

SILVENT 008: an alternative to 008-L. This safety air gun is fitted with a 2120 nozzle.

Silvent 0971

SILVENT 0971: fitted with a small flat nozzle of stainless steel, providing very special characteristics that are perfect when you want to blow with a somewhat narrower air stream. Capable of withstanding excessive mechanical wear and suitable for use in most environments. The 0971 safety gun offers the same advantages as the other 007 guns - including variable and booster positions, top and bottom connection with safety valves and a Softgrip handle. Fully complies with OSHA safety regulations and EU Machine Directive noise limitations. Patented.

ø 4 mm (5/32")

Noise reduction	62%
Air/cost savings	37%

When replacing air guns without a nozzle with this pipe diameter.

Order no: **0971**

Booster position:		
Blowing force	3.3 N	(11.6 oz)
Air consumption	19 Nm³/h	(11.2 scfm)
Sound level	81 dB(A)	
Variable position:		
Blowing force	1.6 N	(5.6 oz)
Air consumption	11 Nm³/h	(6.5 scfm)
Sound level	75 dB(A)	
Air pattern	Flat	
Connection	1/4" BSP	1/4"-18 NPT
Nozzle	971	
Material (nozzle)	Stainless steel	

3.3 N
11.6 oz
FLAT
STAIN-LESS

For accessories, see page 116.
For more technical information, see page 152 or visit our website at www.silvent.com.

Silvent 500-S

SILVENT 500-S is fitted with a stainless steel nozzle. Stainless steel nozzles are most suitable for really tough conditions. The nozzle's solid stainless steel tip is built to withstand intensive mechanical wear. This safety air gun was developed with the user in mind, and it is the result of many years of research. The 500-S is the most ergonomic safety gun on the market today. Fully complies with OSHA safety regulations and EU Machine Directive noise limitations. Patented.

ø 4 mm (5/32")

Noise reduction	62%
Air/cost savings	37%

When replacing air guns without a nozzle with this pipe diameter.

Order no: **500-S**

Blowing force	3.2 N	(11.3 oz)
Air consumption	19 Nm³/h	(11.2 scfm)
Sound level	81 dB(A)	
Air pattern	Concentrated	
Connection	1/4" BSP	1/4"-18 NPT
Nozzle	0071	
Material (nozzle)	Stainless steel	

3.2 N
11.3 oz
CONC.
STAIN-LESS

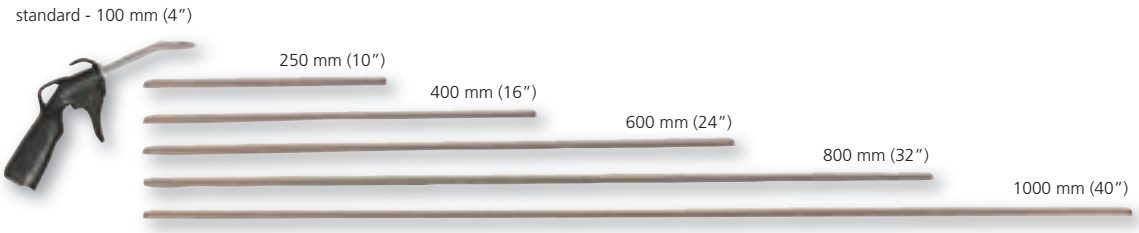
For accessories, see page 116.
For more technical information, see page 152 or visit our website at www.silvent.com.

Alternatives

Order no: **500-L**

SILVENT 500-L: with a stainless steel Laval nozzle. A Laval hole in the center of the nozzle creates a highly concentrated air stream that moves at supersonic speed. Around the Laval hole there are also a number of diverging slots that generate a powerful, quiet and laminar air flow. The combination provides superior cleaning performance and optimal utilization of the compressed air. Fins prevent direct contact between skin and the outlet holes. Blowing force 4.2 N (14.8 oz).

Extension pipes in 6 lengths



The 500 series is available with six different extension pipe lengths. The pipes are made of galvanized steel. When ordering safety guns with extension pipes that are longer than 100 mm (4"), specify the pipe length last in the order number. Safety gun-extension pipe length: e.g. **500-S-600**.

Safety air gun with a short trigger that is easy on the hand

Ergonomics and precision
The combination of an ergonomic handle and a short trigger for one or two fingers provides a perfect grip as well as the possibility to aim the gun with precision and feeling. The ergonomic design of the handle automatically gives you the optimal blowing position so that you do not need to bend your wrist.

Triggers
Our safety guns are fitted with short triggers as standard to provide the most ergonomic grip. If desired however, they can also be equipped with extended triggers. See Accessories.

No muscle strain
The trigger mechanism requires a pressure of only 7 N (25 oz), which means that the gun can be used frequently without the risk of taxing muscles. The average finger strength of men is 96 N (339 oz) and of women, 81 N (295 oz). When less than 10% of the maximum strength of a finger is used, no injury arises due to muscle strain.

Different possibilities for hanging
There are three alternatives for hanging the gun.

Silvent 500-Z

SILVENT 500-Z: fitted with a zinc slot nozzle and suitable for general-purpose cleaning in environments where the nozzle is subject to little or no mechanical wear. Provides strong and extremely quiet blow-off power. The sound level is just 79 dB(A). For more aggressive environments, we recommend our 500-L or 500-S safety guns with nozzles of stainless steel. Fully complies with OSHA safety regulations and EU Machine Directive noise limitations. Patented.

Order no: **500-Z**

Blowing force	3.2 N	(11.3 oz)
Air consumption	19 Nm³/h	(11.2 scfm)
Sound level	79 dB(A)	
Air pattern	Concentrated	
Connection	1/4" BSP	1/4"-18 NPT
Nozzle	5001	
Material (nozzle)	Zinc	

3.2 N
11.3 oz
CONC.
ZINC

For accessories, see page 116.
For more technical information, see page 152 or visit our website at www.silvent.com. Extension pipes, see page 97.

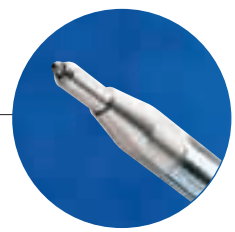
ø 4 mm (5/32")
Noise reduction 67%
Air/cost savings 37%

When replacing air guns without a nozzle with this pipe diameter.

Alternatives

Order no: **500-MJ4**

SILVENT 500-MJ4: an alternative if you need very little blowing force. The blowing force is 0.9 N (3.2 oz) or approx. 25% of that of a standard air gun.

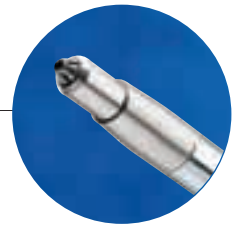


Order no: **500-MJ5**

SILVENT 500-MJ5: an alternative if you want less blowing force than that of 500-Z. The blowing force is 1.8 N (6.4 oz).

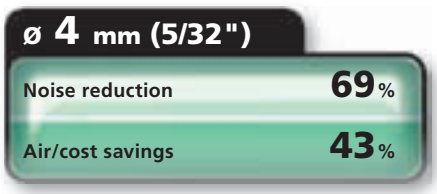
Order no: **500-MJ6**

SILVENT 500-MJ6: an alternative if you need a little less blowing force than that of 500-Z. The blowing force is 2.5 N (8.8 oz).



Silvent 501-L-H

SILVENT 501-L-H: fitted with a new generation of zinc Laval nozzle. A mix of divergent slots and holes surround the central Laval orifice, providing quiet, powerful and laminar air flow. This safety air gun is especially suitable for sweeping large areas or general-purpose cleaning of parts and machines. Also available with a short trigger (order number 501-L). The fin design of the nozzle prevents direct contact with skin. Fully complies with the noise limitations of the EU Machine Directive and OSHA safety standards. Patented.



When replacing air guns without a nozzle with this pipe diameter.

Order no: **501-L-H**

Blowing force	3.4 N	(12.0 oz)
Air consumption	17 Nm³/h	(10.0 scfm)
Sound level	78 dB(A)	
Air pattern	Laval	
Connection	1/4" BSP	1/4"-18 NPT
Nozzle	2120 L	
Material (nozzle)	Zinc	

For accessories, see page 116.
For more technical information, see page 152 or visit our website at www.silvent.com.

Alternatives

Order no: **501-L-S**

SILVENT 501-L-S: with a stainless steel Laval nozzle that will withstand considerably more mechanical wear than a conventional zinc nozzle. This safety gun is supplied with a short trigger, but an extended trigger is also available. Otherwise, the same performance as 501 L-H.

Order no: **501**

SILVENT 501: fitted with Silvent's previous generation of nozzle. The 2120 nozzle is made of zinc and it generates a universal and powerful air cone. This safety air gun is supplied with a short trigger, but an extended trigger is also available.

Silvent 520

SILVENT 520: Flexgun fitted with a bendable hose that can be adjusted to any position. The hose will not wander, even when blowing at high pressures. Flexgun is outstanding for blowing deep inside machines and motors or wherever it is difficult to reach with conventional air guns. Highly recommended for any blowing applications that is hard to reach or directly dangerous for the operator. Flexgun allows you to perform these operations without risking injury to eyes or hands from flying chips. The length of the hose is 200 mm (7.87") and SILVENT offers 5 additional standard lengths. Fully complies with OSHA safety regulations and EU Machine Directive noise limitations. Patented.

ø 4 mm (5/32")

Noise reduction	67%
Air/cost savings	47%

When replacing air guns without a nozzle with this pipe diameter.

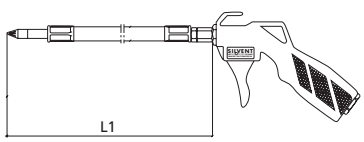
Order no: **520**

Blowing force	2.9 N	(10.2 oz)
Air consumption	16 Nm³/h	(9.4 scfm)
Sound level	79 dB(A)	
Air pattern	Concentrated	
Connection	1/4" BSP	1/4"-18 NPT
Nozzle	5001	
Material (nozzle)	Zinc	

2.9 N
10.2 oz
CONC.
ZINC

For accessories, see page 116.
For more technical information, see page 152 or visit our website at www.silvent.com.

Flexgun in 6 lengths



L1 mm	200	300	400	500	600	800
L1 inches	7.87	11.81	15.75	19.69	23.62	31.50
Order no:	**520**	**530**	**540**	**550**	**560**	**580**

Silvent 5920

ø 6 mm (1/4")	
Noise reduction	77%
Air/cost savings	55%

When replacing air guns without a nozzle with this pipe diameter.

SILVENT 5920: with a flat nozzle for applications where you want the air stream to strike a wider surface for quick and efficient blow-off. This low-noise nozzle is made of zinc and its outlet ports are protected against external forces by fins. Fully complies with OSHA safety regulations and EU Machine Directive noise limitations. Patented.

Order no: **5920**

Blowing force	5.5 N	(19.4 oz)
Air consumption	30 Nm³/h	(17.7 scfm)
Sound level	81 dB(A)	
Air pattern	Flat	
Connection	1/4" BSP	1/4"-18 NPT
Nozzle	920 A	
Material (nozzle)	Zinc	

5.5 N
19.4 oz
FLAT
ZINC

For accessories, see page 116.
For more technical information, see page 152 or visit our website at www.silvent.com.

Silvent 2055-A

SILVENT 2055-A is a safety gun fitted with an aerodynamic aluminum nozzle that offers a blowing force that is equivalent to 5 conventional air guns. Despite this exceptional blowing force, the sound level is comparable to that of an ordinary gun. The 2055-A is a powerful and handy safety air gun that is suitable whenever you need high blowing force to get the job done. Fully complies with OSHA safety regulations and EU Machine Directive noise limitations. Patented.

ø 8 mm (5/16")

Noise reduction	65 %
Air/cost savings	22 %

When replacing air guns without a nozzle with this pipe diameter.

Order no: **2055-A**

Blowing force	13.5 N	(47.7 oz)
Air consumption	92 Nm³/h	(54.1 scfm)
Sound level	93 dB(A)	
Air pattern	Wide	
Connection	3/8" BSP	3/8"-18 NPT
Nozzle	2005	
Material (nozzle)	Aluminum	

13.5 N
47.7 oz
WIDE
MISC.

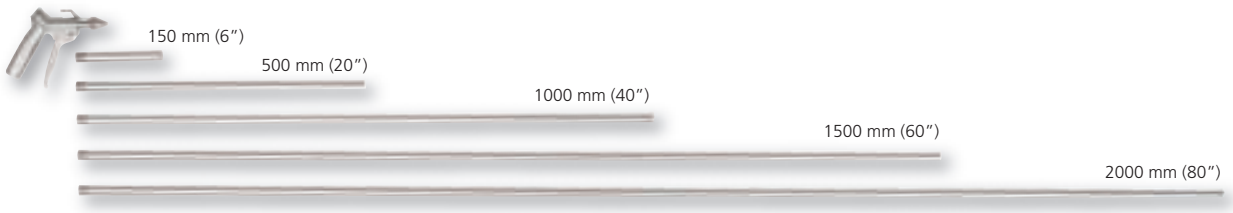
Operating pressure: 0.2 MPa (28.6 psi) - 1.0 MPa (143.0 psi)
For accessories, see page 116.
For more technical information, see page 152 or visit our website at www.silvent.com.

Alternatives

Order no: **2055-S**

SILVENT 2055-S: with a stainless steel nozzle. Recommended if your application requires extreme resistance to wear. The nozzle can withstand nearly any existing application. Designed with aerodynamic slots to use compressed air optimally and generate as little sound as possible. The blowing force is equivalent to the aluminum nozzle on our standard 2000 series gun. Blowing force 15.0 N (53.0 oz).

Extension pipes in 5 lengths



The guns of the 2000 series are available in six different versions - five with extension pipes of different lengths and one with the nozzle mounted directly onto the pistol grip. The extension pipes are made of aluminum. Indicate the length of the extension pipe you require last in the order number. Safety gun-extension pipe length: e.g. **2055-A-2000.**

100% aluminum safety air gun with high blowing force

Practical design
The 2000 grip is made of aluminum and is highly versatile, lightweight and user-friendly. It has a modern and practical design that can be fitted with various types of safety nozzles, extension pipes, safety accessories etc.

Perfect for demanding applications
Equipped with an extension pipe, these guns are ideal for applications that are hard-to-reach or hazardous for the operator. A properly dimensioned extension pipe protects the face from dangerous flying debris and spattering, and allows the user to maintain a more ergonomically correct working posture.

Softgrip handle
These safety guns can be equipped with softgrip handles that are easy on the hand and insulate against both heat and cold. See Accessories.

Silvent 2973

SILVENT 2973: an excellent gun for applications where you need to move away large particles or chips quickly and efficiently. The design of the nozzle makes the air cone dig in and sweep the work surface clean. Fitted with a powerful flat stainless steel nozzle that can cope with most applications. The blowing force is three times that of an ordinary air gun. Despite its power, the sound level and energy consumption are low in relation to the work the gun performs. Fully complies with OSHA safety regulations and EU Machine Directive noise limitations. Patented.

Order no: **2973**

Blowing force	9.5 N	(33.5 oz)
Air consumption	58 Nm³/h	(34.1 scfm)
Sound level	86 dB(A)	
Air pattern	Flat	
Connection	3/8" BSP	3/8"-18 NPT
Nozzle	973	
Material (nozzle)	Stainless steel	

9.5 N
33.5 oz
FLAT
STAIN-LESS

Operating pressure: 0.2 MPa (28.6 psi) - 1.0 MPa (143.0 psi.)
For accessories, see page 116.
For more technical information, see page 152 or visit our website at www.silvent.com.

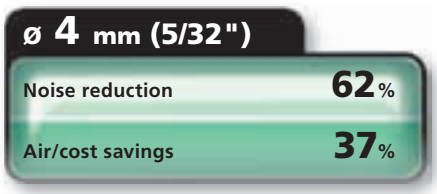
ø 7 mm (9/32")

Noise reduction	73 %
Air/cost savings	37 %

When replacing air guns without a nozzle with this pipe diameter.

Silvent 2050-S

SILVENT 2050-S: with a stainless steel nozzle. Extremely tough but, at the same time, handy aluminum gun. The perfect choice whenever durability is more important than a lot of technical finesse. The standard version of this gun is fitted with a durable stainless steel nozzle with a solid tip for the toughest conditions. Fully complies with OSHA safety regulations and EU Machine Directive noise limitations. Patented.



When replacing air guns without a nozzle with this pipe diameter.

Order no: **2050-S**

Blowing force	3.2 N	(11.3 oz)
Air consumption	19 Nm³/h	(11.2 scfm)
Sound level	81 dB(A)	
Air pattern	Concentrated	
Connection	3/8" BSP	3/8"-18 NPT
Nozzle	0071	
Material (nozzle)	Stainless steel	

3.2 N
11.3 oz
CONC.
STAIN-LESS

Operating pressure: 0.2 MPa (28.6 psi) - 1.0 MPa (143.0 psi)
Extension pipes, see page 97. For accessories, see page 116.
For more technical information, see page 152 or visit our website at www.silvent.com.

Alternatives

Order no: **2050-L**

SILVENT 2050-L: with a Laval nozzle. Provides more concentrated blowing force than 2050-S. Suitable for applications that demand focused power where exposure to mechanical wear is not as great as environments requiring 2050-S. Blowing force 4.4 N (15.5 oz).

Order no: **2220-L-S**

SILVENT 2220-L-S – 2280-L-S: fitted with a bendable hose that can be formed to the desired position and a new generation of stainless steel Laval nozzle. Perfect for applications that are hard to reach with conventional air guns. Available in lengths from 200 mm (7.87") to 800 mm (31.50").

New!

Silvent 755-L

SILVENT 755-L: with a stainless steel Laval nozzle. A core stream traveling at supersonic speed surrounded by a protective sheath of air moving parallel to the central jet makes optimal use of your compressed air. Around the Laval orifice there are divergent slots that generate a quiet, powerful and laminar air stream. The blowing force is approximately 5 times that of an ordinary air gun. Despite the high blowing force, both the noise level and air consumption are low. This safety air gun is frequently used in the glass industry, paper mills, foundries, steel mills etc. Fully complies with the noise limitations of the EU Machine Directive and OSHA safety standards. Patented.

ø 10 mm (3/8")	
Noise reduction	73 %
Air/cost savings	49 %

When replacing air guns without a nozzle with this pipe diameter.

Order no: **755-L**

Blowing force	16.0 N	(56.5 oz)
Air consumption	94 Nm³/h	(55.3 scfm)
Sound level	92.6 dB(A)	
Air pattern	Laval	
Connection	1/2" BSP	1/2"-14 NPT
Nozzle	705 L	
Material (nozzle)	Stainless steel	

16.0 N
56.5 oz
LAVAL
STAIN-LESS

For accessories, see page 116.
For more technical information, see page 152 or visit our website at www.silvent.com.

Alternatives

Order no: **755-S**

SILVENT 755-S: fitted with a stainless steel nozzle. The nozzle features aerodynamic slots to achieve optimal utilization of your compressed air while minimizing the sound level. The extra slot nozzle in the center increases air velocity and thereby the blowing force as well. Suitable for applications that require a greater concentration of force in the center of the object to be cleaned, dried etc. Blowing force 15.0 N (52.9 oz). Air consumption 95 Nm³/h (55.9 scfm). Sound level 92 dB(A). Otherwise, the same performance as 755 L.

Extension pipes in 4 lengths

The 750 series is available with four different extension pipe lengths. The extension pipes are made of aluminum. Indicate the length of the extension pipe you require last in the order number. Safety gun-extension pipe length: e.g. **755-L-1500**.

Robust safety air gun for tough environments

Durable construction
The 750 grip has been developed for jobs requiring high blowing power and working environments that demand a robust grip and valve construction. These guns can also be used when wearing work gloves and the grip is considerably more impact resistant than conventional guns. Commonly used in glass works, paper mills, foundries, steel mills, etc.

Up to 7 times greater blowing force
The safety guns of the 750 series have up to 7 times stronger blowing force than ordinary air guns on the market today. Despite the high blowing force, both the sound level and energy consumption are low.

Thumb regulation
Thumb regulation is standard on the pistol handle to provide the most ergonomic grip. If desired, the handle can also be fitted with an extended trigger for hand regulation. See Accessories.

New!

Silvent 757-L

SILVENT 757-L: with a stainless steel Laval nozzle. A core stream traveling at supersonic speed surrounded by a protective sheath of air moving parallel to the central jet makes optimal use of your compressed air. Around the Laval orifice there are divergent slots that generate a quiet, powerful and laminar air stream. The blowing force is approximately 7 times that of an ordinary air gun. Despite the high blowing force, both the noise level and air consumption are low. This safety air gun is frequently used in the glass industry, paper mills, foundries, steel mills etc. Fully complies with the noise limitations of the EU Machine Directive and OSHA safety standards. Patented.

Order no: **757-L**

Blowing force	20.0 N	(70.6 oz)
Air consumption	113 Nm³/h	(66.5 scfm)
Sound level	93.1 dB(A)	
Air pattern	Laval	
Connection	1/2" BSP	1/2"-14 NPT
Nozzle	707 L	
Material (nozzle)	Stainless steel	

20.0 N
70.6 oz
LAVAL
STAIN-LESS

For accessories, see page 116.
For more technical information, see page 152 or visit our website at www.silvent.com. Extension pipes, see page 107.

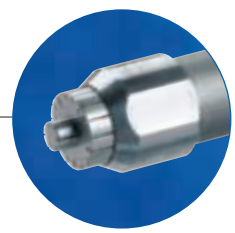
ø 12 mm (1/2")

Noise reduction	80 %
Air/cost savings	58 %

When replacing air guns without a nozzle with this pipe diameter.

Alternatives

Order no: **757-S**



SILVENT 757-S: with a specially made 100% stainless steel nozzle. Aerodynamic slots provide optimal utilization of compressed air while keeping the sound level to a minimum. The extra slot nozzle in the center increases air velocity and thereby the blowing force. This safety air gun is suitable for applications where greater force is required in the center of the object to be cleaned, dried etc. Blowing force = 17.0 N (60.0 oz). Sound level 93 dB(A). Otherwise the same performance as 757-L.

Silvent 753-S

SILVENT 753-S: with a specially made 100% stainless steel nozzle. Aerodynamic slots provide optimal utilization of compressed air while keeping the sound level to a minimum. The blowing force is approx. 3 times that of an ordinary air gun. Despite its powerful force, both the sound level and energy consumption are low. Commonly used in glass works, paper mills, foundries, steel mills, etc. Fully complies with OSHA safety regulations and EU Machine Directive noise limitations. Patented.

ø 7 mm (9/32")

Noise reduction	67%
Air/cost savings	38%

When replacing air guns without a nozzle with this pipe diameter.

Order no: **753-S**

Blowing force	9.6 N	(33.9 oz)
Air consumption	57 Nm³/h	(33.5 scfm)
Sound level	89 dB(A)	
Air pattern	Wide	
Connection	1/2" BSP	1/2"-14 NPT
Nozzle	703	
Material (nozzle)	Stainless steel	

9.6 N
33.9 oz
WIDE
STAIN-LESS

For accessories, see page 116.
For more technical information, see page 152 or visit our website at www.silvent.com. Extension pipes, see page 107.

Alternatives

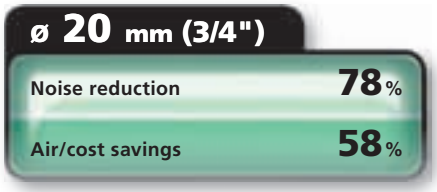
Order no: **751-S**

SILVENT 751-S: an alternative to 753-S if you don't really need so much blowing force. The blowing force is 3.2 N (11.3 oz) or approx. the same as an ordinary air gun.

New!

Silvent 4015-LF

SILVENT 4015-LF is a unique product that combines highly concentrated blowing force with an easily maneuverable valve construction and low sound level. The patented nozzle design with a Laval orifice in the center surrounded by a ring of slots generates a low-turbulence air stream, which means a low sound level with no sacrifice of blowing force. The effect is achieved by surrounding a core stream traveling at supersonic speed with a protective sheath of air moving parallel with the flow of the core jet. The core stream of the 4015-LF is generated by a Laval nozzle. Its design converts all the energy stored in the compressed air into kinetic energy without allowing the air stream to expand laterally after passing through the nozzle. The protective film of air generated by the slots prevents the core stream from being slowed down by the surrounding air, providing full effect, as well as counteracting turbulence and thereby lowering the sound level. The nozzle is made of stainless steel, making it suitable for use in practically any environment where extra high blowing force is required, e.g. the paper and manufacturing industries, steel mills etc. This air bazooka features adjustable blowing force that is easily regulated to any strength between 0 and 100 %. Fully complies with EU Machine Directive noise limitations and OSHA safety regulations. Patented.



When replacing air guns without a nozzle with this pipe diameter.

Order no: **4015-LF**

Blowing force	54.0 N	(190.6 oz)
Air consumption	312 Nm³/h	(183.6 scfm)
Sound level	104 dB(A)	
Air pattern	Laval	
Connection	3/4" BSP	3/4"-14 NPT
Nozzle	4115	
Material (nozzle)	Stainless steel	

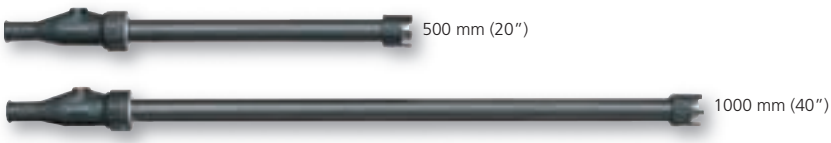
For accessories, see page 116.
For more technical information, see page 152 or visit our website at www.silvent.com.

Alternatives

Order no: **4015-L**

SILVENT 4015-L: without adjustable blowing force. Suitable for applications where 100% power is always required. Otherwise, the same performance as 4015-LF.

Extension pipes in 2 lengths



The 4000 series is available with two different extension pipes. Custom lengths are available upon request. Choosing the right length is important to attain maximum safety and the best working posture. Specify the length of the extension pipe you require last in the order number. Safety gun-extension pipe length: e.g. **4015-LF-1000**.

An extremely powerful blowing tool for long blowing distances

Safe and easily maneuverable
The valve is power-steered, making it easy to operate with just one hand. A light press of a thumb or finger is all that is needed.

User-friendly
The rubber insulation on the handle provides a firm grip while protecting the hand against both heat and cold.

"Dead man's grip"
The valve features a "dead man's grip", which means that it closes instantly if the handle is dropped.

Silvent 4020-LF

SILVENT 4020-LF: a unique product with a Laval nozzle that combines highly concentrated blowing force with an easily maneuverable valve construction and low sound level. Its blowing force of 100 N (353 oz) is twice that of the 4015-LF. The nozzle is made of stainless steel, making it suitable for use in practically any environment where extra high blowing force is required, e.g. the paper and manufacturing industries, steel mills etc. Features adjustable blowing force that is easily adjusted to any strength between 0 and 100 %. Fully complies with EU Machine Directive noise limitations and OSHA safety regulations. Patented.

Order no: **4020-LF**

Blowing force	100.0 N	(353.0 oz)
Air consumption	532 Nm³/h	(313.1 scfm)
Sound level	118 dB(A)	
Air pattern	Laval	
Connection	3/4" BSP	3/4"-14 NPT
Nozzle	4120	
Material (nozzle)	Stainless steel	

100.0 N
353.0 oz
LAVAL
STAIN-LESS

For accessories, see page 116.
For more technical information, see page 152 or visit our website at www.silvent.com. Extension pipes, see page 111.

ø 25 mm (1")

Noise reduction	60 %
Air/cost savings	54 %

When replacing air guns without a nozzle with this pipe diameter.

Alternatives

Order no: **4020-L**

SILVENT 4020-L: without adjustable blowing force. Suitable for applications where 100% power is always required. Otherwise, the same performance as 4020-LF.

Silvent 4010-S

SILVENT 4010-S: combines highly concentrated blowing force with an easily maneuverable valve construction and low sound level. Designed with aerodynamic slots to attain optimal utilization of your compressed air while keeping the sound level to an absolute minimum. The valve is power-steered, making it easy to operate with just one hand. Its "dead man's grip" closes instantly if the handle is dropped. Suitable for applications where 100% force is always required. Fully complies with EU Machine Directive noise limitations and OSHA safety regulations. Patented.

ø 14 mm (9/16")

Noise reduction	75 %
Air/cost savings	41 %

When replacing air guns without a nozzle with this pipe diameter.

Order no: **4010-S**

Blowing force	30.0 N	(105.9 oz)
Air consumption	216 Nm³/h	(127.1 scfm)
Sound level	99 dB(A)	
Air pattern	Wide	
Connection	3/4" BSP	3/4"-14 NPT
Nozzle	4110	
Material (nozzle)	Stainless steel	

30.0 N
105.9 oz
WIDE
STAIN-LESS

For accessories, see page 116.
For more technical information, see page 152 or visit our website at www.silvent.com. Extension pipes, see page 111.

Alternatives

Order no: **4010-SF**

SILVENT 4010-SF: with variable regulation of the blowing force. Otherwise, the same performance as 4010-S.

Silvent BG-007

SILVENT BG-007: hole-blower that replaces conventional air guns when cleaning out blind holes. Clean-out of blind holes generates extremely high and dangerous noise levels. BG-007 eliminates hazardous noise and collects flying chips and debris directly in a sealed container. This closed system ensures a cleaner, quieter, and safer working environment. Fitted with a specially designed rubber collar that completely seals off the hole during clean-out. The flexibility of the collar allows adjustment to the ergonomically correct working angle. The collection vessel is easy to empty and can be rotated 360°. Provides both top and bottom air supply connection.

Order no: **BG-007**

Blowing force	1.0 N	(3.5 oz)
Air consumption	4.4 Nm³/h	(2.6 scfm)
Sound level	77 dB(A)	
Air pattern	Misc.	
Connection	1/4" BSP	1/4"-18 NPT
Material (nozzle)	Stainless steel	

1.0 N
3.5 oz
MISC.
STAIN-LESS

For accessories, see page 116.
For more technical information, see page 152 or visit our website at www.silvent.com.

ø 4 mm (5/32")

Noise reduction	71 %
Air/cost savings	87 %

When replacing air guns without a nozzle with this pipe diameter.

Alternatives

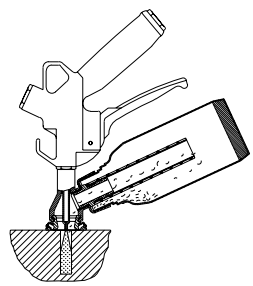
Order no: **BG-500**

SILVENT BG-500: with a 500 grip. When using the 500 grip, the collection vessel can not be positioned parallel to the grip while blowing. Otherwise, same performance as BG-007.

Dimensioning guidelines

CHIPS
BG-007 is designed to collect short chips. It is not suitable for long coil chips.

HOLES
Min. hole diameter - Ø6 mm (0.24")
Max. hole diameter - Ø24 mm (0.95")
Max. hole depth - 4 x Ø



Silvent 100

SILVENT 100: a safety gun with no moving parts. The blowing force is regulated by varying thumb pressure against the side of the nozzle. The valve mechanism is encapsulated and completely sealed, protecting the gun against intrusion of dust. This design makes the gun perfect for use in dirty and dusty environments, e.g. blasting cabinets. Suitable for installation hanging above the operator. Fully complies with OSHA safety regulations and EU Machine Directive noise limitations.

ø 4 mm (5/32")

Noise reduction	65%
Air/cost savings	37%

When replacing air guns without a nozzle with this pipe diameter.

Order no: **100**

Blowing force	3.5 N	(12.4 oz)
Air consumption	19 Nm³/h	(11.2 scfm)
Sound level	80 dB(A)	
Air pattern	Wide	
Connection	1/4" BSP	1/4"-18 NPT
Nozzle	2120	
Material (nozzle)	Aluminum	

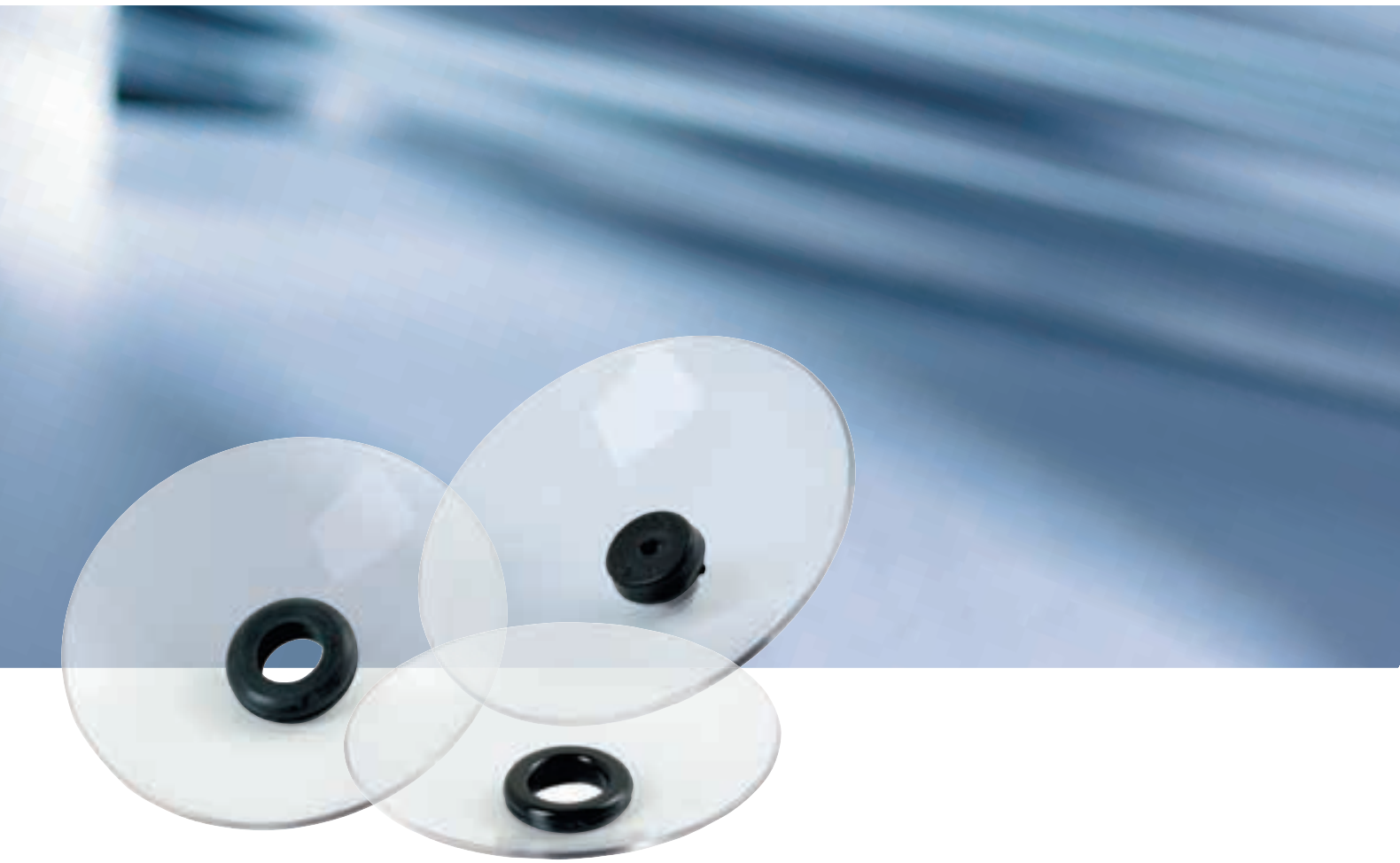
3.5 N
12.4 oz
WIDE
MISC.

For accessories, see page 116.
For more technical information, see page 152 or visit our website at www.silvent.com.

www.silvent.com

On our website you will find complete product information and our "online selection guidelines", where you can easily compare our different safety air guns.

Accessories safety air guns



Accessories

Silvent offers the world's widest range of safety air guns. The products are divided into four categories:

1 Safety air guns 0 – 6 N (0 - 1.3 lbs)
2 Safety air guns 6 – 100 N (1.3 - 22.5 lbs)
3 Special safety guns
4 Safety air gun accessories

The category "Safety air gun accessories" includes products that improve safety, e.g. safety shields and air shields, and products that improve the working environment, e.g. softgrip handles and extended triggers. There are also spare parts such as replacement nozzles.

Plastic safety shields

Safety shields effectively protect the eyes and body from spattering and flying chips when, for example, cleaning out blind holes. Material: Polycarbonate. Meets OSHA requirements for safe blowing.

Order no: **590**

Dimensions	Ø100	(Ø3.94")
Fits	007, 500, 2050	

Order no: **591**

Dimensions	Ø100	(Ø3.94")
Fits	008, 501	

Order no: **592**

Dimensions	Ø100	(Ø3.94")
Fits	2055-A	

Air shields

SILVENT AS1 and AS3 are air shields that prevents spattering and flying chips from striking the body and eyes. Especially suitable when space is limited. Material: Aluminum. Supplied pre-assembled at the factory. Specify with an additional designation at the end of the order no., e.g. 007-L-AS1. Meets OSHA requirements for safe blowing.

Order no: **AS1**

Dimensions	Ø12	(Ø0.47")
Fits	007, 500, 2050	

Order no: **AS3**

Dimensions	Ø24	(Ø0.95")
Fits	2055	

Softgrip handle 2000

SILVENT SG-2000 is a synthetic rubber softgrip handle that can be ordered as an accessory for all the air guns in our 2000 series. The material insulates against both heat and cold and is easy on the hand. Material: TPE.

Order no: **SG-2000**

Nozzle guard 4000

SILVENT NG-4000 is a nozzle guard for the Silvent 4000 series. It effectively protects the nozzle from impact and other damage. Material: EPDM.

Order no: **NG-4000**

Hand regulators

Silvent safety air guns in the 100, 500 and 750 series can be equipped with extended triggers for hand regulation. Hand regulator 103 is supplied separately. Hand regulators 595 and 790 are mounted at the factory and must therefore be specified when ordering.

Order no: **790**

Fits	750-series

Order no: **595**

Fits	500-series

Order no: **103**

Fits	100-series

Replacement nozzles

Complete nozzle assemblies including air pipes or adaptors for mounting directly in the thread on the pistol grip. For nozzle tips only, see the respective nozzle types.

Order no: **MJ42**

Connection	M8x1	
Dimensions	Ø8x100	(Ø0.31x4")
Material (nozzle)	Stainless steel	
Fits	007-MJ4, 500-MJ4	

Order no: **MJ52**

Connection	M8x1	
Dimensions	Ø8x100	(Ø0.31x4")
Material (nozzle)	Stainless steel	
Fits	007-MJ5, 500-MJ5	

Order no: **MJ62**

Connection	M8x1	
Dimensions	Ø8x100	(Ø0.31x4")
Material (nozzle)	Stainless steel	
Fits	007-MJ6, 500-MJ6	

Order no: **5002**

Connection	M8x1	
Dimensions	Ø8x100	(Ø0.31x4")
Material (nozzle)	Zinc	
Fits	007-Z, 500-Z	

Order no: **0072**

Connection	M8x1	
Dimensions	Ø8x100	(Ø0.31x4")
Material (nozzle)	Stainless steel	
Fits	007-S, 500-S, 2050-S	

Order no: **1002**

Connection	M8x1	
Dimensions	Ø8x100	(Ø0.31x4")
Material (nozzle)	Stainless steel	
Fits	007-L, 500-L, 2050-L	

Order no: **8002**

Connection	M8x1	
Dimensions	Ø8x100	(Ø0.31x4")
Material (nozzle)	PEEK	
Fits	007-P	

Order no: **2121 L**

Connection	M8x1	
Dimensions	Ø18x37	(Ø0.71x1.46")
Material (nozzle)	Zinc	
Fits	008-L, 501-L, 501-L-H	

Order no: **2121**

Connection	M8x1	
Dimensions	Ø18x37	(Ø0.71x1.46")
Material (nozzle)	Zinc	
Fits	008, 501	

Replacement nozzle 4000

Air nozzle and nozzle guard for the Silvent 4000 series.

Order no: **4110**

Connection	M36x1.5
Material (nozzle)	Stainless steel
Fits	4010-S, 4010-SF

Order no: **4115**

Connection	M36x1.5
Material (nozzle)	Stainless steel
Fits	4015-L, 4015-LF

Order no: **4120**

Connection	M36x1.5
Material (nozzle)	Stainless steel
Fits	4020-L, 4020-LF

Spiral hoses

Self coiling spiral hoses with swivel connectors in three different materials for different demands and environments. These hoses cause very little pressure drop, even in the longest lengths. Max. operating temp. = 85°C (185°F).
SN - Low-cost polyamide spiral hose.
SP - Standard polyurethane spiral hose.
SA - Top quality reinforced polyurethane spiral hose.

Order no: **SN-08-030**

Connection	1/4" BSP	1/4"-18 NPT
Dimensions	Ø75x3.5m	(Ø2.95"x11.5ft)
Material	PA11	

Order no: **SN-08-050**

Connection	1/4" BSP	1/4"-18 NPT
Dimensions	Ø75x5.0m	(Ø2.95"x16.4ft)
Material	PA11	

Order no: **SN-16-050**

Connection	1/4" BSP	1/4"-18 NPT
Dimensions	Ø220x5.0m	(Ø8.66"x16.4ft)
Material	PA11	

Order no: **SP-10-030**

Connection	1/4" BSP	1/4"-18 NPT
Dimensions	Ø60x2.4m	(Ø2.36"x8ft)
Material	Polyurethane	

Order no: **SP-10-060**

Connection	1/4" BSP	1/4"-18 NPT
Dimensions	Ø60x4.8m	(Ø2.36"x16ft)
Material	Polyurethane	

Order no: **SA-10-030**

Connection	1/4" BSP	1/4"-18 NPT
Dimensions	Ø42x2.4m	(Ø1.65"x8ft)
Material	Reinforced polyurethane	

Order no: **SA-10-060**

Connection	1/4" BSP	1/4"-18 NPT
Dimensions	Ø42x4.8m	(Ø1.65"x16ft)
Material	Reinforced polyurethane	

Order no: **SP-15-030**

Connection	3/8" BSP	3/8"-18 NPT
Dimensions	Ø110x2.4m	(Ø4.33"x8ft)
Material	Polyurethane	

Order no: **SP-15-060**

Connection	3/8" BSP	3/8"-18 NPT
Dimensions	Ø110x4.8m	(Ø4.33"x16ft)
Material	Polyurethane	

OSHA gauge

SILVENT OSH is a OSHA gauge i.e. a simple measuring device for checking safety. According to OSHA regulations, outlet pressure of a nozzle or open pipe must not exceed 210 kPa (30 psi).

Order no: **OSH**

Safety case

SILVENT SAF is a safety case that contains an OSHA gauge and a decibel meter for monitoring both safety and the noise level.

Order no: **SAF**

Applications

SILVENT 007-MJ4
In certain applications too much blowing force can damage the object you are trying to clean. In such cases SILVENT 007-MJ4 is the right choice. Here one is used to blow clean a camera housing prior to final assembly.

SILVENT 007-L
All machines need to be blown clean of dust etc. A SILVENT 007-L is used here for general purpose cleaning and it is fitted with a safety shield to protect the operator.

SILVENT 530
Some applications require blowing deep inside a machine. A SILVENT 530 fitted with a bendable FlexBlow hose improves the working environment for the operator.

www.silvent.com

In the application database on our website you will find more examples and further information on how Silvent's products are used.

SILVENT 2973
SILVENT 2973 is often used in applications where a large surface must be covered with high blowing force. Here a machine is rapidly blown clean of dirt and debris.

SILVENT 2055-A-500
Here a chewing gum machine is being cleaned with a SILVENT 2055-A-500. This safety air gun is fitted with an extension pipe and has five times the blowing force of a conventional air gun.

SILVENT 4015-LF-1000
Paper mills need lots of blowing force to quickly clear machines in the event of production stoppage. The bazooka is often used in paper mills and other types of heavy industry.

Safety silencers

3

Patented safety silencers with warning indicators

Many researchers and experts consider noise to be one of the biggest environmental problems we face today. Alarming reports show that an increasing number of people are being injured by noise. This has resulted in stricter laws and regulations in recent years. Unfortunately however, many are still unaware of the risks exposure to noise entails.

People often think that noise is a natural part of the manufacturing industry and that it is something you get used to. But in truth you don't get used to noise – noise injures, and the damage is permanent.

Using silencers

The noise generated by pneumatic valves is far more dangerous than is generally believed. In fact, 70-80% of all hearing impairment within the manufacturing industry is caused by compressed air noise. However, to a great extent this noise is totally unnecessary; for with the right technology, compressed air noise can, in practice, be eliminated entirely. Fitting the exhaust ports of pneumatic valves with silencers is a simple measure to take, and the advantages are many and well-documented:

- **Reduced risk of hearing problems such as tinnitus, hearing loss, echoing and hypersensitivity to sound**
- **Better working environment**
- **Improved performance**

Clogging

A well-known problem with conventional silencers is that, sooner or later, the filter - the diffuser - becomes clogged with impurities and causes:

- **Costly machine stoppage**
- **Operational disturbance that is difficult to pinpoint**
- **Risk of explosion**

This has resulted in many production technicians removing silencers to avoid problems of this sort. Quite simply, the advantages of noise abatement have had to take a back seat to the practical problem of clogging.

Warning indicators offer a solution

Years of research have enabled Silvent to develop a new, unique and patented series of safety silencers with built-in warning indicators. Basically, the design allows the silencer itself to determine and set the optimal combination of flow capacity and noise reduction through the use of a dynamic inner diffuser. A reliable warning system also indicates that the silencer is about to clog. Using safety silencers of this type means that you:

- **Minimize costly machine stoppage**
- **Receive a warning before problems arise**
- **Reduce the risk of industrial accidents**
- **Allow prioritization of noise control measures**

Overview of our products

Safety silencers

Silvent offers a selection of silencers that increases safety in all types of compressed air installations. The range is primarily designed for stationary installations of pneumatic cylinders and valves. The risk of operational disturbance as a result of clogged filters is a large and costly problem with conventional silencers. Choosing Silvent safety silencers can eliminate such problems entirely.

There are standard silencers with connections from 1/8" up to 2".

All the safety silencers in the range can be connected to individual valves. The larger models can also serve as central silencers and be connected to a large number of valves. Installations with central silencers normally require less maintenance, and therefore mean savings of both time and money.

Silencers for continuous flow applications and silencers that separate oil from the compressed air system are also included in the range.

Silvent's application engineers will gladly offer tips and advice on which silencers are most suitable for different purposes.

Be sure to read about the importance of correct dimensioning when choosing a safety silencer on pages 128-129.

1/8"- 1/2"

Silvent's new series of safety silencers offers extremely effective silencing, compact size and a unique and patented warning system.

SIS-02 New!
See page 130

SIS-03 New!
See page 130

SIS-04 New!
See page 131

SIS-05 New!
See page 131

1"- 2"

Silvent's larger safety silencers also feature warning indicators and are designed for systems with large flow volumes that require minimal flow restriction and low backpressure.

SIS-10
See page 132

New!

SIS-20
See page 133

New!

Special products

Silvent's hose silencers, central silencers and expansion silencers are often used in tailor-made solutions for special applications.

SDR 18
See page 134

SDR 14
See page 134

CD
See page 135

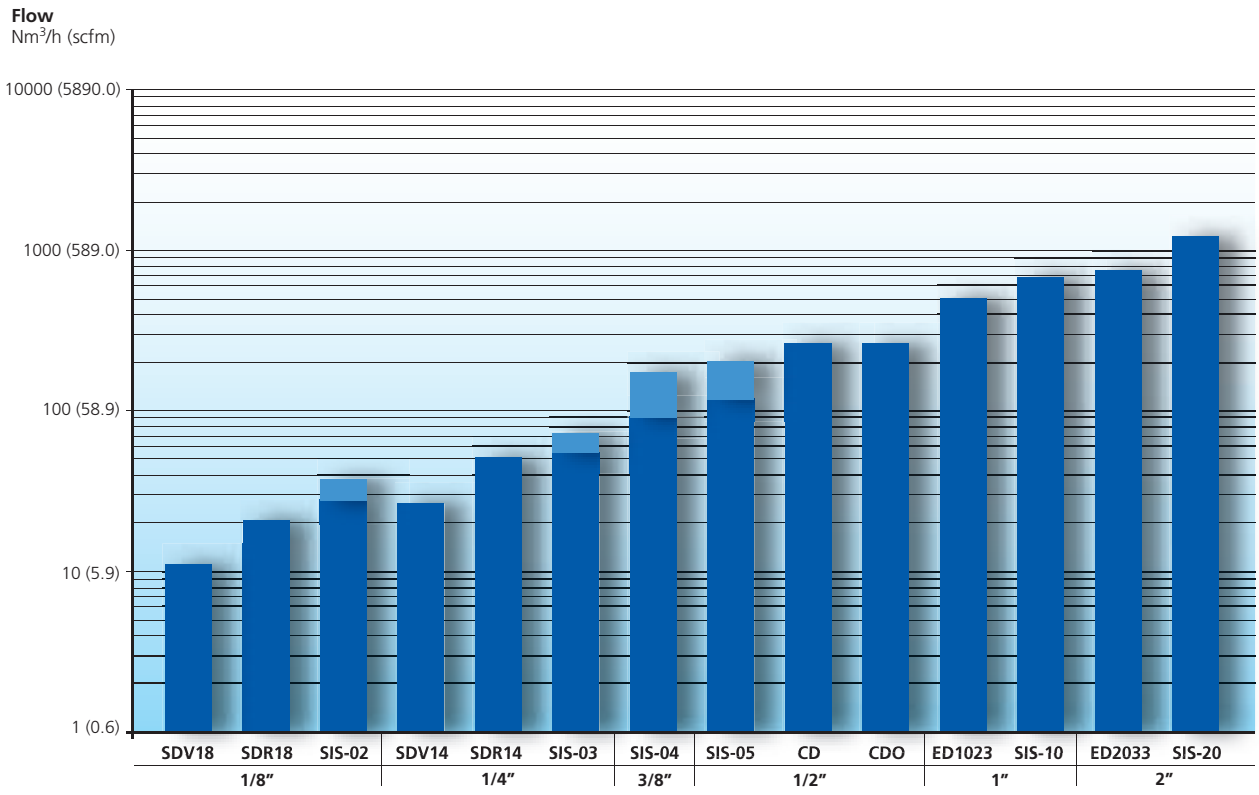
ED 1023
See page 135

ED 2033
See page 135

Dimensioning guidelines

When dimensioning compressed air systems, the exhaust time is strongly affected by the volume and pressure of the contained air. Therefore, it is important to consider the silencer's flow capacity carefully to avoid unnecessary backpressure in the system. If an application is especially sensitive to backpressure, select a silencer with extra large flow capacity. The diagram below shows the recommended maximum flow through the various silencers in the Silvent range.

Flow through a regulating valve at an operating pressure of 500 kPa (71.5 psi)



*The upper value is the max. recommended flow when the indicator is visible.

Explanation of symbols

Flow

The flow the silencer will allow to pass at an operating pressure of 500 kPa (71.5 psi). Applies before a valve with intermittent operation.

Warning indicator

The symbol is used for all the valves that give an indication of clogging.

Connection thread

Shows the size of the silencer's connection. All our silencers are available with both BSP and NPT threads.

Noise reduction

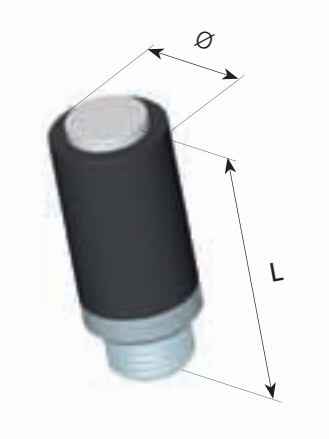
Specifies how many decibels the silencer lowers the sound level in comparison with an unsilenced valve at an operating pressure of 500 kPa (71.5 psi).

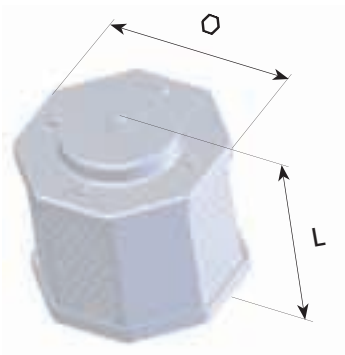
A sound level reduction of 8 to 10 dB(A) is experienced by the human ear as if the sound level has been cut in half. Read more about sound and noise on fact pages 140-148 or visit our website at www.silvent.com.

Dimensions

All values are expressed in mm unless otherwise stipulated.

Complete information on all our silencers is available at www.silvent.com.





Silvent 1/8" - 1/2"

Silvent's new series of safety silencers offers extremely effective noise reduction, compact size and a unique and patented warning system. The silencer's warning indicator gives early warning that backpressure in the system is too high. Maintenance personnel can both see and hear (by an elevated sound level) that it is time to replace the silencer before costly and unnecessary operation disturbance occurs. Since the warning indicator extends when it is pressed out, it is also possible to use electronic monitoring to stop the machine for silencer replacement. These safety silencers provide noise reduction of 30-35 dB(A). Silvent offers four different dimensions. Patented.

Order no: **SIS-02**

Air flow	27 Nm³/h	(15.9 scfm)
Sound level	65.5 dB(A)	
Connection	1/8" BSP	1/8"-27 NPT
Dimensions	Ø14x36	(Ø0.55x1.42")
Material	PP	

27 Nm³/h
15.9 scfm

i

1/8"

Noise reduction 32dB(A)

* Compared with an unsilenced valve.

For more technical information, see page 152 or visit our website at www.silvent.com.

Order no: **SIS-03**

Air flow	53 Nm³/h	(31.2 scfm)
Sound level	66.5 dB(A)	
Connection	1/4" BSP	1/4"-18 NPT
Dimensions	Ø18x43	(Ø0.71x1.69")
Material	PP	

53 Nm³/h
31.2 scfm

i

1/4"

Noise reduction 33dB(A)

* Compared with an unsilenced valve.

For more technical information, see page 152 or visit our website at www.silvent.com.

Order no: **SIS-04**

Air flow	89 Nm³/h	(52.4 scfm)
Sound level	73.2 dB(A)	
Connection	3/8" BSP	3/8"-18 NPT
Dimensions	Ø25x56	(Ø0.98x2.20")
Material	PP	

89 Nm³/h
52.4 scfm

i

3/8"

Noise reduction **30**dB(A)

* Compared with an unsilenced valve.

For more technical information, see page 152 or visit our website at www.silvent.com.

Order no: **SIS-05**

Air flow	115 Nm³/h	(67.7 scfm)
Sound level	76.5 dB(A)	
Connection	1/2" BSP	1/2"-14 NPT
Dimensions	Ø30x73	(Ø1.18x2.87")
Material	PP	

115 Nm³/h
67.7 scfm

i

1/2"

Noise reduction **33**dB(A)

* Compared with an unsilenced valve.

For more technical information, see page 152 or visit our website at www.silvent.com.

For a flow diagram for safety silencer, see pages 162-163.

Working principle of the warning indicator

The design is based on a two-chamber system with an inner and an outer silencing chamber. The inner diffuser serves as a warning indicator that is pressed out when backpressure is too high. In certain systems, the warning indicator may be partially extended after initial use. This is normal - the silencer then provides optimal flow and correct backpressure. It is time to replace the silencer when the inner diffuser extends far enough to show the red marking on the warning indicator.

Silvent 1" - 2"

Silvent's safety silencers are designed to handle sensitive systems with large flows that require minimal flow restriction. The silencers are compact in size, provide extremely effective noise suppression and feature a built-in warning indicator that immediately shows any increase of backpressure in the system. The unique filter material is divided into numerous "noise traps" or cells and gives extremely good muffling with minimal flow restriction. These safety silencers are also suitable for continuous flow applications and use as a central silencer for several pneumatic valves. They have a built-in oil trap where oil can be separated and drained. The silencers are available in two sizes, 1 inch and 2 inch, and reduce noise levels 40-45 dB(A). They are supplied with a mounting bracket.

Order no: **SIS-10**

Air flow	670 Nm³/h	(394.3 scfm)
Sound level	81.6 dB(A)	
Connection	1" BSP	1"-11 1/2 NPT
Dimensions	Ø140 x 130	(Ø5.51 x 5.12")
Material	Steel, PP	

670 Nm³/h
394.3 scfm

i

1"

For more technical information, see page 152 or visit our website at www.silvent.com.

Noise reduction **42**dB(A)

* *Compared with an unsilenced valve.*

Noise reduction **41**dB(A)

* Compared with an unsilenced valve.

Order no: **SIS-20**

Air flow	1210 Nm³/h	(712.2 scfm)
Sound level	94.3 dB(A)	
Connection	2" BSP	2"-11 1/2 NPT
Dimensions	Ø140 x 230	(Ø5.51 x 9.06")
Material	Steel, PP	

1210 Nm³/h
712.2 scfm

i

2"

For more technical information, see page 152 or visit our website at www.silvent.com.

For a flow diagram for safety silencer, see pages 162-163.

Working principle of silencers with warning indicators

The unique ability these silencers possess, combining high noise suppression with low pressure drop, is accomplished by silencing in three steps.

1. The inherent turbulence of the air entering the silencer is reduced by a fine-meshed grid.

2. The air then continues into a diffusion chamber. The diffuser raises the frequency of the sound and distributes the air stream evenly across the octagonal outer filter. A higher frequency accelerates silencing.

3. The final silencing step takes place in the cell structure of the octagonal filter. Here the velocity of the air is successively reduced, thereby radically lowering the sound level without creating excessive pressure drop.

Oil drainage
Another advantage of the octagonal filter's cell structure is that possible oil mist in the compressed air system is separated. When air velocity decreases, droplets form. These can then be drained off through the bottom of the silencer.

Warning indicator
The silencer's warning indicator is set for installation after a regulating valve. When the pressure differential across the silencing filter becomes too great, the red warning indicator pops out, signaling that it is time to change filters. If the silencer is used in a continuous flow application without a regulating valve, the red warning indicator may be visible after initial use. The service interval in continuous flow applications must therefore be determined by monitoring the system.

Silvent Special

Hose silencer SDR features a unique design that provides effective noise suppression and will not allow the silencer to clog. Impurities can pass unhindered between the wall of the hose and the built-in absorber, eliminating the risk of explosion and disrupted service.

Central silencer CD is intended for silencing exhaust air from large individual valves or as a shared silencer for several smaller valves. The silencer is dimensioned to handle the flow from a 1/2 inch valve or a number of 1/4 inch valves. This silencer is also available with a built-in oil trap for highly effective oil separation.

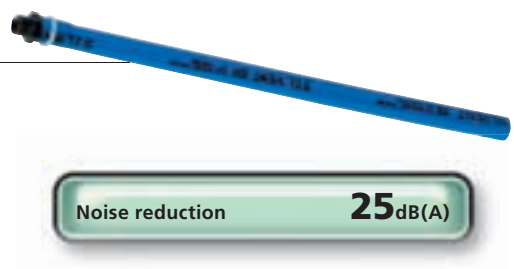
Expansion silencer ED is designed to handle the flow from cylinders with large stroke volumes or in compressed air systems with short cycles that require rapid pressure reduction. These silencers are dimensioned for valves of up to 2 inches and short cycles.

All the safety silencers on this page are intended for a maximum exhaust air pressure of 200 kPa (30 psi).

Order no: **SDR18**

Air flow	20.4 Nm³/h	(12.0 scfm)
Sound level	72.5 dB(A)	
Connection	1/8" BSP	
Dimensions	Ø13x266	(Ø0.51x10.47")
Material	PVC, PP	

Also available with 90° angle connection. Order no.: SDV18.
For more technical information, see page 152 or visit our website at www.silvent.com.

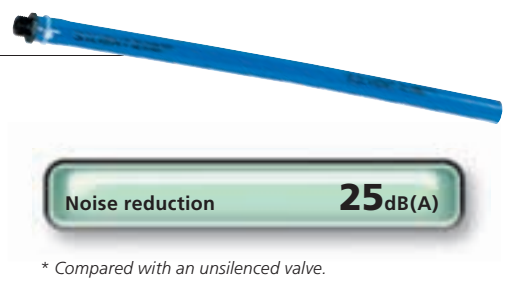


* Compared with an unsilenced valve.

Order no: **SDR14**

Air flow	50.9 Nm³/h	(30.0 scfm)
Sound level	75 dB(A)	
Connection	1/4" BSP	
Dimensions	Ø17x338	(Ø0.67x13.31")
Material	PVC, PP	

Also available with 90° angle connection. Order no.: SDV14 .
For more technical information, see page 152 or visit our website at www.silvent.com.



* Compared with an unsilenced valve.

Noise reduction **34**dB(A)

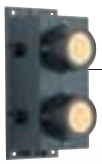
* Compared with an unsilenced valve.

Order no: **CD**

Air flow	261 Nm³/h	(153.6 scfm)
Sound level	76 dB(A)	
Connection	Ø20/16	
Dimensions	Ø150x110	(Ø5.91x4.33")
Material	PP	

261 Nm³/h
153.6 scfm
Ø20/16

Also available with a built-in oil trap for highly effective oil separation. Order no. : CDO
For more technical information, see page 152 or visit our website at www.silvent.com.



Noise reduction **29**dB(A)

* Compared with an unsilenced valve.

Order no: **ED 1023**

Air flow	490 Nm³/h	(288.4 scfm)
Sound level	92.4 dB(A)	
Connection	1" BSP	1"-11 1/2 NPT
Dimensions	175x205x410	(6.89x8.07x16.14")
Material	Steel, PP	

490 Nm³/h
288.4 scfm
1"

For more technical information, see page 152 or visit our website at www.silvent.com.

Noise reduction **31**dB(A)

* Compared with an unsilenced valve.

Order no: **ED 2033**

Air flow	740 Nm³/h	(435.5 scfm)
Sound level	106.5 dB(A)	
Connection	2" BSP	2"-11 1/2 NPT
Dimensions	175x245x610	(6.89x9.65x24.00")
Material	Steel, PP	

740 Nm³/h
435.5 scfm
2"

For more technical information, see page 152 or visit our website at www.silvent.com.

Accessories

Order no: **UK**

Collection vessel for oil. For use together with CDO.

Order no: **ARG 12**

Connection pipe with 1/2" female thread. For CD and CDO.

Order no: **FA**

Outer filter. For CD and ED.

Order no: **FC**

Diffuser filter. For CD and ED.

Applications

Silvent SIS-02
Silvent SIS-02s are used here to muffle exhaust air noise in a butt welding machine and warn operators if backpressure in the system should rise.

Silvent SIS-03
Here Silvent SIS-03s silencers feed equipment for granules in the plastics industry.

Silvent SIS-04
A heat stamping machine has been fitted with a Silvent SIS-04, whose low backpressure improved the quality of marking.

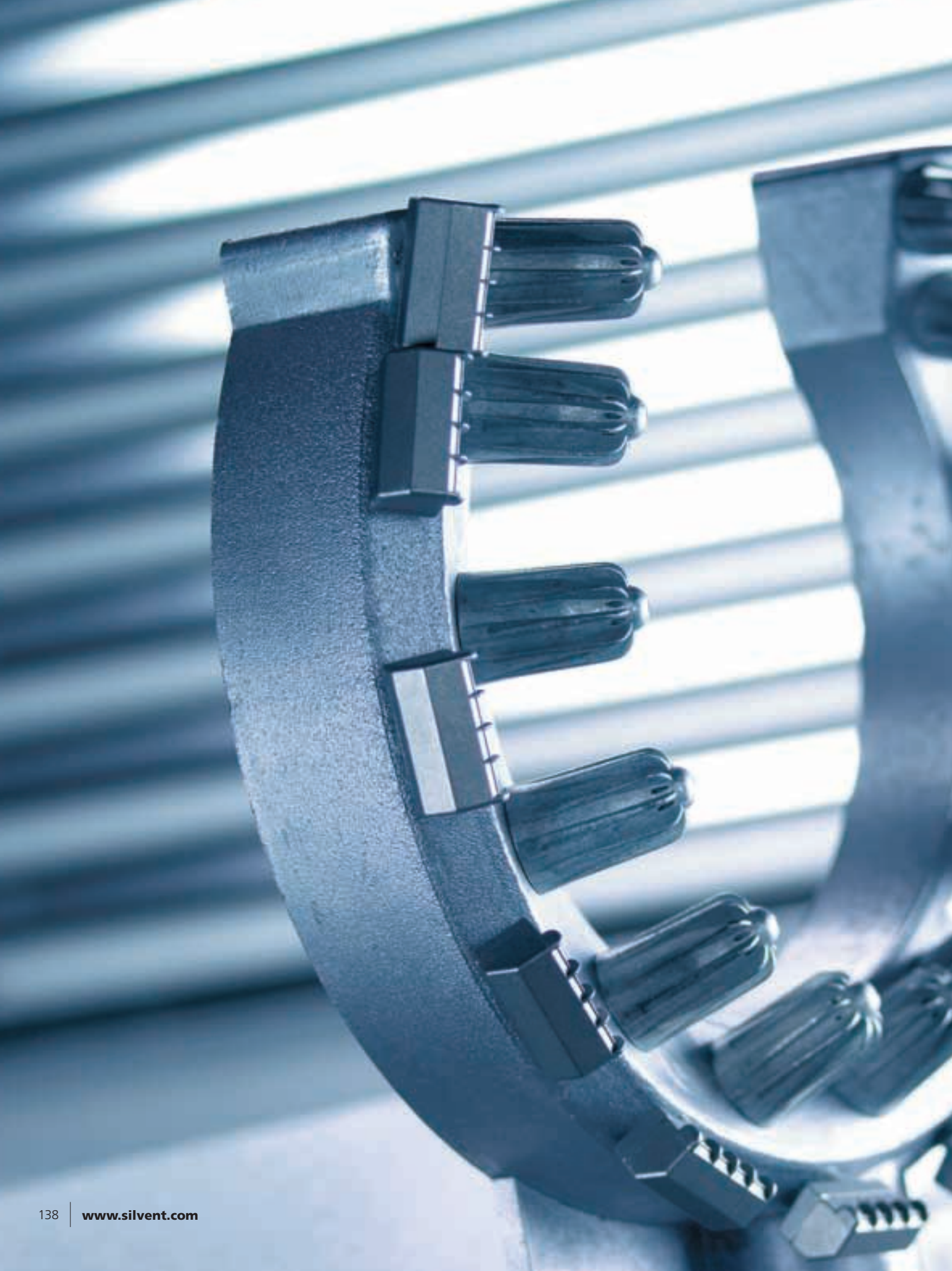
www.silvent.com

You will find more examples and further information on how Silvent's products are used in the application database on our website.

Silvent SIS-10
Here, a Silvent SIS-10 dampens the sound at a test bench in a laboratory. A number of regulating valves are connected to the same safety silencer to attain the lowest possible sound level in an otherwise quiet environment.

Silvent CD
A Silvent CD installed on an automatic edge cutter for the sawmill industry to get rid of noise and reduce maintenance work due to clogged silencers.

Silvent ED 2033
By connecting two Silvent ED 2033s in series, problems with both noise and excessive back-pressure have been eliminated at this powder press.



Facts and technical specifications

The effect of noise on humans

Man has five senses: sight, hearing, taste, smell, and touch. The most essential of the senses is, without question, the sense of sight. It is crucial to our managing our education and work.

After sight, the sense that is generally considered to be the second most important is the sense of hearing. It is primarily through speech and hearing that we communicate with one another. Hearing is also our most sensitive and important warning mechanism. It receives impressions from every direction and is open for impulses when a person is awake as well as asleep.

Modern society has created an environment in which the ear is the sensory organ most frequently and most easily damaged. The human ear is not designed to endure or exclude much of the sound and noise that exist in the industrial society of today. Therefore, the ear can be seriously injured by loud and repetitive noise.

Loss of hearing can result in a person being partially or completely isolated from his surroundings. Such a loss can never be restored.

In the past, a noisy machine was a symbol of strength, power, and wealth. People accustomed themselves to the noise, i.e., they accepted it as the noisy machine meant income and existence. The fact that those exposed to the noise became hard of hearing or practically deaf was considered a natural part of the occupation. Today, we no longer need to accept this rationalization. There are possibilities to reduce or eliminate noise, both in the workplace and in our private lives. It is simply a matter of making people aware of the dangers and the possibilities so that we can take action against noise.

Many experts and researchers view noise pollution as one of the most major of today's environmental problems.

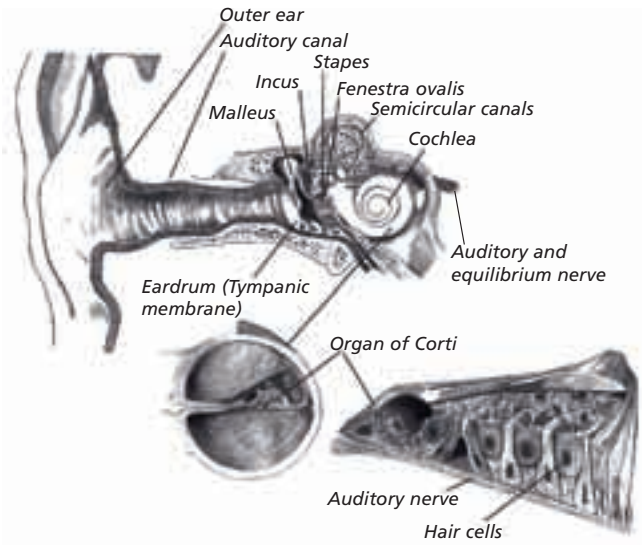
70-80% of all hearing loss within the manufacturing industry today is associated with compressed air noise.

The structure of the ear

When sound waves reach the ear, they are transformed into signals to the brain in the three different parts of the ear:

- The outer ear and the auditory canal
- The middle ear
- The inner ear

The outer ear and auditory canal are designed to amplify incoming sound waves. These then affect the eardrum, setting it into motion. Vibrations in the eardrum are transmitted to the hearing ossicles: the hammer, the anvil, and the stirrup, or malleus, incus and stapes. These tiny bones are in turn connected to the fenestra ovalis, which leads to the inner ear. As the eardrum is some 20 times larger than the fenestra ovalis, the vibrations are amplified. The fenestra passes sound waves on to the cochlea of the inner ear. Fluid contained in the snail shaped cochlea transmits the vibrations to the actual hearing organ, the organ of Corti. This organ contains more than 30,000 sensory cells, known as hair cells as they are equipped with "feelers". When these are agitated, the auditory nerve is affected, sending electrical impulses via nerve synapses to the hearing center of the brain.



How are we affected by noise?

The difference between sound and noise is usually defined as noise being undesirable sound. Whether a sound is considered to be noise is a purely subjective evaluation, determined by one's attitude towards the noise source.

Three types of effects are often mentioned in connection with noise:

- Psychological
- Masking
- Physical

Psychological effects consist of irritation caused by continuous or repeated noise. In this type of disturbance the intensity of the noise need not be particularly great, especially in conjunction with relaxation or sleep. A dripping faucet or the dull sound of traffic can be sufficient.

Irritating noise in the workplace decreases work capacity and performance. Generally speaking, irritation increases in direct proportion to the volume of the noise, and noise containing distinct high-pitched tones is particularly disturbing. Noise is said to be masking when it prevents the ear from interpreting other sound signals, e.g. conversation and warning signals, Masking noise can therefore increase the risk of accident in the workplace.

The primary physical effect of noise on humans is damage to the inner ear. The ear may be damaged acutely by extremely intensive noise such as a rifle shot, or successively by continuous exposure to, say, industrial noise. Other physical effects are elevated blood pressure, an accelerated rate of breathing, and increased production of gastric juices. Blood circulation, sleep, and digestion suffer. This may lead to headache, nausea, muscular tension, and mental and physical fatigue, which, in turn, can result in inattentiveness.

What characterizes impaired hearing?

A common but erroneous conception is that people become accustomed to noise. A positive attitude towards a source of noise does reduce some of the body's physical reactions, but damage to the ear is inevitable. Certain hair cells are, in a sense, exhausted and paralyzed. What a person experiences as "getting used to" a noise is actually an impairment of the ability to perceive those frequencies where the noise is strongest. The "accustomed" person may even be insensitive to all the frequencies that comprise the noise.

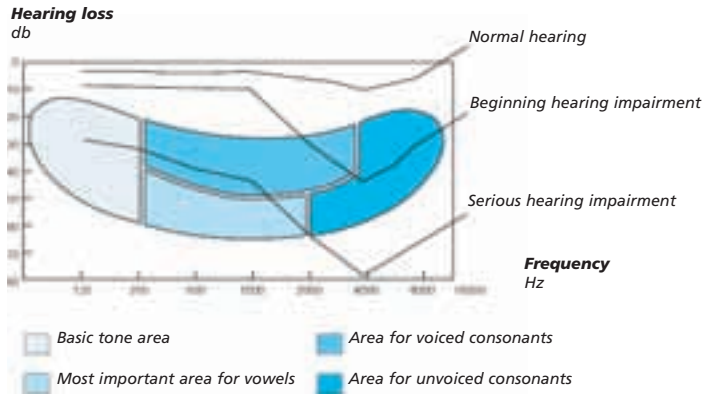
As has previously been mentioned, sound is interpreted when waves of pressure affect the cochlea in the inner ear. The membrane in the cochlea vibrates and affects the sensory hairs, which are bent for precisely the frequency that corresponds to that of the sound wave. Extreme stimulation of the same hair cells for a prolonged period of time disrupts the cells' metabolism, putting them temporarily out of order. One becomes hard of hearing. If the cells are permitted to "rest" a while after exposure to noise that is neither too extreme nor too prolonged, the cells recuperate and function is restored. If this stress occurs day after day and the hair cells do not have time to return to normal between exposures, the cells' blood supply and metabolism permanently change so that they can no longer function.

The frightening thing about hearing loss is that, in its initial stages, it goes unnoticed. The frequencies that lie above the range of speech disappear first. One no longer hears the chirping of birds and the song of crickets. Eventually, the range of speech is affected as well. Consonants vanish first, then the vowels, and the effect can come surprisingly quickly and be devastating.

The areas marked in the diagram below illustrate approximately the sound levels at different frequencies that comprise normal speech measured at a distance of one meter. Hearing impairment caused by exposure to noise often involves the generation of nerve impulses that are experienced as a ringing or buzzing, consisting of pure tones or complexes of tones within a certain frequency zone. In other words, one suffers from auditory hallucinations arising without stimulation. This phenomenon can lead to psychological complications as grave as the physical damage itself.

It is possible to "adapt" oneself to noise, but sooner or later, the harsh truth must be faced:

Hearing loss resulting from exposure to noise can never be restored.



Tinnitus cannot be shut off

Ringing in the ears
Tinnitus, formerly often referred to as ringing in the ears, is perceiving sound when no actual physical stimulation of the inner ear occurs. Sometimes it may sound like a swarm of mosquitoes, sometimes like a chain saw.

Imagine a swarm of mosquitoes in your bedroom on a summer's night. You can't see it. You can't reach it. You can't make it stop. Your only recourse is to pull the pillow over your head and try to ignore it. Having tinnitus is a similar situation; only worse for you have no pillow. The sound is inescapable – there is no avoiding it, muffling it or switching it off. In most cases tinnitus is a temporary problem, but for some it can be a permanent condition, equivalent to chronic pain, and in such cases it is important to seek professional help. Tinnitus cannot be cured with medicine or surgery but there is treatment available that provides relief and support.

What is tinnitus?
Tinnitus results from your hearing being damaged so that you experience a disturbing noise ringing in your head. It is a sound that does not actually exist and that nobody else can hear. This may partially explain the fact that it has taken so long for tinnitus to be recognized as a form of hearing impairment. For years the problem was dismissed as a figment of the imagination. Moreover, tinnitus is often exacerbated when a person is stressed, exhausted or depressed, which has further fed the fires of prejudice.

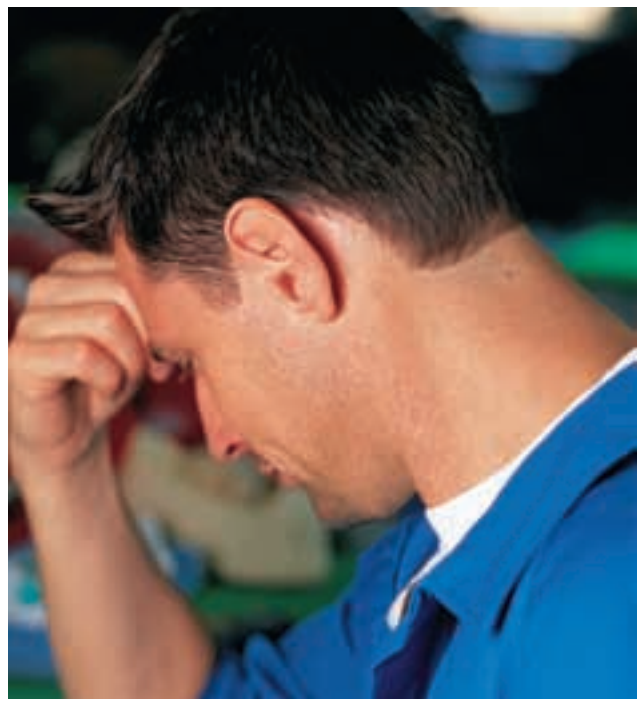
Tinnitus can be a temporary or permanent condition. If the peeping, buzzing or roaring sound disappears the following morning, you are lucky. If it does not disappear, you may be a victim of permanent hearing impairment.

Why do you hear this ringing?
It is not fully understood what causes tinnitus. One theory is that auditory cells have been damaged so that they send false signals to the brain. This may be analogous to the cells being "shocked" by excessive noise and locking in a position where they send out signals even when no actual noise is present.

Tinnitus can be avoided
It is estimated that approximately 20% of the population of industrialized nations suffers from some form of tinnitus. Approximately 5% of these people experience symptoms so severe that their daily lives are affected. Some suffer socially. For example, they cannot go to the cinema or attend concerts because they cannot stand the sound level. Some can no longer work because the tinnitus sound makes it impossible for them to concentrate. Even though there is no general cure for tinnitus, there are ways to avoid being stricken.

Warning!
If you experience a ringing sensation or if your ears feel blocked after a day at work, this constitutes a serious warning. You may have tinnitus.

Implement a thorough noise control program at your place of work. Be especially observant of any unsilenced openings in your compressed air system.



Basic facts on sound

In acoustics, the study of sound, there are many special expressions and terms. Here some of the most common of them are briefly discussed.

Sound
Sound is a wave motion that arises when a sound source sets the surrounding air particles into motion. The motion then spreads to other air particles further from the source. Sound waves propagate at a speed of 340 m/s (1115 ft/s). In liquids and solids the propagation rate is greater: 1500 m/s (4920 ft/s) in water and 5000 m/s (16400 ft/s) in steel.

Noise and tones
Sound that is not desirable is normally called noise. Sound may consist of a single pure tone, but more often it is composed of many tones of various volumes.
The amount of irritation a sound causes is not solely a function of the volume of the different tones. Their frequencies also play a major role, with high tones being more irritating than lower ones. Pure tones create more discomfort than sound consisting of a number of tones.

Frequency, Hz
The number of oscillations per second determines the frequency of a sound wave. The unit of measurement for frequency is the hertz (Hz). Sound exists within a very broad frequency range; the audible range for young people is normally between 20 Hz and 20,000 Hz. Low tones, or base tones, are created by slow oscillations of the air particles. High tones provide treble. Usually tones above 500 Hz are considered to be high tones.

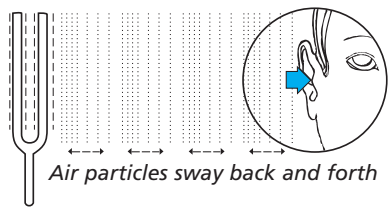
Infrasound and ultrasound
Sound with frequencies of less than 20 Hz is known as infrasound. If a sound has a frequency that exceeds 22,000 Hz it is called ultrasound.

Decibel, dB
The strength of a sound is reflected by the sound level, expressed in the unit dB. An increase in the sound level of 1 dB is just barely discernible. An increase in the sound level of 10 dB anywhere within the area of audible sound is experienced by the human ear as a doubling of the sound volume. Inversely, a decrease of 10 dB is experienced as if the sound level were cut in half.

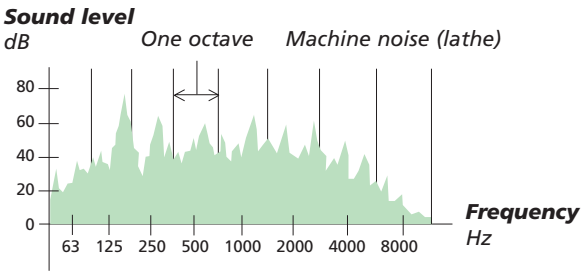
Measuring the sound level
When measuring the strength of a sound it is common to use an instrument that emulates the human ear's varying sensitivity to sounds of different tonal composition. This is known as measuring the A-weighted sound level using the unit dB(A).

Equivalent noise level, dB
The sound from a noise source often varies considerably during a given period of time. Therefore a mean value is measured - the equivalent noise level or noise dose.

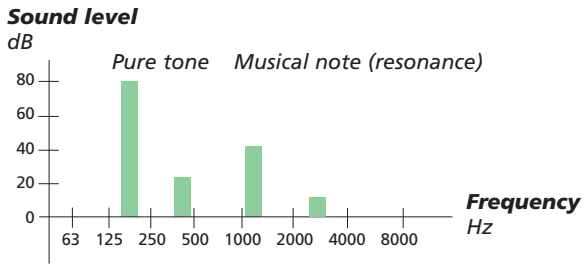
Tuning fork

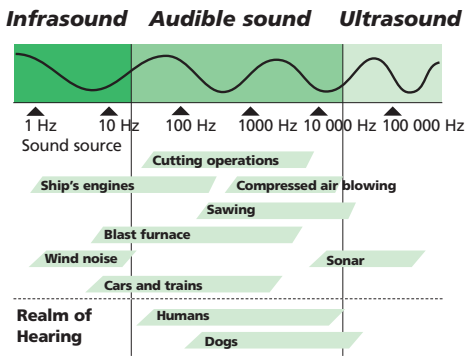


Sound level



Sound level





Noise abatement

Compressed air noise

Consideration should be taken to the noise problem when designing a new machine or planning a new factory.
Formerly not much thought was given to limiting the noise a machine generates in the design phase, but today the sound level has become a strong sales argument for machine makers in many countries.

The EU Machine Directive states the following regarding noise: "Machines shall be designed and constructed so that the risks associated with the emission of airborne noise are reduced to the lowest level possible with consideration to technological advances and existing devices designed to reduce noise, particularly at its source."

Noise in the form of rushing air from pneumatic systems is common in most industrial environments. This noise is of two types: impulse noise, which results from the evacuation of valves and cylinders, and the type of noise that is generated when compressed air is used for cleaning, cooling, transporting or sorting.

Often these noise sources have been allowed to propagate freely. In the best of cases, personal hearing protection has been provided to prevent hearing loss.

In other words, open pipe blowing should be replaced with noise reducing air nozzles.

Comparison table for open pipe and Silvent nozzles at 500 kPa (71.5 psi).

PIPE Inside Ø		SOUND LEVEL	AIR CONSUMPTION		REPLACE WITH SILVENT NOZZLE	NOISE LEVEL REDUCTION		AIR SAVINGS		
mm	Inch	dB(A)	Nm^3/h	scfm		dB(A)	%	Nm^3/h	scfm	%
2	5/64"	84	8	4.7	MJ4	8	43	4	2.4	50
2.5	3/32"	87	12	7.1	MJ5	8	43	2	1.2	17
3	1/8"	90	17	10.0	MJ6	8	43	3	1.8	18
4	5/32"	95	30	17.7	*512, 209 L, 011, 701, 811, 921, 961, 971, 209	16	67	11	6.5	37
5	3/16"	99	47	27.7	*700 M, 1011	15	65	22	13.0	47
6	1/4"	102	67	39.5	920 A	21	77	37	21.8	55
7	9/32"	105	92	54.2	*973, 703	19	73	34	20.0	37
8	5/16"	108	118	69.5	404 L	24	81	50	29.5	42
10	3/8"	112	185	109.0	*705 L, 2005, 705	20	75	90	53.0	49
12	1/2"	116	266	156.7	*707 L, 407 L	22	78	146	86.0	55
14	9/16"	119	363	213.8	710	20	75	147	86.6	40
16	5/8"	122	474	279.2	412 L	34	89	270	159.0	57
17	11/16"	123	536	315.7	715 C	23	80	225	132.5	42
18	23/32"	124	599	352.8	715 L	20	75	287	169.0	48
20	3/4"	126	740	435.9	720	22	78	320	188.5	43
25	1"	131	1159	682.7	*730 C, 735 L	26	84	523	308.0	45

* Values may vary slightly depending on choice of nozzle.

Effective noise abatement

The best solution to the problem is not to let this noise spread throughout the workplace unimpeded. In most cases it is possible to halve the noise of pneumatic systems by using specially designed silencers and air nozzles.
Silvent has specialized on these types of products and offers a unique and patented product range designed to eliminate noise at its source.

1. Air nozzles can cut noise levels in half and, at the same time, maintain or enhance the blowing force, in comparison with open pipe.

2. Safety air guns fitted with noise suppressing air nozzles halve the noise level while saving considerable amounts of energy compared with conventional air guns without nozzles.

3. Safety silencers that reduce noise levels by up to 30 dB(A)

Noise control programs

Authorities around the world have imposed strict restrictions regarding noise levels in the workplace. Measures must be taken to reduce noise to the lowest level that is practically possible. Among other things, a noise control program must be implemented if noise levels exceed existing limits. Personnel must not be exposed to noise that will damage their hearing. Employees who suspect that noise levels at their place of work are too high should turn to their employers for help.

The lower noise exposure action value stipulated in EU directive 2003/10/EC dictates that if noise exposure for a working day exceeds 80 dB or peak sound pressure is greater than 135 dB, employees must be informed of the risk associated with noise, the exposure action and limit values, the results of noise measurement and the measures that are being taken to remedy the situation. The upper exposure action and limit values for daily noise exposure are 85 dB, a maximum A-weighted sound pressure level of 115 dB and a peak value of 135 dB. Should the upper exposure action value be reached or exceeded, measures must be taken to decrease exposure. Measures that are not immediately implemented must be included in a written plan of action. Machines should be designed to generate as little noise as possible. When a new machine, tool or other sort of equipment is purchased, it is important to choose alternatives that are as quiet as possible. Machinery and equipment must be serviced and maintained to prevent it from becoming noisy in the course of time. Workplaces must be acoustically designed so that noise is absorbed and kept to an absolute minimum.

Information about noise

Wherever noise levels may damage hearing, signs saying "risk of hearing impairment – use hearing protection" must be posted. These warnings must be visible when entering the area as well as at the machines themselves. Employees should be made aware of the fact that noise level limitations are being exceeded and provided with information on the measures the company has taken. They must also be required to wear hearing protection. This protection should be adequate for the prevailing conditions and chosen in consultation with the employees. Any personnel that are exposed to a noise level that exceeds existing limitations must undergo regular hearing examinations and be informed of the results.

What is a noise control program?

Authorities in most countries now require that measures be taken to reduce noise employees are exposed to if it exceeds the stipulated limitations. A noise control program is a clear description of the measures that must be taken to reduce noise to a level that is not injurious to hearing. The program should also include a schedule for implementation and specify who is responsible for assuring that the various measures are carried out accordingly. The scope, design and time frame of the control program may vary depending on the size of the company.

Mapping the noise

Step 1. The individual employee

Start by measuring the noise that the individual employees are exposed to. The general noise level must be measured as well but remember that it is important that measurement takes place in representative working conditions. Compare the results with the limitations stipulated in the noise exposure regulations. You should also review any history of hearing impairment among personnel.

Step 2. Recommendations for procedures

1. Map the way the noise level varies throughout the workplace. The results are best presented using so-called noise maps.
2. Determine the amount of noise the various noise sources contribute to the total noise level employees are exposed to. Here it is important to consider the nature of the noise sources, the strength of the noise they generate and their duration.
3. Perform more extensive analysis, e.g. frequency analysis. This is normally necessary to be able to choose the proper steps to take.

Step 3. Study the acoustics in the workplace

The acoustics in the workplace have a great effect on the noise level employees are exposed to. Noise is often amplified by the way it is reflected by walls, ceiling and floor. The sound absorbing characteristics of these surfaces determine to what extent noise is reflected. Their properties can be measured or calculated.

Proposing measures

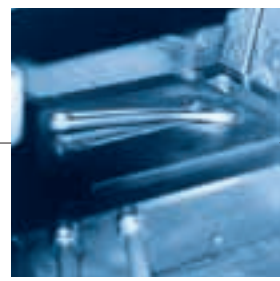
After carefully mapping the noise and evaluating the acoustics of the workplace, it is time to propose actual measures. It is important that employees and safety representatives are also permitted to make suggestions and express their views. Normally a combination of measures is required. This may include:

- Measures directly at the machine or noise source
- Enclosing the noise source
- Replacing machines or equipment with quieter models
- Replacing or altering work routines
- Measures in the workplace itself such as installing sound absorbing materials or screens
- Soundproofed control or monitoring rooms
- Rotation of personnel

There are many laws, regulations and directives concerning noise and compressed air safety.
See www.silvent.com for updated information.

Examples of effective measures provided by Silvent

The picture shows a 1 kg (2.2 lbs) adjustable wrench being lifted off a press by the air stream generated by two SILVENT 705s. Previously conventional blowing methods were employed using a 10 mm (3/8") open pipe. At an operating pressure of 500 kPa (71.5 psi), this meant that each pipe created a noise level of approximately 110 dB(A). Air consumption was 185 Nm^3/hr. (109 scfm) and pipe. Installing the Silvent nozzles cut the noise level in half and decreased air consumption by 49%!



Here a SILVENT 007 safety gun with its unique two-step system reduces both the noise level and energy consumption. The noise suppressing safety nozzle on the 007 grip normally halves the noise level in comparison with conventional air guns without nozzles.

PLM's plastics division has conducted a noise control program in their production facilities. The company has installed more than 50 CD central silencers in their molding machines. They have succeeded in effectively solving their noise problem and have eliminated a previous problem with clogged silencers at the same time.

A scheduled noise control program

When the noise has been mapped and appropriate measures have been decided upon, a detailed noise control program should be scheduled for implementation. It is important that someone is made responsible for making certain that the respective measures are properly carried out and that a time is set for their completion.

Example

Noise control program at Workshop Inc.

Industrial safety engineers have mapped the noise in the company's production and assembly halls. The equivalent noise level for the personnel in the assembly hall during a day's work was calculated at between 79 and 88 dB(A) and for those in the production hall at between 83 and 96 dB(A). This means that a large proportion of the employees are exposed to noise doses in excess of the 85 dB(A) limit stipulated by the national authorities.

Measures	In charge	Completed
1. Compressors in the production hall to be moved to a separate area in the basement.	KE	Oct. 06
2. Noise suppressing nozzles to be mounted on all open pipe used for cleaning, transport, drying etc.	AN	June 06
3. Vacuum pump for sheet metal lift to be fitted with silencers at exhaust ports and soundproofed cover.	KE	Aug. 06
4. All conventional air guns to be replaced with noise suppressing air guns fitted with safety nozzles.	AN	June 06
5. Power shears to be equipped with modified and silenced ejection mechanism.	KE	Oct. 06
6. Acoustic panels to be installed in the ceiling of the production hall and acoustic screens to be set up around the presses.	AN	Nov. 06
7. All pneumatic valves and compressed air exhaust to be silenced individually or led to a central silencer.	KE	Nov. 06
8. All scrap bins and feed troughs to be acoustically insulated.	AN	Oct. 06

These measures are calculated to provide equivalent noise levels of less than 80 dB(A) for all personnel except the press operators for whom exposure levels in excess of 85 dB(A) will continue. Within the next two years however, investment will be made in new and quieter presses. The new presses are scheduled to be in operation by April 2008 after which noise exposure for the operators is expected to fall below the designated limits.

Employees' exposure to noise will be re-measured when the abovementioned measures have been completed and again when the existing presses have been replaced. Re-evaluation of the routines for selecting and using hearing protection will be made immediately. As of June 1, 2006, periodic examination of the hearing of all personnel exposed to equivalent noise levels exceeding 75 dB(A) will be scheduled.

March 15, 2006 Signature/ President

Noise regulations

Regulations governing the amount of noise that is permissible in places of work are stipulated in, among other places, EU directive 2003/10/EC and OSHA 1910.95, Occupational noise exposure.

A few countries have even stricter standards than those found in the EU directive. According to EU regulations, the following applies to the noise level: The emission of airborne noise must be reduced to the lowest level, taking into account technical progress and the availability of means of reducing noise.

In Sweden the stipulated limit value for daily noise exposure is 85 dB, 2 dB lower than the demands of the EU directive. In the event that the designated exposure limit is exceeded, an investigation of the cause must be conducted. Corrective measures must be devised, scheduled and implemented. Exposure shall be reduced as much as is practically possible under the designated limit.

Satisfactory information regarding the violation of the noise exposure limit must be provided to all affected personnel, including information on the measures to be taken. They shall be made aware of the risk to their hearing the exposure entails, as well as their obligation to use hearing protection. Machines and technical devices shall be designed to utilize the possibilities the latest technological advances afford to reduce noise.

In other words, it is important to keep abreast of technological advances regarding noise abatement. Noise abatement at the source of the noise is generally the most effective and the most economical method. When determining the least practically possible noise exposure, it is necessary to take the latest technological development and possibilities to limit noise exposure into consideration. The EU directive means the former reference to the economic feasibility of noise control measures is no longer valid. The purpose of the EU directive is, among other things, to assure that companies and countries are not allowed to improve their competitive position at the expense of a healthy working environment.

There are many laws, regulations and directives concerning noise and compressed air safety. See www.silvent.com for updated information.

Compressed air safety

When you choose to work with compressed air, you choose an energy source that is capable of storing large amounts of energy. Therefore, certain precautions must be taken to prevent accidents from occurring.

Indications of maximum operating pressure, temperature, load, etc. must be respected and must not be exceeded. Compressed air must not be allowed to come into direct contact with skin (the human body). Safety regulations regarding the use of compressed air are being reviewed in a number of countries. At present two countries, the USA and Switzerland, have implemented restrictions on the amount of compressed air pressure that skin may be directly exposed to. Operators often use air guns to clean themselves of dust and grime during and after the working day. Using compressed air in this manner clearly involves the risk of air being pressed through the skin and entering the blood and creating a blood clot. A number of fatal accidents lie behind the restrictions that have been imposed.

In the United States, safety in the workplace is regulated by the OSHA. OSHA is an acronym for the Occupational Safety and Health Administration. The use of compressed air is covered in §1910.242 b, wherein it is stipulated that the pressure of compressed air that comes into direct contact with skin must not exceed 210 kPa (30 psi).

In Switzerland SUVA, Schweizerische Unfallsversicherungsans talt, has imposed similar restrictions.
Every Silvent nozzle is designed to comply with these safety standards. The figure below illustrates that the nozzle cannot be blocked in a manner that closes off the entire opening (dead ending). Thus, the pressure that can be amassed will never exceed 210 kPa (30 psi).

Furthermore §1910.242 b states that some method or equipment must be provided to prevent a chip or particle, regardless of size, from blowing into the eye or against the skin of the operator or a fellow worker. This chip guarding may be separate from the nozzle, as in the case where shields or barriers are used. Generally speaking, the use of protective air cones provides adequate protection for the operator, but screens, baffles or shields may be necessary to protect fellow workers from exposure to flying chips or particles.

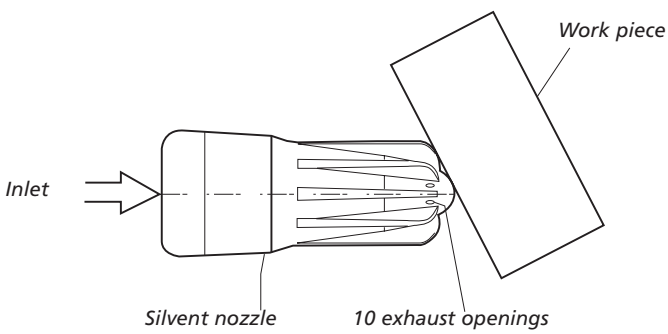
All of Silvent's safety guns are designed to comply with these regulations.

EU Machine Directive
Within the EU, the regulations expressed in the Machine Directive 98/37/EC apply.
The directives set important health and safety standards regarding the design and manufacture of machine and safety components.

Even though compressed air nozzles are used in systems and machines governed by the Machine Directive, air nozzles are not specifically dealt with. Pneumatic components need not be individually CE approved according to the Machine Directive; in fact it is illegal to do so.

For machine makers who must certify that their products comply with the Machine Directives, the specifications included in the catalog regarding temperature, pressure and voltage are sufficient for machine components.

Silvent will gladly answer additional questions regarding the Machine Directive.



Energy conservation

Within every company there is an ongoing aspiration to reduce costs. Every expense is scrutinized, including energy costs.

There are numerous possibilities to conserve energy used in association with compressed air, in part by getting rid of leaks, but primarily through more efficient use of the compressed air.

At least as important as saving money is investing in energy saving measures that provide increased comfort and quality of life. More and more people have understood the connection between job satisfaction and human performance. A good example is using properly dimensioned air nozzles when cleaning with compressed air. In addition to reducing energy costs, you also get considerably lower noise levels.

Clearly the cost of energy is a key factor when dimensioning a compressed air installation. Therefore it is important to find a solution that not only meets the requirements for performance and quality, but requirements for efficient use of energy as well. The additional cost that may arise when purchasing equipment that fulfills both criteria may well be a good investment in the long run.

Blowing with compressed air

When compressed air is used for cleaning, sorting, or drying, most people rely on the use of an open pipe. As a rule, not much thought has been given to the dimensioning of the pipe - rather a "suitable pipe" is used. People normally choose a pipe that is big enough to guarantee that the blowing operation is adequately performed. In the vast majority of cases this has resulted in an over-dimensioning of the blowing force.

Properly conducted technical dimensioning that results in the correct choice of nozzle, distance, and blowing angle often results in an energy savings of 30-50%.

Energy and power savings with Silvent nozzles

PIPE INSIDE Ø		AIR-CONSUMPTION		ANNUAL COST	REPLACE WITH SILVENT NOZZLE	AIR SAVINGS			ENERGY SAVINGS	REDUCTION OF POWER REQUIREMENTS FOR COMPRESSION	
mm	inch	Nm^3/h	scfm	USD		Nm^3/h	scfm	%	USD	kW	%
2	**5/64**	**8**	**4.7**	$84	**MJ4**	**4**	**2.4**	**50**	$42	**0.3**	**50**
2.5	3/32	12	7.1	$127	MJ5	2	1.2	17	$21	0.2	17
3	**1/8**	**17**	**10.0**	$180	**MJ6**	**3**	**1.8**	**18**	$32	**0.2**	**18**
4	5/32	30	17.7	$317	*512, 209 L, 011, 701, 811, 921, 961, 971, 209	11	6.5	37	$116	0.9	37
5	**3/16**	**47**	**27.7**	$496	***700 M, 1011**	**22**	**13.0**	**47**	$232	**1.8**	**47**
6	1/4	67	39.5	$708	920 A	37	21.8	55	$391	3.0	55
7	**9/32**	**92**	**54.2**	$972	***973, 703**	**34**	**20.0**	**37**	$359	**2.8**	**37**
8	5/16	118	69.5	$1 246	404 L	50	29.5	42	$528	4.1	42
10	**3/8**	**185**	**109.0**	$1 954	***705 L, 2005, 705**	**90**	**53.0**	**49**	$950	**7.3**	**49**
12	1/2	266	156.7	$2 809	*707 L, 407 L	146	86.0	55	$1 542	11.9	55
14	**9/16**	**363**	**213.8**	$3 833	**710**	**147**	**86.6**	**40**	$1 552	**11.9**	**40**
16	5/8	474	279.2	$5 005	412 L	270	159.0	57	$2 851	21.9	57
17	**11/16**	**536**	**315.7**	$5 660	**715 C**	**225**	**132.5**	**42**	$2 376	**18.3**	**42**
18	23/32	599	352.8	$6 325	715 L	287	169.0	48	$3 031	23.3	48
20	**3/4**	**740**	**435.9**	$7 814	**720**	**320**	**188.5**	**43**	$3 379	**26.0**	**43**
25	1	1159	682.7	$12 239	*730 C, 735 L	523	308.0	45	$5 523	42.5	45

* Values may vary slightly depending on choice of nozzle.

Comparison table for open pipe and Silvent nozzles at 500 kPa (71.5 psi).

Working hours/year:
1760

Degree of Utilization:
40%

Cost for 1 Nm^3 (35.3 scf) at 500 kPa (71.5 psi):
1.5 ¢ (USD)

Lower the pressure
Silvent's patented air guns and safety nozzles allow more efficient utilization of the compressed air. This permits you to lower the pressure at your workstations and still perform the same job. Lower pressure means an even lower sound level as well as lower energy consumption.

You should always strive to have the right pressure in the right place – neither too high nor too low. The operating pressure directly affects the requirement for power. Higher pressure of course means higher energy consumption. Raising the operating pressure to compensate for pressure drop always means higher operating costs. An equivalent reduction results in an equally large increase of profit.

Raising the pressure by one bar (14.3 psi) means an energy consumption increase of approximately 8%.

Operating costs
The major expense associated with a blowing operation is the operating cost for producing the compressed air. Calculated for a five-year period, the investment and financing costs for purchasing air nozzles are negligible. Installing an open pipe is only an expense. A properly installed Silvent nozzle represents an investment in cost reduction.

The right equipment and knowledge decrease your operating costs.

A study of conservation of energy and the environment
The environmental department in Great Britain recently conducted a study of how compressed air consumption might be reduced by using safety guns. Silvent's safety nozzles were compared with conventional open pipe blowing. The test was performed by Van Leer Ltd., who manufacture steel drums. Compressed air is used at a number of stations throughout the entire production process. After testing Silvent's nozzles, the following conclusions were drawn:

- A 25% reduction of energy costs
- Payback time on the investment was nine months
- Potential for substantial savings
- Extremely simple measures necessary

A report made by the environmental department in Great Britain shows how compressed air can be saved by using the right air nozzles.

Overview - technical specifications

The most vital information and most technical specifications are included in our catalog. You can see just where to find it in the table below. For practical reasons however we have posted certain drawings and some technical information on our website. The information on the website is continuously updated so we recommend that you read more there if you want to keep abreast with the latest developments.

Our online selection guidelines make it easy to find the most suitable products for your particular application and to compare all the products in our various ranges.

Data	Respective product page	Page	www.silvent.com
Air cone patterns		158 - 161	●
Air cone pattern diagrams			●
Air consumption	●		●
Air consumption at different pressures		154 - 157	●
Air savings in %	●		●
Air savings in Nm³/h (scfm)			●
Blowing force	●		●
Blowing force at different pressures		154 - 157	●
Blowing pattern		158 - 161	●
CAD drawing			●
Connection thread	●		●
Conversion factors			●
Dimensions	●		●
Dimension diagrams			●
Flow diagram		162 - 163	●
Material	●		●
Max. operating pressure		153	●
Max. temperature		153	●
Open pipe: blowing characteristics			●
Replacing open pipe	●		●
Sound levels	●		●
Sound levels at different pressures		154 - 157	●
Sound level reductions in %	●		●
Sound level reductions in dB(A)			●
Supply air requirements		67	●
Velocity distribution		159-161	●
Weight			●

www.silvent.com

Data used throughout the catalog

All the information included in the catalog is based upon measurements performed under the following conditions:

Supply pressure
The supply pressure is measured immediately before the nozzle. It is expressed in kilo Pascal [kPa] or pounds per square inch [psi].
500 kPa (71.5 psi) unless otherwise stipulated.

Sound level
The sound level is measured a distance of one meter (3.28 ft) from the nozzle with a microphone placed perpendicular to the direction of the air stream. Expressed in decibel A [dB(A)].

Blowing force
The blowing force is measured against a scale with a flat surface measuring 345 x 310 mm (13.58" x 12.20") at a distance of 200 mm (7.87"). Expressed in Newton [N] or ounce [oz].

Air consumption
The air consumption is measured with a flow meter. Expressed in normal cubic meters per hour [Nm^3/h] or standard cubic feet per minute [scfm].

Dimensions
All values are expressed in mm unless otherwise stated.

The information and data supplied in this publication is based upon our current product range and applicable norms. We reserve the right to make changes to adapt to new technology and future regulations. We further make reservations against any possible misprints.

Restrictions on use
Silvent's products are intended for use in industrial compressed air systems. They must not be used when or wherever pressures or temperatures exceed the maximum stipulations.

Maximum operating pressure
1.0 MPa (143 psi), unless otherwise stipulated.

Temperature ranges for different nozzle materials

Zinc	-20° to +70°C	(-4° to 158°F)
Stainless steel	-20° to +400°C	(-4° to 752°F)
Aluminum	-20° to +150°C	(-4° to 302°F)
PEEK	-65° to +260°C	(-85° to 500°F)

Unless otherwise stipulated.

Air nozzles

SI units

MODEL	FORCE [N]					FLOW [Nm³/h]					SOUND [dB(A)]				
PRESSURE [kPa]	200	400	600	800	1000	200	400	600	800	1000	200	400	600	800	1000
Blowing force 0 - 6 N (0 - 1.3 lbs)															
MJ4	0.4	0.7	1.1	1.4	1.8	1.4	3.1	4.8	6.4	8.1	66.8	74.3	76.6	80.0	81.4
MJ5	0.7	1.5	2.1	2.9	3.6	4.5	7.9	11.4	14.8	18.2	72.3	77.6	80.7	84.5	86.0
MJ6	1.1	2.1	3.0	4.0	5.0	6.8	11.6	16.6	21.4	26.2	74.6	80.5	83.6	87.5	88.4
209 L	1.4	2.7	4.0	5.3	6.8	8.5	13.8	20.1	26.4	32.2	70.0	75.5	78.7	83.0	86.0
512	1.4	2.6	4.0	5.1	6.3	9.3	15.3	22.8	29.8	36.8	71.0	76.8	81.0	84.9	87.5
630	1.1	2.3	3.7	4.8	6.0	6.5	12.5	20.1	27.1	34.1	71.0	76.8	81.0	84.9	87.5
011	1.4	2.8	4.1	5.5	7.0	9.5	15.5	22.5	29.5	36.0	72.0	77.5	80.7	85.0	88.0
701	1.4	2.6	4.0	5.2	6.3	10.0	16.5	26.5	33.2	40.0	75.3	80.0	83.6	86.2	87.5
811	1.1	2.2	3.3	4.3	5.4	7.5	12.5	17.6	22.7	27.7	69.5	76.7	80.9	83.6	85.9
921	1.2	2.4	3.6	4.8	6.0	7.9	13.5	19.8	25.8	31.8	69.2	76.4	80.8	83.5	85.7
961	1.3	2.6	3.9	5.1	6.6	9.0	15.5	22.7	29.6	36.5	71.1	78.1	82.8	85.5	87.6
971	1.6	3.1	4.6	6.0	7.5	10.5	17.9	24.7	31.7	38.8	71.7	79.3	82.7	85.4	87.4
209	1.4	2.8	4.1	5.5	7.0	9.5	15.5	22.5	29.5	36.0	72.0	77.5	80.7	85.0	88.0
217	1.3	2.5	3.7	5.0	6.3	8.6	14.0	20.2	26.6	32.4	71.0	76.5	79.7	84.0	87.0
218	1.3	2.5	3.7	5.0	6.3	8.6	14.0	20.2	26.6	32.4	71.0	76.5	79.7	84.0	87.0
209-S1	2.3	4.5	6.7	8.8	11.0	16.7	28.2	39.4	50.9	62.1	76.9	83.6	87.6	90.5	92.5
700 M	1.8	3.2	5.3	7.0	8.9	12.9	21.3	31.0	40.0	48.6	75.8	82.5	86.7	88.6	90.3
1011	1.9	3.6	5.3	6.9	8.5	13.0	22.1	30.9	40.0	48.3	74.0	81.2	85.5	88.6	90.7
920 A	2.0	4.3	7.0	9.2	11.4	12.0	25.0	38.0	50.1	62.0	72.0	79.1	83.3	86.6	88.4
920 R	1.8	3.9	6.3	8.3	10.3	10.8	22.5	34.2	45.1	55.8	71.0	78.1	82.3	85.6	87.4
High blowing force 6 - 130 N (1.3 - 28.7 lbs)															
973	4.0	7.9	11.5	15.2	18.9	29.2	49.0	67.9	87.2	106.5	76.7	84.0	87.6	90.5	92.6
703	4.1	7.8	11.8	15.3	19.1	29.8	49.5	71.5	90.2	106.1	83.0	87.0	90.8	93.0	94.6
404 L	5.6	10.8	16.4	21.9	27.0	36.0	57.2	80.8	104.3	125.4	76.0	81.5	84.7	89.0	92.0
2005	6.6	12.2	17.8	23.4	29.0	48.5	81.1	114.0	146.8	179.6	82.8	90.0	94.4	97.4	99.3
705	6.3	12.1	18.3	24.0	30.0	49.8	82.0	114.0	149.0	180.0	85.6	90.6	95.0	97.6	100.0
705 L	6.5	13.1	20.2	27.1	33.9	43.1	78.0	111.2	145.8	181.1	86.0	91.2	94.0	96.1	97.6
707 L	9.0	16.9	25.0	33.2	40.9	60.9	99.8	139.1	176.9	219.8	87.8	92.3	95.1	97.0	98.6
707 C	8.1	15.3	23.6	31.0	38.7	62.7	103.3	145.0	183.5	224.0	88.3	93.3	96.3	99.0	100.3
407 L	9.5	19.3	29.0	38.9	47.7	52.8	96.7	139.0	182.6	223.7	78.5	84.0	87.3	91.5	94.5
710	11.8	23.6	35.0	47.3	58.3	93.0	175.0	250.0	340.1	412.0	91.1	96.7	100.7	103.5	105.4
412 L	16.3	31.7	48.5	60.4	74.2	97.7	167.8	236.8	313.2	386.9	80.8	86.3	89.5	93.8	96.8
715 C	18.1	35.7	53.3	71.2	88.9	142.8	257.0	364.0	476.4	587.2	92.1	97.6	101.7	103.0	104.5
715 L	24.4	47.3	73.5	98.0	115.1	165.5	284.8	412.8	535.0	654.8	97.9	103.4	107.7	111.2	112.7
720	20.0	51.7	82.9	114.1	145.4	182.6	343.5	500.0	650.1	804.1	96.1	101.2	105.0	107.3	109.8
730 C	31.8	75.3	117.9	161.9	205.2	275.6	518.5	750.0	990.6	1228.3	97.3	102.5	106.3	107.7	109.1
735 L	47.0	99.1	155.2	209.6	261.8	331.0	619.8	908.2	1180.5	1460.0	101.1	106.5	110.4	112.2	113.4
Air knives, air curtains															
302 L	2.6	5.3	8.1	10.6	13.4	17.0	27.7	40.3	53.2	64.4	73.0	78.5	81.7	86.0	89.0
304 L	5.6	10.8	16.4	21.9	27.0	36.0	57.2	80.8	104.3	125.4	76.0	81.5	84.7	89.0	92.0
306 L	8.3	16.2	24.3	32.4	40.7	54.7	89.3	123.0	156.7	200.3	78.8	83.3	86.5	90.8	93.8
362	2.4	5.2	7.8	10.2	13.2	18.0	31.0	45.4	59.2	75.0	73.1	81.1	85.8	88.5	90.6
364	5.4	10.4	15.6	20.4	26.4	36.0	62.0	90.8	118.4	150.0	77.1	84.1	88.8	91.5	93.6
366	8.1	15.6	23.4	30.6	39.6	54.0	93.0	136.2	174.6	225.0	78.9	85.9	90.6	93.3	95.4
392	4.2	8.8	14.0	17.8	23.4	25.0	50.0	75.0	100.0	125.0	75.0	82.1	86.3	89.6	91.4
394	9.1	17.6	26.1	34.6	43.1	50.0	100.0	150.0	200.0	250.0	78.0	85.1	89.3	92.6	94.4
396	16.5	26.4	39.2	49.8	69.3	75.0	150.0	225.0	300.0	375.0	79.8	86.9	91.1	94.4	96.2
372	8.0	15.8	22.9	30.3	37.8	58.4	98.0	135.8	174.4	212.9	79.7	87.0	90.6	93.5	95.6
374	16.0	31.6	45.8	60.7	75.6	116.8	196.0	271.6	348.7	425.8	82.7	90.0	93.6	96.5	98.6
378	32.0	63.2	91.6	121.4	151.1	233.6	392.0	543.2	697.4	851.7	85.7	93.0	96.6	99.5	101.6
Special															
910	2.2	4.3	6.7	8.8	11.0	15.6	30.0	44.8	59.9	73.3	76.5	83.4	87.0	90.1	92.6
912	5.3	10.3	16.1	21.1	26.4	37.4	72.0	107.5	143.7	176.0	81.1	87.8	90.7	92.9	94.1
915	2.0	4.1	6.6	8.9	11.2	20.5	33.5	44.5	56.2	67.9	79.4	84.6	88.3	91.1	92.6
952	2.8	5.2	8.0	10.2	12.6	18.6	30.6	45.6	59.6	73.6	75.0	80.8	85.0	88.9	91.5
453	8.4	15.6	24.0	30.6	37.8	55.8	91.8	136.8	178.8	220.8	82.0	87.8	92.0	95.9	98.5
454	6.3	13.1	19.4	25.7	33.0	50.7	87.4	128.0	167.0	205.9	78.9	85.2	89.7	92.2	94.4
455	14.7	28.7	43.4	56.3	70.8	106.5	179.2	264.8	345.8	426.7	86.0	91.8	96.0	99.9	102.5
463 L	17.3	33.4	49.4	65.6	84.1	110.5	179.4	261.3	343.2	418.6	83.9	89.4	92.6	96.9	99.9
464	12.6	26.2	38.8	51.4	66.0	108.0	186.0	272.4	355.2	438.0	80.9	88.1	92.7	95.2	98.2
465 L	29.9	59.6	88.2	117.8	150.1	218.5	365.4	533.7	698.4	856.6	85.9	93.3	97.8	100.3	102.5
473 L	41.2	78.4	115.6	152.8	194.0	267.0	438.2	630.0	821.6	1003.2	87.2	94.1	98.4	101.9	103.3
474	29.9	59.8	92.0	121.9	151.8	207.0	356.5	522.1	680.8	839.5	84.7	91.7	96.4	99.1	101.2
475 L	71.1	138.2	207.6	274.7	345.8	474.0	794.7	1152.1	1502.4	1842.7	89.2	96.1	100.4	103.6	105.1

Air nozzles

American units of measure

MODEL	FORCE [oz]					FLOW [scfm]					SOUND [dB(A)]				
PRESSURE [psi]	40	60	80	100	120	40	60	80	100	120	40	60	80	100	120
Blowing force 0 - 6 N (0 - 1.3 lbs)															
MJ4	1.9	2.7	3.6	4.5	5.4	1.2	1.9	2.6	3.3	3.9	70.2	73.9	76.4	78.5	80.1
MJ5	3.5	5.3	7.0	8.8	10.5	3.4	4.8	6.2	7.6	9.0	74.8	78.4	80.8	82.8	84.3
MJ6	5.2	7.6	10.0	12.4	14.8	5.1	7.1	9.0	11.0	13.0	77.4	81.0	83.5	85.5	87.1
209 L	6.9	10.1	13.0	16.3	20.0	6.5	8.4	11.0	13.6	16.0	72.5	75.8	78.1	81.6	84.3
512	6.5	9.5	12.5	15.5	18.6	7.1	9.8	12.6	15.4	18.0	73.3	77.0	80.1	82.8	85.2
630	5.0	8.2	11.4	14.5	17.7	4.9	7.7	10.5	13.2	15.9	73.3	77.0	80.1	82.8	85.2
011	6.8	10.1	13.3	16.7	20.1	7.2	8.8	12.5	15.2	17.9	74.3	77.8	80.5	82.8	84.9
701	7.6	10.6	13.8	17.0	20.2	8.2	11.3	14.4	17.6	20.8	76.8	80.3	82.8	84.9	86.6
811	5.5	8.2	10.8	13.5	16.2	5.6	7.7	9.8	11.8	13.9	73.0	77.1	80.0	82.3	84.2
921	5.9	8.9	11.8	14.8	17.8	6.0	8.5	10.9	13.4	15.9	72.7	76.9	79.8	82.1	84.1
961	6.4	9.7	12.7	15.7	19.4	6.9	9.4	12.4	15.2	18.1	73.7	78.4	82.2	84.0	85.9
971	7.8	11.5	16.2	18.8	22.4	7.9	10.8	13.7	16.6	19.5	75.3	79.2	82.0	84.1	85.9
209	6.8	10.1	13.3	16.7	20.1	7.2	8.8	12.5	15.2	17.9	74.3	77.8	80.5	82.8	84.9
217	6.1	9.1	12.0	15.0	18.1	6.5	7.9	11.3	13.7	16.1	73.3	76.8	79.5	81.8	83.9
218	6.1	9.1	12.0	15.0	18.1	6.5	7.9	11.3	13.7	16.1	73.3	76.8	79.5	81.8	83.9
209-S1	11.3	16.7	22.0	27.4	32.8	12.6	17.2	21.9	26.6	31.3	80.2	84.1	86.9	89.1	90.9
700 M	8.4	12.6	16.8	21.0	25.3	8.8	12.6	16.3	20.0	23.7	79.0	82.8	85.6	87.5	88.9
1011	9.1	13.2	17.2	21.3	25.3	9.8	13.5	17.1	20.8	24.4	77.5	81.7	84.7	87.1	89.0
920 A	10.4	16.2	22.1	27.8	33.7	10.8	15.4	20.0	24.6	29.2	75.1	79.3	82.5	85.0	87.0
920 R	9.4	14.6	19.9	25.0	30.3	9.7	13.9	18.0	22.1	26.3	74.1	78.3	81.5	84.0	86.0
High blowing force 6 - 130 N (1.3 - 28.7 lbs)															
973	19.7	28.9	38.0	47.2	56.4	21.9	29.8	37.7	45.6	53.6	80.2	84.2	87.0	89.2	91.0
703	19.6	28.4	37.8	47.1	56.0	21.1	29.5	38.0	47.1	54.8	84.9	88.0	90.2	91.9	92.3
404 L	27.6	40.4	53.4	67.4	79.4	27.7	34.7	44.2	53.6	62.2	78.7	81.8	84.1	87.5	90.2
2005	31.2	45.0	58.8	72.6	86.5	36.3	49.8	63.2	76.7	90.3	86.3	90.5	93.5	95.8	97.7
705	30.2	44.3	58.2	73.5	88.7	34.0	47.2	60.9	74.9	89.0	87.8	91.3	94.2	96.4	97.8
705 L	32.0	49.0	65.8	83.3	99.6	33.1	47.4	60.8	74.9	89.9	89.1	91.6	93.3	94.5	95.7
707 L	44.3	63.2	81.5	102.1	120.2	46.8	60.6	76.1	90.9	109.1	91.0	92.7	94.4	95.3	96.7
707 C	39.0	58.0	76.9	96.0	115.0	46.7	63.3	79.8	96.4	113.0	90.7	93.8	96.0	97.6	99.0
407 L	46.8	72.1	94.5	119.6	140.2	40.6	58.7	76.0	93.9	111.0	81.3	84.3	86.6	89.9	92.7
710	61.5	90.9	118.7	148.0	177.4	76.5	108.7	140.0	172.3	203.0	92.5	97.0	99.8	102.3	103.8
412 L	80.2	118.5	158.1	185.8	218.1	75.1	101.9	129.5	161.0	192.1	83.7	86.6	88.8	92.2	94.9
715 C	88.6	132.3	175.7	219.5	263.2	110.8	156.5	201.9	247.6	293.3	94.9	98.1	100.3	102.1	103.5
715 L	121.9	179.3	236.3	293.6	351.0	126.0	176.7	227.0	277.7	328.3	100.7	104.5	107.2	109.4	111.1
720	111.8	239.4	266.9	346.1	425.3	143.7	210.0	274.1	340.0	405.9	97.7	101.3	104.2	106.1	107.5
730 C	173.2	280.3	386.7	493.8	600.9	219.2	317.3	414.6	512.6	610.6	99.9	103.0	105.1	106.8	108.1
735 L	231.4	370.5	505.8	644.6	769.5	254.5	376.3	496.7	606.8	724.7	104.7	106.9	109.6	110.3	111.2
Air knives, air curtains															
302 L	12.8	19.8	26.4	32.6	39.4	13.1	16.8	22.0	27.3	32.0	75.6	78.8	81.1	84.5	87.3
304 L	27.6	40.4	53.4	67.4	79.4	27.7	34.7	44.2	53.6	62.2	78.7	81.8	84.1	87.5	90.2
306 L	40.9	60.6	79.2	99.6	119.6	42.1	54.2	67.3	80.6	99.4	81.6	83.6	85.8	89.2	92.0
362	11.8	19.4	25.4	31.4	38.8	13.8	18.8	24.8	30.4	37.2	75.7	81.4	85.1	87.0	88.8
364	26.6	38.9	50.8	62.7	77.6	27.7	37.6	49.7	60.9	74.5	79.9	84.4	88.1	89.9	91.8
366	39.9	58.3	76.3	94.1	116.4	41.5	56.5	74.5	89.8	111.7	81.7	86.2	89.9	91.7	93.6
392	20.8	31.9	43.4	54.6	65.7	20.0	30.1	40.1	50.3	60.7	78.5	82.7	85.6	87.9	89.8
394	48.2	68.0	87.1	106.2	126.1	40.2	61.1	81.2	101.1	121.0	81.5	85.7	88.6	90.9	92.8
396	69.8	99.7	126.5	153.6	184.5	61.6	92.1	121.4	152.1	182.9	83.3	87.5	90.4	92.7	94.6
372	39.4	57.8	76.0	94.4	112.8	43.8	59.6	75.4	91.2	107.2	83.2	87.2	90.0	92.2	94.0
374	78.8	115.6	152.0	188.8	225.6	87.6	119.2	150.8	182.4	214.4	86.2	90.2	93.0	95.2	97.0
378	157.6	231.2	304.0	377.6	451.2	175.2	238.4	301.6	364.8	428.8	89.2	93.2	96.0	98.2	100.0
Special															
910	10.7	16.1	21.4	26.7	32.3	12.3	18.5	24.4	30.4	36.7	79.4	83.8	86.6	88.8	90.4
912	25.1	38.0	50.1	64.0	70.7	29.1	43.7	58.1	72.8	87.5	82.0	85.8	88.5	90.8	92.3
915	10.1	15.8	21.5	27.2	32.9	15.2	20.0	24.8	29.7	34.5	82.0	85.4	87.8	89.7	91.2
952	13.0	19.0	25.0	31.0	37.2	7.1	9.8	12.6	15.4	18.0	75.0	80.8	85.0	88.9	91.5
453	41.4	58.3	78.2	94.1	111.1	42.9	55.7	74.8	91.9	109.6	84.9	88.1	91.3	94.3	96.6
454	31.0	49.0	63.2	79.0	97.0	39.0	53.1	70.0	85.8	102.2	81.7	85.5	89.0	90.6	92.6
455	72.4	107.3	141.4	173.2	208.1	81.9	108.8	144.8	177.8	211.8	89.1	92.2	95.3	98.2	100.5
463 L	85.2	124.9	161.0	201.8	247.2	84.9	108.9	142.9	176.4	207.8	86.9	89.7	91.9	95.2	98.0
464	62.0	97.9	126.4	158.1	194.0	83.0	112.9	149.0	182.6	217.4	83.8	88.4	92.0	93.6	96.3
465 L	147.2	222.8	287.4	362.3	441.2	168.0	221.9	291.9	359.0	425.2	89.0	93.7	97.1	98.6	100.5
473 L	202.8	293.1	376.7	469.9	570.2	205.3	266.1	344.5	422.3	498.0	90.3	94.5	97.6	100.2	101.3
474	147.2	223.5	299.8	374.9	446.2	159.1	216.5	285.5	350.0	416.7	87.7	92.1	95.7	97.4	99.2
475 L	350.0	516.6	676.5	844.9	1016.4	364.4	482.5	630.0	772.3	914.7	92.4	96.5	99.6	101.8	103.1

Safety air guns

SI units

MODEL	FORCE [N]					FLOW [Nm³/h]					SOUND [dB(A)]				
PRESSURE [kPa]	200	400	600	800	1000	200	400	600	800	1000	200	400	600	800	1000
Blowing force 0 - 6 N (0 - 1.3 lbs)															
007-L	1.4	2.8	4.2	5.5	6.9	11.0	18.3	25.6	32.5	37.2	71.5	78.0	83.9	86.6	88.7
007-S	1.0	2.2	3.6	4.9	6.3	6.0	12.0	19.5	26.5	33.5	71.0	78.5	81.5	83.5	84.5
007-Z	1.0	2.3	3.6	5.1	6.6	6.8	14.0	20.9	27.3	34.1	68.0	76.5	80.5	82.5	83.5
007-P	1.0	1.9	2.9	3.8	4.8	6.8	11.6	16.2	20.9	25.5	68.3	76.0	80.1	82.8	85.1
007-MJ4	0.4	0.7	1.1	1.4	1.8	1.4	3.1	4.8	6.4	8.1	66.8	74.3	76.6	80.0	81.4
007-MJ5	0.7	1.5	2.1	2.9	3.6	4.5	7.9	11.4	14.8	18.2	72.3	77.6	80.7	84.5	86.0
007-MJ6	1.1	2.1	3.0	4.0	5.0	6.8	11.6	16.6	21.4	26.2	74.6	80.5	83.6	87.5	88.4
008-L	1.0	2.2	3.5	5.0	6.4	6.1	12.5	18.7	24.4	30.5	67.0	74.7	78.7	80.6	81.5
008	1.0	2.3	3.6	5.1	6.6	6.8	14.0	20.9	27.3	34.1	68.0	76.5	80.5	82.5	83.5
0971	1.3	2.6	4.0	5.3	6.6	9.2	15.6	22.0	28.4	34.8	68.6	76.9	80.2	83.1	85.1
500-S	1.4	2.8	4.1	5.5	7.0	9.5	15.5	22.5	29.5	36.0	72.0	77.5	80.7	85.0	88.0
500-L	1.7	3.3	4.9	6.4	7.8	12.0	20.7	28.9	37.2	44.4	73.7	80.8	85.2	88.2	90.1
500-Z	1.4	2.6	4.0	5.1	6.3	9.3	15.3	22.8	29.8	36.8	71.0	76.8	81.0	84.9	87.5
500-MJ4	0.4	0.7	1.1	1.4	1.8	1.4	3.1	4.8	6.4	8.1	66.8	74.3	76.6	80.0	81.4
500-MJ5	0.7	1.5	2.1	2.9	3.6	4.5	7.9	11.4	14.8	18.2	72.3	77.6	80.7	84.5	86.0
500-MJ6	1.1	2.1	3.0	4.0	5.0	6.8	11.6	16.6	21.4	26.2	74.6	80.5	83.6	87.5	88.4
501-L-H	1.4	2.7	4.0	5.3	6.8	8.5	13.8	20.1	26.4	32.2	70.0	75.5	78.7	83.6	86.0
501-L	1.4	2.7	4.0	5.3	6.8	8.5	13.8	20.1	26.4	32.2	70.0	75.5	78.7	83.6	86.0
501	1.4	2.8	4.1	5.5	7.0	9.5	15.5	22.5	29.5	36.0	72.0	77.5	80.7	85.0	88.0
520	1.1	2.3	3.7	4.8	6.0	6.5	12.5	20.1	27.1	34.1	71.0	76.8	81.0	84.9	87.5
5920	2.0	4.3	7.0	9.2	11.4	12.0	25.0	38.0	50.1	62.0	72.0	79.1	83.3	86.6	88.4
High blowing force 6 - 100 N (1.3 - 28.7 lbs)															
2055-A	5.8	10.8	16.0	21.1	26.2	45.3	76.2	107.1	137.9	168.8	82.6	89.4	93.8	97.3	99.0
2055-S	6.3	12.1	18.3	24.0	30.0	49.8	82.0	114.0	149.0	180.0	85.6	90.6	95.0	97.6	100.0
2973	4.0	7.9	11.5	15.2	18.9	29.2	49.0	67.9	87.2	106.5	76.7	84.0	87.6	90.5	92.6
2050-S	1.4	2.8	4.1	5.5	7.0	9.5	15.5	22.5	29.5	36.0	72.0	77.5	80.7	85.0	88.0
2050-L	2.0	3.6	5.3	7.1	8.8	13.2	22.2	31.3	40.3	49.3	73.4	81.0	85.4	88.9	90.9
2220-L-S	1.4	2.7	4.0	5.3	6.8	8.5	13.8	20.1	26.4	32.2	70.0	75.5	78.7	83.6	86.0
755-L	6.5	13.1	20.2	27.1	33.9	43.1	78.0	111.2	145.8	181.1	86.0	91.2	94.0	96.1	97.6
755-S	6.3	12.1	18.3	24.0	30.0	49.8	82.0	114.0	149.0	180.0	85.6	90.6	95.0	97.6	100.0
757-L	8.0	15.9	24.0	32.2	39.9	59.8	97.8	129.6	166.1	200.9	86.9	91.4	94.6	97.0	98.2
757-S	6.7	13.6	20.4	27.2	34.0	60.9	101.3	132.3	167.0	201.7	85.8	91.4	94.8	98.1	99.8
753-S	4.1	7.8	11.8	15.3	19.1	29.8	49.5	71.5	90.2	106.1	83.0	87.0	90.8	93.0	94.6
751-S	1.4	2.6	4.0	5.2	6.3	10.0	16.5	26.5	33.2	40.0	75.3	80.0	83.6	86.2	87.5
4015-LF		38.8	59.3	79.3	97.4		242.0	362.3	468.1	570.3		102.2	105.5	108.8	111.3
4015-L		38.8	59.3	79.3	97.4		242.0	362.3	468.1	570.3		102.2	105.5	108.8	111.3
4020-LF		72.6	125.9	174.8	229.4		399.0	657.0	912.0	1193.0		113.0	120.0	122.0	124.0
4020-L		72.6	125.9	174.8	229.4		399.0	657.0	912.0	1193.0		113.0	120.0	122.0	124.0
4010-S		23.6	35.0	47.3	58.3		175.0	250.0	340.1	412.0		96.7	100.7	103.5	105.4
4010-SF		23.6	35.0	47.3	58.3		175.0	250.0	340.1	412.0		96.7	100.7	103.5	105.4
Special															
BG-007	0.4	0.8	1.2	1.6	2.0	1.4	3.1	5.2	7.2	9.1	66.2	74.3	78.9	82.7	85.4
BG-500	0.4	0.8	1.2	1.6	2.0	1.4	3.1	5.2	7.2	9.1	66.2	74.3	78.9	82.7	85.4
100	1.4	2.8	4.1	5.5	7.0	9.5	15.5	22.5	29.5	36.0	72.0	77.5	80.7	85.0	88.0

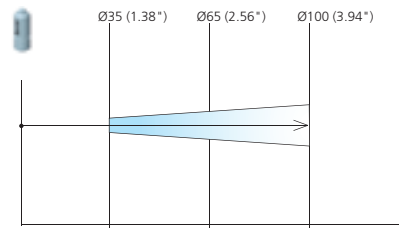
Safety air guns

American units of measure

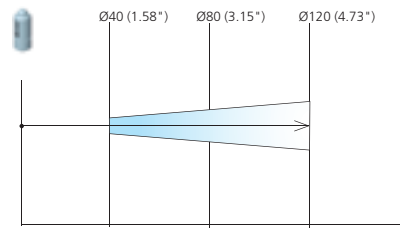
MODEL	FORCE [oz]					FLOW [scfm]					SOUND [dB(A)]				
PRESSURE [psi]	40	60	80	100	120	40	60	80	100	120	40	60	80	100	120
Blowing force 0 - 6 N (0 - 1.3 lbs)															
007-L	7.0	10.4	13.8	17.2	20.6	8.4	11.1	13.9	16.6	19.4	74.9	79.4	82.5	85.0	87.0
007-S	4.7	7.9	11.1	14.2	17.4	4.9	7.7	10.5	13.2	15.9	74.2	78.7	81.3	82.8	83.7
007-Z	5.4	8.6	11.8	15.0	18.3	5.5	8.2	11.1	13.8	16.6	72.0	76.8	79.7	81.6	82.6
007-P	4.9	7.2	9.6	11.9	14.3	5.1	7.1	9.0	10.9	12.9	72.0	76.2	79.2	81.5	83.4
007-MJ4	1.9	2.7	3.6	4.5	5.4	1.2	1.9	2.6	3.3	3.9	70.2	73.9	76.4	78.5	80.1
007-MJ5	3.5	5.3	7.0	8.8	10.5	3.4	4.8	6.2	7.6	9.0	74.8	78.4	80.8	82.8	84.3
007-MJ6	5.2	7.6	10.0	12.4	14.8	5.1	7.1	9.0	11.0	13.0	77.4	81.0	83.5	85.5	87.1
008-L	4.9	8.2	11.4	15.4	18.9	4.7	7.6	10.2	12.5	15.1	69.6	75.1	78.5	79.1	79.9
008	5.4	8.6	11.8	15.0	18.3	5.5	8.2	11.1	13.8	16.6	72.0	76.8	79.7	81.6	82.6
0971	6.5	9.8	13.1	16.4	19.7	6.9	9.6	12.2	14.8	17.5	72.5	76.6	79.5	81.8	83.6
500-S	6.8	10.1	13.3	16.7	20.1	7.2	8.8	12.5	15.2	17.9	74.3	77.8	80.5	82.8	84.9
500-L	8.4	12.2	16.0	19.8	23.6	9.2	12.6	15.9	19.3	22.6	77.2	81.4	84.3	86.6	88.5
500-Z	6.5	9.5	12.5	15.5	18.6	7.1	9.8	12.6	15.4	18.0	73.3	77.0	80.1	82.8	85.2
500-MJ4	1.9	2.7	3.6	4.5	5.4	1.2	1.9	2.6	3.3	3.9	70.2	73.9	76.4	78.5	80.1
500-MJ5	3.5	5.3	7.0	8.8	10.5	3.4	4.8	6.2	7.6	9.0	74.8	78.4	80.8	82.8	84.3
500-MJ6	5.2	7.6	10.0	12.4	14.8	5.1	7.1	9.0	11.0	13.0	77.4	81.0	83.5	85.5	87.1
501-L-H	6.9	10.0	13.1	16.3	20.0	6.5	8.3	11.0	13.5	16.0	72.7	75.8	78.5	82.1	84.3
501-L	6.9	10.0	13.1	16.3	20.0	6.5	8.3	11.0	13.5	16.0	72.7	75.8	78.5	82.1	84.3
501	6.8	10.1	13.3	16.7	20.1	7.2	8.8	12.5	15.2	17.9	74.3	77.8	80.5	82.8	84.9
520	5.0	8.2	11.4	14.5	17.7	4.9	7.7	10.5	13.2	15.9	73.3	77.0	80.1	82.8	85.5
5920	10.4	16.2	22.1	27.8	33.7	10.8	15.4	20.0	24.6	29.2	75.1	79.3	82.5	85.0	87.0
High blowing force 6 - 100 N (1.3 - 28.7 lbs)															
2055-A	27.6	40.2	52.8	65.5	78.1	33.9	46.7	59.4	72.1	84.8	86.0	90.2	93.2	95.5	97.4
2055-S	30.2	44.3	58.2	73.5	88.7	34.0	47.2	60.9	74.9	89.0	87.8	91.3	94.2	96.4	97.8
2973	19.7	28.9	38.0	47.2	56.4	22.4	30.4	38.4	46.4	54.5	80.2	84.2	97.0	89.2	91.0
2050-S	6.8	10.1	13.3	16.7	20.1	7.2	8.8	12.5	15.2	17.9	74.3	77.8	80.5	82.8	84.9
2050-L	9.3	13.6	17.8	22.0	26.3	9.9	13.6	17.3	21.1	24.8	77.1	81.6	84.7	87.1	89.2
2220-L-S	6.9	10.0	13.1	16.3	20.0	6.5	8.3	11.0	13.5	16.0	72.7	75.8	78.5	82.1	84.3
755-L	32.1	48.6	66.0	83.3	99.9	33.1	47.1	60.7	74.8	89.9	89.3	91.6	93.7	94.3	95.6
755-S	30.2	44.3	58.2	73.5	88.7	34.0	47.2	60.9	74.9	89.0	87.8	91.3	94.2	96.4	97.8
757-L	39.5	59.0	78.5	98.9	117.6	46.0	59.1	70.7	85.2	99.7	90.3	91.8	94.3	95.2	96.2
757-S	33.4	50.3	67.0	83.9	100.7	45.4	59.7	73.9	88.3	102.6	88.1	91.6	94.1	96.0	97.6
753-S	19.6	28.4	37.8	47.1	56.0	21.1	29.5	38.0	47.1	54.8	84.9	88.0	90.2	91.9	92.3
751-S	7.6	10.6	13.8	17.0	20.2	8.2	11.3	14.4	17.6	20.8	76.8	80.3	82.8	84.9	86.6
4015-LF		146.6	199.2	245.7	291.1		146.3	197.7	240.1	283.0		102.7	105.2	106.8	109.1
4015-L		145.7	193.8	242.2	290.5		151.9	196.5	241.4	286.4		102.4	105.3	107.5	109.3
4020-LF		269.4	411.6	537.1	676.1		241.1	358.6	467.9	592.1		113.5	119.6	119.8	121.5
4020-L		269.4	411.6	537.1	676.1		241.1	358.6	467.9	592.1		113.5	119.6	119.8	121.5
4010-S		90.9	118.7	148.0	177.4		108.7	140.0	172.3	203.0		97.0	99.8	102.3	103.8
4010-SF		87.6	114.4	145.3	171.8		105.8	136.4	174.5	204.5		97.1	100.4	101.6	103.3
Special															
BG-007	2.0	3.0	3.9	4.9	5.9	1.1	1.9	2.8	3.7	4.5	68.8	74.6	78.7	81.2	83.7
BG-500	2.0	3.0	3.9	4.9	5.9	1.1	1.9	2.8	3.7	4.5	68.8	74.6	78.7	81.2	83.7
100	6.8	10.1	13.3	16.7	20.1	7.2	8.8	12.5	15.2	17.9	74.3	77.8	80.5	82.8	84.9

Air cone patterns for our most common nozzles

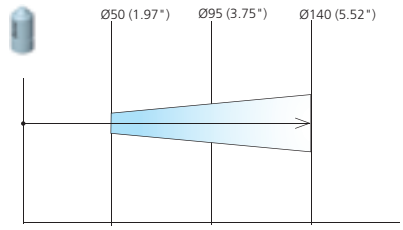
MJ4



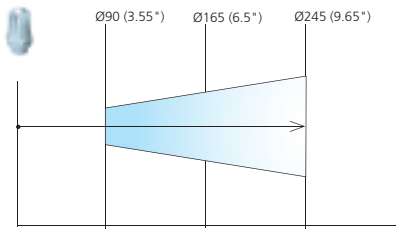
MJ5



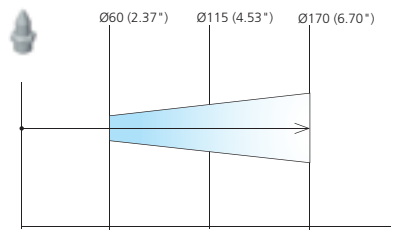
MJ6



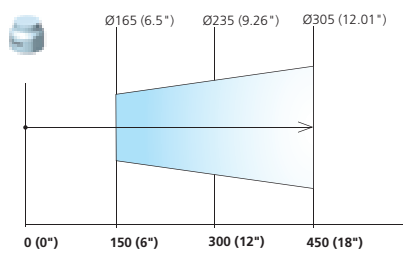
209 L, 209



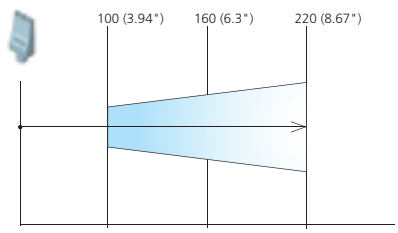
512, 011, 811, 1011



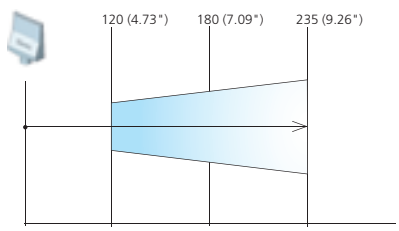
701, 703, 705, 705 L, 707 L, 707 C



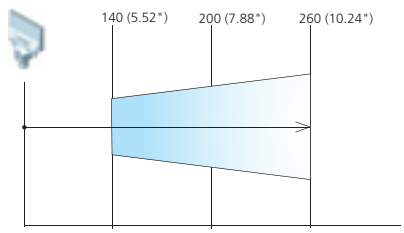
921, 961, 971*



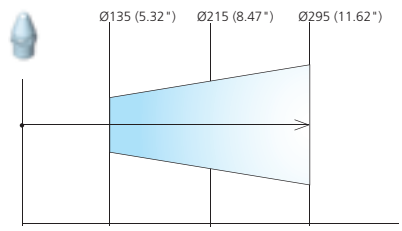
920 A



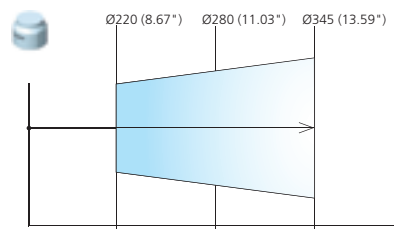
973



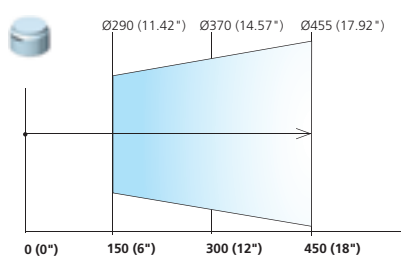
2005



710, 715 C, 715 L



720, 730 C, 735 L



*Values may differ somewhat depending on the choice of nozzle.

Cone patterns and velocity distribution

About the tables

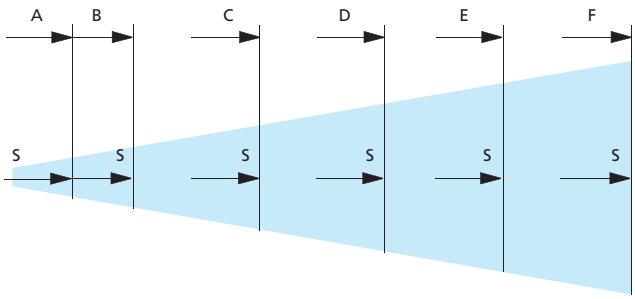
On the following pages you will find tables describing the air cone patterns for our different nozzles. The tables also show values representing the maximum air velocity at various distances from the nozzle outlet.
The figure shows in principle the appearance of an air cone. The following description of the columns in the tables is intended to make it easier to interpret the tables.

The first column contains the type of nozzle that the row applies to. The other columns show the lateral spread of the air cone and the velocity of the air at the center of the cone.

The columns labeled A-F provide the values at different distances from the nozzle outlet. Values in column D show air cones with circular lateral spread. The designations L and W indicate cones with rectangular lateral spread. Velocities are listed in the S column.

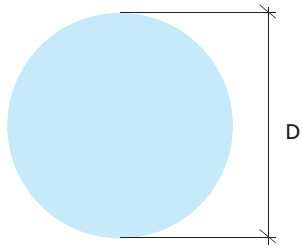
The air cone pattern is expressed in millimeters and the velocity in m/s in the table on page 160 and in inches and ft/s in the table on page 161.

Distance from nozzle



Strike pattern alternatives

Alt 1



Alt 2

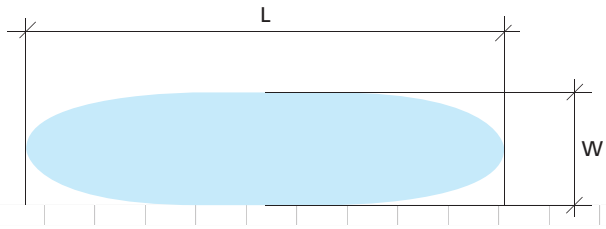


Table examples

MODEL	A=50mm				B=100mm				C=2
	D	L	W	S	D	L	W	S	D
Blowing force 0 - 6 N									
MJ4	12			129	24			104	
MJ5	13			132	27			105	
MJ6	20			135	35			108	
209 L	40			253	65			201	
512	24			121	38			1	
630	24			121	38				
011	24			122	38				
701	95			108	140				
811	24			133	38				
921		63	30	122		87			
961		63	30	122					
971		60	30	122					
209	40			11					
217	40								

Cone patterns and velocity distribution

SI units

MODEL	A=50 mm				B=100 mm				C=200 mm				D=300 mm				E=400 mm				F=1500 mm			
	D	L	W	S	D	L	W	S	D	L	W	S	D	L	W	S	D	L	W	S	D	L	W	S
Blowing force 0 - 6 N (0 - 1.3 lbs)																								
MJ4	12			129	24			104	45			57	65			40	88			36	110			33
MJ5	13			132	27			105	53			58	80			41	106			37	133			34
MJ6	20			135	35			108	65			59	95			41	125			37	155			34
209 L	40			253	65			206	115			110	165			79	215			57	265			52
512	24			121	38			101	80			56	114			39	156			35	194			32
630	24			121	38			101	80			56	114			39	156			35	194			32
011	24			122	38			102	80			56	114			39	156			35	194			32
701	95			108	140			86	190			51	235			39	280			34	330			31
811	24			133	38			106	80			58	114			40	156			36	194			33
921		63	30	122		82	50	100		120	90	57		160	130	40		200	170	36		240	210	33
961		63	30	122		82	50	100		120	90	57		160	130	40		200	170	36		240	210	33
971		60	30	122		80	50	100		120	90	57		160	130	40		200	170	36		240	210	33
209	40			111	65			89	115			51	165			37	215			34	265			31
217	40			111	65			89	115			51	165			37	215			34	265			31
218	40			111	65			89	115			51	165			37	215			34	265			31
209-S1	40			120	65			96	115			56	165			41	215			37	265			34
700 M	70			115	95			94	145			54	190			40	240			36	290			33
1011	24			244	38			197	80			109	114			79	156			57	194			52
920 A		80	40	122		100	60	100		140	100	57		180	140	40		220	180	36		260	220	33
High blowing force 6 - 130 N (1.3 - 28.7 lbs)																								
973		100	40	122		120	60	100		160	100	57		200	140	40		240	180	36		280	220	33
703	95			116	140			96	190			54	235			40	280			36	330			33
404 L	80			250	110			200	165			101	220			75	280			53	340			48
2005	82			127	108			107	162			58	215			45	268			39	321			36
705	95			125	140			105	190			57	235			44	280			38	330			35
705 L	95			253	140			203	190			103	235			76	280			55	330			50
707 L	95			255	140			203	190			103	235			76	280			55	330			50
707 C	95			140	140			113	190			64	235			49	280			43	330			39
407 L	98			252	130			202	195			103	260			75	325			54	390			49
710	140			130	200			108	240			61	280			46	325			40	365			37
412 L	127			253	165			203	245			104	325			77	405			55	485			50
715 C	140			146	200			118	240			67	280			51	325			45	365			41
715 L	140			296	200			251	240			143	280			103	325			74	365			67
720	200			139	260			110	315			63	370			48	445			42	485			39
730 C	200			155	260			126	315			72	370			55	445			48	485			44
735 L	200			296	260			251	315			143	370			103	445			74	485			67
Air knives, air curtains																								
302 L		90	40	253		115	65	206		165	115	110		215	165	79		270	220	57		325	275	52
304 L		190	40	253		215	65	206		265	115	110		315	165	79		370	220	57		425	275	52
306 L		290	40	253		315	65	206		365	115	110		415	165	79		470	220	57		524	275	52
362		92	30	122		112	50	100		152	90	57		192	130	40		232	170	36		272	210	33
364		142	30	122		162	50	100		202	90	57		242	130	40		282	170	36		322	210	33
366		192	30	122		212	50	100		252	90	57		292	130	40		332	170	36		372	210	33
392		130	40	122		150	60	102		190	100	58		230	140	41		270	180	37		310	220	34
394		230	40	122		250	60	102		290	100	58		330	140	41		370	180	37		410	220	34
396		330	40	122		350	60	102		390	100	58		430	140	41		470	180	37		510	220	34
372		165	40	122		185	60	102		225	100	58		265	140	41		305	180	37		345	220	34
374		295	40	122		315	60	102		355	100	58		395	140	41		435	180	37		475	220	34
378		555	40	122		575	60	102		615	100	58		655	140	41		695	180	37		735	220	34

Cone patterns and velocity distribution

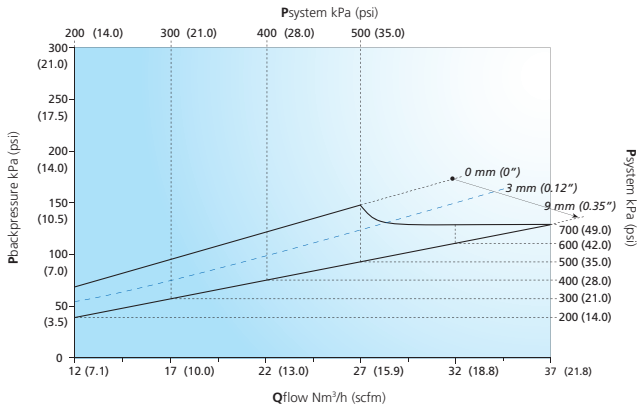
American units of measure

MODEL	A=2″				B=4″				C=8″				D=12″				E=16″				F=20″			
	D	L	W	S	D	L	W	S	D	L	W	S	D	L	W	S	D	L	W	S	D	L	W	S
Blowing force 0 - 6 N (0 - 1.3 lbs)																								
MJ4	0.47			423	0.94			341	1.77			187	2.56			131	3.46			118	4.33			108
MJ5	0.51			433	1.06			344	2.09			190	3.15			135	4.17			121	5.24			111
MJ6	0.79			443	1.38			354	2.56			194	3.74			135	4.92			121	6.10			111
209 L	1.57			830	2.56			676	4.53			361	6.50			259	8.46			187	10.43			171
512	0.94			397	1.50			331	3.15			184	4.49			128	6.14			115	7.64			105
630	0.94			397	1.50			331	3.15			184	4.49			128	6.14			115	7.64			105
011	0.94			400	1.50			335	3.15			184	4.49			128	6.14			115	7.64			105
701	3.74			354	5.51			282	7.48			167	9.25			128	11.02			112	12.99			102
811	0.94			436	1.50			348	3.15			190	4.49			131	6.14			118	7.64			108
921		2.48	1.18	400		3.23	1.97	328		4.72	3.54	187		6.30	5.12	131		7.87	6.69	118		9.45	8.27	108
961		2.48	1.18	400		3.23	1.97	328		4.72	3.54	187		6.30	5.12	131		7.87	6.69	118		9.45	8.27	108
971		2.36	1.18	400		3.15	1.97	328		4.72	3.54	187		6.30	5.12	131		7.87	6.69	118		9.45	8.27	108
209	1.57			364	2.56			292	4.53			167	6.50			121	8.46			112	10.43			102
217	1.57			364	2.56			292	4.53			167	6.50			121	8.46			112	10.43			102
218	1.57			364	2.56			292	4.53			167	6.50			121	8.46			112	10.43			102
209-S1	1.57			394	2.56			315	4.53			184	6.50			135	8.46			121	10.43			112
700 M	2.76			377	3.74			308	5.71			177	7.48			131	9.45			118	11.42			108
1011	0.94			801	1.50			646	3.15			358	4.49			259	6.14			187	7.64			171
920 A		3.15	1.57	400		3.94	2.36	328		5.51	3.94	187		7.09	5.51	131		8.66	7.09	118		10.24	8.66	108
High blowing force 6 - 130 N (1.3 - 28.7 lbs)																								
973		3.94	1.57	400		4.72	2.36	328		6.30	3.94	187		7.87	5.51	131		9.45	7.09	118		11.02	8.66	108
703	3.74			381	5.51			315	7.48			177	9.25			131	11.02			118	12.99			108
404 L	3.15			820	4.33			656	6.50			331	8.66			246	11.02			174	13.39			158
2005	3.23			417	4.25			351	6.38			190	8.46			147	10.55			128	12.64			118
705	3.74			410	5.51			344	7.48			187	9.25			144	11.02			125	12.99			115
705 L	3.74			830	5.51			666	7.48			338	9.25			249	11.02			180	12.99			164
707 L	3.74			837	5.51			666	7.48			338	9.25			249	11.02			180	12.99			164
707 C	3.74			459	5.51			371	7.48			210	9.25			161	11.02			141	12.99			128
407 L	3.86			827	5.12			663	7.68			338	10.24			246	12.80			177	15.35			161
710	5.51			427	7.87			354	9.45			200	11.02			151	12.80			131	14.37			121
412 L	5.00			830	6.50			666	9.65			341	12.80			253	15.94			180	19.09			164
715 C	5.51			479	7.87			387	9.45			220	11.02			167	12.80			148	14.37			135
715 L	5.51			971	7.87			823	9.45			469	11.02			338	12.80			243	14.37			220
720	7.87			456	10.24			361	12.40			207	14.57			157	17.52			138	19.09			128
730 C	7.87			509	10.24			413	12.40			236	14.57			180	17.52			157	19.09			144
735 L	7.87			971	10.24			823	12.40			469	14.57			338	17.52			243	19.09			220
Air knives, air curtains																								
302 L		3.54	1.57	830		4.53	2.56	676		6.50	4.53	361		8.46	6.50	259		10.63	8.66	187		12.80	10.83	171
304 L		7.48	1.57	830		8.46	2.56	676		10.43	4.53	361		12.40	6.50	259		14.57	8.66	187		16.73	10.83	171
306 L		11.42	1.57	830		12.40	2.56	676		14.37	4.53	361		16.34	6.50	259		18.50	8.66	187		20.63	10.83	171
362		3.62	1.18	400		4.41	1.97	328		5.98	3.54	187		7.56	5.12	131		9.13	6.69	118		10.71	8.27	108
364		5.59	1.18	400		6.38	1.97	328		7.95	3.54	187		9.53	5.12	131		11.10	6.69	118		12.68	8.27	108
366		7.56	1.18	400		8.35	1.97	328		9.92	3.54	187		11.50	5.12	131		13.07	6.69	118		14.65	8.27	108
392		5.12	1.57	400		5.91	2.36	334		7.48	3.94	190		9.06	5.51	135		10.63	7.09	121		12.20	8.66	112
394		9.06	1.57	400		9.84	2.36	334		11.42	3.94	190		12.99	5.51	135		14.57	7.09	121		16.14	8.66	112
396		12.99	1.57	400		13.76	2.36	334		15.35	3.94	190		16.93	5.51	135		18.50	7.09	121		20.08	8.66	112
372		6.50	1.57	400		7.28	2.36	334		8.86	3.94	190		10.43	5.51	135		12.01	7.09	121		13.58	8.66	112
374		11.61	1.57	400		12.40	2.36	334		13.98	3.94	190		15.55	5.51	135		17.13	7.09	121		18.70	8.66	112
378		21.85	1.57	400		22.64	2.36	334		24.21	3.94	190		25.79	5.51	135		27.36	7.09	121		28.94	8.66	112

Flow diagram for safety silencer SIS 02-05

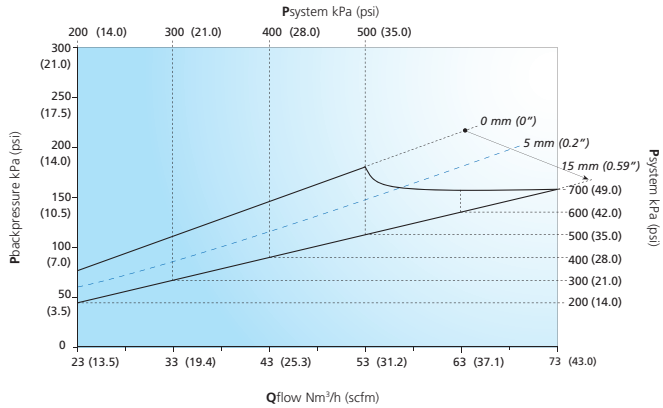
The diagram provides flow and backpressure values at various system pressures for the different SIS safety silencers. The values in italics specify in mm (inch) how much the inner diffuser is extended - from zero to the maximum extended position. where the warning indicator becomes visible.

SIS-02



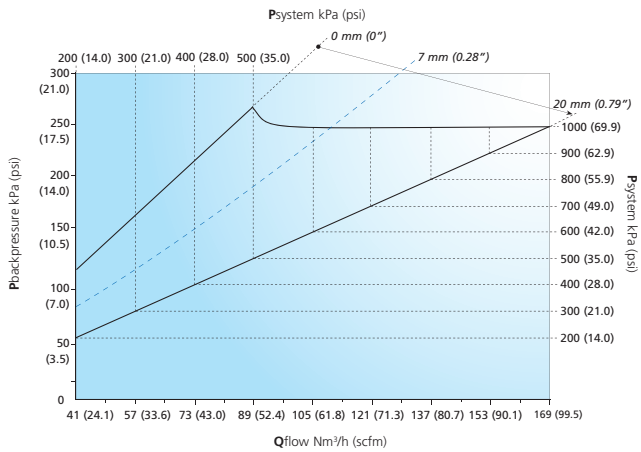
* Continuous operation across a 1/8" valve with a hose diameter of Ø 6 mm (Ø 0.236 inch).

SIS-03



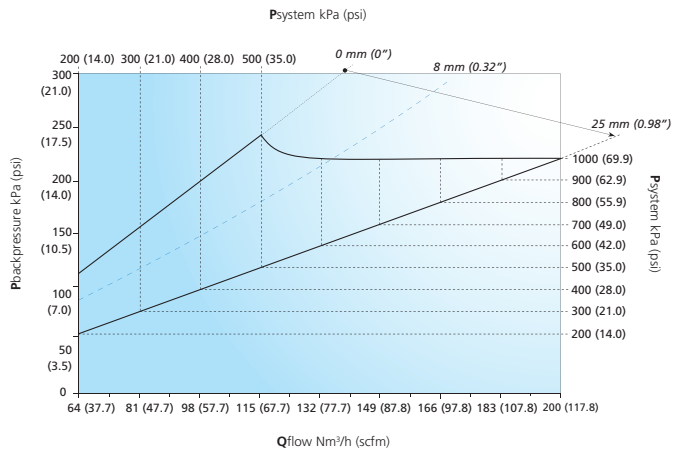
* Continuous operation across a 1/4" valve with a hose diameter of Ø 8 mm (Ø 0.315 inch).

SIS-04



* Continuous operation across a 3/8" valve with a hose diameter of Ø 10 mm (Ø 0.394 inch).

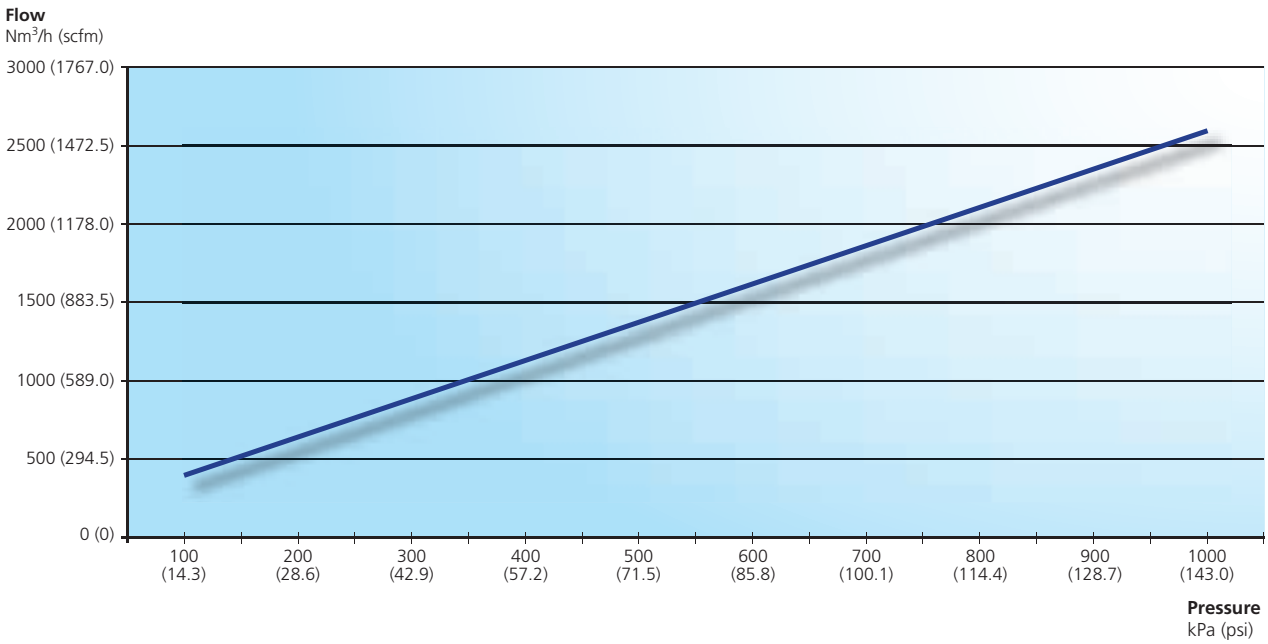
SIS-05



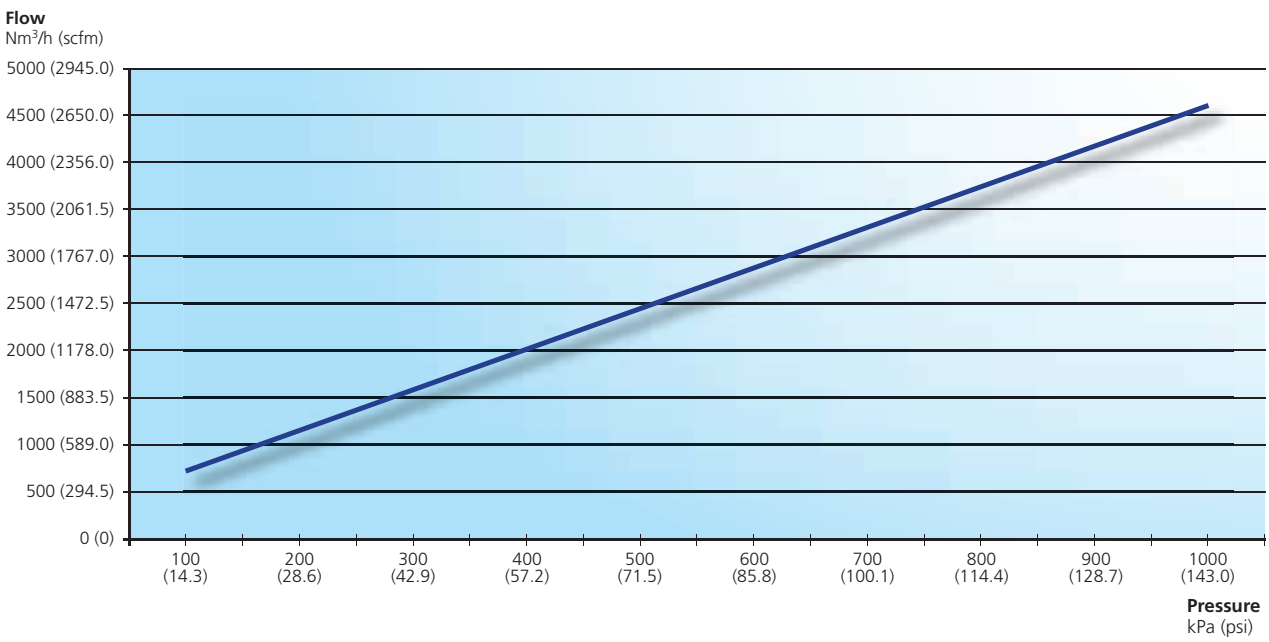
* Continuous operation across a 1/2" valve with a hose diameter of Ø 12 mm (Ø 0.472 inch).

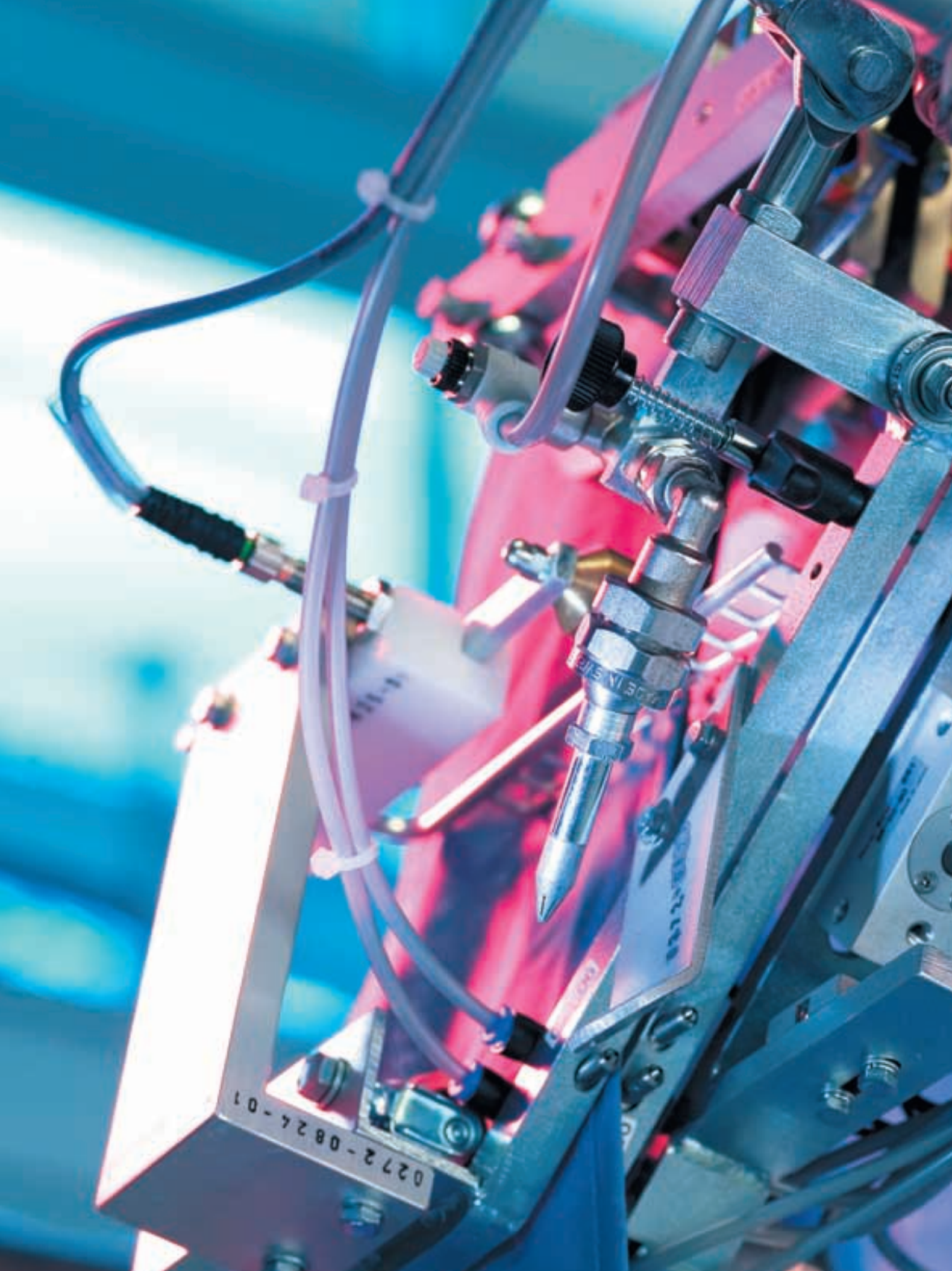
Flow diagram for safety silencer SIS 10-20

SIS-10



SIS-20




0272-0824-01

SILVENT®

SILVENT AB Stämpelgatan 5
SE-504 94 Borås, SWEDEN
TEL +46 (0)33 23 79 00
FAX +46 (0)33 23 79 10
E-MAIL info@silvent.se
INTERNET www.silvent.com

Production: R&M Advertising agency AB, www.rochm.com

www.silvent.com