SILVENT®

ADVANCED AIR NOZZLE TECHNOLOGY

INDEX:

SOME THINK COMPETITION.
WE THINK INNOVATION

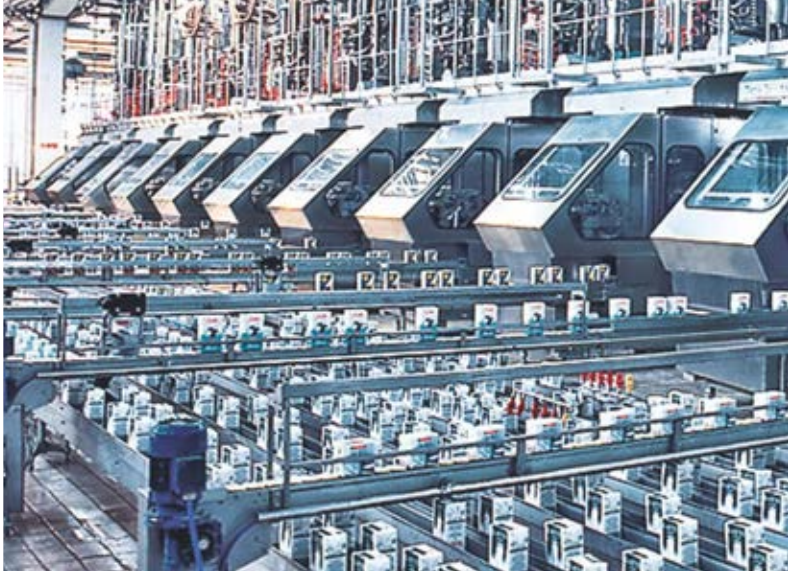
A FEW OF OUR CUSTOMERS

BMW
Kimberly-Clark
Baosteel
Tetra Pak
Sandvik
Coca-Cola
TATA
General Motors
Nippon Steel (NSSMC)
SCA
ABB
Toyota
Volvo

Alcoa
Chrysler
Tuborg
Porsche
Georgia Pacific
SSAB
Nestlé
Pratt & Whitney
Saint Gobain
General Electric
Siemens
Xerox
Bayer AG

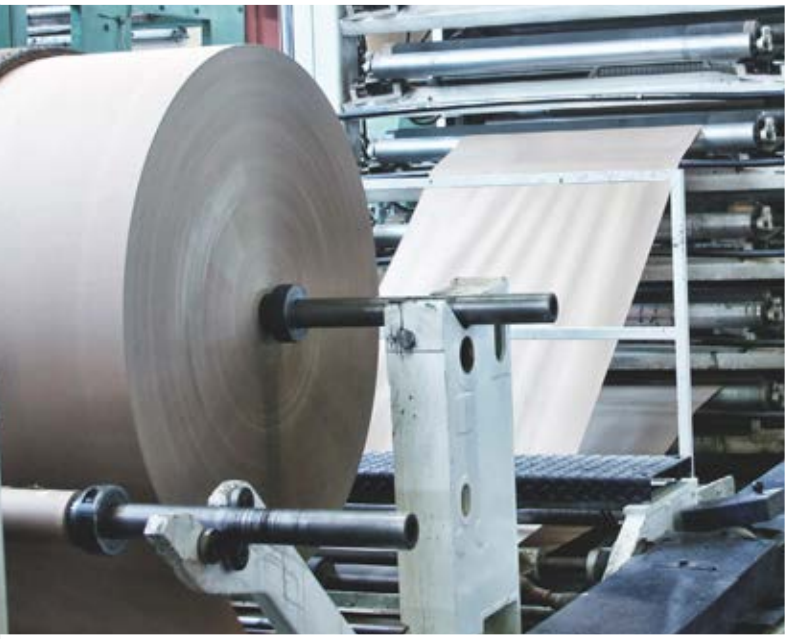
Renault
Fuji Film
Anshan Steel
Mitsubishi
M-real
Alunorf
Boeing
Orrefors
Intel
Procter & Gamble
BASF
Tesla Motors
Rolex

Hoechst
Hydro Aluminium
SKF
Goodyear
Weyerhaeuser
Arcelor Mittal
Sony
Honda
Pfizer
L'Oréal
Mercedes Benz
Stelco
and others



"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



SIX INDUSTRIES
SIX PROBLEMS – ONE SOLUTION

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 deadman'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.

Unique expertise helped a well-known packaging company

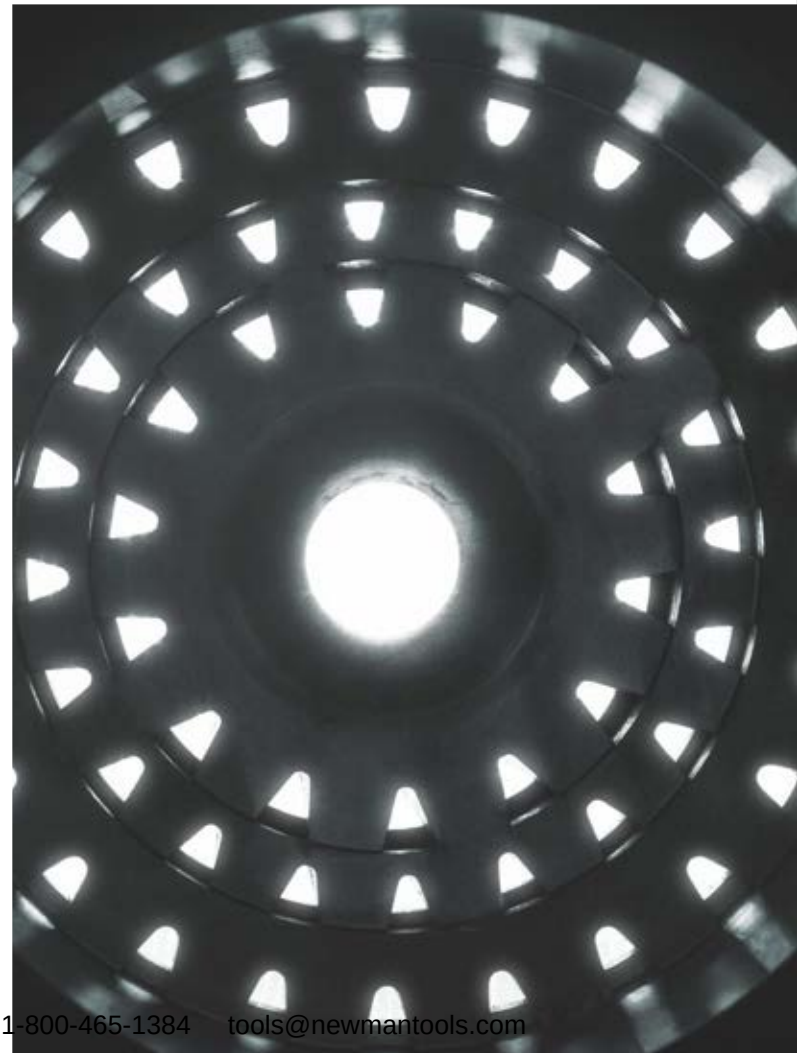
The best known supplier of packaging in the world is famous for their innovative thinking and ambition to always make use of the latest technology. Many years ago the company's engineers discovered Silvent's solutions. Today our application engineers are often involved from the initial stages of the 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
- Ejecting
- 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**

OPEN PIPE VS. SILVENT AIR NOZZLE

Compare the major differences between Silvent air nozzles and blowing with an open pipe in the table below, which is based on an eight-hour work day with blowing 5 days per week, year around. The cost of 1,000 scfm at 70 psi is calculated to the nearest $0.30.* Through practical application testing we have been able to compile a table that shows which nozzles perform the same job as an open pipe.

OPEN PIPE				SILVENT AIR NOZZLE					
Pipe internal Ø		Noise level	Air consumption	Replace with	Noise reduction		Air savings		Annual savings
mm	*inch*	*dB(A)*	*scfm*		*dB(A)*	*%*	*scfm*	*%*	*USD*
2	5/64"	84	4.7	**MJ4**	8	43%	2.3	50%	$86
2.5	3/32"	87	7.1	**MJ5**	8	43%	1.2	17%	$45
3	1/8"	90	10.0	**MJ6**	8	43%	1.8	18%	$67
4	5/32"	95	17.7	**209 L**	17	69%	7.7	43%	$288
5	3/16"	99	27.7	**1011**	15	65%	12.4	45%	$464
6	1/4"	102	39.5	**9002W**	22	78%	21.8	55%	$816
7	9/32"	105	54.2	**973**	19	73%	20.1	37%	$753
8	5/16"	108	69.5	**703 L**	17	69%	34.2	49%	$1,280
10	3/8"	112	109.0	**705 L**	20	75%	53.1	49%	$1,988
12	1/2"	116	156.7	**707 L**	22	78%	86.1	55%	$3,224
14	9/16"	119	213.8	**710 L**	20	75%	86.7	40%	$3,246
16	5/8"	122	279.2	**412 L**	34	89%	159.1	57%	$5,957
17	11/16"	123	315.7	**715 C**	23	80%	132.6	42%	$4,965
18	23/32"	124	352.8	**715 LA**	20	75%	164.2	48%	$6,335
20	3/4"	126	435.9	**720**	22	78%	188.7	43%	$7,065
25	1"	131	682.7	**735 LA**	22	78%	230.7	34%	$8,637
32	1 1/2"	139	1,576.8	**780 LA**	20	75%	546.8	35%	$20,472

EXAMPLE

Open pipe Ø 10 mm (3/8")
Number of hours per year:
52 weeks x 5 working days x 8 hours = **2,080 hours**

Scfm cost:
$0.30 per 1,000 scfm

$$\frac{109 \text{ scfm} \times 60 \text{ min} \times 2{,}080 \text{ hrs}}{1{,}000 \text{ scfm}} \times \$\ 0.30$$

Annual operating cost = $4,081

Replaced with SILVENT 705 L
Number of hours per year:
52 weeks x 5 working days x 8 hours = **2,080 hours**

Scfm cost:
$0.30 per 1,000 scfm

$$\frac{55.9 \text{ scfm} \times 60 \text{ min} \times 2{,}080 \text{ hrs}}{1{,}000 \text{ scfm}} \times \$\ 0.30$$

Annual operating cost = $2,093

** For more information please see page 26.*

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 has 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.

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 compressed 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!

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's highly trained employees have cutting edge expertise in blowing with compressed air.

All products are assembled and inspected at our headquarters in Sweden prior to delivery.

Silvent is an abbreviation of the two Latin words Silencium Ventum, which means silent wind.

Silvent is headquartered in Sweden. Distributors and staff from all over the world come here for training.

Avoid this!

Just add air.

SILVENT® InTech
IMPROVE THE QUALITY, JUST ADD AIR.

INTEGRATED
TECHNOLOGY
MADE IN SWEDEN

silvent.com

SOLUTIONS FOR STEEL MILLS

We aren't a new company. The fact is that for years we've been the market leader in our segment: compressed air blowing. But it wasn't until a few years ago that we realized our products could improve quality during steel production. After thousands of hours of development, our new products —completely tailored to the steel industry—are now tested at steel mills and patented.

New partner in the steel industry
Although we have collaborated over the years with steel mills such as US Steel, Baosteel, and Nippon Steel, we are a relatively new partner in the steel industry. But we consider that to be an advantage. A partner that comes from the outside often has the advantage of seeing operations with new eyes. Tough problems suddenly become manageable, largely thanks to what we work with every day: air.

Silvent InTech
Since its inception, Silvent has always developed products that essentially any industry can use. The air nozzle for the brewery could also be used in the bakery, as well as by the car manufacturer and the pharmaceutical company. But the steel mill requires more. Much more. Power. Size. Durability. Everything. You could say that steel production is the heavyweight match for air nozzles. No question about it; Silvent InTech has the most demanding customers.

Absolute highest quality
Almost every country has a few steel mills that are a bit more demanding, a bit more meticulous, a bit more talented. Silvent InTech targets those steel mills that want to offer their customers sheet of the absolute highest quality. Quite simply, Silvent InTech targets those steel mills that want to be best.

Interested in Silvent InTech? Visit silvent.com for more information.

FACTS

FACTS ABOUT COMPRESSED AIR BLOWING

A high noise level does not mean good blowing force

Nearly everyone understands that a higher noise level doesn't necessarily indicate a more powerful engine. Yet many people believe that the higher the noise level, the stronger the blowing force. Many industries seem to be convinced that they have implemented efficient compressed air solutions simply because the noise level is high. Do you want to know the actual truth about noise and blowing force?

Silvent's solution:

A high noise level is not the same as good blowing force and vice versa. In short, Silvent's patented technology allows a reduction of the noise level without sacrificing blowing force. Extensive research and development has provided Silvent with the know-how required to design nozzles that create the least possible turbulence. This means that the noise level can be reduced by a full 50%.

Not many people know just how much compressed air actually costs

In your shower you use a nozzle that effectively sprays water over your entire body. We simply take this for granted. At the same time, the nozzle saves water and energy. Why don't we apply the same logic at our places of work? In many industries people seem to think that compressed air is inexpensive or even free. In truth, it is just the opposite. Compressed air is among our most costly sources of energy.

Silvent's solution:

One of several unique advantages of Silvent's nozzles is that they can reduce air consumption by up to 50% in applications such as cleaning, drying and cooling. Silvent's patented technology utilizes the surrounding air in an efficient manner and conserves large amounts of energy.

70-80% of all hearing loss within the manufacturing industry is caused by compressed air

Noise is like sore muscles or a blister on your heel – it seems harmless and you get used to it. Nothing could be further from the truth. You don't get used to it, it results in permanent injury. Tinnitus is increasingly common among industrial workers. Hearing loss can never be restored. Who is responsible for the working environment at your company?

Silvent's solution:

Silvent's patented nozzles and safety guns reduce air turbulence and thereby lower the noise level by at least 8-10 dB(A). This is experienced by the human ear as if the noise level has been cut in half. Using Silvent products minimizes the risk of contracting tinnitus and other serious forms of hearing loss.

Many people believe that any old piece of pipe is a satisfactory solution

Shopping in a convenience store is quick and easy. But in the long run, it is expensive. All too often a piece of pipe that happens to be lying nearby is installed when there is a need for compressed air. Of course this gets the job done, but 90% of all these "open pipe installations" are over-dimensioned and waste enormous amounts of energy. If you are seeking quick and easy compressed air solutions, the end results are likely to be costly in the long run.

Silvent's solution:

Silvent offers the world's widest range of compressed air nozzles. A fact that applies to all of Silvent's nozzles is that energy consumption is reduced considerably when the blowing force and blowing pattern can easily be adapted to the job at hand. Installing an air nozzle is always a more efficient and economical solution.

The use of compressed air doesn't need to mean a bad working environment

How would we react if every vehicle in our vicinity was not equipped with a muffler? Could we stand to be in the midst of city traffic during rush hour? Industry's enormous need for compressed air is certainly unquestionable today. But why accept a noisy working environment that can lead to stress, headaches and nausea? Do you wish to contribute to a better environment at your place of work?

Silvent's solution:

Silvent's patented compressed air nozzles cut the noise level in half. This reduction means a considerable improvement of the working environment. Beyond any doubt there is a clear correlation between a good working environment and good personnel performance.

5

Air guns are often not adapted to the job they must perform

Do you use a crescent wrench to drive a nail? Of course not! But most people use the same air gun for every type of blowing operation. Blowing away heavy metal turnings requires much more force than general-purpose cleaning. This is obvious to you, isn't it?

Silvent's solution:

Silvent has the largest assortment of safety air guns in the world. There is always a gun to suit your particular needs. The right equipment gets the job done quickly, easily and efficiently.

6

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9 out of 10 air guns in use today are dangerous

You know that you are risking your life when you step into a busy street without checking to see if a car is coming. But did you know that your life is at stake when you use an unsafe air gun? Fatal accidents have occurred when air has been forced into the bloodstream. Do you have air guns at your company that can lead to life-threatening accidents?

Silvent's solution:

The nozzle of a Silvent safety gun cannot be blocked by a hand. The maximum amount of pressure a Silvent gun can build up against human skin is so low that the risk of air bubbles entering the bloodstream and causing serious injury is negligible. Silvent's safety guns fully comply with the strictest requirements of national authorities throughout the world.

7

Few realize the risk associated with the use of compressed air

Would you be able to perform your work without being able to see? Unfortunately the use of compressed air and eye injury are often related. Dust, particles and chips bounce back at the operator. Our eyes are sensitive organs that can be seriously damaged by even very small particles. Are you among those who forget to protect your eyes?

Silvent's solution:

Silvent's safety air guns can be fitted with a safety shield that effectively prevents particles from bouncing back at the operator's eyes. Air shields are yet another example of our safety solutions. Both products are alternatives to safety goggles and comply with OSHA safety guidelines.

8

FACTS ABOUT SOUND AND NOISE

What is sound?
Sound is the result of pressure variations in the air. These pressure variations set the eardrum into motion and produce what we humans perceive as sound. The sound is transmitted from the eardrum through the ossicles to the cochlea where it is converted into electrical signals that continue on to the brain. The human ear can distinguish sound pressure within a very large area. A special measuring scale is used to describe the strength of the sound in the working area of the ear. The result—the sound pressure level—is expressed in decibels (dB).

In the logarithmic sound pressure scale, two equally strong sources of sound provide a sound pressure level that is 3 dB higher than just one source. Ten equally strong sources of sound provide a level that is 10 dB higher and one hundred equally loud sources of sound cause a 20 dB higher level. The following formula can be used to calculate the total sound pressure level of several equally strong sources of sound:

$$Lp\ (total) = Lp + 10*lg(n)$$

where (n) is the number of equal sources and Lp is the sound pressure level from a source.

Sound travels at different frequencies (oscillations per second) and the sensitivity of the human ear to them varies. The instrument (sound level meter) used to measure noise is designed to take this into account. The measurement result is filtered and given in an A-weighted level to resemble the sound pressure that the human ear experiences. The resulting sound level is then stated in dB(A). There is also filtering according to a C-weighted level that is used for high-frequency sounds; the result is then stated as dB(C).

In most environments, the sound level varies during the time spent in it, which is taken into account by using a type of average sound level, called the equivalent sound level (Seq), for a period of time, such as an eight-hour workday.

What is noise?
The difference between sound and noise is that noise is usually defined as undesirable sound. Such sounds may be perceived as just disturbing and annoying, or they may be directly harmful for hearing. What is sound and what is noise is indeed purely subjective, determined by the attitude toward the noise source.

Eliminating or reducing the noise at a workplace is often very profitable. The safer and healthier the working environment, the less likely that the employer will sustain the costs of absenteeism, accidents, and employees who are unable to work at full capacity. A good sound environment requires a preventive, consistent and long-term approach to noise issues. And the employer is always responsible for achieving this objective.

Compressed air blowing generates noise
Noise from compressed air systems is frequently found in industry. There are two types of blowing noises. One is impulse noise, which occurs when venting valves and cylinders. The second type occurs when using compressed air for blowing something clean, cooling, transporting or sorting. Blowing noise occurs when the compressed air expands out from the system. This occurs at high speed and often through an "open pipe" or a hole. When air freely expands, turbulence is created, which in turn generates loud noise.

Basic facts about sound
Many special terms and expressions are used in acoustics, the science of sound. Some of the most common are briefly described here.

Sound
Sound is a wave generated by a source that sets the surrounding air particles in motion. The movement then spreads to other air particles that are further away from the source. The sound wave propagates in air at a speed of 340 m/s (1115 ft/s). In liquids and solids the propagation velocity is greater: 1,500 m/s (4,920 ft/s) in water and 5,000 m/s (16,400 ft/s) in steel.

Noise and tones
Noise can consist of a single pure tone, but is usually composed of many tones of varying strength. The disturbing effect of a sound depends not only on the strength of the tones; frequency also has an effect—high tones are more disturbing than low tones. Pure tones are more disturbing than a composite sound.

Frequency
The number of oscillations per second determines the frequency of the sound wave. The unit of frequency is the hertz, Hz. Sounds exist in a very wide frequency range; the audible range for young people is between 20 Hz and 20,000 Hz. For low tones, the air particles oscillate slowly and produce bass notes. High tones provide treble notes. The boundary between high and low tones is usually set at 500 Hz.

Infrasound and ultrasound
Sound with frequencies below 20 Hz is called infrasound. Sound with a frequency greater than 20,000 Hz is called ultrasound.

Decibel, dB
The strength of the sound is indicated by the sound level in the unit dB. An increase in the sound level of 1 dB is barely perceptible. A 10 dB increase in the sound level anywhere within hearing range is perceived by the ear as twice as loud. Conversely, a reduction of 10 dB is perceived as reducing the sound level by 50%.

Sound level measurement
When measuring the strength of sound, an instrument that emulates the varying sensitivity of the human ear to sounds with different tonal composition is often used. This is called the A-weighted sound level and the unit is called dB(A).

Equivalent noise level (Leq)
The sound from noise sources often changes significantly during a certain period of time. To allow for these changes we measure the average, the equivalent sound level or noise dose, during this period.

Hearing loss
Humans have five senses: sight, hearing, taste, smell and touch. The sense in first place is sight. It is important for us to be able to perform at school or work.

After vision, hearing is usually considered to be the next most important sense. We use speech and hearing to communicate with each other. Hearing is also our most sensitive and most important warning mechanism. It receives impressions from all directions and is open to impulses both when we are awake and when we are asleep.

Modern society has created an environment in which the ear is the sensory organ most frequently and easily injured. The ear is not designed to tolerate or exclude many of the sounds and noises generated in today's industrial society. Loud recurrent noise can seriously injure the ear.

Damage to hearing can completely or partially isolate individuals from their surroundings. Such hearing damage can never be repaired. In the past a noisy machine was considered to be a symbol of strength, power and prosperity. People became used to the noise; they accepted it because the noisy machine meant income and sustenance. Becoming deaf or nearly deaf because of noise exposure was considered to be part of the job. Today we do not have to just accept this explanation. We have the ability to reduce or exclude noise, both in the workplace and in everyday life. People just have to be made aware of the dangers and possibilities so that they will want to do something to reduce noise levels. Many experts and researchers consider noise to be one of our greatest environmental problems.

They usually talk about three types of impacts associated with noise:

Psychological:
The psychological impact includes irritation due to continuous or repeated noise. With such disruption the intensity does not have to be high, especially in connection with relaxation and sleep. A dripping faucet or the muffled rumbling of traffic is sufficient. Irritating noise in the workplace reduces work capacity and performance. Generally speaking, irritation rises with sound strength and noise, which contains distinctive, high-pitched tones, is particularly disturbing.

Masking
When noise is masking it means that it prevents the ear from perceiving other sounds, such as conversations and warning signals. Masking noise can therefore increase the risk of accidents in the workplace.

Physical
Physically, noise primarily affects us by damaging the inner ear, either acutely in response to a very intense noise such as a rifle shot, or gradually through continuous exposure to industrial noise. Other noise impact of a physical nature can include elevated blood pressure, altered respiration and altered gastric acid production. Circulation, sleep and digestion can suffer, leading to headache, nausea, tense muscles, and general mental and physical fatigue, which in turn can impair concentration.

When the ear is stressed with loud noises, the sound-sensitive hair cells in the inner ear can be damaged. The louder the sound, the less time needed for an injury to occur.

When exposed to loud sounds, individuals may experience a feeling of a lid covering the ears, their hearing worsens and they may hear buzzing or ringing in the ears. In most cases, the ear recovers after a while—the damage was only temporary, but still shows that the individual has been exposed to more noise than the ear can tolerate. This clear warning signal should be taken very seriously.

After repeated exposure to loud sounds the ear may eventually no longer be able to recover. The ear has sustained permanent hearing damage that cannot be reversed. There is also a high risk that the buzzing or ringing in the ear will become permanent. Exposure to loud noise primarily affects the ability of the ear to perceive higher frequencies, treble sounds.

Even a relatively moderate hearing loss can cause problems because it often leads to difficulties in understanding conversations, especially in large groups in which several people talk simultaneously, or if background noise is present. In many cases, people do not discover an impending hearing injury until a late stage, because they gradually become used to the worsening situation. To some extent the brain compensates for hearing loss by using other senses, such as by reading lips when others speak. But this response also contributes to delayed detection of hearing impairment.

In most cases, hearing loss is a permanent injury that can only be inadequately compensated by technical means such as a hearing aid.

Tinnitus
Tinnitus is defined as perception of sound even when there is no noise in the environment. It can be experienced as buzzing, ringing and monotonous sounds in the head. Tinnitus is often a component of noise damage, but also occurs in connection with hearing loss that has another cause. Tinnitus can also occur even without any measurable hearing loss. When we refer to tinnitus as a problem, we mean permanent tinnitus that bothers the individual. Tinnitus occurs to varying degrees in about 10-15% of the population. Severe tinnitus affects about 3-5%.

The exact cause of tinnitus is unknown. One theory is that the hair cells become so damaged that they send false signals to the brain. The brain perceives these signals as sound. Essentially, the hair cells have been "shocked" by the noise and locked themselves in a position where they transmit signals even when there is no sound in the environment.

In most cases tinnitus is a temporary problem, but for some people it can be permanent, comparable to chronic pain and it is important to seek help. In addition, stress, fatigue and depression can make tinnitus worse. Tinnitus does not respond to treatment with medications or to surgery, but there is treatment that provides relief and support.

Hyperacusis
Another form of hearing loss that can occur is hypersensitivity to sound, which means that moderately loud sounds are perceived as uncomfortably loud. It often occurs in connection with tinnitus, though not always.

Sound distortion
In yet another form of injury, sounds are distorted. Even when sounds are clearly audible, they are perceived with lower quality because of the damage to the ear. Diplacusis, or double hearing, is one form of sound distortion. It can manifest as a pure tone perceived as two tones in combinations that can be very discordant, or the same tone may be perceived as having a different pitch in the left ear than in the right. This condition can be very annoying, such as when listening to music.

One common misconception is that people get used to noise. A positive attitude toward noise will reduce some of the physical reactions, but the adverse effects on the hearing organ are unavoidable, causing fatigue and paralysis of some hair cells. When people become used to noise, it is because they have a hearing loss for the frequencies where the noise is most intense. People who have become accustomed to a certain type of noise may become insensitive to all the frequencies included in just that particular noise.

As mentioned earlier, sound occurs when a sound pressure wave affects the eardrum and the cochlea of the inner ear. The membrane of the cochlea vibrates and affects the sensory hairs, which are bent at the frequency corresponding to the pressure wave. If the hair cells are strongly irritated over time, metabolism is disrupted and the sensory cells become temporarily dysfunctional. The individual becomes hard of hearing. If the cells are allowed to recover in peace and quiet following a stress that is not too strong or prolonged, they can recover and become functional again. If the stress is repeated day after day, the hair cells are unable to normalize between exposures. The blood supply and metabolism of the cell have changed in such a way that it can no longer function.

The worst part about hearing loss is that it is insidious. The high frequencies above the speech range are affected first. The individual no longer hears the birds chirping or crickets singing. In the end, the speech range is also affected.

In the speech range, the consonants disappear first, followed by the vowels. The effect can be surprisingly fast and devastating. Noise damage often results in the generation of nerve impulses, which are perceived as beeping or buzzing, consisting of pure tones or complex tones within a given frequency range; in other words, the individual experiences auditory sensations without any stimulation. This phenomenon can cause extreme mental strain along with the actual hearing damage. It is possible to adapt to noise, but sooner or later a price must be paid for this adjustment.

Hearing damage can never be reversed.

Laws and regulations
The EU Directive 2006/42/EC and in the U.S., OSHA Regulations 1910.95 "Occupational noise exposure" are examples of regulations governing what noise can be permitted in the workplace. OSHA is the acronym for "Occupational Safety and Health Administration," the federal agency responsible for ensuring implementation of legislation on health and safety at work in the U.S. Some countries have even more stringent national requirements than those specified in the EU Directives or OSHA.

Under the EU directive, the environment must meet the requirement for the lowest possible noise level in light of technological advances and the possibilities for controlling noise, especially by the sound source. If the stated guidelines are exceeded the cause must be investigated. A timetable for an action program must be formulated and implemented. Noise exposure must be reduced as far as is possible in practice under the specified values.

Employees must receive adequate information about the exceeded levels and the measures taken. Information must also be provided about the risk of hearing loss that exposure may pose and the obligation to wear hearing protection.

Machinery and technical equipment must be designed based on the latest technical developments for reducing noise. It is therefore important to monitor technological developments with respect to noise control. Noise reduction directly at the source of the noise is generally the most efficient and economical.

When determining the lowest level of noise exposure that is practicable, it is important to consider the latest technical advances and possibilities for limiting the noise.

Under the EU Directive, the previous reference to the economic feasibility of measures to prevent noise can no longer be used. One aim of the EU Directive is to prevent companies and countries from increasing their competitiveness through a poor working environment.

International and national regulations.
Virtually all legislation regarding noise at work defines the limit for the maximum volume level to between 85 and 90 dB(A) Leq for eight hours of exposure. This limit is based on the guidelines of the International Standard ISO 1999:1990.

The European Directive 2003/10/EC, concerning the risks of exposure to noise at work, defines the maximum limit as 87 dB(A) Leq for an eight-hour day.
France, Sweden, Norway, New Zealand and Spain allow 85 dB(A) Leq for an eight-hour day and an exchange rate of 3 dB(A), while the US allows 90 dB (A) for an eight-hour day and an exchange rate of 5 dB(A).
If the exchange rate is 3 dB(A), it means that if the sound level increases by 3 dB(A), the amount of time a person can be exposed to it is cut in half.
In the UK, the Control of Noise at Work Regulations 2005 set a limit of 87 dB(A) Leq for eight hours of exposure, in line with the EC Directive.

Developing countries have traditionally adopted the laws and regulations set by developed countries, without taking any greater account to local circumstances. For example, in 1948 India set a limit of 90 dB(A) for eight hours of exposure, but since most factories in India have a six-day work week, total exposure is 48 hours per week. As a result, cumulative exposure is higher than the limit approved in developed countries.

OSHA 1910.95 sets values for noise exposure in the workplace. The limits are based on a worker's weighted average over an eight-hour day. OSHA sets the maximum permissible exposure limit (PEL) to 90 dB(A) for everyone who works eight hours per day. These levels apply for an exchange rate of 5 dB(A).

The National Institute for Occupational Safety and Health (NIOSH) in the US recommends that the equivalent noise level that a worker is exposed to should be limited to 85 dB(A) for an eight-hour day to minimize the risk of hearing damage. Based on updated literature studies, NIOSH has found that significant hearing loss can occur even at

levels in line with the OSHA PEL. NIOSH also recommends an exchange rate of 3 dB(A) so that each increase of 3 dB(A) halves the permitted exposure time.
Example: OSHA allows eight hours of exposure for noise levels of 90 dB(A), but only two hours of exposure to 100 dB(A). NIOSH recommends limiting eight-hour exposure to below 85 dB(A). For 100 dB(A), NIOSH recommends less than fifteen minutes of exposure per day.

In 1981 OSHA implemented new requirements to protect workers in the manufacturing industry. In cases where the worker is exposed to a weighted equivalent noise level of 85 dB(A) or more during an eight-hour shift, the employer must implement a hearing conservation program. Employers must measure the noise level, offer free annual hearing tests, provide hearing protection and training, as well as evaluate safety measures, unless they ensure that workers are exposed to less than 85 dB(A) by changing work practices, tools and equipment.

Proposed measures
Sound level measurement
A sound level meter that expresses the sound pressure level in the unit dB(A) is used to measure the sound level. The measurement is carried out by aiming the meter's microphone toward the sound source, at a distance of one meter (1 m) and at a 90° angle to the direction of the sound. It is not complicated, just remember to use a sound level meter that complies with IEC 61672 class 2 (replaces IEC 60651 (651) type 2), ANSI 51.4 requirements for the results to be reliable.

To measure the equivalent noise level during an eight-hour shift, a dosimeter is worn by the person whose noise exposure is to be measured. A dosimeter is a meter that the individual carries that measures the total noise that a person has been exposed to during the measurement period.

Start by measuring the noise to which individual employees are exposed. The general noise level should also be measured, but note that it is important for the measurements to be made during representative working conditions. Compare the levels measured with the limits in the noise regulations.

Analyze the variations in noise levels around the work site or workplace. The measurement is best presented using "noise maps." Determine how much the various sources of noise contribute to the noise to which workers are exposed. Make sure to include the sources of the noise, the noise level and the duration of exposure to noise. This work should be done by an expert in the field because it requires both more advanced equipment and more specialized knowledge.

Action plan
After carefully mapping out the noise, you can formulate a proposal for an action plan. It is important for employees and health and safety representatives to have the opportunity to submit proposals and opinions. In many cases a combination of measures may be needed, such as:
- Measures right at the machine or noise source
- Enclosing the noise source
- Replacement of machinery and equipment with quieter models
- Replacement or change in work practices
- Measures in the work area involving e.g. sound absorbing materials and screens
- Sound insulation in the control or supervision cab
- Job rotation

Practical aspects
Replacing traditional, loud machinery and production processes with new noise-reducing methods is often capital-intensive.

The alternative method regarding protection against noise in the workplace is to teach employees how to safely use hearing protection. In this scenario, the safety measures for employees are based less on technical solutions: rather, the emphasis is on controlling employee attitudes and influencing use of hearing protection.

Research and studies in the field show that the use of hearing protection is a less effective method of combating noise damage because of the negative side effects that can occur in the workplace, such as discomfort and difficulty communicating with others.

For this reason it is important to choose the right hearing protectors. The choice of appropriate hearing protection depends on the relevant noise situation in the workplace. Hearing protection must have the right acoustic properties so that it insulates at the frequencies where noise is present.

Hearing protection manufacturers provide the mean and standard deviation for the damping effect of the product at different frequencies, which helps calculate the likely noise protection at different frequencies.

Silvent Technology
Silvent technology makes it possible to blow with compressed air at a low noise level but without compromising on the high blowing force. Instead of allowing the air to

expand through one large hole, it is divided into a number of small holes or slits, which increases the frequency of the sound to levels beyond what the human ear can perceive or be harmed. Through co-ejection of the surrounding still air, the speed difference in the air stream is reduced, which also reduces the noise level.

Another important factor to reduce the noise level is to control the air and create a laminar flow that eliminates the turbulence that usually creates noise when blowing with compressed air.

Silvent is continually developing its patented technology and has introduced a whole new dimension to blowing technology. The effect is achieved by surrounding a core of air traveling at supersonic speed with a protective sheath of air moving parallel to the central air jet. The core stream in the nozzle 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. Because of the protective sheath of air, the surrounding air does not slow down the core stream, which can be used to full effect. The gas flow prevents turbulence, thereby lowering noise levels.

Over the years Silvent has received several international patents for its products which reduce both noise and power consumption when blowing with compressed air.

Summary

- The difference between sound and noise is that noise is usually defined as undesirable sound. Such sounds may be perceived as just disturbing and annoying, or they may be directly harmful for hearing.
- Virtually all legislation regarding noise at work defines the limit for the maximum volume level to between 85 and 90 dB(A) Leq for eight hours of exposure.
- If the exchange rate is 3 dB(A), it means that if the sound level increases by 3 dB(A), the amount of time a person can be exposed to it is cut in half.
- Conversely, a reduction of 10 dB is perceived as reducing the sound level by 50%.
- Many experts and researchers consider noise to be one of our greatest environmental problems. They usually talk about three types of impacts associated with noise: psychological, masking, and physical (hearing loss, tinnitus, hyperacusis and sound distortion).
- A sound level meter that expresses the sound pressure level in the unit dB(A) is used to measure the sound level. The measurement is carried out by aiming the meter's microphone toward the sound source, at a distance of one meter (1 m) and at a 90° angle to the direction of the sound. You can easily do this on your own.

COMPRESSED AIR BLOWING AS A FORM OF ENERGY

What is compressed air?
Compressed air is ordinary atmospheric air which has been compressed by a compressor to a pressure higher than atmospheric pressure. Dry air mainly consists of oxygen and nitrogen. Water mixed with dry air to a certain moisture content can also be found in the atmosphere, depending on temperature and location.

Compressed air is a medium that can safely and reliably store large amounts of energy. This energy is widespread and is used in essentially all industry worldwide. About 90% of all manufacturing companies use compressed air in one way or another in their production process.

Comparable types of energy such as gas, water and electricity are usually delivered to the production site by external suppliers. These suppliers must comply with quality, environmental and safety standards set by regulators, customers and industry organizations. In contrast, compressed air usually is not supplied by external providers, but is produced on site. It is therefore the user's responsibility to satisfy quality requirements and to reduce production costs as much as possible.

Compressed air is a beneficial form of energy in many ways. It is clean and safe, easy to store and transport, and is very useful for highly diverse industrial applications. Compressed air can be used for everything from operating screwdrivers and similar tools to creating movements and lifting, or for blowing surfaces clean, moving and cooling materials.

Operational costs
Compressed air is produced by a compressor which in most cases is operated by electricity from the grid. For example, European industry uses 3% of its total electricity consumption to produce compressed air. Electricity consumption, which is the energy supplied, accounts for the majority, about 70%, of the total cost of compressed air production over a ten-year period. Other expenditure items are mainly investment costs, as well as service and maintenance.

Given that much of the energy supplied is lost through leakage, heat and idling, the efficiency of a compressed air system offers substantial potential savings. Losses due to leakage of 20-50% during regular operation of a compressed air system are not uncommon.

What does compressed air cost you?
As a starting point and basis for price calculations and purchasing, it is often important to know specific costs such as the cost of cubic meter of water, a kilowatt hour of electricity, or the kilometer cost of truck transport. However, people are rarely aware of the cost of compressed air. Studies have shown that the majority of decision-makers do not know what a cubic meter of compressed air costs. Since compressed air is usually produced on site, and not by an external supplier, there is no way to easily monitor what it costs.

How can we find out what compressed air costs?
A simple approach is to find out how much energy (electricity) the compressor consumed during a given period and how much compressed air was delivered during the same period. The amount of compressed air delivered is measured by a flow meter. This approach shows how many kWh have been used to produce 1,000 scfm air in the specific system. The operating cost of 1,000 scfm air can then be calculated based on the cost of one kWh from the electricity provider. However, this scenario does not consider the investment or maintenance costs of the compressed air equipment.

Expense estimates in this handbook are based on a screw compressor that provides 214.7 cfm, with an engine power of 37 kW, and cost per kWh of 0.0725 USD. The result in this case is 214.7 cfm x 60 min/h = 12882.8 cf/h. So, energy consumption to produce 12,882.8 cf is 37 kWh, which means 37 kWh/12882.8 cf = 0.00287 kWh/cf. The cost:
0.00287 kWh/cf x $0.0725 USD = $0.000208 USD/cf or $0.208 USD per 1,000 cf. Assuming that 70% of the total cost over ten years is the cost of electricity, the total cost would be $0.30 USD per produced 1,000 cf.

To go further and evaluate the various users of compressed air within the facility, air consumption has to be measured at different points in the system. This can be complicated because external devices (flow meters) have to be connected to obtain specific levels of exactly how much compressed air is consumed in each place.

Measuring air consumption
Since compressed air is one of the most expensive types of energy in the industry, knowledge of where consumption takes place, and how to optimize consumption gains increasing importance. Production grinds to a halt without compressed air, which means that measurement and monitoring of compressed air consumption and compressor maximum capacity can be crucial for reliability.
Measurement of compressed air consumption is also crucial for maintaining necessary cost controls. Not many

companies are aware of the actual cost of compressed air and how vital operating conditions are for efficiency.

Another advantage of continuously monitoring and checking air consumption is that the effect of any measures taken can clearly be seen. The results of increases in leakage and measures taken by different consumers of air make it possible to see which changes best improve efficiency. Air consumption is measured not only to learn about the current situation, but also to learn about potential savings.

Possible savings measures

Compressor

The compressor that produces the compressed air also produces a large amount of heat, like a light bulb. Even if compressors were more efficient, most of the electrical input power disappears as heat. But even here there are solutions—take advantage of the excess heat from the compressor and use it for something that would otherwise require extra energy.

Choose the right compressor for your needs, to achieve optimal utilization of the facility. Determine the amount of compressed air and the pressure needed to perform various tasks and to operate various machines in your production. Find out about the operating cycles and the air quality required by the facility. Then determine your needs together with your compressor supplier and the equipment needed to achieve the most energy-efficient production possible.

Optimal use of compressed air

Compressed air technology has long been slightly ignored; no one has paid it much attention. Instead, perhaps a little extra margin has been allowed just to be on the safe side. But a large air cylinder can hold more than a smaller one, and unless pressure is optimized for the current application, more air will be consumed than necessary. The pressure in a compressed air system is often too high in relation to the need, resulting in increased air and energy consumption. Such a system design would never be taken so lightly in electrical engineering. As technology develops, more and more smart components will emerge that reduce energy consumption in compressed air systems.

Compressed air is used in industry as a power source for tools and machines, for drying and cooling, and for purging. Make sure you choose the right equipment for your needs in order to optimally take advantage of compressed air.

If you need compressed air for cleaning, you should use specially designed nozzles which may benefit from the ejector effect, the ability to draw the air surrounding the nozzle. Air consumption can be reduced by up to 50% compared with conventional methods.

Replace all "open pipe" blowing with more efficient air nozzles that provide the right blowing force and blowing pattern for the specific application. The same applies for air guns; replace the simple "open pipe" models with more modern and energy-efficient versions. Use compressed air only when needed—install manual or automatic shutoff valves on all blowing stations, which will also have a positive impact in terms of reduced leakage.

Where possible, compressed air tools should be replaced by electric tools, which are often much more efficient. An electrical device can achieve 50% efficiency, while corresponding compressed air tools often do not convert more than 12-15% of energy into useful work.

Leakage

Perhaps the biggest culprit in a compressed air system is leakage. It is not uncommon for 20-50% of the compressed air we produce to disappear into the environment as leakage. To remedy this, it is important to regularly review the compressed air system to search for leaks that need to be sealed. Typically, 80-90% of all leaks are found close to the user in hoses, fittings and fixtures. The leakage in compressed air machines and tools can also be significant.

Plenty of money can be saved by periodically reviewing the compressed air system, sealing leaks, adapting machines and air consumers to operating conditions, and upgrading the tools and equipment to energy-efficient versions.

RISKS ASSOCIATED WITH COMPRESSED AIR BLOWING

Basic facts
Compressed air, along with electricity, is the most useful form of energy in today's advanced manufacturing industry. The compressed air acts as a power source for various types of tools and machinery, and is often an important and well-integrated part of many production processes. The advantages of compressed air include low maintenance costs, low weight in relation to power, and the possibility of high load over a long period of time with-out overheating. Since most compressed air applications are not connected to electricity, people do not always consider what dangers may be lurking. But just as safety regulations must be observed for electrical machines and tools, compressed air components must also be treated with respect to avoid dangerous accidents.

Compressed air stores large amounts of energy at high pressure, which means that improper use may lead to serious incidents in the workplace. For this reason it is important that staff complete risk awareness training and comply with the company's safety rules; for example, never aim a compressed air pistol at another person. It is also important to comply with technical limitations regarding maximum allowable working pressure, temperature, load, etc., specified by the manufacturer for a particular component or tool. Precautions involving use of compressed air are becoming increasingly important for both business and government, and several countries are currently investigating the matter.

Risks
Compressed air is not just ordinary air. Compressed air is a concentrated stream of air at high pressure and high speed that can cause serious injury to the operator and the people around him.

Playing with compressed air can be fatal. In one case of an innocent attempt to frighten someone by suddenly blowing behind his back, the person was so surprised that he fell forward and was seriously injured on the moving parts of a machine. A misdirected jet of compressed air to the head can cause serious eye injuries or rupture the eardrum. Aiming the compressed air into the mouth can damage the lungs and esophagus. Careless use of compressed air to blow away dirt or dust from the body, even with a protective layer of clothes, could allow the air to enter the body, which can damage the internal organs.

The most serious damage that can be caused by compressed air occurs when air is blown in under the skin, for example via an open wound. It can lead to an air embolism, in which air bubbles are pressed into the veins and transported along the bloodstream. When the air bubble reaches the heart it causes symptoms similar to those of a heart attack. When the air bubble reaches the brain, it can cause a stroke. This type of injury can be directly fatal. Since compressed air usually contains small amounts of oil or dirt, severe infections can also occur if the compressed air enters the body.

Laws and regulations
Today two countries, the US and Switzerland, have implemented requirements for blowing directly on the skin. Workers often use air guns to blow off dust and dirt during or at the end of the work day. Using compressed air this way could force air bubbles to enter the blood stream and cause a clot. Current regulations were implemented as a result of several fatal accidents of this kind.

OSHA and SUVA
In the United States workplace safety is regulated by OSHA regulations. OSHA is the acronym for Occupational Safety and Health Administration. Compressed air use is governed by § 1910.242.b, which says that air pressure in direct contact with the skin cannot exceed 210 kPa (30 psi). In Switzerland, SUVA, Schweizerische Unfallversicherungsanstalt, issued similar rules.

All products from Silvent are designed to meet these safety requirements.

Moreover, under § 1910.242.b the workplace must have some method or equipment that prevents chips or particles, regardless of size, from being blown into an eye or against the skin of the operator or any other employee. The dust cover can be separate from the nozzle, as in cases where screens or barriers are used. The use of protective air cones is generally accepted to protect the operator, but barriers, baffles or screens may be necessary to protect employees from being exposed to flying chips or particles. All Silvent products are designed to meet these safety requirements.

The Machinery Directive
The EU has imposed the Machinery Directive 2006/42/EC, which includes important health and safety requirements for the design and manufacture of machinery and safety components.
Although air nozzles used in systems and machinery are covered by the Machinery Directive, these components are not affected separately. Compressed air components are not required to be CE-marked individually under the Machinery Directive; in fact, it is even illegal to do so. For

machine builders who must specify that their product complies with the Machinery Directive the technical specifications for temperature and pressure, as stated in the catalog, are sufficient for integrated components such as nozzles.

Possible measures
To protect yourself and others when using compressed air, you should follow these guidelines:

- Never point an air hose or air gun at anyone, either for fun or to blow away dirt from clothes or the body.
- Always use personal protective equipment, such as goggles, when cleaning with compressed air.
- When cleaning tools, machines, or the work site, use a safe air gun with an air nozzle that meets OSHA requirements. Place a protective screen around the workplace, or watch carefully so that no one else is nearby.
- Check the air hoses regularly for damage or leakage. Remove a leaking hose immediately. A hose that breaks under pressure will come loose and wave around completely uncontrolled.
- Before disconnecting a hose from the compressed air system, shut off the compressed air at the nearest shutoff valve and drain the remaining air from the system.
- Check the connectors and hose clamps so that everything is securely fastened. Avoid screwdrivers when tightening; use a wrench or just your hand. Hold the hose and air gun when the compressed air is switched on again.
- Never stop the air flow by bending the hose – always use the shutoff valve. Always open the valve carefully to detect any faulty connections.
- Avoid allowing the air hoses to lie on the floor where someone can trip over them, or where they can be damaged by vehicles, doors or tools. If possible, pull the air lines and hoses at ceiling height.
- Remember to always treat compressed air and related components as professional tools – something that facilitates your work, but only if handled properly and safely.

AIR NOZZLES

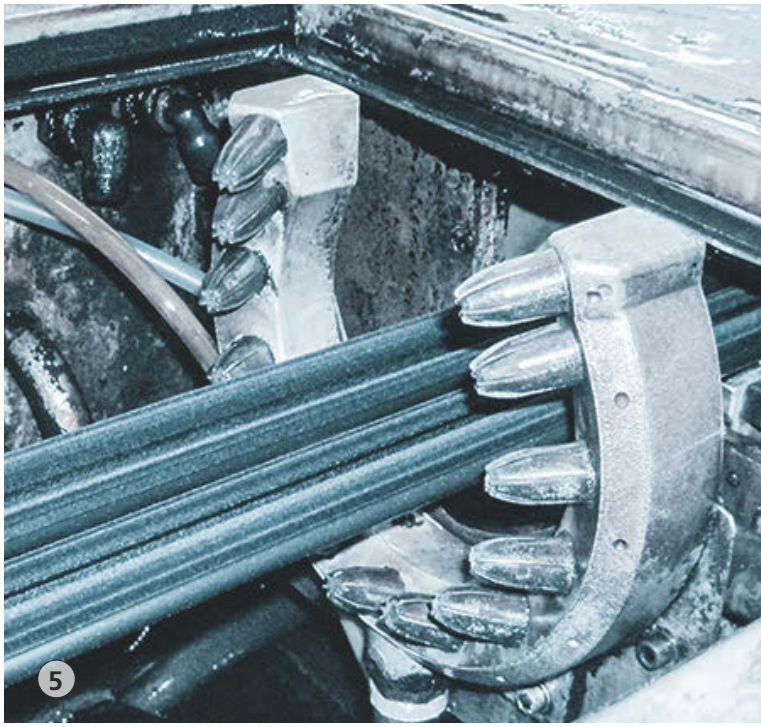
APPLICATIONS

- Cleaning
- Drying
- Cooling
- Ejecting
- Sorting

Open pipe *a common but ineffective installation.*

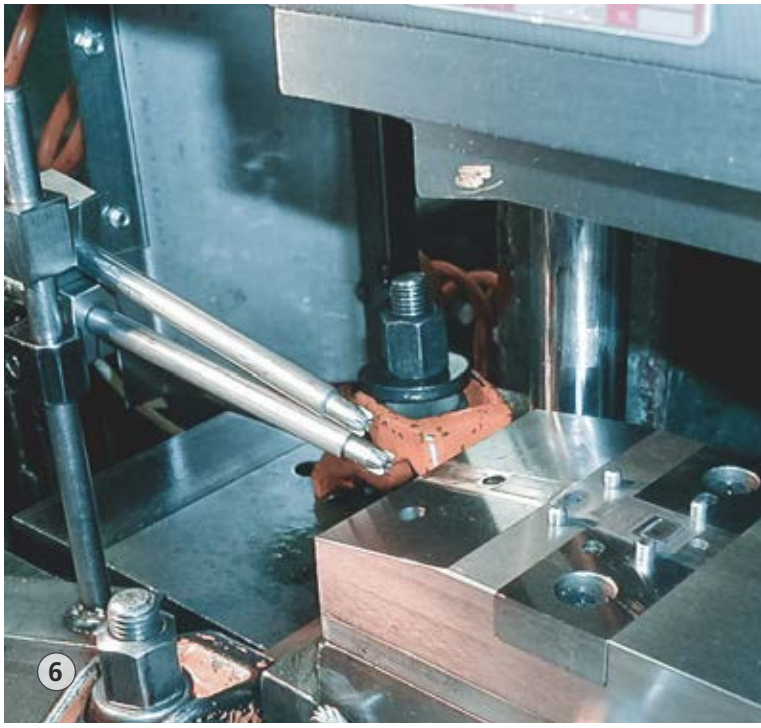
SILVENT 707 L *for optimal efficiency and reduced noise.*

Cleaning *with SILVENT 961 nozzles for reduced noise.*



Cooling *with SILVENT 209 L nozzles for reduced noise and lower air consumption.*

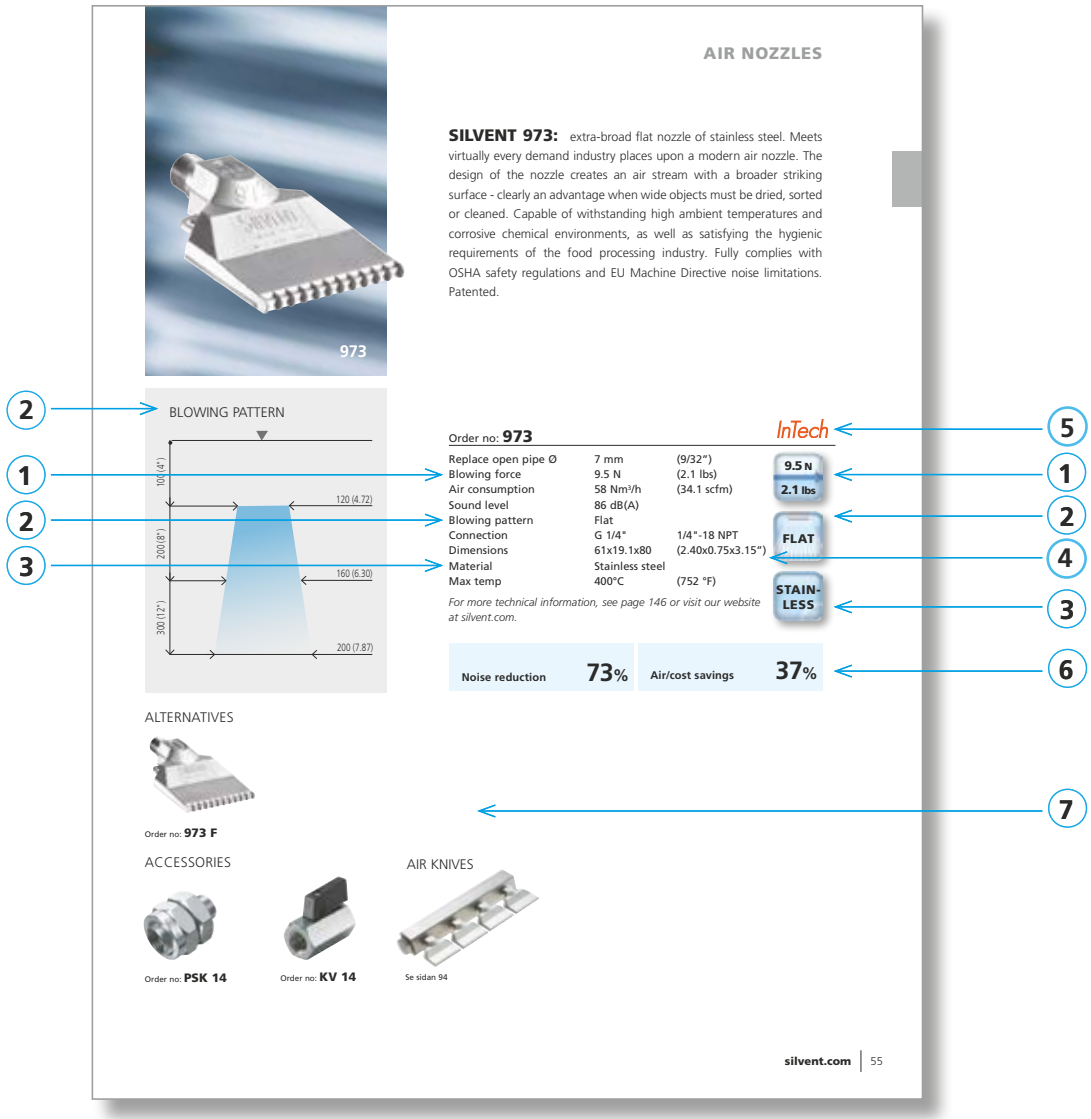
Drying *with SILVENT 973 nozzles for better quality.*



Ejecting *with SILVENT 1003 for reduced air consumption.*

CHOOSING THE RIGHT AIR NOZZLE

It is essential to choose the right air nozzle to ensure that the application will be safe, quiet and effective, as well as economical. Each blowing operation is unique, but taking the factors on the next page into account makes it easy to optimize the blowing application.



1. Blowing force

It is essential to choose the right air nozzle to ensure that the application will be safe, quiet and effective, as well as economical. Blowing force is crucial; if it is inadequate, the blowing application cannot be performed, while if it is oversized, it is not possible to take full advantage of Silvent technology. Blowing force is measured in newtons (N) and ounces (oz) or pounds (lbs). Contact Silvent if you are uncertain about the blowing force required for your application.

2. Blowing pattern

Generates a broad air jet.

Generates a large conical air jet.

Generates a centered conical air jet.

Generates a core jet with supersonic speed and surrounded by a protective airstream.

Extraordinary blowing patterns such as backward blowing, divergent, etc.

3. Material

Handles blowing applications with low ambient temperature and limited mechanical abrasion. From -20° to +70°C (-4° to +158° F).

Tolerates high ambient temperatures, mechanical abrasion, aggressive and corrosion-prone atmosphere as well as requirements for cleanliness. From -20° to +400°C (-4° to +752° F).

Handles temperatures from -20° to +150°C (-4° to +302° F).

Soft contact surface but can withstand high temperatures. Max temperature is 260°C (500°F).

An advanced fiberglass-reinforced polyamide with good performance in terms of moisture, temperature, and chemical environment. Max temperature is 180°C (356°F).

Minimizes the risk of scratching during blowing with compressed air. Max temperature is 70°C (158°F).

4. Dimensions

The dimensions in the catalog are specified as Ø x L, ⬡ x L or W x H x L.

5. InTech

Silvent InTech is a division of Silvent that specializes in integrating Silvent technology in settings such as steel mills. These applications are extremely demanding because of their environment, which means that only selected products can be used in these installations. All products in this catalog that we recommend for InTech applications have this symbol.

6. Advantages

Silvent has conducted research to develop its now well-known and patented Silvent technology. The basic principle is to create a uniform, smooth and straight laminar airflow instead of the turbulent and loud flow found, for example, in open pipes. Silvent's patented technology offers unique advantages, including a substantial reduction in noise and savings in air consumption compared with blowing with an open pipe.

7. Options and accessories

See silvent.com for detailed descriptions of all options and accessories.

PRODUCT OVERVIEW

The air nozzles in this section are divided into groups according to blowing force equivalent to the open pipes they replace.

Replaces open pipe with Ø 2 mm (5/64")

SILVENT **MJ4**
See page 38

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

SILVENT **MJ5**
See page 39

Replaces open tube with Ø 3 mm (1/8")

SILVENT **MJ6**
See page 40

Replaces open pipe with Ø 4 mm (5/32")

SILVENT **209 L**
See page 41

SILVENT **512**
See page 42

SILVENT **011**
See page 43

SILVENT **701**
See page 44

SILVENT **811**
See page 45

SILVENT **921**
See page 46

SILVENT **961**
See page 47

SILVENT **971**
See page 48

SILVENT **209**
See page 49

New!

Replaces open pipe with Ø 5 mm (3/16")

SILVENT **801**
See page 50

SILVENT **700 M**
See page 51

SILVENT **1011**
See page 52

New!

Replaces open pipe with Ø 6 mm (1/4")

SILVENT **920 A**
See page 53

SILVENT **9002W**
See page 54

Replaces open pipe with Ø 7 mm (9/32")

SILVENT **973**
See page 55

SILVENT **703**
See page 56

New!

Replaces open pipe with Ø 8 mm (5/16")

SILVENT **703 L**
See page 57

SILVENT **804**
See page 58

New!

SILVENT **404 L**
See page 59

Replaces open pipe with Ø 10 mm (3/8")

SILVENT **2005**
See page 60

SILVENT **705**
See page 61

SILVENT **9005W** New!
See page 62

SILVENT **705 L**
See page 63

Replaces open pipe with Ø 12 mm (1/2")

SILVENT **707 L**
See page 64

SILVENT **407 L**
See page 65

SILVENT **808** New!
See page 66

Replaces open pipe with Ø 14 mm (9/16")

SILVENT **710**
See page 67

SILVENT **710 L** New!
See page 68

Replaces open pipe with Ø 16 mm (5/8")

SILVENT **412 L**
See page 69

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

SILVENT **715 C**
See page 70

SILVENT **9015W** New!
See page 71

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

SILVENT **715 LA** New!
See page 72

Replaces open pipe with Ø 20 mm (3/4")

SILVENT **720**
See page 73

Replaces open pipe with Ø 25 mm (1")

SILVENT **730 C**
See page 74

SILVENT **735 LA** New!
See page 75

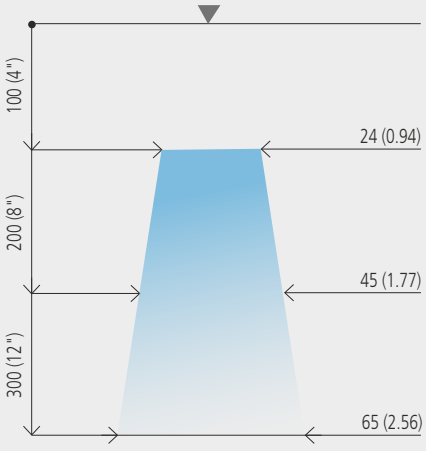
Replaces open pipe with Ø 38 mm (1 1/2")

SILVENT **780 LA** New!
See page 76

SILVENT **Special** New!
See pages 77 – 83

SILVENT MJ4: micro-nozzle of stainless steel with 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.

BLOWING PATTERN



Order no: **MJ4**

Replace open pipe Ø	2 mm	(5/64")
Blowing force	0.9 N	(3.2 oz)
Air consumption	4 Nm³/h	(2.4 scfm)
Sound level	76 dB(A)	
Blowing pattern	Concentrated	
Connection	M4x0.5	
Dimensions	Ø4x16.5	(Ø0.16x0.65")
Material	Stainless steel	
Max temp	400°C	(752 °F)

0.9 N
3.2 oz
CONC.
STAIN-LESS

For more technical information, see page 146 or visit our website at silvent.com.

Noise reduction **43%**

Air/cost savings **50%**

ALTERNATIVES

New!

Order no: **MJ40**

ACCESSORIES (MJ40)

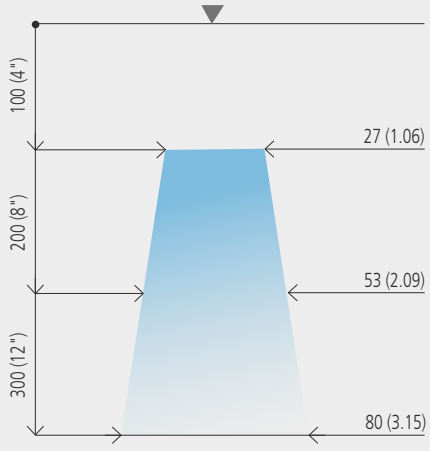
Order no: **PSK 18**

Order no: **FV 18**

Order no: **KV 18**

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.

BLOWING PATTERN



Order no: **MJ5**

Replace open pipe Ø	2.5 mm	(3/32")
Blowing force	1.8 N	(6.4 oz)
Air consumption	10 Nm³/h	(5.9 scfm)
Sound level	79 dB(A)	
Blowing pattern	Concentrated	
Connection	M5x0.5	
Dimensions	Ø5x17	(Ø0.20x0.67")
Material	Stainless steel	
Max temp	400°C	(752 °F)

For more technical information, see page 146 or visit our website at silvent.com.

Noise reduction **43%**

Air/cost savings **17%**

ALTERNATIVES

◀ New!

Order no: **MJ50**

ACCESSORIES (MJ50)

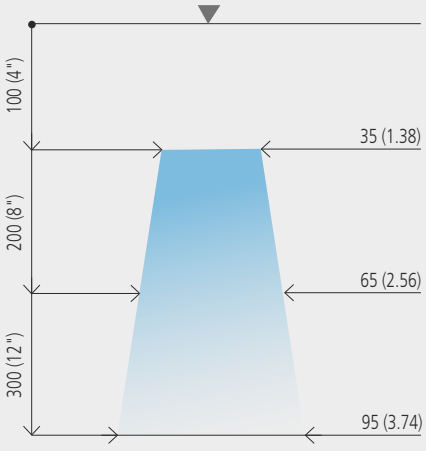
Order no: **PSK 18**

Order no: **FV 18**

Order no: **KV 18**

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.

BLOWING PATTERN



Order no: **MJ6**

Replace open pipe Ø	3 mm	(1/8")
Blowing force	2.5 N	(8.8 oz)
Air consumption	14 Nm³/h	(8.2 scfm)
Sound level	82 dB(A)	
Blowing pattern	Concentrated	
Connection	M6x0.75	
Dimensions	Ø6x17	(Ø0.24x0.67")
Material	Stainless steel	
Max temp	400°C	(752 °F)

2.5 N
8.8 oz
CONC.
STAIN-LESS

For more technical information, see page 146 or visit our website at silvent.com.

Noise reduction **43%**

Air/cost savings **18%**

ALTERNATIVES

◀ New!

Order no: **MJ60**

ACCESSORIES (MJ60)

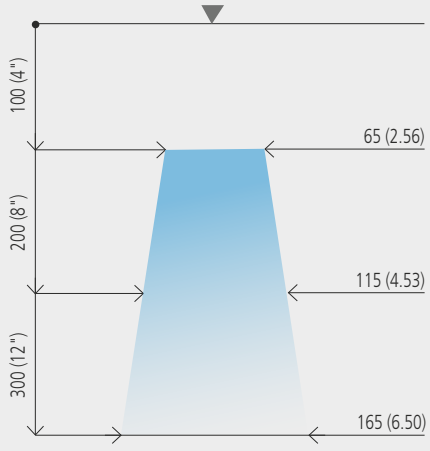
Order no: **PSK 18**

Order no: **FV 18**

Order no: **KV 18**

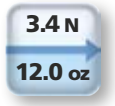
SILVENT 209 L is part of a new generation of patented Laval nozzles. It is a refinement of Silvent's 208 and 209 nozzle series and represents an entirely new phase in blowing technology. The effect is achieved by surrounding a core jet moving at supersonic speed with a protective sheath of air running 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.

BLOWING PATTERN



Order no: **209 L**

Replace open pipe Ø	4 mm	(5/32")
Blowing force	3.4 N	(12.0 oz)
Air consumption	17 Nm³/h	(10.0 scfm)
Sound level	78 dB(A)	
Blowing pattern	Laval	
Connection	G 1/4"	1/4"-18 NPT
Dimensions	Ø19x44	(Ø0.75x1.73")
Material	Zinc	
Max temp	70°C	(158 °F)



For more technical information, see page 146 or visit our website at silvent.com.

Noise reduction **69%**

Air/cost savings **43%**

ALTERNATIVES

Order no: **208 L**

Order no: **209 L-S**

Order no: **208 L-S**

Order no: **2120 L**

Order no: **2120 L-S**

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

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

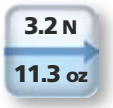
Order no: **222 L-282 L**

Order no: **293 L**

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 Machine Directive noise restrictions. Patented.

Order no: **512**

Replace open pipe Ø	4 mm	(5/32")
Blowing force	3.2 N	(11.3 oz)
Air consumption	19 Nm³/h	(11.2 scfm)
Sound level	79 dB(A)	
Blowing pattern	Concentrated	
Connection	G 1/8"	1/8"-27 NPT
Dimensions	Ø12x30.3	(Ø0.47x1.19")
Material	Zinc	
Max temp	70°C	(158 °F)

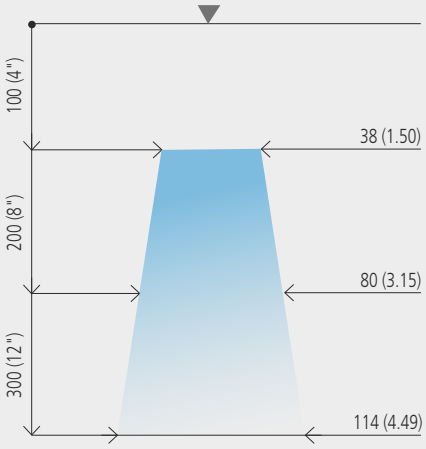


For more technical information, see page 146 or visit our website at silvent.com.

Noise reduction **67%**

Air/cost savings **37%**

BLOWING PATTERN



ALTERNATIVES

Order no: **511**

Order no: **5001**

Order no: **5003**

Order no: **620-680**

Order no: **291**

ACCESSORIES

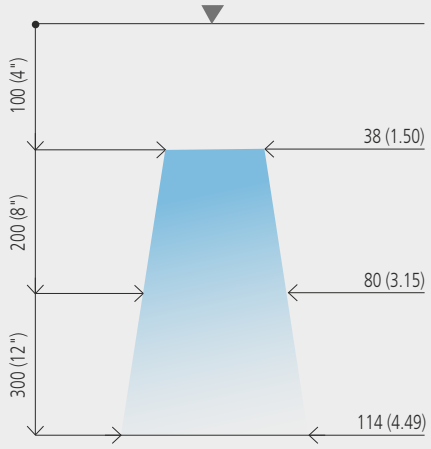
Order no: **PSK 18**

Order no: **FV 18**

Order no: **KV 18**

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.

BLOWING PATTERN



Order no: **011**

Replace open pipe Ø	4 mm	(5/32")
Blowing force	3.2 N	(11.3 oz)
Air consumption	19 Nm³/h	(11.2 scfm)
Sound level	81 dB(A)	
Blowing pattern	Concentrated	
Connection	G 1/8"	1/8"-27 NPT
Dimensions	Ø12x39.5	(Ø0.47x1.56")
Material	Stainless steel	
Max temp	400°C	(752 °F)

3.2 N
11.3 oz
CONC.
STAIN-LESS

For more technical information, see page 146 or visit our website at silvent.com.

Noise reduction **62%**

Air/cost savings **37%**

ALTERNATIVES

Order no: **0071**

Order no: **0073**

Order no: **292**

ACCESSORIES

Order no: **PSK 18**

Order no: **FV 18**

Order no: **KV 18**

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.

Order no: **701**

InTech

Replace open pipe Ø	4 mm	(5/32")
Blowing force	3.2 N	(11.3 oz)
Air consumption	21 Nm³/h	(12.4 scfm)
Sound level	82 dB(A)	
Blowing pattern	Wide	
Connection	G 1/2"	1/2"-14 NPT
Dimensions	Ø23x33	(Ø0.91x1.30")
Material	Stainless steel	
Max temp	400°C	(752 °F)

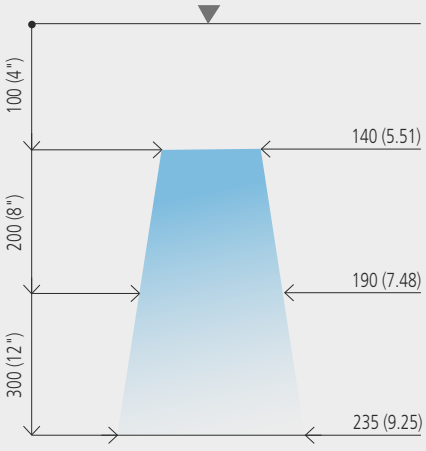
3.2 N
11.3 oz

WIDE

STAIN-LESS

For more technical information, see page 146 or visit our website at silvent.com.

BLOWING PATTERN



Noise reduction	**60%**	**Air/cost savings**	**30%**

ALTERNATIVES

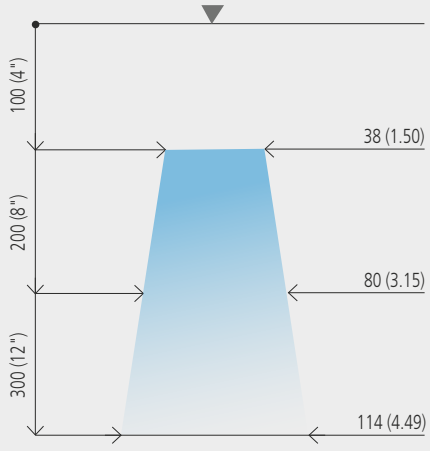
Order no: **701 A**

◀ **New!**

Order no: **701 LP**

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.

BLOWING PATTERN



Order no: **811**

Replace open pipe Ø	4 mm	(5/32")
Blowing force	2.7 N	(9.5 oz)
Air consumption	15.2 Nm³/h	(8.9 scfm)
Sound level	80 dB(A)	
Blowing pattern	Concentrated	
Connection	G 1/8"	1/8"-27 NPT
Dimensions	Ø12x32	(Ø0.47x1.26")
Material	PEEK	
Max temp	260°C	(500 °F)

For more technical information, see page 146 or visit our website at silvent.com.

2.7 N
9.5 oz
CONC.
PEEK

Noise reduction **65%**

Air/cost savings **50%**

ew!

ALTERNATIVES

Order no: **8001**

ACCESSORIES

Order no: **PSK 18**

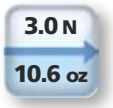
Order no: **FV 18**

Order no: **KV 18**

SILVENT 921: flat nozzle that generates a broad and efficient blowing pattern. 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.

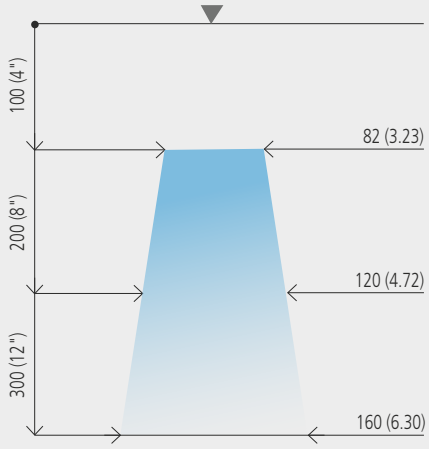
Order no: **921**

Replace open pipe Ø	4 mm	(5/32")
Blowing force	3.0 N	(10.6 oz)
Air consumption	17 Nm³/h	(10.0 scfm)
Sound level	80 dB(A)	
Blowing pattern	Flat	
Connection	G 1/8"	1/8"-27 NPT
Dimensions	23.9x11x55	(0.94x0.43x2.17")
Material	Zinc	
Max temp	70°C	(158 °F)



For more technical information, see page 146 or visit our website at silvent.com.

BLOWING PATTERN



Noise reduction **65%**

Air/cost savings **43%**

ACCESSORIES

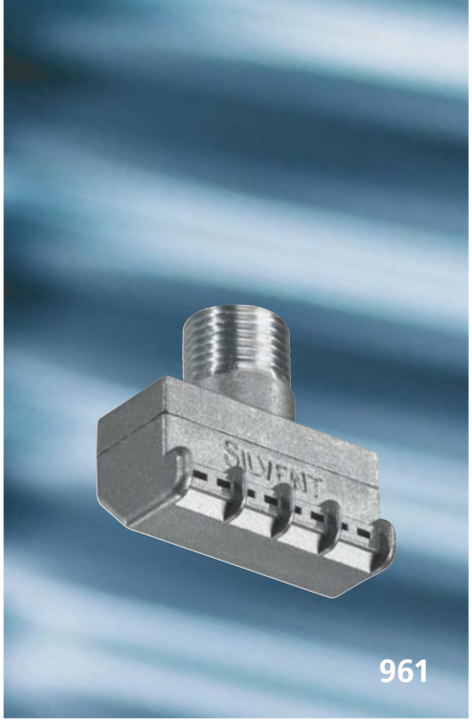
Order no: **PSK 18**

Order no: **FV 18**

Order no: **KV 18**

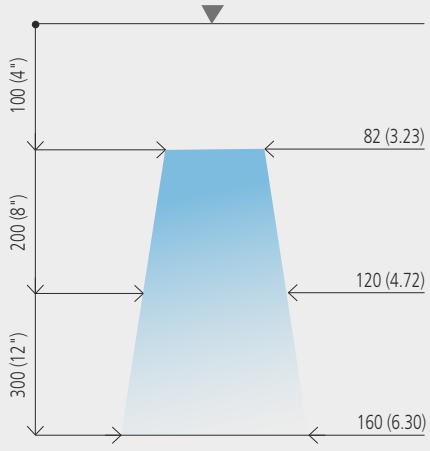
DON'T JUST EXPERIENCE THE DIFFERENCE. MEASURE IT. **Is the noise exposure level too high? Is the noise level harmful? Over 85 dB(A)?** Taking simple measurements in production is often the first step toward a better workplace environment. Order an SPL unit and start measuring.

Order no: **SPL**



SILVENT 961: a small, angled flat nozzle that generates a broad but thin blowing pattern. 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.

BLOWING PATTERN



Order no: **961**

Replace open pipe Ø	4 mm	(5/32")
Blowing force	3.3 N	(11.6 oz)
Air consumption	19.5 Nm³/h	(11.5 scfm)
Sound level	81.5 dB(A)	
Blowing pattern	Flat	
Connection	G 1/8"	1/8"-27 NPT
Dimensions	23.9x23.5x13.4	(0.94x0.93x0.53")
Material	Zinc	
Max temp	70°C	(158 °F)

For more technical information, see page 146 or visit our website at silvent.com.

Noise reduction **60%**

Air/cost savings **33%**

ACCESSORIES

Order no: **PSK 18**

Order no: **FV 18**

Order no: **KV 18**

AIR KNIVES

See page 95

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**

Replace open pipe Ø	4 mm	(5/32")
Blowing force	3.8 N	(13.4 oz)
Air consumption	21 Nm³/h	(12.4 scfm)
Sound level	81 dB(A)	
Blowing pattern	Flat	
Connection	G 1/8"	1/8"-27 NPT
Dimensions	23.6x17x70	(0.93x0.67x2.76")
Material	Stainless steel	
Max temp	400°C	(752 °F)

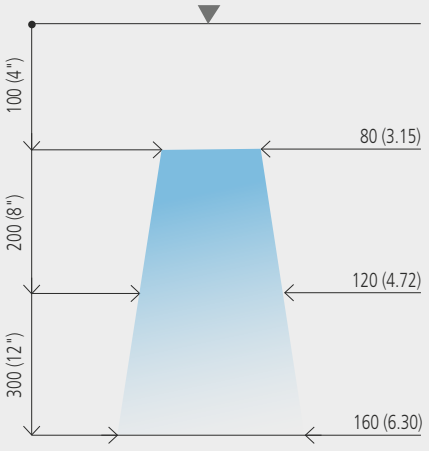
3.8 N
13.4 oz
FLAT
STAIN-LESS

For more technical information, see page 146 or visit our website at silvent.com.

Noise reduction **62%**

Air/cost savings **30%**

BLOWING PATTERN



ALTERNATIVES

Order no: **971 F**

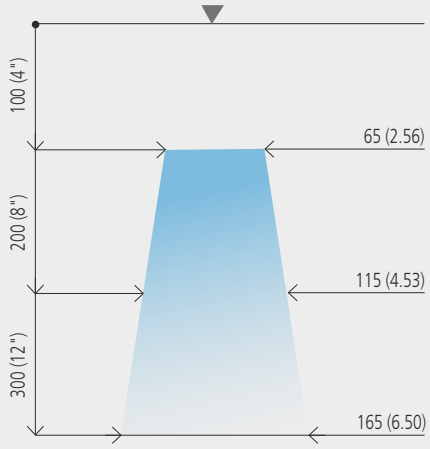
ACCESSORIES

Order no: **PSK 18**

Order no: **KV 18**

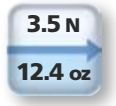
SILVENT 209: used in most types of applications. Made of zinc with 1/4" male connection thread. These nozzles have been installed in thousands of different applications throughout the world - applications where the noise level has been cut in half and energy consumption drastically reduced. The protective 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.

BLOWING PATTERN



Order no: **209**

Replace open pipe Ø	4 mm	(5/32")
Blowing force	3.5 N	(12.4 oz)
Air consumption	19 Nm³/h	(11.2 scfm)
Sound level	80 dB(A)	
Blowing pattern	Wide	
Connection	G 1/4"	1/4"-18 NPT
Dimensions	Ø19x47	(Ø0.75x1.85")
Material	Zinc	
Max temp	70°C	(158 °F)



For more technical information, see page 146 or visit our website at silvent.com.

Noise reduction **65%**

Air/cost savings **37%**

ALTERNATIVES

Order no: **208**

Order no: **210**

Order no: **211**

Order no: **215**

Order no: **216**

Order no: **217**

Order no: **218**

Order no: **2120**

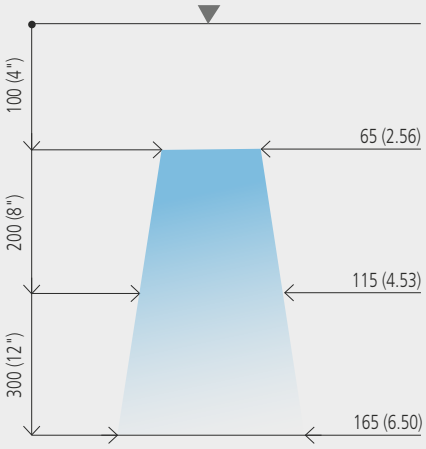
Order no: **209-S1**

Order no: **200**

New!

SILVENT 801 is an energy-efficient Laval nozzle that is part of Silvent's new "SILVENT SOFT™" series. The air nozzle is specially made in EPDM rubber to minimize the risk of scratches, such as on the surface of tools. The product meets the unique combination of demands for a scratch-free surface and high blowing force by applying Silvent's patented Laval technology. Silvent Laval technology is achieved by surrounding a core of air traveling at supersonic speed with a protective sheath of air moving parallel to the central air jet. The SILVENT SOFT 801 is ideal for all industries in which equipment and products are handled that cannot be damaged during compressed air blowing. Fully compliant with EU Machinery Directive noise limits and OSHA safety regulations. Patented.

BLOWING PATTERN



Order no: **801**

Replace open pipe Ø	5 mm	(3/16")
Blowing force	4.0 N	(14.1 oz)
Air consumption	23 Nm³/h	(13.5 scfm)
Sound level	81.1 dB(A)	
Blowing pattern	Laval	
Connection	G 1/4"	1/4"-18 NPT
Dimensions	Ø26 x 32	(Ø1 x 1.26")
Material	EPDM	
Max temp	70°C	(158 °F)

4.0 N
14.1 oz
LAVAL
EPDM

For more technical information, see page 146 or visit our website at silvent.com.

Noise reduction **71%**

Air/cost savings **51%**

ACCESSORIES

Order no: **FV 14**

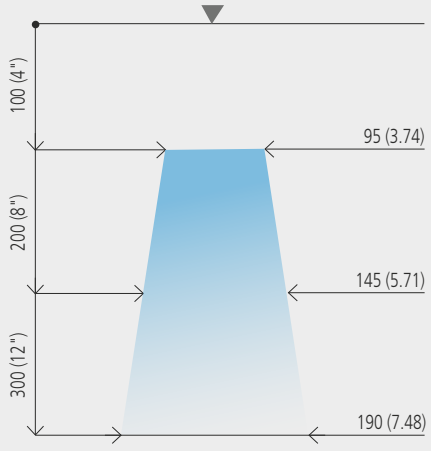
Order no: **820**

Order no: **830**

Order no: **840**

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 in applications where clearance is a problem. Designed for applications 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.

BLOWING PATTERN



Order no: **700 M**

Replace open pipe Ø	5 mm	(3/16”)
Blowing force	4.2 N	(14.8 oz)
Air consumption	25 Nm³/h	(14.7 scfm)
Sound level	84 dB(A)	
Blowing pattern	Concentrated	
Connection	G 1/8"	1/8"-27 NPT
Dimensions	Ø14x23	(Ø0.55x0.91”)
Material	Stainless steel	
Max temp	400°C	(752 °F)

For more technical information, see page 146 or visit our website at silvent.com.

4.2 N
14.8 oz
CONC.
STAIN-LESS

Noise reduction **65%**

Air/cost savings **47%**

ACCESSORIES

Order no: **FV 18**

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.

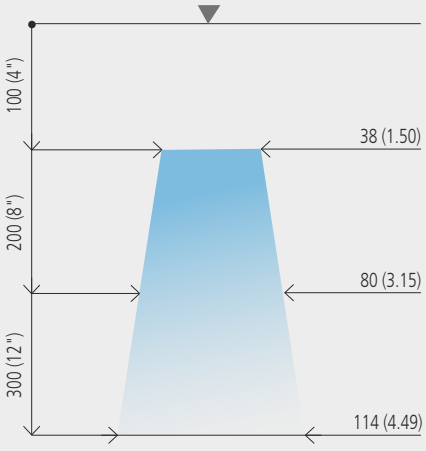
Order no: **1011**

Replace open pipe Ø	5 mm	(3/16")
Blowing force	4.4 N	(15.5 oz)
Air consumption	26 Nm³/h	(15.3 scfm)
Sound level	84 dB(A)	
Blowing pattern	Laval	
Connection	G 1/8"	1/8"-27 NPT
Dimensions	Ø12x27	(Ø0.47x1.06")
Material	Stainless steel	
Max temp	400°C	(752 °F)

4.4 N
15.5 oz
LAVAL
STAIN-LESS

For more technical information, see page 146 or visit our website at silvent.com.

BLOWING PATTERN



Noise reduction **65%**

Air/cost savings **45%**

ALTERNATIVES

Order no: **1001**

Order no: **1003**

ACCESSORIES

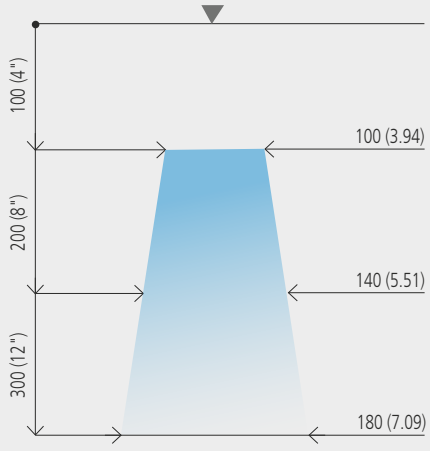
Order no: **PSK 18**

Order no: **FV 18**

Order no: **KV 18**

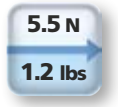
SILVENT 920 A: flat nozzle that generates a broad and efficient blowing pattern. Outstanding for use wherever a wide but thin striking surface is required. Flat nozzles are suitable for most areas of application, such as: drying, transporting, cooling, cleaning etc. Often used in manifold systems, providing 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.

BLOWING PATTERN



Order no: **920 A**

Replace open pipe Ø	6 mm	(1/4")
Blowing force	5.5 N	(1.2 lbs)
Air consumption	30 Nm³/h	(17.7 scfm)
Sound level	81 dB(A)	
Blowing pattern	Flat	
Connection	G 1/4"	1/4"-18 NPT
Dimensions	46.3x14.3x80	(1.82x0.56x3.15")
Material	Zinc	
Max temp	70°C	(158 °F)



For more technical information, see page 146 or visit our website at silvent.com.

Noise reduction **77%**

Air/cost savings **55%**

ALTERNATIVES

Order no: **920 B**

Order no: **920 R**

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

Order no: **294**

ACCESSORIES

Order no: **FV 14**

Order no: **KV 14**

Order no: **PSK 14**

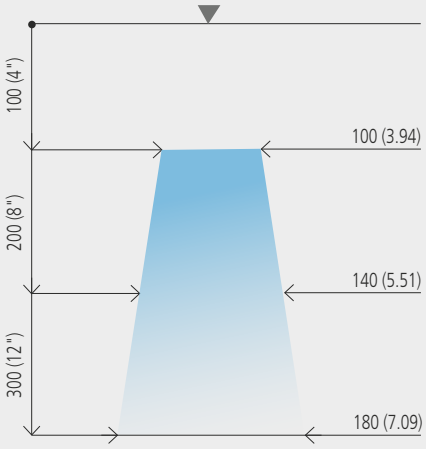
AIR KNIVES

See page 96

New!

SILVENT 9002W: an energy-efficient flat nozzle that generates a strong, efficient blowing force at an exceptionally low noise level. Compressed air is optimally used in this flat nozzle, which through its unique design introduces a completely new blowing technology feature. The aerodynamic nozzle design achieves the effect by maximizing entrainment of air. Each orifice is also uniquely designed to optimize the entrainment area. The air nozzle – SILVENT 9002W – is made exclusively of Zytel, a high-performance material without which the unique and truly complex Laval orifices would not be possible. These small orifices combined with the aerodynamic slots of the nozzle provide high efficiency. Fully complies with EU Machine Directive noise limitations and OSHA safety regulations. Patented.

BLOWING PATTERN



Order no: **9002W**

Replace open pipe Ø	6 mm	(1/4")
Blowing force	6.0 N	(1.3 lbs)
Air consumption	30.0 Nm³/h	(17.7 scfm)
Sound level	80 dB(A)	
Blowing pattern	Flat	
Connection	G 1/4"	1/4"-18 NPT
Dimensions	47.2x17.6x64	(1.86x0.69x2.52")
Material	Zytel	
Max temp	180°C	(356 °F)

6.0 N
1.3 lbs
FLAT
ZYTEL

For more technical information, see page 146 or visit our website at silvent.com.

Noise reduction **78%**

Air/cost savings **55%**

ALTERNATIVES

Order no: **220 W-280 W**

Order no: **294 W**

ACCESSORIES

Order no: **PSK 14**

Order no: **FV 14**

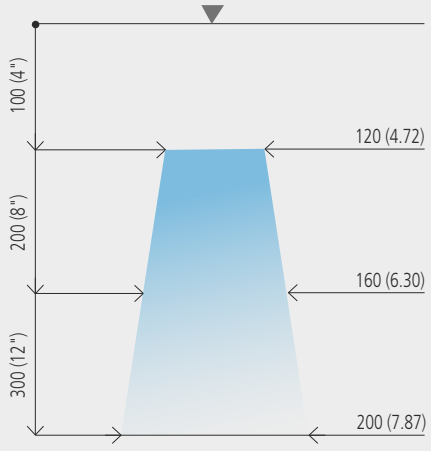
Order no: **KV 14**

AIR KNIVES

See page 92

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.

BLOWING PATTERN



Order no: **973**

InTech

Replace open pipe Ø	7 mm	(9/32")
Blowing force	9.5 N	(2.1 lbs)
Air consumption	58 Nm³/h	(34.1 scfm)
Sound level	86 dB(A)	
Blowing pattern	Flat	
Connection	G 1/4"	1/4"-18 NPT
Dimensions	61x19.1x80	(2.40x0.75x3.15")
Material	Stainless steel	
Max temp	400°C	(752 °F)

9.5 N
2.1 lbs
FLAT
STAIN-LESS

For more technical information, see page 146 or visit our website at silvent.com.

Noise reduction **73%**

Air/cost savings **37%**

ALTERNATIVES

Order no: **973 F**

ACCESSORIES

Order no: **PSK 14**

Order no: **KV 14**

AIR KNIVES

See page 94

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 (2.1 lbs)). 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**

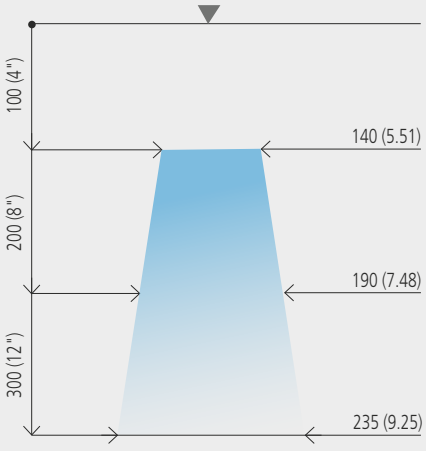
InTech

Replace open pipe Ø	7 mm	(9/32")
Blowing force	9.6 N	(2.1 lbs)
Air consumption	57 Nm³/h	(33.5 scfm)
Sound level	89 dB(A)	
Blowing pattern	Wide	
Connection	G 1/2"	1/2"-14 NPT
Dimensions	Ø23x33	(Ø0.91x1.30")
Material	Stainless steel	
Max temp	400°C	(752 °F)

9.6 N
2.1 lbs
WIDE
STAIN-LESS

For more technical information, see page 146 or visit our website at silvent.com.

BLOWING PATTERN



Noise reduction **67%**

Air/cost savings **38%**

ALTERNATIVES

Order no: **703 A**

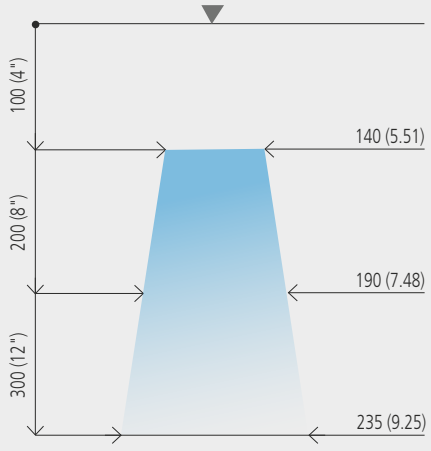
Order no: **295**

◀ New!

Order no: **703 LP**

SILVENT 703 L is a stainless steel Laval nozzle. Compressed air is optimally used in this air nozzle, which introduced a whole new dimension to blowing technology. The effect is achieved by surrounding a core of air traveling at supersonic speed with a protective sheath of air moving parallel to the central air jet. The core stream in the 703 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. Because of the protective sheath of air, the surrounding air does not slow down the core stream, which can be used to full effect. The gas flow prevents turbulence, thereby lowering noise levels. Fully compliant with EU Machinery Directive noise limits and OSHA safety regulations. Patented.

BLOWING PATTERN



Order no: **703 L**

InTech

Replace open pipe Ø	8 mm	(5/16")
Blowing force	10.6 N	(2.3 lbs)
Air consumption	60.0 Nm³/h	(35.3 scfm)
Sound level	91 dB(A)	
Blowing pattern	Laval	
Connection	G 1/2"	1/2"-14 NPT
Dimensions	Ø23x33	(Ø0.91x1.30")
Material	Stainless steel	
Max temp	400°C	(752 °F)

10.6 N
2.3 lbs
LAVAL
STAIN-LESS

For more technical information, see page 146 or visit our website at silvent.com.

Noise reduction **69%**

Air/cost savings **49%**

ALTERNATIVES

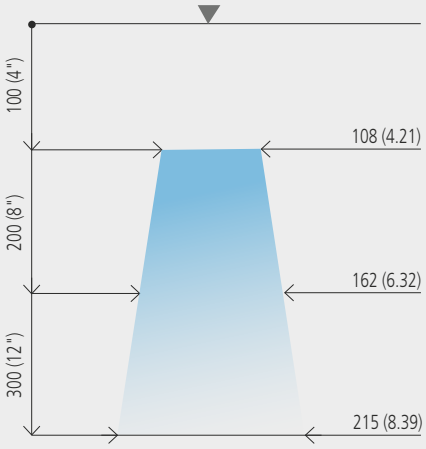
Order no: **703 LA**

Order no: **703 L LP**

New!

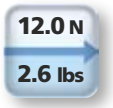
SILVENT 804: an energy-efficient Laval nozzle that is part of Silvent's new "SILVENT SOFT™" series. The air nozzle is specially made in EPDM rubber to minimize the risk of scratches, such as on the surface of tools. The product meets the unique combination of demands for a scratch-free surface and high blowing force by applying Silvent's patented Laval technology. Silvent Laval technology is achieved by surrounding a core of air traveling at supersonic speed with a protective sheath of air moving parallel to the central air jet. The SILVENT SOFT 804 is ideal for all industries in which equipment and products are handled that cannot be damaged during compressed air blowing. Fully compliant with EU Machinery Directive noise limits and OSHA safety regulations. Patented.

BLOWING PATTERN



Order no: **804**

Replace open pipe Ø	8 mm	(5/16")
Blowing force	12.0 N	(2.6 lbs)
Air consumption	70.0 Nm³/h	(41.2 scfm)
Sound level	90 dB(A)	
Blowing pattern	Laval	
Connection	G 3/8"	3/8"-18 NPT
Dimensions	Ø28 x 35	(Ø1.10 x 1.38")
Material	EPDM	
Max temp	70°C	(158 °F)



For more technical information, see page 146 or visit our website at silvent.com.

Noise reduction **71%**

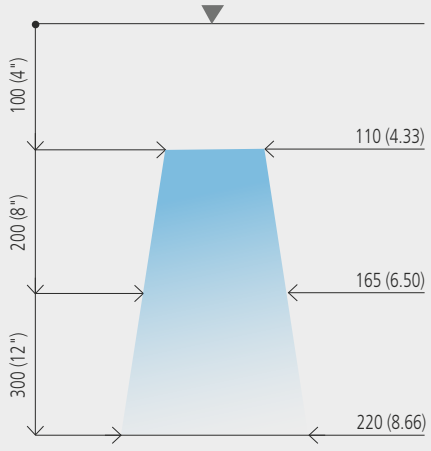
Air/cost savings **41%**

DON'T JUST EXPERIENCE THE DIFFERENCE. MEASURE IT. **Is the noise exposure level too high? Is the noise level harmful? Over 85 dB(A)?** Taking simple measurements in production is often the first step toward a better workplace environment. Order an SPL unit and start measuring.

Order no: **SPL**

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.

BLOWING PATTERN



Order no: **404 L**

Replace open pipe Ø	8 mm	(5/16")
Blowing force	13.6 N	(3.0 lbs)
Air consumption	68 Nm³/h	(40.0 scfm)
Sound level	84 dB(A)	
Blowing pattern	Wide	
Connection	G 3/8"	3/8"-18 NPT
Dimensions	Ø55x60.7	(Ø2.17x2.39")
Material	Zinc	
Max temp	70°C	(158 °F)

For more technical information, see page 146 or visit our website at silvent.com.

Noise reduction **81%**

Air/cost savings **42%**

ALTERNATIVES

Order no: **1104 L**

Order no: **1204 L**

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**

Replace open pipe Ø	10 mm	(3/8")
Blowing force	14.5 N	(3.2 lbs)
Air consumption	98 Nm³/h	(57.7 scfm)
Sound level	93.5 dB(A)	
Blowing pattern	Wide	
Connection	G 3/8"	3/8"-18 NPT
Dimensions	Ø19x46	(Ø0.75x1.81")
Material	Aluminum	
Max temp	150°C	(302 °F)

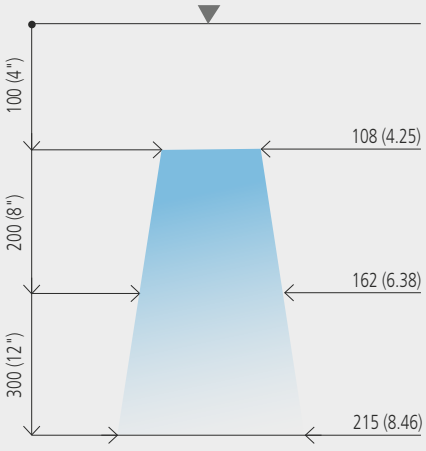
14.5 N
3.2 lbs
WIDE
ALUMI-NUM

For more technical information, see page 146 or visit our website at silvent.com.

Noise reduction **71%**

Air/cost savings **47%**

BLOWING PATTERN



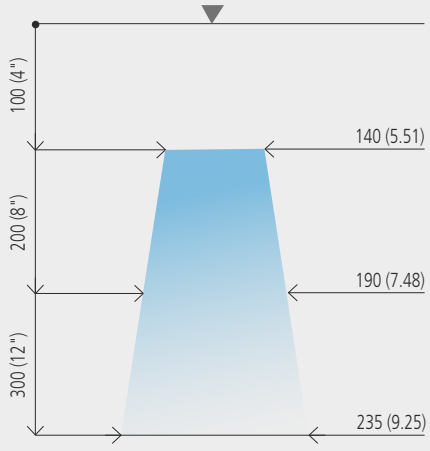
ACCESSORIES

Order no: **PSK 38**

Order no: **KV 38**

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 (3.3 lbs)). 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.

BLOWING PATTERN



Order no: **705**

InTech

Replace open pipe Ø	10 mm	(3/8")
Blowing force	15.0 N	(3.3 lbs)
Air consumption	95 Nm³/h	(55.9 scfm)
Sound level	92 dB(A)	
Blowing pattern	Wide	
Connection	G 1/2"	1/2"-14 NPT
Dimensions	Ø23x33	(Ø0.91x1.30")
Material	Stainless steel	
Max temp	400°C	(752 °F)

15.0 N
3.3 lbs
WIDE
STAIN-LESS

For more technical information, see page 146 or visit our website at silvent.com.

Noise reduction	**75%**	**Air/cost savings**	**49%**

ALTERNATIVES

Order no: **705 A**

Order no: **296**

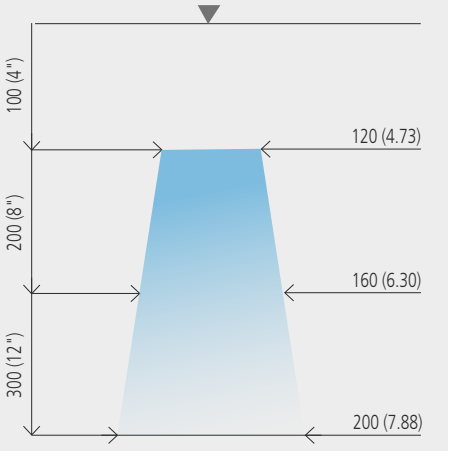
◀ New!

Order no: **705 LP**

New!

SILVENT 9005W: an energy-efficient flat nozzle that generates a strong, efficient blowing force at an exceptionally low noise level. Compressed air is optimally used in this flat nozzle, which through its unique design introduces a completely new blowing technology feature. The aerodynamic nozzle design achieves the effect by maximizing entrainment of air. Each orifice is also uniquely designed to optimize the entrainment area. The air nozzle – SILVENT 9005W – is made exclusively of Zytel, a high-performance material without which the unique and truly complex Laval orifices would not be possible. These small orifices combined with the aerodynamic slots of the nozzle provide high efficiency. The nozzle is ideal for blowing applications that require extra blowing force and an extra wide air cone. Fully complies with EU Machine Directive noise limitations and OSHA safety regulations. Patented.

BLOWING PATTERN



Order no: **9005W**

Replace open pipe Ø	10 mm	(3/8")
Blowing force	15.0 N	(3.3 lbs)
Air consumption	76.0 Nm³/h	(44.7 scfm)
Sound level	87 dB(A)	
Blowing pattern	Flat	
Connection	G 1/4"	1/4"-18 NPT
Dimensions	70.2x17.6x64	(2.76x0.69x2.52")
Material	Zytel	
Max temp	180°C	(356 °F)

For more technical information, see page 146 or visit our website at silvent.com.

Noise reduction **82%**

Air/cost savings **59%**

ACCESSORIES

Order no: **PSK 14**

Order no: **FV 14**

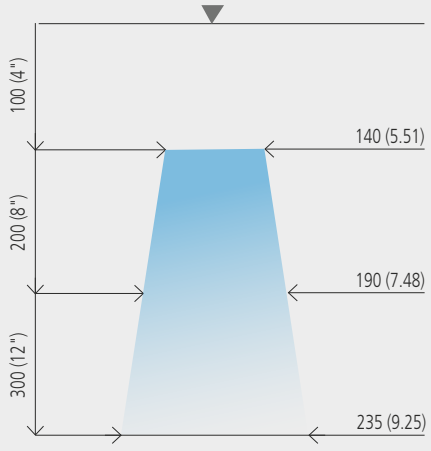
Order no: **KV 14**

AIR KNIVES

See page 92

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 sheath 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. Fully meets the EU Machine Directive's noise limitation requirements and OSHA's safety regulations. Patented.

BLOWING PATTERN



Order no: **705 L**

InTech

Replace open pipe Ø	10 mm	(3/8")
Blowing force	17.0 N	(3.8 lbs)
Air consumption	95 Nm³/h	(55.9 scfm)
Sound level	93 dB(A)	
Blowing pattern	Laval	
Connection	G 1/2"	1/2"-14 NPT
Dimensions	Ø23x33	(Ø0.91x1.30")
Material	Stainless steel	
Max temp	400°C	(752 °F)

17.0 N / 3.8 lbs

LAVAL

STAIN-LESS

For more technical information, see page 146 or visit our website at silvent.com.

Noise reduction **73%**

Air/cost savings **49%**

ALTERNATIVES

◀ New!

Order no: **705 LA**

◀ New!

Order no: **705 L LP**

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 sheath 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. Fully meets the EU Machine Directive's noise limitation requirements and OSHA's safety regulations. Patented.

Order no: **707 L**

InTech

Replace open pipe Ø	12 mm	(1/2")
Blowing force	21.0 N	(4.6 lbs)
Air consumption	120 Nm³/h	(70.6 scfm)
Sound level	94 dB(A)	
Blowing pattern	Laval	
Connection	G 1/2"	1/2"-14 NPT
Dimensions	Ø23x33	(Ø0.91x1.30")
Material	Stainless steel	
Max temp	400°C	(752 °F)

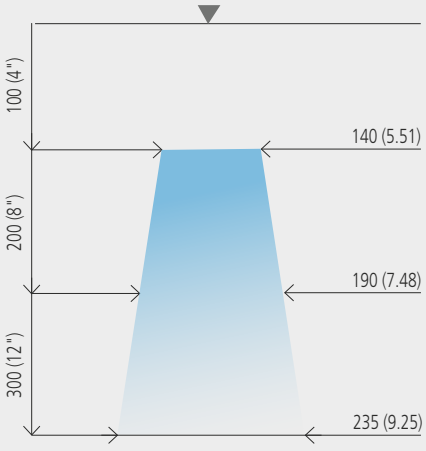
21.0 N
4.6 lbs
LAVAL
STAIN-LESS

For more technical information, see page 146 or visit our website at silvent.com.

Noise reduction **78%**

Air/cost savings **55%**

BLOWING PATTERN



ALTERNATIVES


◀ New!

Order no: **707 LA**

Order no: **707 C**


◀ New!

Order no: **707 CA**


◀ New!

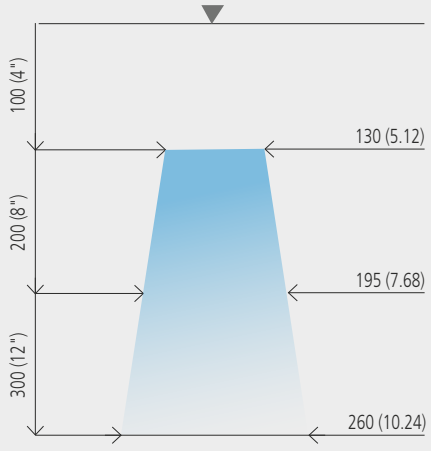
Order no: **707 L LP**


◀ New!

Order no: **707 C LP**

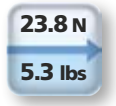
SILVENT 407 L: for operations that require high blowing force and longer blowing range. Typical areas of application include use in steel mills, paper mills and foundries for cleaning, cooling, drying etc. Fully complies with the noise limitations of the EU Machine Directive and OSHA safety standards.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

BLOWING PATTERN



Order no: **407 L**

Replace open pipe Ø	12 mm	(1/2")
Blowing force	23.8 N	(5.3 lbs)
Air consumption	119 Nm³/h	(70.0 scfm)
Sound level	86 dB(A)	
Blowing pattern	Wide	
Connection	G 1/2"	1/2"-14 NPT
Dimensions	Ø67x63.7	(Ø2.64x2.51")
Material	Zinc	
Max temp	70°C	(158 °F)



For more technical information, see page 146 or visit our website at silvent.com.

Noise reduction	**88%**	**Air/cost savings**	**55%**

ALTERNATIVES

Order no: **1107 L**

Order no: **1207 L**

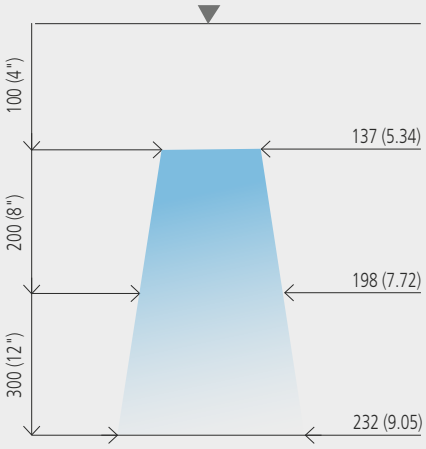
ACCESSORIES

Order no: **PSKM 12**

New!

SILVENT 808: an energy-efficient Laval nozzle that is part of Silvent's new "SILVENT SOFT™" series. The air nozzle is specially made in EPDM rubber to minimize the risk of scratches, such as on the surface of tools. The product meets the unique combination of demands for a scratch-free surface and high blowing force by applying Silvent's patented Laval technology. Silvent Laval technology is achieved by surrounding a core of air traveling at supersonic speed with a protective sheath of air moving parallel to the central air jet. The SILVENT SOFT 808 is ideal for all industries in which equipment and products are handled that cannot be damaged during compressed air blowing. Fully compliant with EU Machinery Directive noise limits and OSHA safety regulations. Patented.

BLOWING PATTERN



Order no: **808**

Replace open pipe Ø	12 mm	(1/2")
Blowing force	24.0 N	(5.3 lbs)
Air consumption	128.0 Nm³/h	(75.3 scfm)
Sound level	96.2 dB(A)	
Blowing pattern	Laval	
Connection	G 1/2"	1/2"-14 NPT
Dimensions	Ø35 x 44	(Ø1.38 x 1.72")
Material	EPDM	
Max temp	70°C	(158 °F)

24.0 N
5.3 lbs
LAVAL
EPDM

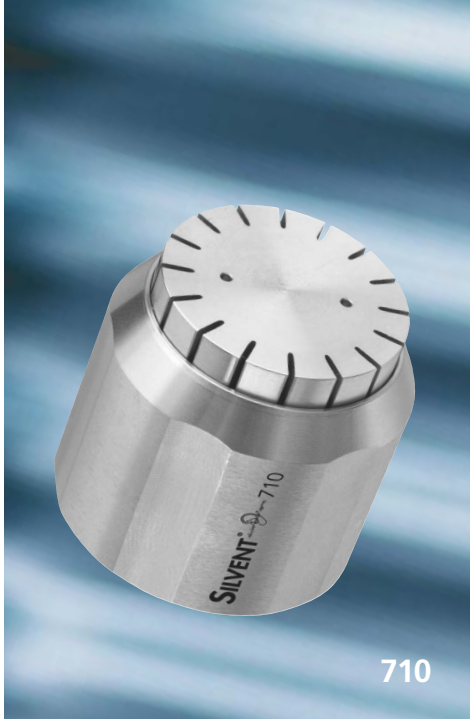
For more technical information, see page 146 or visit our website at silvent.com.

Noise reduction **75%**

Air/cost savings **52%**

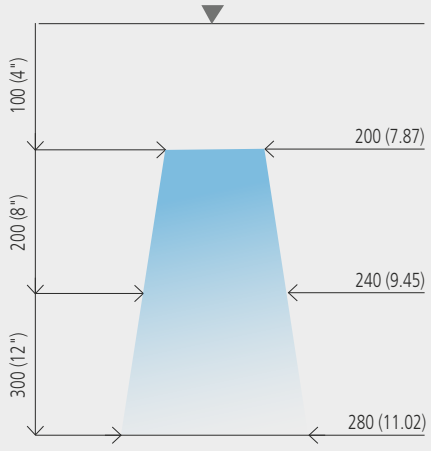
ACCESSORIES

Order no: **PSKM 12**



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 (6.6 lbs)).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.

BLOWING PATTERN



Order no: **710**

InTech

Replace open pipe Ø	14 mm	(9/16")
Blowing force	30.0 N	(6.6 lbs)
Air consumption	216 Nm³/h	(127.1 scfm)
Sound level	99 dB(A)	
Blowing pattern	Wide	
Connection	G 3/4"	3/4"-14 NPT
Dimensions	Ø41x40	(Ø1.61x1.57")
Material	Stainless steel	
Max temp	400°C	(752 °F)

30.0 N
6.6 lbs

WIDE

STAIN-LESS

For more technical information, see page 146 or visit our website at silvent.com.

Noise reduction **75%**

Air/cost savings **41%**

ALTERNATIVES

Order no: **710 A**

Order no: **1710**

Order no: **2710**

◀ New!

Order no: **710 TA**

◀ New!

Order no: **710 LP**

New!

SILVENT 710 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 sheath of air moving parallel to the central air jet. The central stream of air in the SILVENT 710 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. Fully complies with EU Machine Directive noise limitations and OSHA safety regulations. Patented.

Order no: **710 L**

InTech

Replace open pipe Ø	14 mm	(9/16")
Blowing force	33.0 N	(7.3 lbs)
Air consumption	216 Nm³/h	(127.1 scfm)
Sound level	100 dB(A)	
Blowing pattern	Laval	
Connection	G 3/4"	3/4"-14 NPT
Dimensions	Ø41x40	(Ø1.61x1.57")
Material	Stainless steel	
Max temp	400°C	(752 °F)

33.0 N
7.3 lbs

LAVAL

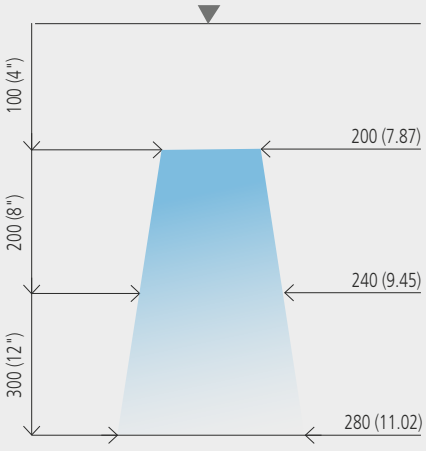
STAIN-LESS

For more technical information, see page 146 or visit our website at silvent.com.

Noise reduction **73%**

Air/cost savings **41%**

BLOWING PATTERN



ALTERNATIVES

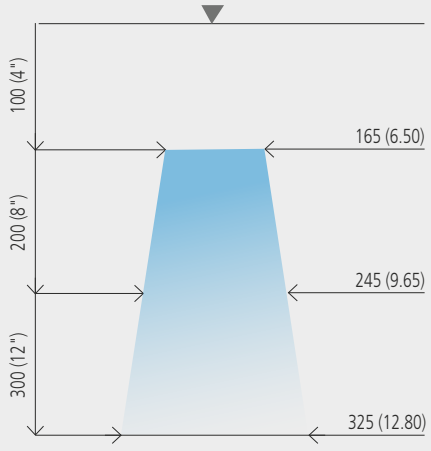
Order no: **710 LA**

Order no: **710 L TA**

Order no: **710 L LP**

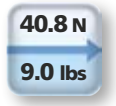
SILVENT 412 L: for operations that require high blowing force and longer blowing range. Typical areas of application include use in steel mills, paper mills and foundries for cleaning, cooling, drying etc. Fully complies with the noise limitations of the EU Machine Directive and OSHA safety standards.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

BLOWING PATTERN



Order no: **412 L**

Replace open pipe Ø	16 mm	(5/8")
Blowing force	40.8 N	(9.0 lbs)
Air consumption	204 Nm³/h	(120.1 scfm)
Sound level	88 dB(A)	
Blowing pattern	Wide	
Connection	G 3/4"	3/4"-14 NPT
Dimensions	Ø92x66.7	(Ø3.62x2.63")
Material	Zinc	
Max temp	70°C	(158 °F)



For more technical information, see page 146 or visit our website at silvent.com.

Noise reduction **89%**

Air/cost savings **57%**

ALTERNATIVES

Order no: **1112 L**

Order no: **1212 L**

ACCESSORIES

Order no: **UBJ 34**

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 (9.9 lbs)). 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.

Order no: **715 C**

InTech

Replace open pipe Ø	17 mm	(11/16")
Blowing force	45.0 N	(9.9 lbs)
Air consumption	311 Nm³/h	(183.0 scfm)
Sound level	100 dB(A)	
Blowing pattern	Concentrated	
Connection	G 3/4"	3/4"-14 NPT
Dimensions	Ø41x47	(Ø1.61x1.85")
Material	Stainless steel	
Max temp	400°C	(752 °F)

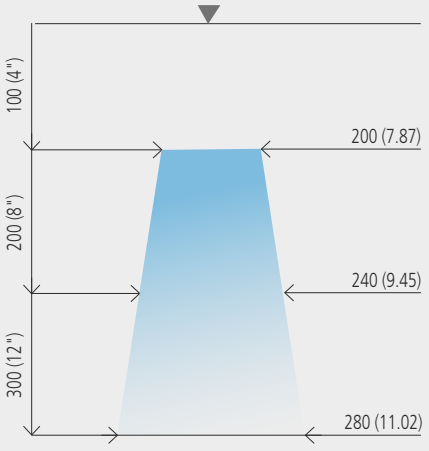
45.0 N 9.9 lbs

CONC.

STAIN-LESS

For more technical information, see page 146 or visit our website at silvent.com.

BLOWING PATTERN



Noise reduction **80%**

Air/cost savings **42%**

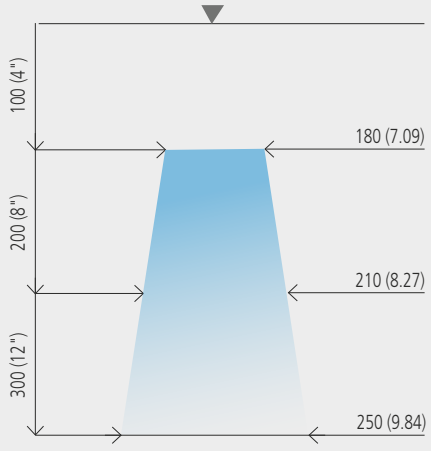
ALTERNATIVES

◀ New!

Order no: **715 CA**

SILVENT 9015W: an energy-efficient flat nozzle that generates a strong, efficient blowing force at an exceptionally low noise level. Compressed air is optimally used in this flat nozzle, which through its unique design introduces a completely new blowing technology feature. The aerodynamic nozzle design achieves the effect by maximizing entrainment of air. Each orifice is also uniquely designed to optimize the entrainment area. The air nozzle – SILVENT 9015W – is made exclusively of Zytel, a high-performance material without which the unique and truly complex Laval orifices would not be possible. These small orifices combined with the aerodynamic slots of the nozzle provide high efficiency. Fully complies with EU Machine Directive noise limitations and OSHA safety regulations. Patented.

BLOWING PATTERN



Order no: **9015W**

InTech

Replace open pipe Ø	17 mm	(11/16")
Blowing force	45.0 N	(9.9 lbs)
Air consumption	228.0 Nm³/h	(134.2 scfm)
Sound level	94 dB(A)	
Blowing pattern	Flat	
Connection	G 1/2"	1/2"-14 NPT
Dimensions	141.3x95x26.3	(5.56x3.74x1.04")
Material	Zytel	
Max temp	180°C	(356 °F)

45.0 N
9.9 lbs
FLAT
ZYTEL

For more technical information, see page 146 or visit our website at silvent.com.

Noise reduction **87%**

Air/cost savings **57%**

ACCESSORIES

Order no: **PSK 12**

Order no: **KV 12**

DON'T JUST EXPERIENCE THE DIFFERENCE. MEASURE IT. **Is the noise exposure level too high? Is the noise level harmful? Over 85 dB(A)?** Taking simple measurements in production is often the first step toward a better workplace environment. Order an SPL unit and start measuring.

Order no: **SPL**

New!

SILVENT 715 LA: an adjustable Laval nozzle. The nozzle position can be regulated 30° from the centre line, making it easy to fine tune the blowing angle. 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 sheath of air moving parallel to the central air jet. The central stream of air in the SILVENT 715 LA 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. Fully complies with EU Machine Directive noise limitations and OSHA safety regulations. Patented.

Order no: **715 LA**

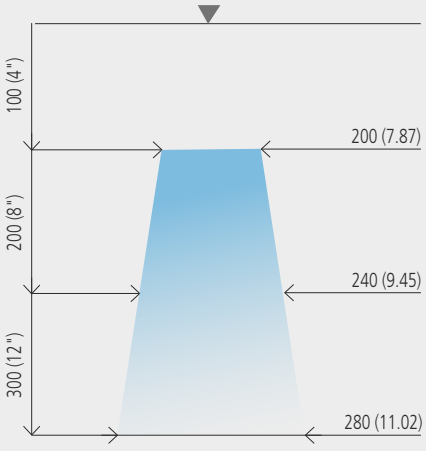
InTech

Replace open pipe Ø	18 mm	(23/32")
Blowing force	54.0 N	(11.9 lbs)
Air consumption	312 Nm³/h	(183.6 scfm)
Sound level	104 dB(A)	
Blowing pattern	Laval	
Connection	G 3/4"	3/4"-14 NPT
Dimensions	Ø50x84	(Ø1.97x3.31")
Material	Stainless steel	
Max temp	400°C	(752 °F)

54.0 N
11.9 lbs
LAVAL
STAIN-LESS

For more technical information, see page 146 or visit our website at silvent.com.

BLOWING PATTERN



Noise reduction **75%**

Air/cost savings **48%**

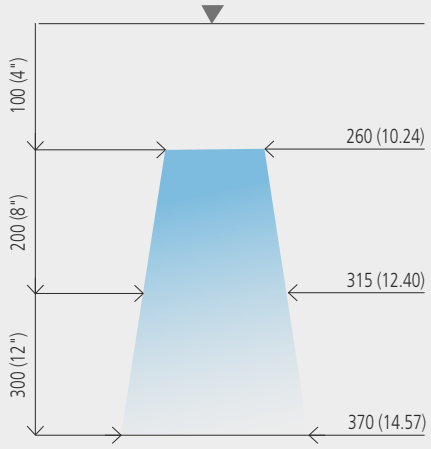
ALTERNATIVES

Order no: **715 L**

Order no: **715 L LP**

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 (15.0 lbs)).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.

BLOWING PATTERN



Order no: **720**

InTech

Replace open pipe Ø	20 mm	(3/4")
Blowing force	68.0 N	(15.0 lbs)
Air consumption	420 Nm³/h	(247.2 scfm)
Sound level	104 dB(A)	
Blowing pattern	Wide	
Connection	G 1"	1"-11 1/2 NPT
Dimensions	Ø60x52	(Ø2.36x2.05")
Material	Stainless steel	
Max temp	400°C	(752 °F)

For more technical information, see page 146 or visit our website at silvent.com.

Noise reduction **78%**

Air/cost savings **43%**

ALTERNATIVES

Order no: **720 A**

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 (21.6 lbs)). 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.

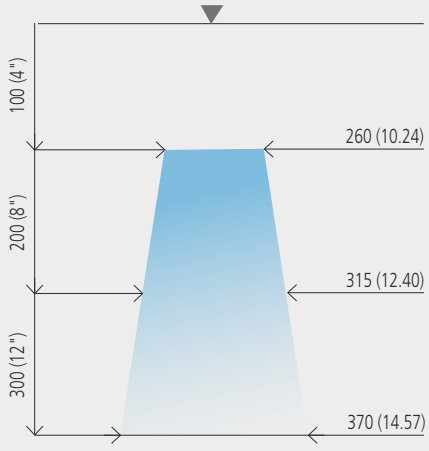
Order no: **730 C**

InTech

Replace open pipe Ø	25 mm	(1")
Blowing force	98.0 N	(21.6 lbs)
Air consumption	636 Nm³/h	(374.3 scfm)
Sound level	105 dB(A)	
Blowing pattern	Concentrated	
Connection	G 1"	1"-11 1/2 NPT
Dimensions	Ø60x57	(Ø2.36x2.24")
Material	Stainless steel	
Max temp	400°C	(752 °F)

For more technical information, see page 146 or visit our website at silvent.com.

BLOWING PATTERN



Noise reduction **84%**

Air/cost savings **45%**

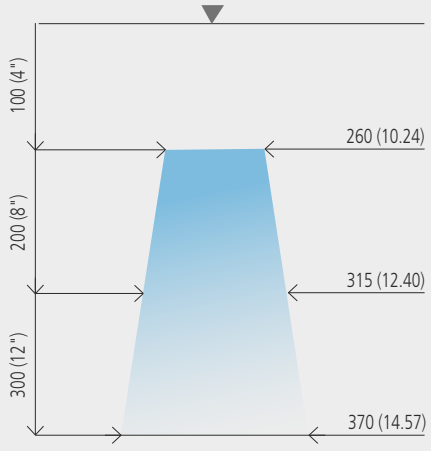
ALTERNATIVES

◀ New!

Order no: **730 CA**

SILVENT 735 LA: an adjustable Laval nozzle. The nozzle position can be regulated 30° from the centre line, making it easy to fine tune the blowing angle. 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 sheath of air moving parallel to the central air jet. The central stream of air in the SILVENT 735 LA 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. Fully complies with EU Machine Directive noise limitations and OSHA safety regulations. Patented.

BLOWING PATTERN



Order no: **735 LA**

InTech

Replace open pipe Ø	25 mm	(1")
Blowing force	127.0 N	(28.0 lbs)
Air consumption	768 Nm³/h	(452.0 scfm)
Sound level	109 dB(A)	
Blowing pattern	Laval	
Connection	G 1"	1"-11 1/2 NPT
Dimensions	Ø60x114	(Ø2.36x4.49")
Material	Stainless steel	
Max temp	400°C	(752 °F)

127.0 N
28.0 lbs
LAVAL
STAIN-LESS

For more technical information, see page 146 or visit our website at silvent.com.

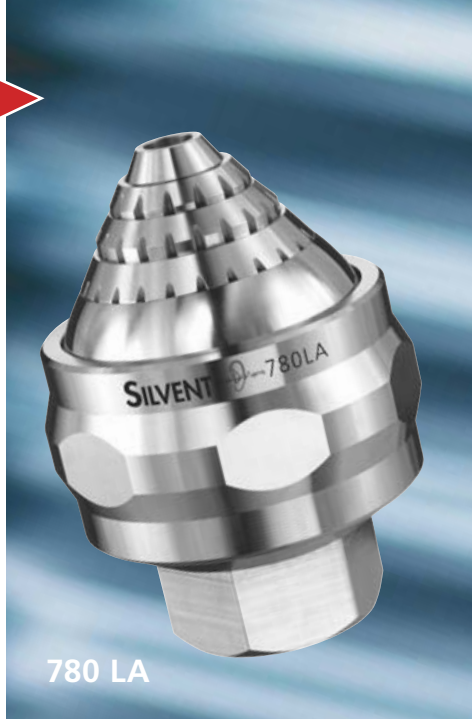
Noise reduction **78%**

Air/cost savings **34%**

ALTERNATIVES

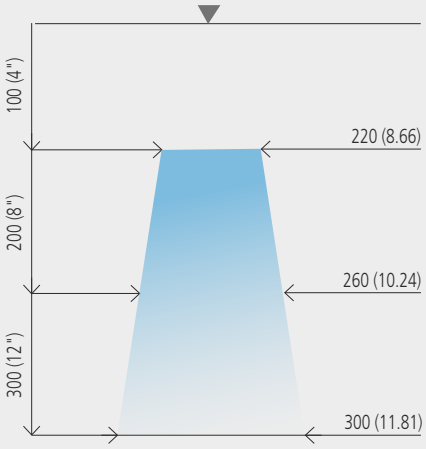
Order no: **735 L**

New!



SILVENT 780 LA: a stainless steel adjustable Laval nozzle that generates an enormous blowing force. Compressed air is optimally used in this nozzle, which introduced a completely new blowing technology feature. The effect is achieved by surrounding a core of air traveling at supersonic speed with a protective sheath of air moving parallel to the central air jet. The core stream in the SILVENT 780 LA 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 adjustable blowing angle allows a maximum of 30° adjustability around the center line. The time for installation and adjusting to the correct blowing angle is significantly reduced. Fully compliant with OSHA safety regulations. Patented.

BLOWING PATTERN



Order no: **780 LA**

InTech

Replace open pipe Ø	38 mm	(1 ½")
Blowing force	270.0 N	(59.6 lbs)
Air consumption	1750 Nm³/h	(1030.0 scfm)
Sound level	119 dB(A)	
Blowing pattern	Laval	
Connection	G 1 1/2"	1 1/2"-11 1/2 NPT
Dimensions	Ø110x152	(Ø4.33x5.98")
Material	Stainless steel	
Max temp	400°C	(752 °F)

270.0 N
59.6 lbs
LAVAL
STAIN-LESS

For more technical information, see page 146 or visit our website at silvent.com.

Noise reduction **75%**

Air/cost savings **35%**

ALTERNATIVES

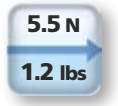
Order no: **780 L**

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.

PRINCIPLE SKETCH

Order no: **910**

Replace open pipe Ø	7 mm	(9/32")
Blowing force	5.5 N	(1.2 lbs)
Air consumption	38 Nm³/h	(22.4 scfm)
Sound level	86 dB(A)	
Blowing pattern	Misc.	
Connection	G 1/4"	1/4"-18 NPT
Dimensions	Ø18x17.5	(Ø0.71x0.69")
Material	Stainless steel	
Max temp	250°C	(482 °F)



For more technical information, see page 146 or visit our website at silvent.com.

Noise reduction **73%**

Air/cost savings **59%**

ALTERNATIVES

Order no: **912**

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.

PRINCIPLE SKETCH

Order no: **915**

Replace open pipe Ø	6 mm	(1/4”)
Blowing force	5.5 N	(1.2 lbs)
Air consumption	38 Nm³/h	(22.4 scfm)
Sound level	86 dB(A)	
Blowing pattern	Misc.	
Connection	G 1/4"	1/4"-18 NPT
Dimensions	Ø20x27	(Ø0.79x1.06”)
Material	Stainless steel	
Max temp	400°C	(752 °F)

5.5 N
1.2 lbs
MISC.
STAIN-LESS

For more technical information, see page 146 or visit our website at silvent.com.

Noise reduction **67%**

Air/cost savings **43%**

ALTERNATIVES

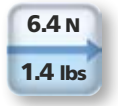
Order no: **915-90**

Order no: **915-135**

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.

Order no: **952**

Replace open pipe Ø	6 mm	(1/4")
Blowing force	6.4 N	(1.4 lbs)
Air consumption	38 Nm³/h	(22.4 scfm)
Sound level	83 dB(A)	
Blowing pattern	Misc.	
Connection	M27x2	
Dimensions	160x34x125	(6.30x1.34x4.92")
Material	Zinc	
Max temp	70°C	(158 °F)



For more technical information, see page 146 or visit our website at silvent.com.

Noise reduction **73%**

Air/cost savings **43%**

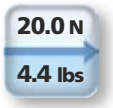
ACCESSORIES

Order no: **2252**

SILVENT 453: the smallest version of Silvent's doughnut nozzles with just an inner ring of nozzles. This is our most commonly used type of doughnut nozzle. 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.

Order no: **453**

Replace open pipe Ø	10 mm	(3/8")
Blowing force	20.0 N	(4.4 lbs)
Air consumption	114 Nm³/h	(67.1 scfm)
Sound level	90 dB(A)	
Blowing pattern	Misc.	
Connection	G 1/2"	1/2"-14 NPT
Dimensions	113x120x38	(4.45x4.72x1.50")
Material	Zinc	
Max temp	70°C	(158 °F)

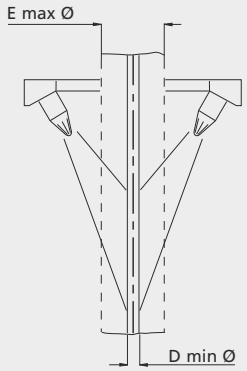


For more technical information, see page 146 or visit our website at silvent.com.

Noise reduction **78%**

Air/cost savings **38%**

BLOWING PATTERN



D min Ø		E max Ø	
mm	"	mm	"
5	0.2	25	1

Max. Ø feed 454 = 55 mm (2.2")

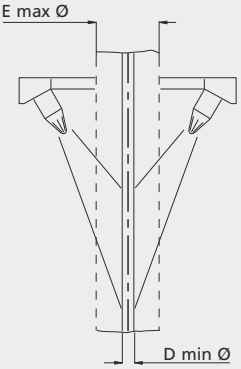
ALTERNATIVES

Order no: **454**

Order no: **455**

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.

BLOWING PATTERN



D min Ø		E max Ø	
mm	"	mm	"
25	1	105	4.1

Max. Ø feed 464 = 140 mm (5.5")

Order no: **464**

Replace open pipe Ø	16 mm	(5/8")
Blowing force	32.0 N	(7.1 lbs)
Air consumption	234 Nm³/h	(137.7 scfm)
Sound level	92 dB(A)	
Blowing pattern	Misc.	
Connection	G 3/4"	3/4"-14 NPT
Dimensions	235x205x56	(9.25x8.07x2.20")
Material	Zinc	
Max temp	70°C	(158 °F)

32.0 N
7.1 lbs

MISC.

ZINC

For more technical information, see page 146 or visit our website at silvent.com.

Noise reduction **88%**

Air/cost savings **51%**

ALTERNATIVES

Order no: **463 L**

Order no: **465 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**

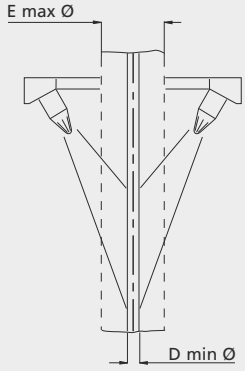
Replace open pipe Ø	25 mm	(1")	
Blowing force	148.9 N	(32.9 lbs)	148.9 N / 32.9 lbs
Air consumption	948 Nm³/h	(558.0 scfm)	
Sound level	104 dB(A)		
Blowing pattern	Misc.		MISC.
Connection	G 3/4"	3/4"-14 NPT	
Dimensions	365x336x78	(14.37x13.23x3.07")	
Material	Zinc & Aluminum		
Max temp	70°C	(158 °F)	MISC.

For more technical information, see page 146 or visit our website at silvent.com.

Noise reduction **85%**

Air/cost savings **18%**

BLOWING PATTERN



D min Ø		E max Ø	
mm	"	mm	"
100	4	205	8.1

Max. Ø feed 474 = 270 mm (10.6")

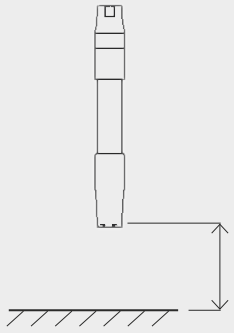
ALTERNATIVES

Order no: **473 L**

Order no: **474**

SILVENT F 1 is a cooling nozzle with FRIGUS technology that is especially designed for spot cooling where unwanted heat occurs due to material milling, drilling, grinding, turning etc. Maintaining a reduced temperature during machining operations facilitates the process and extends tool life. F 1 generates a low noise level. Its revolutionary design is compact and the unit is simple to install. It is easy to replace your standard nozzle with a FRIGUS cooling nozzle. F 1 cools the target while blowing away chips and enhancing quality. FRIGUS technology provides the possibility to quickly and easily adjust both the air consumption and cold fraction you need. This simple, unique control design allows you to set air consumption in relation to your refrigeration requirements. F 1 also complies with the noise limitations of the EU Machine Directive and OSHA safety standards. Patented.

BLOWING DISTANCE



To obtain best cooling effect from the cooling nozzle, use as short blowing distance as possible from the nozzle to the object. Recommended max blowing distance = 30 mm (1.18").

Order no: **F 1**

Refrigeration	0 - 150 kcal/h	(0 - 594 Btu/h)
Air consumption	0 - 30 Nm³/h	(0 - 17.7 scfm)
Temperature reduction	0 - 55°C	0 - 99°F
Connection	G 1/4"	1/4" - 18 NPT
Dimensions	Ø22x169	(Ø0.87x6.65")
Material (nozzle)	Zytel	
Factory pre-set values		
Refrigeration	110 kcal/h	(436 Btu/h)
Air consumption	17 Nm³/h	(10 scfm)
Temperature reduction	38°C	68.4°F
Sound level	76 dB(A)	

MISC. CONC. ZYTEL

**Values apply at a compressed air inlet temperature of 21°C (70°F).*

For more technical information, see page 146 or visit our website at silvent.com.

ALTERNATIVES

Order no: **F 1-M2**

Order no: **F 1-M3**

Order no: **F 1-M4**

Order no: **F 1-X2 – F 1-X4**

ACCESSORIES

Order no: **820**

Order no: **830**

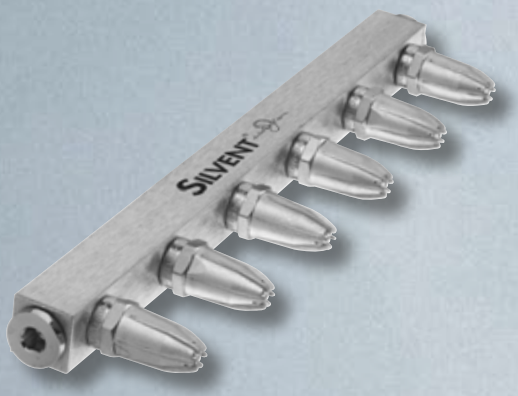
Order no: **840**

AIR KNIVES

EXAMPLES

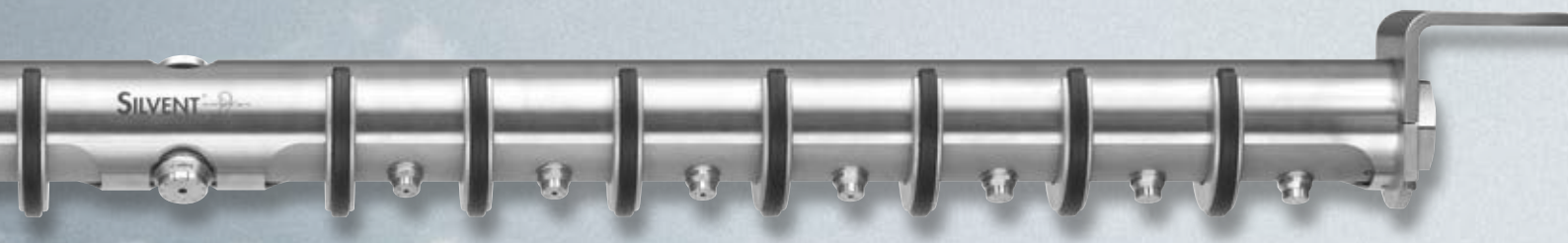
1 SILVENT 300™ with 973

2 SILVENT 300™ with 209 L



3 SILVENT AirBattery™

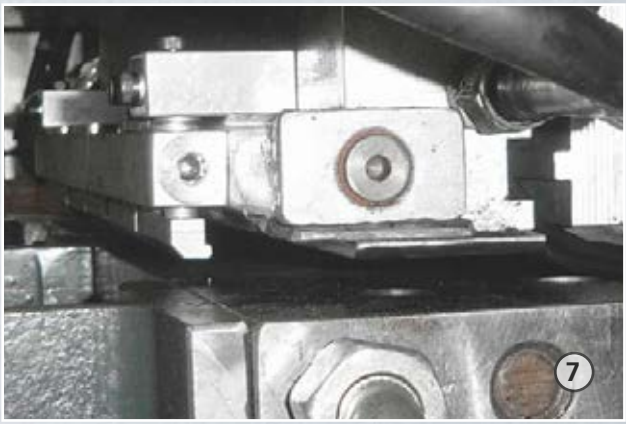
4 SILVENT Straight AirPlow™



5 SILVENT AirPlow™

6 SILVENT 300 Z+

7 SILVENT 300™ with 961



FACTS ABOUT AIR KNIVES

SILVENT AirPlow™

SILVENT AirPlow™ is the world's most advanced type of air knife with a unique patented design and construction that offers a number of setting options for optimized blowing in demanding blowing applications. Silvent InTech, a division of the Silvent Group, works with customized solutions that are integrated in the manufacturing process for products such as sheet and plate. These products, which are completely adapted for each application, can be divided into three main groups: SILVENT AirPlow™, SILVENT Straight AirPlow™ and SILVENT AirBattery™.

SILVENT 300™

The SILVENT 300™ series offers air knives designed by engineers at Silvent's head office in Sweden based on each individual application. The air knives are completely adapted to the nature of the application and the wishes of the customer. The air knives are produced and tested at Silvent's plant in Sweden before delivery to the customer. SILVENT 300™ is a stamp of quality that gives you peace of mind. Choosing SILVENT 300™ provides you with the best solution in the market, including support with information about issues such as installation and recommendations for blowing angles.

SILVENT 300 Z+

SILVENT 300 Z + is a modular system that allows you to build your own air knife with different blowing forces and lengths. More information about SILVENT 300 Z+ can be found on pages 92 – 93.

In-house manufactured air knife with SILVENT nozzles

Customers can also buy SILVENT nozzles and then build an air knife in-house. Note how the nozzles overlap to provide homogeneous air knife blowing patterns, since internal conflicts can be created when several nozzles are mounted.

SILVENT standard models of air knives

Silvent has developed several standard models of air knives including the 396, 378 and 366. These air knives are of good quality but can never be compared with the SILVENT 300™, since each application is unique and a standard model is seldom the optimal solution. More information about SILVENT standard models can be found on pages 94 – 97.

SILVENT 300

SILVENT 300™ is a unique customized solution that provides you with access to the world's leading application engineers for compressed air blowing. Ever since the company was founded, Silvent has developed customized air knives for all types of industries, from bakeries to paper mills. Over the years, our application engineers have accumulated extensive knowledge and experience about what works best in various industries. Designing a customized air knife that not only works optimally, but also consumes a minimal amount of compressed air and has a low noise level is more complicated than you might think.

SILVENT 300™ Report

SILVENT 300™ is a collective term used for all of Silvent's customized solutions. Each SILVENT 300™ proposal is unique and is always presented in a SILVENT 300™ Report in which Silvent engineers comment on your existing equipment and suggest a new improved, completely customized solution. You will receive a drawing of the air knife, installation tips, suggestions for appropriate accessories and technical data for the air knife. Should you have any special requirements regarding what to include in the report, this can also be arranged. We want you to feel that investing in a SILVENT 300™ air knife is a secure and convenient process.

Are you interested in SILVENT 300™, or would you like to contact Silvent's application engineers? Contact your Silvent representative or send an email message to 300@silvent.se.

SILVENT 300™ with 973

YOUR APPLICATION

SILVENT 300™ means that Silvent's application engineers at the head office in Sweden will formulate a proposal for an air knife that is completely tailored to your application. The proposal is always presented in a SILVENT 300™ Report. In addition to a detailed drawing, this report includes all technical data, making SILVENT 300™ a secure and reliable solution. Below is a checklist of information required for the application engineers to be able to begin working with your application. The checklist can also be downloaded from silvent.com.

Description of the application

1.1 What type of application (e.g., cleaning, cooling, drying)?
1.2 What type of product is produced in the machine?
1.3 How large a surface needs to be blown?
1.4 What is the speed of production?

1

Objective What is your top priority?

2.1 Improved quality
2.2 Lower noise level
2.3 Reduced energy consumption
2.4 Combination of the above
2.5 Other?

2

Existing equipment If it is a completely new application – continue to point 4.

3.1 Open pipe or drilled holes (how many, what size)?
3.2 Fluid nozzles or other nozzles (how many, what type)?
3.3 Size of air line?
3.4 System pressure?
3.5 Blowing distance?
3.6 Blowing angle?
Please attach a photo or video of your current equipment.

3

Limitations

4.1 What is the size of the air line currently near the machine?
4.2 Is it possible to increase the size of the air line?
4.3 What is the maximum system pressure?
4.4 Are there any limitations regarding where the air knife can be installed?
4.5 Does the air knife have to tolerate a certain temperature?
Is there any additional information, other than the above, that Silvent's application engineers should know before they start working on your application?

4

SILVENT 300™ with 973
Example of an air knife with SILVENT 973 nozzle used when the application requires high blowing force.

SILVENT 300™ with 209 L
Example of an air knife with SILVENT 209 L nozzle that provides an effective but energy-efficient blowing force.

MODULAR AIR KNIFE SYSTEM

SILVENT 310 Z+ and SILVENT 304 Z+ can easily be assembled together. All that is needed is the accessory SILVENT A 12. It has never been easier to make an air knife that fits your specific application.

310 Z+

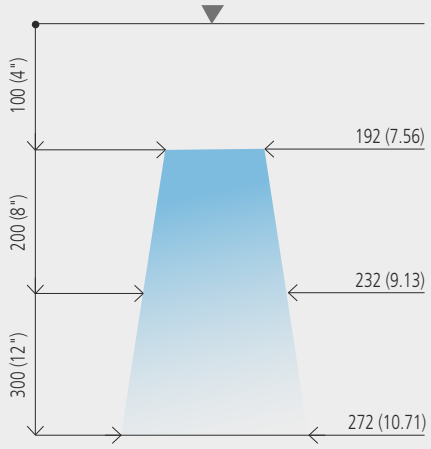
310 Z+	Blowing force		Noise level	Connections	Blowing pattern					
Number	*N*	*(lbs)*	*dB(A)*	*Number*	*100 (4")*		*200 (8")*		*300 (12")*	
1	30.0	(6.6)	90	**1**	192	(7.56")	232	(9.13")	272	(10.71")
2	60.0	(13.2)	93	**2**	336	(13.23")	376	(14.80")	416	(16.38")
3	90.0	(19.9)	95	**3**	480	(18.90")	520	(20.47")	560	(22.05")
4	120.0	(26.5)	96	**3**	624	(24.57")	664	(26.14")	704	(27.72")
5	150.0	(33.1)	97	**4**	768	(30.24")	808	(31.81")	848	(33.39")
6	180.0	(39.7)	98	**5**	912	(35.91")	952	(37.48")	992	(39.06")
7	210.0	(46.3)	98	**6**	1056	(41.57")	1096	(43.15")	1136	(44.72")

304 Z+

304 Z+	Blowing force		Noise level	Connections	Blowing pattern					
Number	*N*	*(lbs)*	*dB(A)*	*Number*	*100 (4")*		*200 (8")*		*300 (12")*	
1	12.0	(2.6)	83	**1**	172	(6.77")	212	(8.35")	252	(9.92")
2	24.0	(5.3)	86	**1**	316	(12.44")	356	(14.02")	396	(15.59")
3	36.0	(7.9)	88	**1**	460	(18.11")	500	(19.69")	540	(21.26")
4	48.0	(10.6)	89	**2**	604	(23.78")	644	(25.35")	684	(26.93")
5	60.0	(13.2)	90	**2**	748	(29.45")	788	(31.02")	828	(32.60")
6	72.0	(15.9)	91	**2**	892	(35.12")	932	(36.69")	972	(38.27")
7	84.0	(18.5)	91	**2**	1036	(40.79")	1076	(42.36")	1116	(43.94")

SILVENT 310 Z+ is a modular, energy-efficient air knife that generates an extremely strong and effective blowing force with an exceptionally low sound level. Compressed air is optimally used in this air knife. Its unique design introduced a completely new blowing technology feature. The aerodynamic nozzle design achieves the effect by maximizing entrainment of air. Each orifice is also uniquely designed to optimize the entrainment area. SILVENT 310 Z+ modules can easily be combined to achieve the desired length of the air knife (see SILVENT A 12 in accessories). Fully compliant with EU Machinery Directive noise limits and OSHA safety regulations. Patented.

BLOWING PATTERN



Order no: **310 Z+**

Replace open pipe Ø	12 mm	(1/2")
Blowing force	30.0 N	(6.6 lbs)
Air consumption	152.0 Nm³/h	(89.5 scfm)
Sound level	90 dB(A)	
Blowing pattern	Flat	
Connection	G 1/2"	1/2"-14 NPT
Dimensions	153x28x80	(6.02x1.10x3.15")
Material	Zytel	
Max temp	180°C	(356 °F)

For more technical information, see page 146 or visit our website at silvent.com.

Noise reduction **84%**

Air/cost savings **43%**

ALTERNATIVES

Order no: **304 Z+**

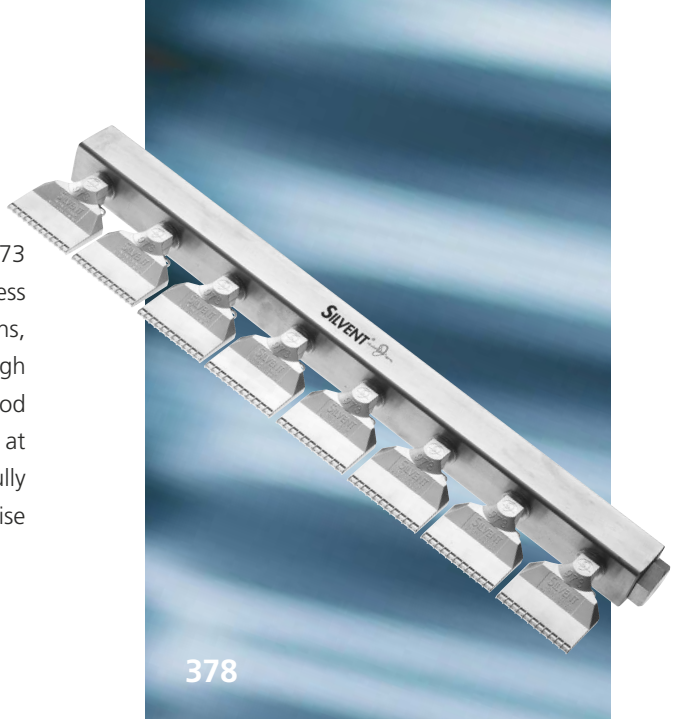
ACCESSORIES

Order no: **3902**

Order no: **KVM 12**

Order no: **A 12**

Order no: **SR 34**



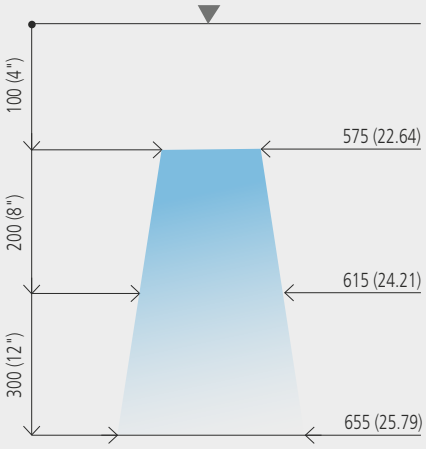
SILVENT 378: robust stainless steel air knife with eight 973 nozzles and a specially designed manifold. Made entirely of stainless steel and thereby suitable for even the most demanding applications, such as those involving aggressive chemical environments, high ambient temperatures or the stringent 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 (16.8 lbs). Fully complies with OSHA safety regulations and EU Machine Directive noise limitations. Patented.

Order no: **378**

Replace open pipe Ø	20 mm	(3/4")
Blowing force	76.0 N	(16.8 lbs)
Air consumption	464 Nm³/h	(273.1 scfm)
Sound level	95 dB(A)	
Blowing pattern	Flat	
Connection	G 1"	1"-11 1/2 NPT
Dimensions	529x40x110	(20.82x1.57x4.33")
Material	Stainless steel	
Max temp	400°C	(752 °F)

For more technical information, see page 146 or visit our website at silvent.com.

BLOWING PATTERN



Noise reduction **88%**

Air/cost savings **37%**

ALTERNATIVES

Order no: **372**

Order no: **374**

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

ACCESSORIES

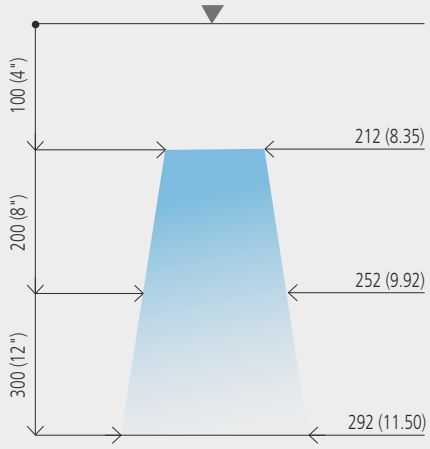
Order no: **M1E**

Order no: **KVM 10**

Order no: **SR 10**

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 (4.4 lbs). Fully meets OSHA safety regulations and the demands the EU Machine Directive makes on the amount of airborne noise generated by machines. Patented.

BLOWING PATTERN



Order no: **366**

Replace open pipe Ø	10 mm	(3/8")
Blowing force	19.8 N	(4.4 lbs)
Air consumption	117 Nm³/h	(68.9 scfm)
Sound level	89.5 dB(A)	
Blowing pattern	Flat	
Connection	G 3/8"	3/8"-18 NPT
Dimensions	172x23x38.5	(6.77x0.90x1.52")
Material	Zinc	
Max temp	70°C	(158 °F)

19.8 N
4.4 lbs
FLAT
ZINC

For more technical information, see page 146 or visit our website at silvent.com.

Noise reduction **78%**

Air/cost savings **37%**

ALTERNATIVES

Order no: **362**

Order no: **364**

ACCESSORIES

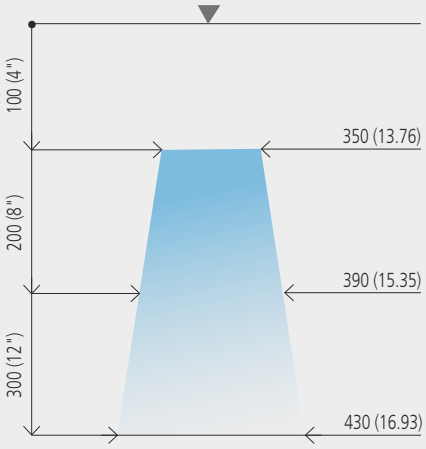
Order no: **3302**

Order no: **KVM 38**

Order no: **SR 34**

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 (7.3 lbs). Fully complies with OSHA safety regulations and EU Machine Directive noise limitations. Patented.

BLOWING PATTERN



Order no: **396**

Replace open pipe Ø	12 mm	(1/2”)	
Blowing force	33.0 N	(7.3 lbs)	33.0 N / 7.3 lbs
Air consumption	180 Nm³/h	(105.9 scfm)	
Sound level	89 dB(A)		
Blowing pattern	Flat		FLAT
Connection	G 3/8"	3/8"-18 NPT	
Dimensions	297x23x95	(11.69x0.90x3.74”)	
Material	Zinc		ZINC
Max temp	70°C	(158 °F)	

For more technical information, see page 146 or visit our website at silvent.com.

Noise reduction **85%**

Air/cost savings **32%**

ALTERNATIVES

Order no: **392**

Order no: **394**

ACCESSORIES

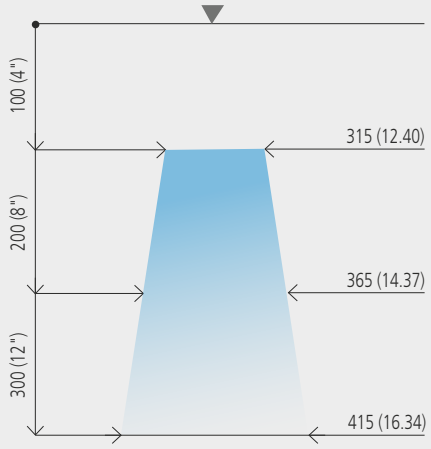
Order no: **3302**

Order no: **KVM 38**

Order no: **SR 34**

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.

BLOWING PATTERN



Order no: **306 L**

Replace open pipe Ø	10 mm	(3/8”)
Blowing force	20.4 N	(4.5 lbs)
Air consumption	102 Nm³/h	(60.0 scfm)
Sound level	85 dB(A)	
Blowing pattern	Flat	
Connection	G 3/8"	3/8"-18 NPT
Dimensions	297x23x61.7	(11.69x0.90x2.43”)
Material	Zinc	
Max temp	70°C	(158 °F)

20.4 N
4.5 lbs
FLAT
ZINC

For more technical information, see page 146 or visit our website at silvent.com.

Noise reduction **85%**

Air/cost savings **45%**

ALTERNATIVES

Order no: **302 L**

Order no: **304 L**

Order no: **302 L-S – 306 L-S**

ACCESSORIES

Order no: **3302**

Order no: **KVM 38**

Order no: **SR 34**

SAFETY AIR GUNS

APPLICATIONS

Different applications require different safety air guns

1. SILVENT **007-MJ4**
See page 107

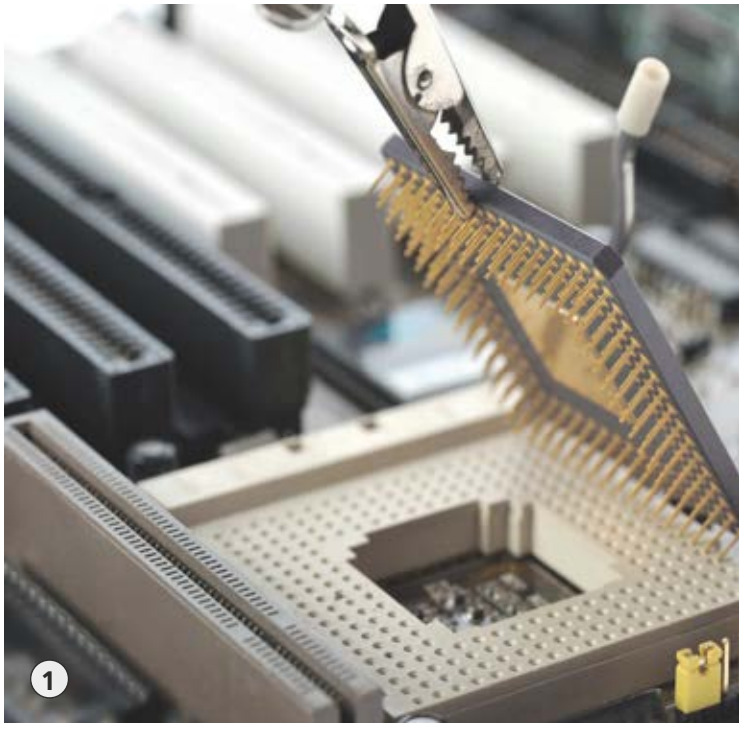
2. SILVENT **007-L**
See page 104

3. SILVENT **59002W**
See page 112

4. SILVENT **007-P**
See page 106

5. SILVENT **757-L**
See page 130

6. SILVENT **4015-LF-500**
See page 135

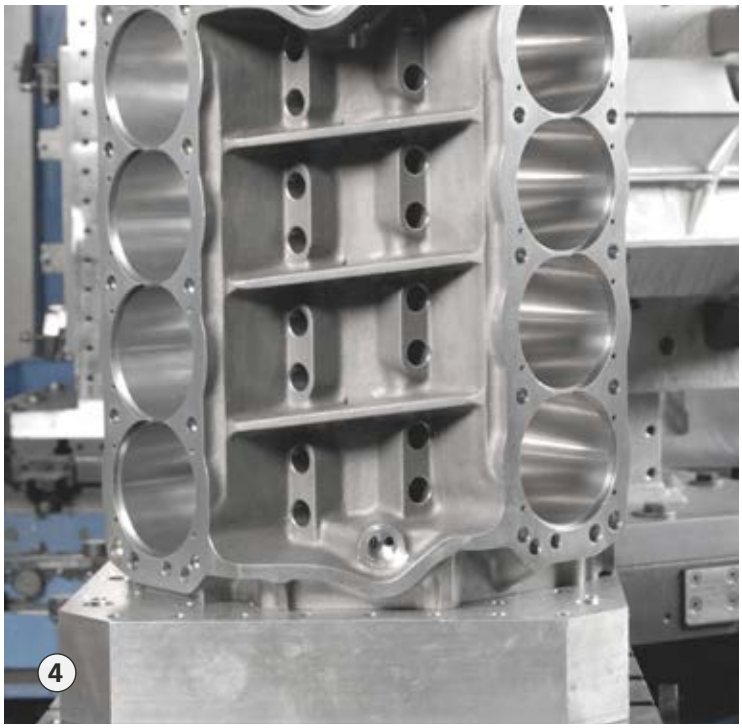


Cleaning of small parts – SILVENT 007-MJ4

General blowing – SILVENT 007-L

Cleaning of larger objects – SILVENT 59002W

Cleaning of floors – SILVENT 757-L



Cleaning of complicated parts – SILVENT 007-P

Cleaning with extremely high force – SILVENT 4015-LF-500

PRODUCT OVERVIEW

SILVENT **007-L**
See page 104

SILVENT **007-S**
See page 105

SILVENT **007-Z**
See page 105

SILVENT **007-P**
See page 106

New!

SILVENT **007-R**
See page 106

SILVENT **007-MJ4**
See page 107

SILVENT **007-MJ5**
See page 107

SILVENT **007-MJ6**
See page 107

SILVENT **008-L**
See page 108

SILVENT **008-L-S**
See page 108

SILVENT **008**
See page 108

SILVENT **0971**
See page 109

SILVENT **Special**
See pages 118-119

SILVENT **500-S**
See page 110

SILVENT **500-L**
See page 111

New!

SILVENT **59002W**
See page 112

New!

SILVENT **59002W-H**
See page 112

New!

SILVENT **500-R**
See page 113

SILVENT **500-P**
See page 113

SILVENT **500-Z**
See page 114

SILVENT **500-MJ4**
See page 114

SILVENT **500-MJ5**
See page 114

SILVENT **500-MJ6**
See page 114

SILVENT **501-L-H**
See page 115

SILVENT **501-L**
See page 115

SILVENT **501**
See page 115

SILVENT **501-L-S**
See page 115

SILVENT **520**
See page 116

SILVENT **5920**
See page 117

Safety air gun with entirely unique advantages

SILVENT 007-L 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.

1 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 operation.

2 TOP & 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.

3 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.

Order no: **007-L**

Replace open pipe Ø	4 mm	(5/32")
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)	
Blowing pattern	Laval	
Connection	G 1/4"	1/4"-18 NPT
Nozzle	1001	
Material (nozzle)	Stainless steel	

3.5 N
12.4 oz
LAVAL
STAIN-LESS

For more technical information, see page 146 or visit our website at silvent.com.

Noise reduction **60%** **Air/cost savings** **27%**

Extension pipes in 6 lengths

standard - 100 mm (4”)

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**.

ALTERNATIVES

Order no: **007-S**

Order no: **007-Z**

ACCESSORIES

Order no: **590**

Order no: **AS1**

TRY IT YOURSELF!

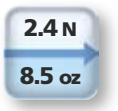
Do you have air guns that are dangerous for the users? Do you have equipment to test your air guns? SILVENT OSH contains an “OSHA meter” that shows whether your air guns are dangerous for the user. Every production facility that prioritizes workplace health and safety should have an OSHA meter.

Order no: **OSH**

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**

Replace open pipe Ø	4 mm	(5/32”)
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	79 dB(A)	
Blowing pattern	Concentrated	
Connection	G 1/4”	1/4”-18 NPT
Nozzle	8001	
Material (nozzle)	PEEK	



For more technical information, see page 146 or visit our website at silvent.com.

Noise reduction **67%** **Air/cost savings** **53%**

EXTENSION PIPES IN 3 LENGTHS

- standard - 100 mm (4”)
- 250 mm (10”)
- 500 mm (20”)

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**.

ALTERNATIVES

◀ New!

Order no: **007-R**

ACCESSORIES

Order no: **590**

Order no: **AS1**

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.

EXTENSION PIPES IN 6 LENGTHS

- standard - 100 mm (4")
- 250 mm (10")
- 400 mm (16")
- 600 mm (24")
- 800 mm (32")
- 1000 mm (40")

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-MJ4-1000**.

Order no: **007-MJ4**

Replace open pipe Ø	2 mm	(5/64")
Booster position:		
Blowing force	0.9 N	(3.2 oz)
Air consumption	4 Nm^3/h	(2.4 scfm)
Sound level	76 dB(A)	
Variable position:		
Blowing force	0.9 N	(3.2 oz)
Air consumption	4 Nm^3/h	(2.4 scfm)
Sound level	76 dB(A)	
Blowing pattern	Concentrated	
Connection	G 1/4"	1/4"-18 NPT
Nozzle	MJ4	
Material (nozzle)	Stainless steel	

0.9 N 3.2 oz

CONC.

STAIN-LESS

For more technical information, see page 146 or visit our website at silvent.com.

Noise reduction **43%**

Air/cost savings **50%**

ALTERNATIVES

Order no: **007-MJ5**

Order no: **007-MJ6**

ACCESSORIES

Order no: **590**

Order no: **AS1**

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**

Replace open pipe Ø	4 mm	(5/32")
Booster position:		
Blowing force	2.9 N	(10.2 oz)
Air consumption	15.2 Nm^3/h	(8.9 scfm)
Sound level	77.5 dB(A)	
Variable position:		
Blowing force	1.6 N	(5.6 oz)
Air consumption	11 Nm^3/h	(6.5 scfm)
Sound level	75 dB(A)	
Blowing pattern	Laval	
Connection	G 1/4"	1/4"-18 NPT
Nozzle	2120 L	
Material (nozzle)	Zinc	

For more technical information, see page 146 or visit our website at silvent.com.

Noise reduction **69%** **Air/cost savings** **50%**

ALTERNATIVES

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

Order no: **008**

ACCESSORIES

Order no: **591**

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.

Order no: **0971**

Replace open pipe Ø	4 mm	(5/32")
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)	
Blowing pattern	Flat	
Connection	G 1/4"	1/4"-18 NPT
Nozzle	971	
Material (nozzle)	Stainless steel	

For more technical information, see page 146 or visit our website at silvent.com.

Noise reduction **62%** **Air/cost savings** **37%**

DON'T JUST EXPERIENCE THE DIFFERENCE. MEASURE IT. **Is the noise exposure level too high? Is the noise level harmful? Over 85 dB(A)?** Taking simple measurements in production is often the first step toward a better workplace environment. Order an SPL unit and start measuring.

Order no: **SPL**

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

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.

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.

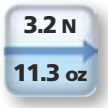
ERGONOMICS AND PRECISION
The combination of an ergonomic handle and a short trigger for one or two fingers provides a perfect grip as well as the possibility to aim the gun with precision and feeling. The ergonomic design of the handle automatically gives you the optimal blowing position so that you 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.

Order no: **500-S**

Replace open pipe Ø	4 mm	(5/32")
Blowing force	3.2 N	(11.3 oz)
Air consumption	19 Nm³/h	(11.2 scfm)
Sound level	81 dB(A)	
Blowing pattern	Concentrated	
Connection	G 1/4"	1/4"-18 NPT
Nozzle	0071	
Material (nozzle)	Stainless steel	

For more technical information, see page 146 or visit our website at silvent.com.



Noise reduction **62%**

Air/cost savings **37%**

Extension pipes in 6 lengths

standard - 100 mm (4")

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**.

ALTERNATIVES

Order no: **500-L**

ACCESSORIES

Order no: **590**

Order no: **AS1**

DON'T JUST EXPERIENCE THE DIFFERENCE. MEASURE IT. **Is the noise exposure level too high? Is the noise level harmful? Over 85 dB(A)?** Taking simple measurements in production is often the first step toward a better workplace environment. Order an SPL unit and start measuring.

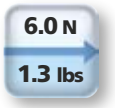
Order no: **SPL**

New!

SILVENT 59002W: is a safety air gun fitted with an energy-efficient flat nozzle that generates a strong, efficient blowing force at an exceptionally low noise level. Compressed air is optimally used in this safety air gun, which through its unique design introduces a completely new blowing technology feature. The aerodynamic nozzle design achieves the effect by maximizing entrainment of air. Each orifice is also uniquely designed to optimize the entrainment area. The air nozzle is made exclusively of Zytel, a high-performance material without which the unique and truly complex Laval orifices would not be possible. These small orifices combined with the aerodynamic slots of the nozzle provide high efficiency. This safety air gun is ideal for quickly and efficiently blowing surfaces clean without risk of scratches. Fully complies with EU Machine Directive noise limitations and OSHA safety regulations. Patented.

Order no: **59002W**

Replace open pipe Ø	6 mm	(1/4")
Blowing force	6.0 N	(1.3 lbs)
Air consumption	30.0 Nm³/h	(17.7 scfm)
Sound level	80 dB(A)	
Blowing pattern	Flat	
Connection	G 1/4"	1/4"-18 NPT
Nozzle	9002W	
Material (nozzle)	Zytel	



For more technical information, see page 146 or visit our website at silvent.com.

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

ALTERNATIVES

Order no: **59002W-H**

SILVENT 500-R: part of a completely new generation of safety air guns designed for blowing applications aimed at avoiding scratches on equipment and products. The 500-R is equipped with an energy-efficient Laval nozzle that is part of Silvent's new "SILVENT SOFT™" series. The air nozzle is specially made in EPDM rubber to minimize the risk of scratches. The product meets the unique combination of demands for a scratch-free surface and high blowing force by applying Silvent's patented Laval technology. Fully compliant with EU Machinery Directive noise limits and OSHA safety regulations. Patented.

EXTENSION PIPES IN 3 LENGTHS

- standard - 100 mm (4")
- 250 mm (10")
- 500 mm (20")

When ordering safety guns with longer pipes than standard, specify the length last in the order number. Safety gun-extension pipe length, e.g **500-R-250**.

Order no: **500-R**

Replace open pipe Ø	5 mm	(3/16")
Blowing force	4.0 N	(14.1 oz)
Air consumption	22.6 Nm³/h	(13.3 scfm)
Sound level	81.1 dB(A)	
Blowing pattern	Laval	
Connection	G 1/4"	1/4"-18 NPT
Nozzle	801	
Material (nozzle)	EPDM	

For more technical information, see page 146 or visit our website at silvent.com.

4.0 N
14.1 oz
LAVAL
EPDM

Noise reduction **71%**

Air/cost savings **51%**

ALTERNATIVES

Order no: **500-P**

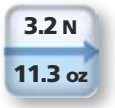
ACCESSORIES

Order no: **AS1**

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**

Replace open pipe Ø	4 mm	(5/32")
Blowing force	3.2 N	(11.3 oz)
Air consumption	19 Nm³/h	(11.2 scfm)
Sound level	79 dB(A)	
Blowing pattern	Concentrated	
Connection	G 1/4"	1/4"-18 NPT
Nozzle	5001	
Material (nozzle)	Zinc	



For more technical information, see page 146 or visit our website at silvent.com.

Noise reduction **67%**

Air/cost savings **37%**

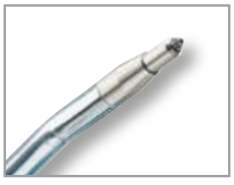
EXTENSION PIPES IN 6 LENGTHS

- standard - 100 mm (4")
- 250 mm (10")
- 400 mm (16")
- 600 mm (24")
- 800 mm (32")
- 1000 mm (40")

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-Z-600**.

ALTERNATIVES

Order no: **500-MJ4**



Order no: **500-MJ5**

Order no: **500-MJ6**

ACCESSORIES

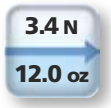
Order no: **590**

Order no: **AS1**

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.

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

Replace open pipe Ø	4 mm	(5/32")
Blowing force	3.4 N	(12.0 oz)
Air consumption	17 Nm³/h	(10.0 scfm)
Sound level	78 dB(A)	
Blowing pattern	Laval	
Connection	G 1/4"	1/4"-18 NPT
Nozzle	2120 L	
Material (nozzle)	Zinc	



For more technical information, see page 146 or visit our website at silvent.com.

Noise reduction **69%**

Air/cost savings **43%**

ALTERNATIVES

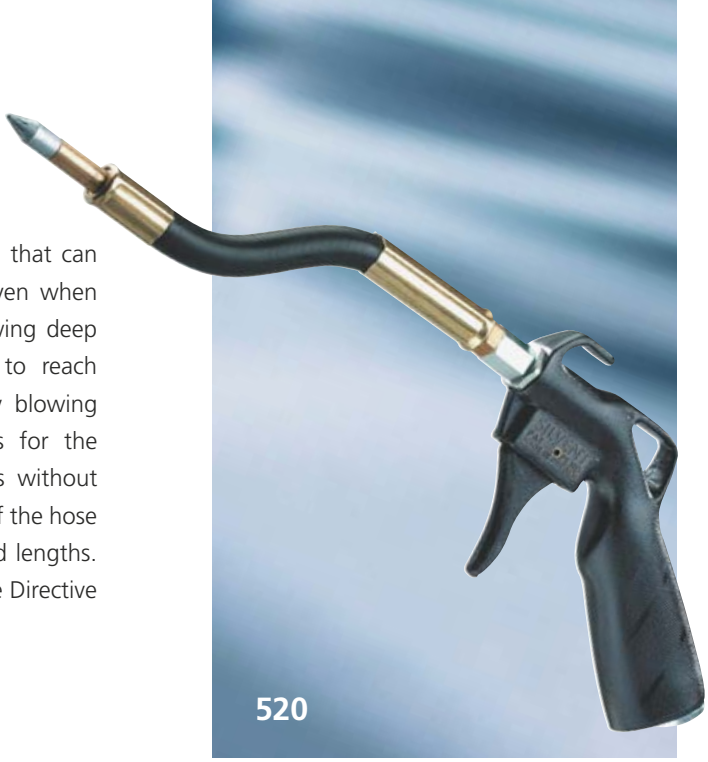
Order no: **501-L**

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

Order no: **501**

ACCESSORIES

Order no: **591**



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.

Order no: **520**

Replace open pipe Ø	4 mm	(5/32")
Blowing force	2.9 N	(10.2 oz)
Air consumption	16 Nm^3/h	(9.4 scfm)
Sound level	79 dB(A)	
Blowing pattern	Concentrated	
Connection	G 1/4"	1/4"-18 NPT
Nozzle	5001	
Material (nozzle)	Zinc	

For more technical information, see page 146 or visit our website at silvent.com.

2.9 N
10.2 oz
CONC.
ZINC

Noise reduction **67%**

Air/cost savings **47%**

FLEXGUN IN 6 LENGTHS

- **520** – 200 mm (7.87")
- **530** – 300 mm (11.81")
- **540** – 400 mm (15.75")
- **550** – 500 mm (19.69")
- **560** – 600 mm (23.62")
- **580** – 800 mm (31.50")

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**

Replace open pipe Ø	6 mm	(1/4")
Blowing force	5.5 N	(1.2 lbs)
Air consumption	30 Nm³/h	(17.7 scfm)
Sound level	81 dB(A)	
Blowing pattern	Flat	
Connection	G 1/4"	1/4"-18 NPT
Nozzle	920 A	
Material (nozzle)	Zinc	

For more technical information, see page 146 or visit our website at silvent.com.

5.5 N
1.2 lbs
FLAT
ZINC

Noise reduction	**77%**	**Air/cost savings**	**55%**

TRY IT YOURSELF!

Do you have air guns that are dangerous for the users? Do you have equipment to test your air guns? SILVENT OSH contains an "OSHA meter" that shows whether your air guns are dangerous for the user. Every production facility that prioritizes workplace health and safety should have an OSHA meter.

Order no: **OSH**

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**

Replace open pipe Ø	4 mm	(5/32”)
Blowing force	1.0 N	(3.5 oz)
Air consumption	4.4 Nm³/h	(2.6 scfm)
Sound level	77 dB(A)	
Blowing pattern	Misc.	
Connection	G 1/4”	1/4”-18 NPT
Material (nozzle)	Stainless steel	

For more technical information, see page 146 or visit our website at silvent.com.

1.0 N
3.5 oz
MISC.
STAIN-LESS

Noise reduction **71%**

Air/cost savings **87%**

DIMENSIONING RULES

CHIPS

The BG-007 is designed to collect short chips. The BG-007 is not suitable for gathering long spiral chips.

HOLES

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

ALTERNATIVES

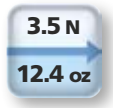
Order no: **BG-500**

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. The gun is suitable for installation hanging above the operator. Fully complies with OSHA safety regulations and EU Machine Directive noise limitations.

Order no: **100**

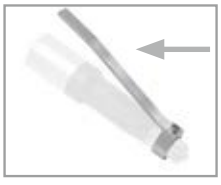
Replace open pipe Ø	4 mm	(5/32”)
Blowing force	3.5 N	(12.4 oz)
Air consumption	19 Nm³/h	(11.2 scfm)
Sound level	80 dB(A)	
Blowing pattern	Wide	
Connection	G 1/4”	1/4”-18 NPT
Nozzle	2120	
Material (nozzle)	Aluminum	

For more technical information, see page 146 or visit our website at silvent.com.

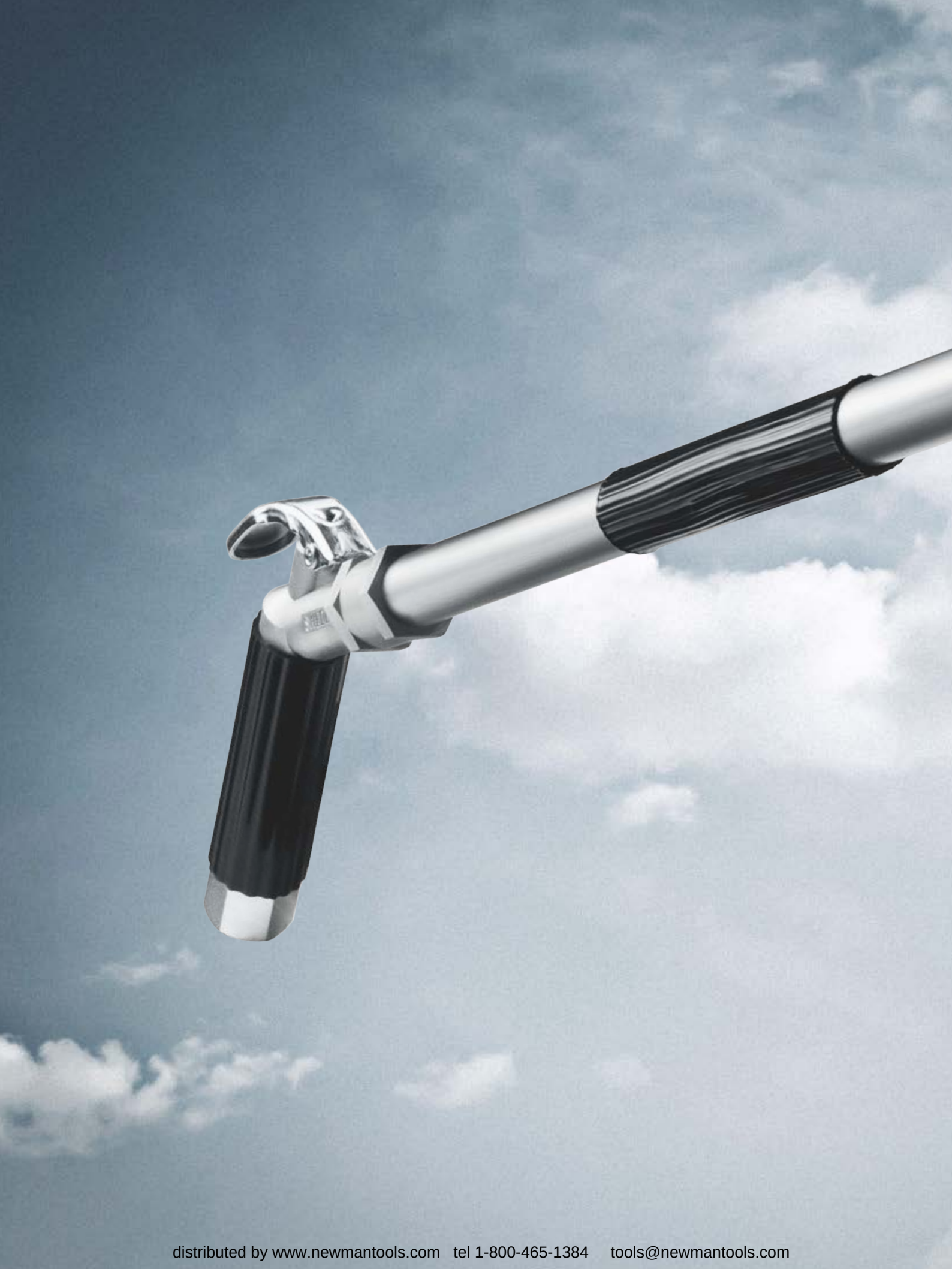


Noise reduction	**65%**	**Air/cost savings**	**37%**

ACCESSORIES



Order no: **103**



SAFETY AIR GUNS
HIGH BLOWING FORCE

PRODUCT OVERVIEW

SILVENT **2055-A-SG**
See page 124

SILVENT **2055-A**
See page 125

SILVENT **2055-S**
See page 125

New!

SILVENT **2053-L-SG**
See page 126

New!

SILVENT **2804-R**
See page 127

SILVENT **2973**
See page 128

SILVENT **2050-S**
See page 129

SILVENT **2050-L**
See page 129

SILVENT **2220-L-S**
See page 129

SILVENT **757-L**
See page 130

SILVENT **755-S**
See page 131

SILVENT **755-L**
See page 131

SILVENT **757-S**
See page 131

◀ New!

SILVENT **753-L**
See page 131

SILVENT **753-S**
See page 131

SILVENT **751-S**
See page 131

◀ New!

SILVENT **750-W**
See page 132

◀ New!

SILVENT **758-R**
See page 133

SILVENT **4015-L**
See page 135

SILVENT **4020-LF**
See page 136

SILVENT **4020-L**
See page 136

SILVENT **4015-LF**
See page 134

SILVENT **4010-S**
See page 137

SILVENT **4010-SF**
See page 137

100% aluminum safety air gun with high blowing force

SILVENT 2055-A-SG is a safety air gun that is equipped with a softgrip handle for greater comfort. The safety air gun has an aerodynamic aluminum nozzle that provides a blowing force equivalent to 5 conventional compressed air guns. Despite the high blowing force, the sound level is comparable to that of a conventional air gun. The 2055-A is a powerful but flexible safety air gun that is ideal for applications that require a high blowing force. Fully compliant with EU Machinery Directive noise limits and OSHA safety regulations. Patented.

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.

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.

Order no: **2055-A-SG**

Replace open pipe Ø	8 mm	(5/16”)
Blowing force	13.5 N	(3.0 lbs)
Air consumption	92 Nm³/h	(54.1 scfm)
Sound level	93 dB(A)	
Blowing pattern	Wide	
Connection	G 3/8"	3/8"-18 NPT
Nozzle	2005	
Material (nozzle)	Aluminum	

For more technical information, see page 146 or visit our website at silvent.com.

13.5 N
3.0 lbs
WIDE
ALUMI-NUM

Noise reduction **65%**

Air/cost savings **22%**

Extension pipes in 6 lengths

Standard - 0 mm (0")

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-SG-2000**.

ALTERNATIVES

Order no: **2055-A**

Order no: **2055-S**

ACCESSORIES

Order no: **592**

Order no: **AS3**

Order no: **SG-2000**

TRY IT YOURSELF!

Do you have air guns that are dangerous for the users? Do you have equipment to test your air guns? SILVENT OSH contains an “OSHA meter” that shows whether your air guns are dangerous for the user. Every production facility that prioritizes workplace health and safety should have an OSHA meter.

Order no: **OSH**

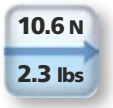
New!

SILVENT 2053-L-SG is a safety air gun that is equipped with a softgrip handle for greater comfort. The blowing force is more than 3 times stronger than that of an ordinary compressed air gun. The compressed air is optimally used in this Laval nozzle by surrounding a core of air traveling at supersonic speed with a protective sheath of air moving parallel to the central air jet. Diverging slits around the Laval hole provide quiet, strong and laminar air streams. Despite the high blowing force both the sound level and energy consumption are low. Fully compliant with EU Machinery Directive noise limits and OSHA safety regulations. Patented.

Order no: **2053-L-SG**

Replace open pipe Ø	8 mm	(5/16”)
Blowing force	10.6 N	(2.3 lbs)
Air consumption	60.0 Nm³/h	(35.3 scfm)
Sound level	91 dB(A)	
Blowing pattern	Laval	
Connection	G 3/8"	3/8”-18 NPT
Nozzle	753-L	
Material (nozzle)	Stainless steel	

For more technical information, see page 146 or visit our website at silvent.com.



Noise reduction **69%**

Air/cost savings **49%**

EXTENSION PIPES IN 6 LENGTHS

- Standard - 0 mm (0")
- 150 mm (6”)
- 500 mm (20”)
- 1000 mm (40”)
- 1500 mm (60”)
- 2000 mm (80”)

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. **2053-L-SG-2000**.

ALTERNATIV

Order no: **2053-L**

ACCESSORIES

Order no: **AS3**

SILVENT 2804-R: part of a completely new generation of safety air guns designed for blowing applications aimed at avoiding scratches on equipment and products. The 2804-R is equipped with an energy-efficient Laval nozzle that is part of Silvent's new "SILVENT SOFT™" series. The air nozzle is specially made in EPDM rubber to minimize the risk of scratches. The product meets the unique combination of demands for a scratch-free surface and high blowing force by applying Silvent's patented Laval technology. Fully compliant with EU Machinery Directive noise limits and OSHA safety regulations. Patented.

EXTENSION PIPES IN 6 LENGTHS

- Standard - 0 mm (0")
- 150 mm (6")
- 500 mm (20")
- 1000 mm (40")
- 1500 mm (60")
- 2000 mm (80")

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. 2804-R-2000.**

Order no: **2804-R**

Replace open pipe Ø	8 mm	(5/16")
Blowing force	12.0 N	(2.6 lbs)
Air consumption	70.0 Nm³/h	(41.2 scfm)
Sound level	90.0 dB(A)	
Blowing pattern	Laval	
Connection	G 3/8"	3/8"-18 NPT
Nozzle	804	
Material (nozzle)	EPDM	

For more technical information, see page 146 or visit our website at silvent.com.

Noise reduction **71%**

Air/cost savings **41%**

ACCESSORIES

Order no: **SG-2000**

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 pattern 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**

Replace open pipe Ø	7 mm	(9/32")
Blowing force	9.5 N	(2.1 lbs)
Air consumption	58 Nm³/h	(34.1 scfm)
Sound level	86 dB(A)	
Blowing pattern	Flat	
Connection	G 3/8"	3/8"-18 NPT
Nozzle	973	
Material (nozzle)	Stainless steel	

For more technical information, see page 146 or visit our website at silvent.com.

Noise reduction **73%**

Air/cost savings **37%**

ACCESSORIES

Order no: **SG-2000**

Don't just experience the difference. Measure it.

Is the noise exposure level too high? Is the noise level harmful? Over 85 dB(A)? Taking simple measurements in production is often the first step toward a better workplace environment. Order an SPL unit and start measuring.

Order no: **SPL**

SILVENT 2050-S: with a stainless steel nozzle. Extremely tough, but at the same time, practical 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.

EXTENSION PIPES IN 6 LENGTHS

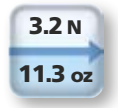
- standard - 100 mm (4")
- 250 mm (10")
- 400 mm (16")
- 600 mm (24")
- 800 mm (32")
- 1000 mm (40")

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. **2050-S-1000**.

Order no: **2050-S**

Replace open pipe Ø	4 mm	(5/32")
Blowing force	3.2 N	(11.3 oz)
Air consumption	19 Nm³/h	(11.2 scfm)
Sound level	81 dB(A)	
Blowing pattern	Concentrated	
Connection	G 3/8"	3/8"-18 NPT
Nozzle	0071	
Material (nozzle)	Stainless steel	

For more technical information, see page 146 or visit our website at silvent.com.



Noise reduction **62%**

Air/cost savings **37%**

ALTERNATIVES

Order no: **2050-L**

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

ACCESSORIES

Order no: **590**

Order no: **SG-2000**

Robust safety air gun for tough environments

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.

UP TO 12 TIMES GREATER BLOWING FORCE The safety guns of the 750 series have up to 12 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.

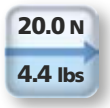
DURABLE CONSTRUCTION The 750 grip has been developed for jobs requiring high blowing power and working environments that demand a robust grip and valve construction. These guns can also be used when wearing work gloves and the grip is considerably more impact resistant than conventional guns. Commonly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

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.

Order no: **757-L**

Replace open pipe Ø	12 mm	(1/2")
Blowing force	20.0 N	(4.4 lbs)
Air consumption	113 Nm^3/h	(66.5 scfm)
Sound level	93.1 dB(A)	
Blowing pattern	Laval	
Connection	G 1/2"	1/2"-14 NPT
Nozzle	707 L	
Material (nozzle)	Stainless steel	

For more technical information, see page 146 or visit our website at silvent.com.



Noise reduction **80%**

Air/cost savings **58%**

Extension pipes in 5 lengths

Standard - 0 mm (0")

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. **757-L-1500**.

ALTERNATIVES

Order no: **757-S**

Order no: **755-L**

Order no: **755-S**

New!

Order no: **753-L**

Order no: **753-S**

Order no: **751-S**

TRY IT YOURSELF!

Do you have air guns that are dangerous for the users? Do you have equipment to test your air guns? SILVENT OSH contains an "OSHA meter" that shows whether your air guns are dangerous for the user. Every production facility that prioritizes workplace health and safety should have an OSHA meter.

Order no: **OSH**

New!

SILVENT 750-W: equipped with an energy-efficient flat nozzle made of Zytel that generates an extremely strong and effective blowing force at the same time that the sound level is exceptionally low. Compressed air is optimally used in this safety air gun, which through its unique design introduces a completely new blowing technology feature. This safety air gun is an excellent choice for large surfaces that need to be blown clean because of its unique blowing pattern and high blowing force. Fully compliant with EU Machinery Directive noise limits and OSHA safety regulations. Patented.

Order no: **750-W**

Replace open pipe Ø	14 mm	(9/16”)
Blowing force	36.0 N	(7.9 lbs)
Air consumption	182.0 Nm³/h	(107.1 scfm)
Sound level	92 dB(A)	
Blowing pattern	Flat	
Connection	G 1/2"	1/2"-14 NPT
Material (nozzle)	Zytel	

For more technical information, see page 146 or visit our website at silvent.com.

Noise reduction **85%**

Air/cost savings **50%**

Don’t just experience the difference. Measure it.

Is the noise exposure level too high? Is the noise level harmful? Over 85 dB(A)? Taking simple measurements in production is often the first step toward a better workplace environment. Order an SPL unit and start measuring.

Order no: **SPL**

New!

SILVENT 758-R: part of a completely new generation of safety air guns designed for blowing applications aimed at avoiding scratches on equipment and products. The 758-R is equipped with an energy-efficient Laval nozzle that is part of Silvent's new "SILVENT SOFT™" series. The air nozzle is specially made in EPDM rubber to minimize the risk of scratches. The product meets the unique combination of demands for a scratch-free surface and high blowing force by applying Silvent's patented Laval technology. Fully compliant with EU Machinery Directive noise limits and OSHA safety regulations. Patented.

EXTENSION PIPES IN 5 LENGTHS

- Standard - 0 mm (0")
- 500 mm (20")
- 1000 mm (40")
- 1500 mm (60")
- 2000 mm (80")

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. **758-R-1500**.

Order no: **758-R**

Replace open pipe Ø	12 mm	(1/2")
Blowing force	21.0 N	(4.6 lbs)
Air consumption	114.0 Nm³/h	(67.1 scfm)
Sound level	94.8 dB(A)	
Blowing pattern	Laval	
Connection	G 1/2"	1/2"-14 NPT
Nozzle	808	
Material (nozzle)	EPDM	

For more technical information, see page 146 or visit our website at silvent.com.

21.0 N
4.6 lbs
LAVAL
EPDM

Noise reduction **77%**

Air/cost savings **57%**

An extremely powerful blowing tool for long blowing distances

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 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.

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

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.

Order no: **4015-LF**

Replace open pipe Ø	20 mm	(3/4")
Blowing force	54.0 N	(11.9 lbs)
Air consumption	312 Nm³/h	(183.6 scfm)
Sound level	104 dB(A)	
Blowing pattern	Laval	
Connection	G 3/4"	3/4"-14 NPT
Nozzle	4115	
Material (nozzle)	Stainless steel	

For more technical information, see page 146 or visit our website at silvent.com.

54.0 N
11.9 lbs

LAVAL

STAIN-LESS

Noise reduction	78%	Air/cost savings	58%

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**.

ALTERNATIVES

Order no: **4015-LF-500**

Order no: **4015-LF-1000**

Order no: **4015-L**

Order no: **4015-L-500**

Order no: **4015-L-1000**

ACCESSORIES

Order no: **SW-4000**

Don't just experience the difference. Measure it.

Is the noise exposure level too high? Is the noise level harmful? Over 85 dB(A)? Taking simple measurements in production is often the first step toward a better workplace environment. Order an SPL unit and start measuring.

Order no: **SPL**

SILVENT 4020-LF: a unique product with Laval nozzle that combines highly concentrated blowing force with an easily maneuverable valve construction and low sound level. Its blowing force of 100 N (22.1 lbs) 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**

Replace open pipe Ø	25 mm	(1")
Blowing force	100.0 N	(22.1 lbs)
Air consumption	532 Nm³/h	(313.1 scfm)
Sound level	118 dB(A)	
Blowing pattern	Laval	
Connection	G 3/4"	3/4"-14 NPT
Nozzle	4120	
Material (nozzle)	Stainless steel	

For more technical information, see page 146 or visit our website at silvent.com.

Noise reduction **60%**

Air/cost savings **54%**

EXTENSION PIPES IN 2 LENGTHS

- 500 mm (20")
- 1000 mm (40")

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. **4020-LF-1000**.

ALTERNATIVES

Order no: **4020-LF-500**

Order no: **4020-LF-1000**

Order no: **4020-L**

Order no: **4020-L-500**

Order no: **4020-L-1000**

ACCESSORIES

Order no: **SW-4000**

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.

EXTENSION PIPES IN 2 LENGTHS

- 500 mm (20")
- 1000 mm (40")

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. **4010-S-1000**.

Order no: **4010-S**

Replace open pipe Ø	14 mm	(9/16")
Blowing force	30.0 N	(6.6 lbs)
Air consumption	216 Nm³/h	(127.1 scfm)
Sound level	99 dB(A)	
Blowing pattern	Wide	
Connection	G 3/4"	3/4"-14 NPT
Nozzle	4110	
Material (nozzle)	Stainless steel	

For more technical information, see page 146 or visit our website at silvent.com.

Noise reduction **75%**

Air/cost savings **41%**

ALTERNATIVES

Order no: **4010-S-500**

Order no: **4010-S-1000**

Order no: **4010-SF**

Order no: **4010-SF-500**

Order no: **4010-SF-1000**

ACCESSORIES

Order no: **SW-4000**

SAFETY SILENCERS

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, 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; 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**

Two-chamber system

Decreases backpressure when the expansion volume increases and new filter surface is exposed.

Warning indicator

Provides early warning before problems arise in the pneumatic system.

Inner diffuser

Extends from the outer silencer chamber when backpressure is too great.

Outer diffuser

Effectively muffles noise through optimal use of the material volume.

MAKING THE RIGHT CHOICE

When designing compressed air systems, the outflow time is strongly influenced by the volume and pressure of the enclosed air. Consequently the flow capacity of the silencer is an important factor to take into account to avoid unnecessary back pressure in the system. If the application is extremely sensitive to back pressure a silencer with extra large flow capacity should be chosen.

The table below shows the max flows through the different safety silencers in Silvent's product program.

FLOW CAPACITY SI units

Model	Max. flow [Nm³/h]					
Pressure [kPa]:	***100***	***200***	***300***	***400***	***500***	***600***
SIS-02	31	48	65	82	99	116
SIS-03	61	92	123	154	185	216
SIS-04	80	128	176	224	272	320
SIS-05	185	292	399	506	613	720
SIS-10	420	670	905	1140	1380	1630
SIS-20	760	1210	1630	2050	2480	2930

FLOW CAPACITY American units of measurement

Model	Max flow [scfm]			
Pressure (psi):	***20***	***40***	***60***	***80***
SIS-02	22	36	50	63
SIS-03	43	68	93	118
SIS-04	58	97	136	175
SIS-05	133	220	307	393
SIS-10	515	848	1173	1509
SIS-20	931	1529	2109	2713

PRODUCT OVERVIEW

SILVENT **SIS-02**
See page 144

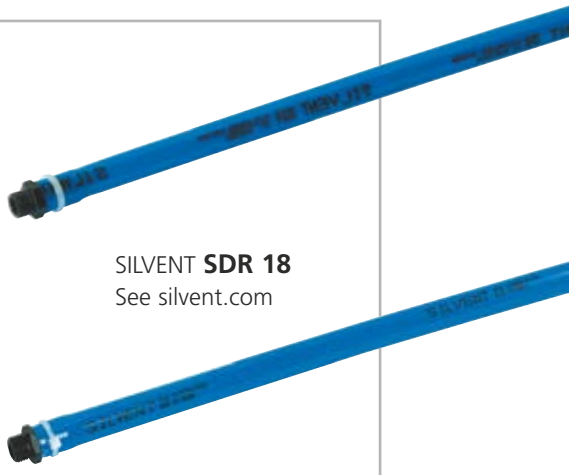
SILVENT **SIS-03**
See page 144

SILVENT **SIS-04**
See page 144

SILVENT **SIS-05**
See page 144

SILVENT **SIS-10**
See page 145

SILVENT **SIS-20**
See page 145



SILVENT **SDR 18**
See silvent.com

SILVENT **SDR 14**
See silvent.com

CD
See silvent.com

ED 1023
See silvent.com

ED 2033
See silvent.com

SILVENT SIS-03: 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-03**

Air flow	53 Nm³/h	(31.2 scfm)
Sound level	66.5 dB(A)	
Connection	G 1/4"	1/4"-18 NPT
Dimensions	Ø19.6x42.6	(Ø0.77x1.68")
Material	PP	

53 Nm³/h
31.2 scfm

i

G 1/4"

The value for flow applies with continuous operation over a valve. For more technical information, see page 146 or visit our website at silvent.com.

Noise reduction **33dB(A)**

ALTERNATIVES

Order no: **SIS-02**
Connection G 1/8"
1/8"-27 NPT

Order no: **SIS-04**
Connection G 3/8"
3/8"-18 NPT

Order no: **SIS-05**
Connection G 1/2"
1/2"-14 NPT

SILVENT SIS-10: 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 can be used 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	G 1"	1"-11 1/2 NPT
Dimensions	Ø140 x 130	(Ø5.51 x 5.12")
Material	Steel, PP	

670 Nm³/h
394.3 scfm
i
G 1"

The value for flow applies with continuous operation over a valve. For more technical information, see page 146 or visit our website at silvent.com.

Noise reduction **42dB(A)**

ALTERNATIVES

Order no: **SIS-20**
Connection G 2"
2"-11 1/2 NPT

TECHNICAL SPECIFICATIONS

BASIC INFORMATION

The technical data presented in the manual are based on extensive control measurements, performed in a laboratory with calibrated measurement equipment according to internationally accepted standards. The data are based on measurements performed under the following conditions:

Feed pressure
Feed pressure is measured right in front of the air nozzle, and is stated in the unit kilopascal [kPa] or pounds per square inch [psi]. Technical data presented in the manual apply at a feed pressure of 500 kPa (72.5 psi) unless stated otherwise.

Blowing force
Blowing force is measured on a scale with a flat surface of 310 x 290 (12.20" x 11.40") and at a distance of 200 mm (7.87") from the opening of the air nozzle. Blowing force specified in the unit Newtons [N] or ounces [oz] or pounds [lbs]. 1 lb = 16 oz.

Blowing force at different pressures
The values for blowing force at 200 kPa to 1000 kPa resp. 40 psi to 120 psi, are listed in table format for air nozzles on pages 150 to 151, air knives on pages 152 to 153 and safety air guns on pages 154 to 155.

Air consumption
Air consumption is measured by a flow meter located before the blowing nozzle. Consumption is given in the unit Normal cubic meter per hour [Nm³/h] or standard cubic feet per minute [scfm].

Air consumption at different pressures
The values for air consumption at 200 kPa to 1000 kPa resp. 40 psi to 120 psi, are listed in table format for air nozzles on pages 150 to 151, air knives on pages 152 to 153 and safety air guns on pages 154 to 155.

Sound level
Sound level is measured at a distance of one meter (3.28 ft) from the air nozzle outlet and with the microphone perpendicular to the direction of the air jet. The sound level is stated in the unit decibel A [dB(A)].

Sound level at different pressures
The values for sound level at 200 kPa to 1000 kPa resp. 40 psi to 120 psi, are listed in table format for air nozzles on pages 150 to 151, air knives on pages 152 to 153 and safety air guns on pages 154 to 155.

Blowing pattern
The blowing pattern shows the spread of the air in front of the air nozzle and is stated in millimeters [mm] or inches ["].

Blowing pattern at different distances
The values for blowing patterns from 50 mm to 500 mm and 4" to 20", respectively, are stated in table format for air nozzles and air knives on pages 156 to 157.

Air velocity
Air velocity is measured at the center of the air jet and is stated in meters per second (m/s) or feet per second (ft/s)

Air velocity at different distances
The values for air velocity from 50 mm to 500 mm and 4" to 20", respectively, are stated in table format for air nozzles and air knives on pages 156 to 157.

Measurements
The measurement data are stated in millimeters [mm] or inches ["].

Temperature
Maximum allowable working temperature for the products is stated in degrees Celsius [°C] or degrees Fahrenheit [°F].

If any value is is missing or any questions arise, please visit our website at silvent.com or contact us at info@silvent.com.

INSTRUCTIONS FOR USE

Silvent's products are intended for use in industrial compressed air systems. They may not be used where pressure or temperature exceeds the maximum regulations.

Maximum working pressure
1.0 MPa (145 psi) unless stated otherwise.

Thread standards
G-thread
Cylindrical thread according to ISO 228/1. Use sealing washer, adhesive or thread tape during assembly. Another classification for this thread is BSP (British Default Pipe Thread).

NPT thread (National Pipe Thread)
American standard according to ANSI/ASME B 1.20.1. The threads are deformed to achieve a seal.

M-thread
Metric thread according to ISO 68/ISO 724. Use adhesive or thread tape during assembly.

Air supply
An important factor for the air nozzle(s) to function optimally is that the air supply must be large enough. Otherwise the flow might be turbulent and/or the blowing force could be unevenly distributed. For applications that use many nozzles mounted on a line the air supply can be divided among multiple inlets. It is also important that fittings and nipples do not choke the air supply.

The table to the right shows how many nozzles can be supplied by one line (feeding from one side).

Table for air supply

Number of nozzles/line (internal diameter Ø)

	1/4"	3/8"	1/2"	3/4"	1"	1 1/2"	2"
MJ4	13	29	52	118	210	473	841
MJ5	5	11	21	47	84	189	336
MJ6	3	8	15	33	60	135	240
209 L	3	6	12	27	49	111	198
512	2	6	11	24	44	99	177
011	2	6	11	24	44	99	177
701	2	5	10	22	40	90	160
811	3	7	13	31	55	124	221
921	3	6	12	27	49	111	198
961	2	6	10	24	43	97	172
971	2	5	10	22	40	90	160
209	2	6	11	24	44	99	177
801	2	5	9	20	36	82	146
700 M	2	4	8	18	33	75	134
1011	2	4	8	18	32	72	129
920 A	1	3	7	15	28	63	112
9002W	1	3	7	15	28	63	112
973	1	2	3	8	14	32	58
703	0	2	3	8	14	33	59
703 L	0	1	3	7	14	31	56
804	0	1	3	6	12	27	48
404 L	0	1	3	6	12	27	49
2005	0	1	2	4	8	19	34
705	0	1	2	4	8	19	35
9005W	1	1	2	6	11	24	44
705 L	0	1	2	4	8	19	35
707 L	0	0	1	3	7	15	28
407 L	0	0	1	3	7	15	28
808	0	0	1	3	6	14	26
710	0	0	0	2	3	8	15
710 L	0	0	0	2	3	8	15
412 L	0	0	1	2	4	9	16
715 C	0	0	0	1	2	6	10
9015W	0	0	1	2	3	8	14
715 LA	0	0	0	1	2	6	10
720	0	0	0	1	2	4	8
730 C	0	0	0	0	1	2	5
735 LA	0	0	0	0	1	2	4
780 LA	0	0	0	0	0	1	1

Air nozzles

SI units

MODEL	BLOWING FORCE [N]					AIR CONSUMPTION [Nm³ h]					SOUND LEVEL [dB(A)]				
PRESSURE [kPa]	200	400	600	800	1000	200	400	600	800	1000	200	400	600	800	1000
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
620 - 680	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	20.3	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	20.3	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
801	1.4	3.0	4.8	6.5	8.3	9.7	18.0	26.1	34.9	44.1	71.6	78.4	83.1	86.0	88.0
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
9002W	2.5	4.9	7.1	9.3	11.5	16.0	25.0	34.0	43.0	52.0	71.3	78.0	82.0	85.0	87.2
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
703 L	4.3	8.2	13.0	17.2	21.7	27.0	48.3	70.1	93.0	117.9	87.8	90.0	92.8	95.2	97.2
804	4.8	9.7	15.0	19.5	24.5	35.2	58.9	81.8	105.0	127.8	82.2	88.2	92.3	95.4	97.5
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
9005W	6.7	12.4	18.1	23.8	29.5	40.0	64.0	88.0	112.0	136.0	79.0	85.5	89.1	91.3	92.7
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	85.6	90.6	95.0	97.6	99.8
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
808	9.2	18.8	29.2	39.0	49.8	57.4	102.5	154.0	204.0	255.0	86.5	93.8	98.0	100.6	102.3
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
710 L	15.1	27.2	39.1	51.4	63.9	104.0	179.0	250.0	337.0	400.0	92.8	97.5	101.6	104.9	106.5
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
9015W	20.0	36.5	53.0	69.5	86.0	117.0	191.0	265.0	339.0	413.0	85.7	92.1	95.8	96.8	97.4
715 LA	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	205.3	275.6	518.5	750.0	990.6	1228.3	97.3	102.5	106.3	107.7	109.1
735 LA	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
780 LA	130.0	230.0	320.0	420.0	520.0	950.0	1550.0	2150.0	2750.0	3350.0	111.0	117.5	120.0	122.0	123.5
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	-	-	-	-	-	18.6	30.6	45.6	59.6	73.6	-	-	-	-	-
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 measurement

MODEL	BLOWING FORCE [oz]					AIR CONSUMPTION [scfm]					SOUND LEVEL [dB(A)]				
PRESSURE [psi]	40	60	80	100	120	40	60	80	100	120	40	60	80	100	120
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
620 - 680	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
801	7.1	11.6	15.9	20.1	24.7	7.4	11.2	14.7	18.3	21.8	75.0	78.6	81.5	83.9	85.7
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
9002W	13.1	18.5	23.8	29.2	34.5	11.5	15.5	19.5	23.5	27.5	74.7	78.6	81.2	83.4	85.1
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
703 L	20.8	21.8	42.7	53.0	64.0	21.2	30.2	40.1	48.6	57.6	88.5	90.8	92.2	93.8	95.6
804	21.9	35.3	48.7	60.7	72.4	25.9	35.4	45.4	54.5	64.2	85.1	89.2	92.5	94.6	96.5
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	84.0	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
9005W	30.0	44.0	58.0	72.0	86.0	28.0	38.0	48.0	58.0	68.0	81.0	84.8	87.6	89.7	91.5
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	88.1	91.6	94.1	96.0	97.6
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
808	44.1	70.6	97.1	121.8	144.7	41.8	63.6	85.4	104.8	125.5	89.7	94.3	97.4	99.5	101.0
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
710 L	70.2	102.4	131.0	160.0	189.0	78.3	114.3	149.6	157.9	194.4	95.0	98.0	100.7	103.2	105.1
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
9015W	95.0	135.0	175.0	215.0	255.0	90.0	115.0	140.0	165.0	190.0	89.0	92.5	95.0	96.4	97.0
715 LA	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 LA	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
780 LA	604.0	836.0	1052.0	1271.0	1490.0	706.0	913.0	1190.0	1443.0	1702.0	115.0	117.7	119.5	120.8	122.1
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	-	-	-	-	-	7.1	9.8	12.6	15.4	18.0	-	-	-	-	-
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	97.0	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

Air knives

SI units

MODEL	BLOWING FORCE [N]					AIR CONSUMPTION [Nm³/h]					SOUND LEVEL [dB(A)]				
PRESSURE [kPa]	200	400	600	800	1000	200	400	600	800	1000	200	400	600	800	1000
310 Z+	13.4	24.8	36.2	47.6	59.0	80.0	128.0	176.0	224.0	272.0	82.0	88.5	92.1	94.3	95.7
304 Z+	5.0	9.8	14.2	18.6	23.0	32.0	50.0	68.0	86.0	104.0	74.3	81.0	85.0	88.0	90.2
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
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
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
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
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
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
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
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
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
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
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
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
EXAMPLE															
Number 304 Z+															
1 x 304 Z+	5.0	9.8	14.2	18.6	23.0	32.0	50.0	68.0	86.0	104.0	74.3	81.0	85.0	88.0	90.2
2 x 304 Z+	10.0	19.6	28.4	37.2	46.0	64.0	100.0	136.0	172.0	208.0	77.3	84.0	88.0	91.0	93.2
3 x 304 Z+	15.0	29.4	42.6	55.8	69.0	96.0	150.0	204.0	258.0	312.0	79.1	85.8	89.8	92.8	95.0
4 x 304 Z+	20.0	39.2	56.8	74.4	92.0	128.0	200.0	272.0	344.0	416.0	80.3	87.0	91.0	94.0	96.2
5 x 304 Z+	25.0	49.0	71.0	93.0	115.0	160.0	250.0	340.0	430.0	520.0	81.3	88.0	92.0	95.0	97.2
6 x 304 Z+	30.0	58.8	85.2	111.6	138.0	192.0	300.0	408.0	516.0	624.0	82.1	88.8	92.8	95.8	98.0
7 x 304 Z+	35.0	68.6	99.4	130.2	161.0	224.0	350.0	476.0	602.0	728.0	82.8	89.5	93.5	96.5	98.7
Number 310 Z+															
1 x 310 Z+	13.4	24.8	36.2	47.6	59.0	80.0	128.0	176.0	224.0	272.0	82.0	88.5	92.1	94.3	95.7
2 x 310 Z+	26.8	49.6	72.4	95.2	118.0	160.0	256.0	352.0	448.0	544.0	85.0	91.5	95.1	97.3	98.7
3 x 310 Z+	40.2	74.4	108.6	142.8	177.0	240.0	384.0	528.0	672.0	816.0	86.8	93.3	96.9	99.1	100.5
4 x 310 Z+	53.6	99.2	144.8	190.4	236.0	320.0	512.0	704.0	896.0	1088.0	88.0	94.5	98.1	100.3	101.7
5 x 310 Z+	67.0	124.0	181.0	238.0	295.0	400.0	640.0	880.0	1120.0	1360.0	89.0	95.5	99.1	101.3	102.7
6 x 310 Z+	80.4	148.8	217.2	285.6	354.0	480.0	768.0	1056.0	1344.0	1632.0	89.8	96.3	99.9	102.1	103.5
7 x 310 Z+	93.8	173.6	253.4	333.2	413.0	560.0	896.0	1232.0	1568.0	1904.0	90.5	97.0	100.6	102.8	104.2
Number 973															
5 x 973	20.0	39.5	57.3	75.9	94.5	146.0	245.0	339.5	435.9	532.3	83.7	91.0	94.6	97.5	99.6
10 x 973	40.0	79.0	114.5	151.7	188.9	292.0	490.0	679.0	871.8	1064.6	86.7	94.0	97.6	100.5	102.6
15 x 973	60.0	118.5	171.8	227.6	283.4	438.0	735.0	1018.5	1307.7	1596.9	88.5	95.8	99.4	102.3	104.4
20 x 973	80.0	158.0	229.0	303.4	377.8	584.0	980.0	1358.0	1743.6	2129.2	89.7	97.0	100.6	103.5	105.6
Number 920 A															
5 x 920 A	10.0	21.5	35.0	46.0	57.0	60.0	125.0	190.0	250.5	310.0	79.0	86.1	90.3	93.6	95.4
10 x 920 A	20.0	43.0	70.0	92.0	114.0	120.0	250.0	380.0	501.0	620.0	82.0	89.1	93.3	96.6	98.4
15 x 920 A	30.0	64.5	105.0	138.0	171.0	180.0	375.0	570.0	751.5	930.0	83.8	90.9	95.1	98.4	100.2
20 x 920 A	40.0	86.0	140.0	184.0	228.0	240.0	500.0	760.0	1002.0	1240.0	85.0	92.1	96.3	99.6	101.4
Number 961															
5 x 961	6.5	13.0	19.5	25.5	33.0	45.0	77.5	113.5	148.0	182.5	78.1	85.1	89.8	92.5	94.6
10 x 961	13.0	26.0	39.0	51.0	66.0	90.0	155.0	227.0	296.0	365.0	81.1	88.1	92.8	95.5	97.6
15 x 961	19.5	39.0	58.5	76.5	99.0	135.0	232.5	340.5	444.0	547.5	82.9	89.9	94.6	97.3	99.4
20 x 961	26.0	52.0	78.0	102.0	132.0	180.0	310.0	454.0	592.0	730.0	84.1	91.1	95.8	98.5	100.6

Air knives

American units of measurement

MODEL	BLOWING FORCE [oz]					AIR CONSUMPTION [scfm]					SOUND LEVEL [dB(A)]				
PRESSURE [psi]	40	60	80	100	120	40	60	80	100	120	40	60	80	100	120
310 Z+	60.0	88.0	116.0	144.0	172.0	56.0	76.0	96.0	116.0	136.0	84.0	87.8	90.6	92.7	94.5
304 Z+	26.2	37.0	47.6	58.4	69.0	23.0	31.0	39.0	47.0	55.0	77.7	81.6	84.2	86.4	88.1
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
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
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
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
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
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
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
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
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
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
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	84.0	87.5	90.2
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
EXAMPLE															
Number 304 Z+															
1 x 304 Z+	26.2	37.0	47.6	58.4	69.0	23.0	31.0	39.0	47.0	55.0	77.7	81.6	84.2	86.4	88.1
2 x 304 Z+	52.4	74.0	95.2	116.8	138.0	46.0	62.0	78.0	94.0	110.0	80.7	84.6	87.2	89.4	91.1
3 x 304 Z+	78.6	111.0	142.8	175.2	207.0	69.0	93.0	117.0	141.0	165.0	82.5	86.4	89.0	91.2	92.9
4 x 304 Z+	104.8	148.0	190.4	233.6	276.0	92.0	124.0	156.0	188.0	220.0	83.7	87.6	90.2	92.4	94.1
5 x 304 Z+	131.0	185.0	238.0	292.0	345.0	115.0	155.0	195.0	235.0	275.0	84.7	88.6	91.2	93.4	95.1
6 x 304 Z+	157.2	222.0	285.6	350.4	414.0	138.0	186.0	234.0	282.0	330.0	85.5	89.4	92.0	94.2	95.9
7 x 304 Z+	183.4	259.0	333.2	408.8	483.0	161.0	217.0	273.0	329.0	385.0	86.2	90.1	92.7	94.9	96.6
Number 310 Z+															
1 x 310 Z+	60.0	88.0	116.0	144.0	172.0	56.0	76.0	96.0	116.0	136.0	84.0	87.8	90.6	92.7	94.5
2 x 310 Z+	120.0	176.0	232.0	288.0	344.0	112.0	152.0	192.0	232.0	272.0	87.0	90.8	93.6	95.7	97.5
3 x 310 Z+	180.0	264.0	348.0	432.0	516.0	168.0	228.0	288.0	348.0	408.0	88.8	92.6	95.4	97.5	99.3
4 x 310 Z+	240.0	352.0	464.0	576.0	688.0	224.0	304.0	384.0	464.0	544.0	90.0	93.8	96.6	98.7	100.5
5 x 310 Z+	300.0	440.0	580.0	720.0	860.0	280.0	380.0	480.0	580.0	680.0	91.0	94.8	97.6	99.7	101.5
6 x 310 Z+	360.0	528.0	696.0	864.0	1032.0	336.0	456.0	576.0	696.0	816.0	91.8	95.6	98.4	100.5	102.3
7 x 310 Z+	420.0	616.0	812.0	1008.0	1204.0	392.0	532.0	672.0	812.0	952.0	92.5	96.3	99.1	101.2	103.0
Number 973															
5 x 973	98.5	144.5	190.0	236.0	282.0	109.5	149.0	188.5	228.0	268.0	87.2	91.2	94.0	96.2	98.0
10 x 973	197.0	289.0	380.0	472.0	564.0	219.0	298.0	377.0	456.0	536.0	90.2	94.2	97.0	99.2	101.0
15 x 973	295.5	433.5	570.0	708.0	846.0	328.5	447.0	565.5	684.0	804.0	92.0	96.0	98.8	101.0	102.8
20 x 973	394.0	578.0	760.0	944.0	1128.0	438.0	596.0	754.0	912.0	1072.0	93.2	97.2	100.0	102.2	104.0
Number 920 A															
5 x 920 A	52.0	81.0	110.5	139.0	168.5	54.0	77.0	100.0	123.0	146.0	82.1	86.3	89.5	92.0	94.0
10 x 920 A	104.0	162.0	221.0	278.0	337.0	108.0	154.0	200.0	246.0	292.0	85.1	89.3	92.5	95.0	97.0
15 x 920 A	156.0	243.0	331.5	417.0	505.5	162.0	231.0	300.0	369.0	438.0	86.9	91.1	94.3	96.8	98.8
20 x 920 A	208.0	324.0	442.0	556.0	674.0	216.0	308.0	400.0	492.0	584.0	88.1	92.3	95.5	98.0	100.0
Number 961															
5 x 961	32.0	48.6	63.5	78.4	97.0	34.6	47.1	62.1	76.1	90.6	80.6	85.4	89.2	91.0	92.9
10 x 961	64.0	97.2	127.1	156.9	194.0	69.2	94.1	124.1	152.2	181.2	83.7	88.4	92.2	94.0	95.9
15 x 961	96.0	145.8	190.6	235.3	291.0	103.8	141.2	186.2	228.2	271.8	85.4	90.2	93.9	95.8	97.7
20 x 961	128.0	194.4	254.2	313.7	388.0	138.4	188.2	248.3	304.3	362.4	86.7	91.4	95.2	97.0	98.9

Safety air guns

SI units

MODEL	BLOWING FORCE [N]					AIR CONSUMPTION [Nm³/h]					SOUND LEVEL [dB(A)]				
PRESSURE [kPa]	200	400	600	800	1000	200	400	600	800	1000	200	400	600	800	1000
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-R	1.0	2.5	4.3	6.0	7.6	8.0	15.1	23.0	30.1	39.5	72.3	77.9	82.0	85.4	87.4
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-L-S	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
59002W	2.3	4.5	6.5	8.5	10.5	15.0	24.0	32.0	41.0	49.0	69.3	76.0	80.0	83.0	85.2
500-R	1.4	3.0	4.8	6.5	8.3	9.7	18.0	26.1	34.9	44.1	71.6	78.4	83.1	86.0	88.0
500-P	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
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
501-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
520 - 580	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
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 – high blowing force															
2055-A-SG	5.8	10.8	16.0	21.1	26.2	45.3	76.2	107.1	138.0	168.9	82.6	89.4	93.8	97.3	99.0
2055-S-SG	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
2053-L-SG	4.3	8.2	13.0	17.2	21.7	27.0	48.3	70.1	93.0	117.9	87.8	90.0	92.8	95.2	97.2
2804-R	4.8	9.7	15.0	19.5	24.5	35.2	58.9	81.8	105.0	127.8	82.2	88.2	92.3	95.4	97.5
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
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
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
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
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-L	4.3	8.2	13.0	17.2	21.7	27.0	48.3	70.1	93.0	114.9	87.8	90.0	92.8	95.2	97.2
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
750-W	16.0	29.2	42.0	55.6	68.8	93.6	153.0	212.0	271.0	330.0	83.7	90.1	94.0	94.8	95.4
758-R	5.9	15.8	26.0	36.2	46.5	36.1	87.8	137.5	190.0	241.0	86.5	92.3	96.8	99.7	101.7
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

Safety air guns

American units of measurement

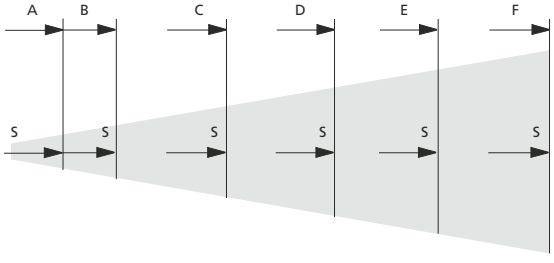
MODEL	BLOWING FORCE [oz]					AIR CONSUMPTION [scfm]					SOUND LEVEL [dB(A)]				
PRESSURE [psi]	40	60	80	100	120	40	60	80	100	120	40	60	80	100	120
007-L	7.0	10.4	13.8	17.2	20.6	8.4	11.1	13.9	16.6	19.4	74.9	79.4	82.5	85.0	87.0
007-S	4.7	7.9	11.1	14.2	17.4	4.9	7.7	10.5	13.2	15.9	74.2	78.7	81.3	82.8	83.7
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-R	4.9	9.2	13.4	17.7	22.2	5.9	9.1	12.4	16.2	19.1	74.3	78.4	81.5	83.4	85.7
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	75.0	78.5	79.1	79.9
008-L-S	4.9	8.2	11.4	15.4	18.9	4.7	7.6	10.2	12.5	15.1	69.6	75.0	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
59002W	11.9	17.0	22.0	27.0	31.4	10.8	15.0	18.0	22.0	25.9	72.7	77.0	79.0	81.0	83.1
500-R	7.1	11.6	15.9	20.1	24.7	7.4	11.2	14.7	18.3	21.8	75.0	78.6	81.5	83.9	85.7
500-P	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
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
501-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
520 - 580	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
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
Safety air guns – high blowing force															
2055-A-SG	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-SG	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
2053-L-SG	20.8	21.8	42.7	53.0	64.0	21.2	30.2	40.1	48.6	57.6	88.5	90.8	92.2	93.8	95.6
2804-R	21.9	35.3	48.7	60.7	72.4	25.9	35.4	45.4	54.5	64.2	85.1	89.2	92.5	94.6	96.5
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
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
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
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
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-L	20.8	21.8	42.7	53.0	64.0	21.2	30.2	40.1	48.6	57.6	88.5	90.8	92.2	93.8	95.6
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
750-W	76.0	108.0	140.0	172.0	204.0	72.0	92.0	112.0	132.0	152.0	87.0	90.5	93.0	94.4	95.0
758-R	32.8	59.3	85.1	109.8	134.1	33.0	54.5	74.8	96.6	116.9	88.2	93.0	96.2	98.5	100.2
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

Blowing pattern and air velocity

SI units

MODEL	A=50 mm				B=100 mm				C=200 mm				D=300 mm				E=400 mm				F=500 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
Air nozzles																								
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
620 - 680	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
801	40			240	65			193	115			98	165			75	215			53	265			48
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
9002W		80	45	126		100	65	105		140	105	60		180	145	42		220	185	37		260	225	34
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
703 L	95			251	140			201	190			101	235			74	280			53	330			48
804	82			249	108			199	162			101	215			78	268			56	321			51
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
9005W		100	45	126		120	65	105		160	105	60		200	145	42		240	185	37		280	225	34
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
808	92			252	137			201	198			103	232			80	278			57	327			52
710	140			130	200			108	240			61	280			46	325			40	365			37
710 L	140			260	200			215	240			114	280			88	325			66	365			58
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
9015W		155	45	219		180	90	167		210	140	109		250	200	86		290	260	74		330	330	67
715 LA	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 LA	200			296	260			251	315			143	370			103	445			74	485			67
780 LA	160			306	220			261	260			153	300			113	345			84	385			77
Air knives																								
310 Z+		45	172	126		65	192	105		105	232	60		145	272	42		185	312	37		225	352	34
304 Z+		45	152	126		65	172	105		105	212	60		145	252	42		185	292	37		225	332	34
378		555	40	122		575	60	102		615	100	58		655	140	41		695	180	37		735	220	34
374		295	40	122		315	60	102		355	100	58		395	140	41		435	180	37		475	220	34
372		165	40	122		185	60	102		225	100	58		265	140	41		305	180	37		345	220	34
366		192	30	122		212	50	100		252	90	57		292	130	40		332	170	36		372	210	33
364		142	30	122		162	50	100		202	90	57		242	130	40		282	170	36		322	210	33
362		92	30	122		112	50	100		152	90	57		192	130	40		232	170	36		272	210	33
396		330	40	122		350	60	102		390	100	58		430	140	41		470	180	37		510	220	34
394		230	40	122		250	60	102		290	100	58		330	140	41		370	180	37		410	220	34
392		130	40	122		150	60	102		190	100	58		230	140	41		270	180	37		310	220	34
306 L		290	40	253		315	65	206		365	115	110		415	165	79		470	220	57		524	275	52
304 L		190	40	253		215	65	206		265	115	110		315	165	79		370	220	57		425	275	52
302 L		90	40	253		115	65	206		165	115	110		215	165	79		270	220	57		325	275	52

Distance from nozzle



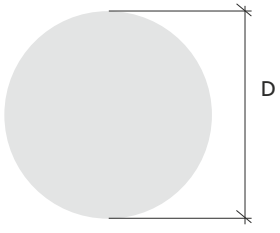
Blowing pattern and air velocity

American units of measurement

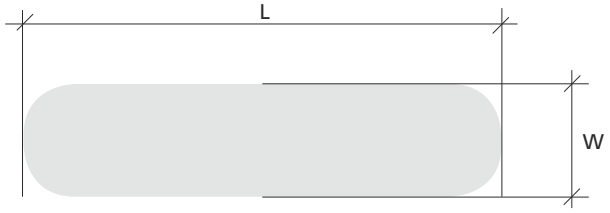
MODEL	A=2"				B=4"				C=8"				D=12"				E=16"				F=20"			
	D	L	W	S	D	L	W	S	D	L	W	S	D	L	W	S	D	L	W	S	D	L	W	S
Air nozzles																								
MJ4	0.47			423	0.94			341	1.77			187	2.56			131	3.46			118	4.33			108
MJ5	0.51			433	1.06			344	2.09			190	3.15			135	4.17			121	5.24			111
MJ6	0.79			443	1.38			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
620 - 680	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
801	1.57			787	2.56			633	4.53			321	6.50			246	8.46			173	10.43			157
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
9002W		3.15	1.77	413		3.94	2.56	344		5.51	4.13	197		7.09	5.71	138		8.66	7.28	121		10.24	8.86	112
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
703 L	3.74			823	5.51			659	7.48			331	9.25			243	11.02			173	12.99			157
804	3.20			817	4.21			653	6.32			331	8.39			256	10.45			184	12.52			167
404 L	3.15			820	4.33			656	6.50			331	8.66			246	11.02			174	13.39			157
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
9005W		3.94	1.77	413		4.73	2.56	344		6.30	4.13	197		7.88	5.71	128		9.45	7.28	121		11.03	8.86	112
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
808	3.59			827	5.34			659	7.72			338	9.05			262	10.84			187	12.75			171
710	5.51			427	7.87			354	9.45			200	11.02			151	12.80			131	14.37			121
710 L	5.51			853	7.87			705	9.45			374	11.02			289	12.80			217	14.37			190
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
9015W		6.10	1.77	718		7.09	3.54	548		8.27	5.51	357		9.84	7.88	282		11.42	10.24	243		12.99	12.99	220
715 LA	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 LA	7.87			971	10.24			823	12.40			469	14.57			338	17.52			243	19.09			220
780 LA	6.30			1004	8.66			856	10.24			502	11.81			371	13.58			276	15.16			253
Air knives																								
310 Z+		1.77	6.77	413		2.56	7.55	344		4.13	9.13	197		5.71	10.70	128		7.28	12.28	121		8.86	13.85	112
304 Z+		1.77	5.98	413		2.56	6.77	344		4.13	8.34	197		5.71	9.92	128		7.28	11.49	121		8.86	13.07	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
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
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
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
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
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
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
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
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
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
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
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

Strike pattern alternatives

Alt 1



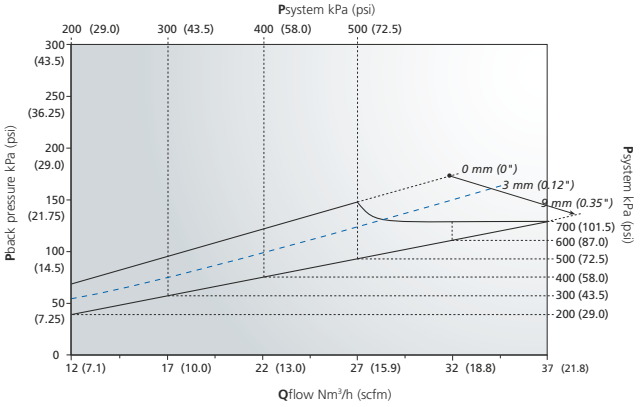
Alt 2



Flow chart for safety silencers SIS 02 – SIS 05

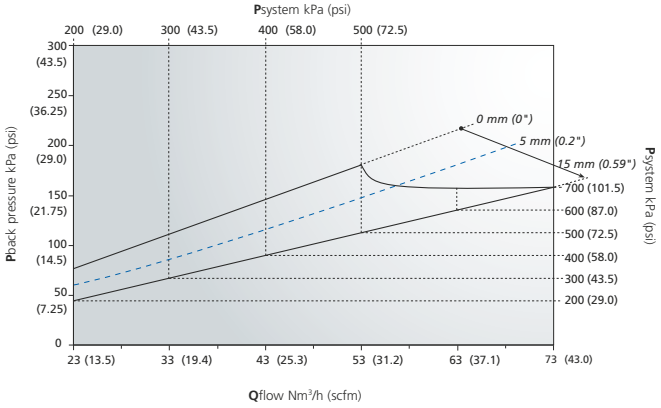
The diagrams show flows and back pressure for different system pressures for each SIS safety silencer. The values in italics state in mm (inches) how much the silencer is triggered. Values range from zero to a maximum recommended triggered mode, where the warning indicator becomes visible.

SIS-02



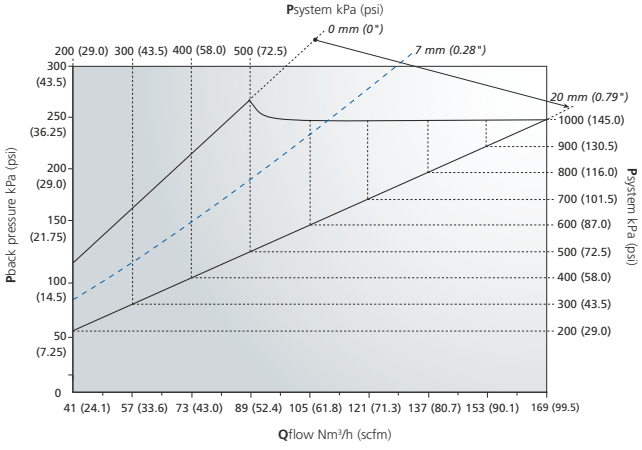
*Continuous operation over 1/8" valve with hose diameter Ø 6/4 mm (Ø 0.236").

SIS-03



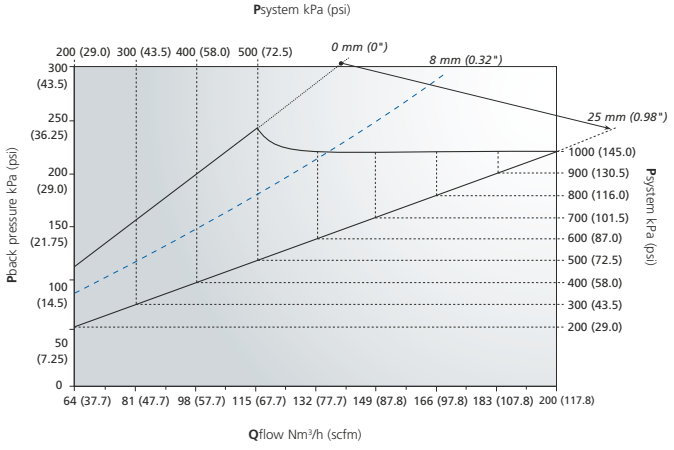
*Continuous operation over 1/4" valve with hose diameter Ø 8/6 mm (Ø 0.315").

SIS-04



*Continuous operation over 3/8" valve with hose diameter Ø 10/8 mm (Ø 0.394").

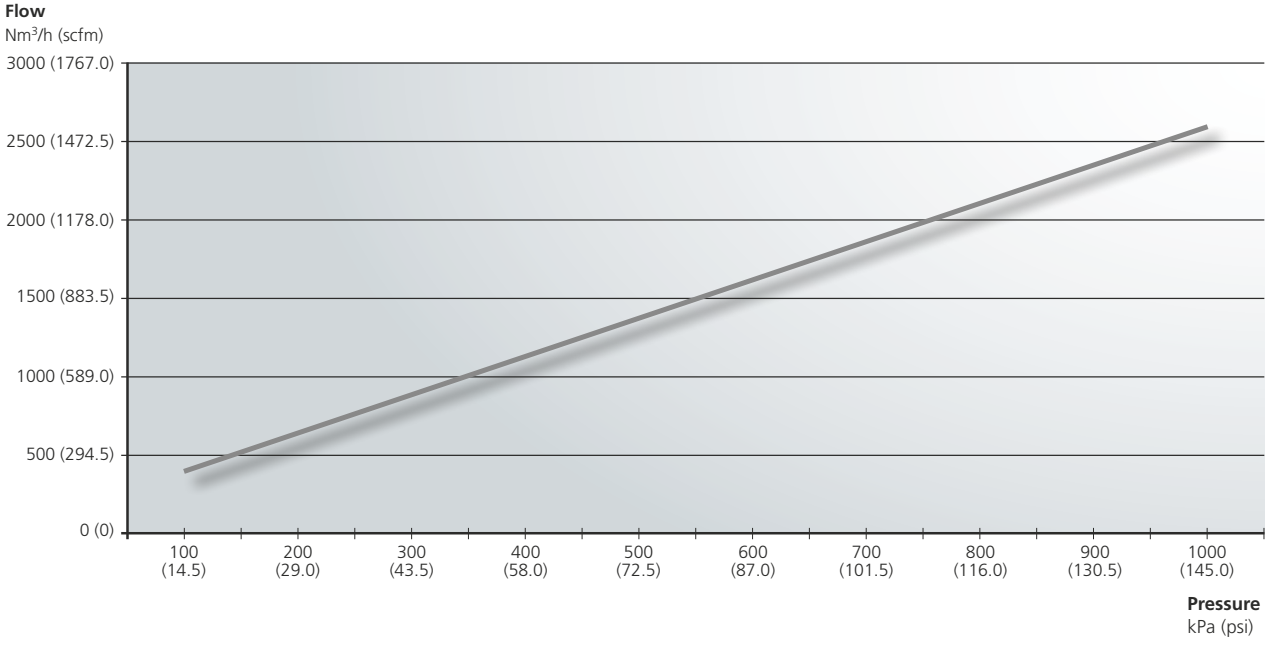
SIS-05



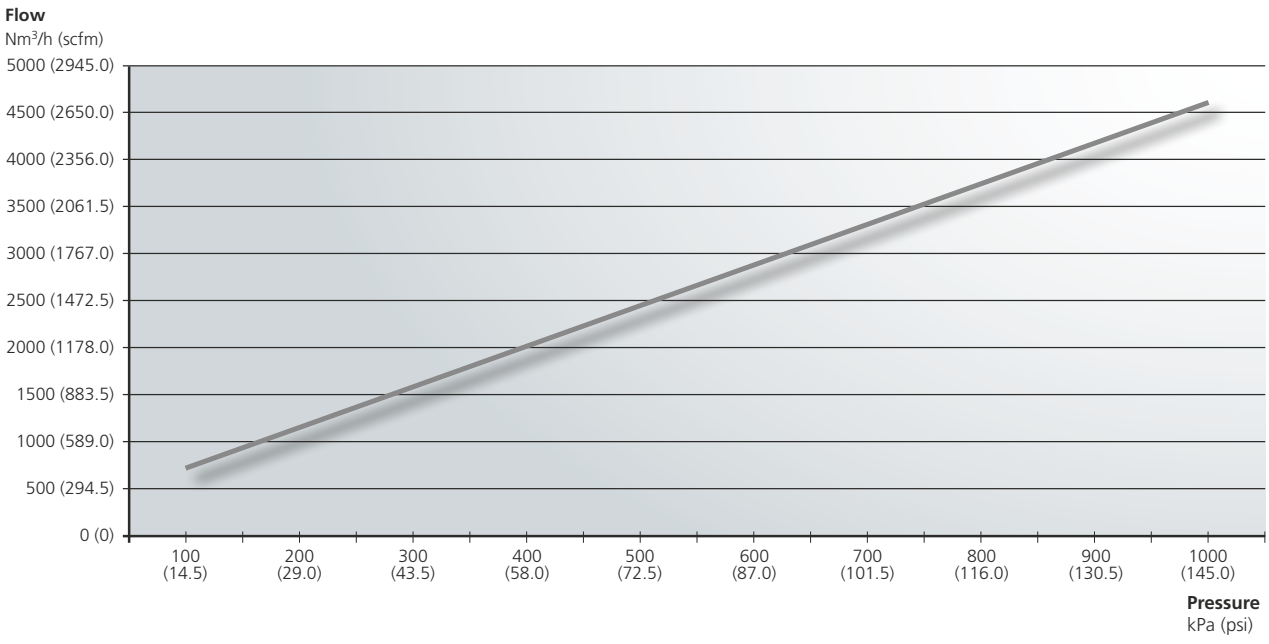
*Continuous operation over 1/2" valve with hose diameter Ø 12/10 mm (Ø 0.472").

Flow chart for safety silencers SIS 10 – SIS 20

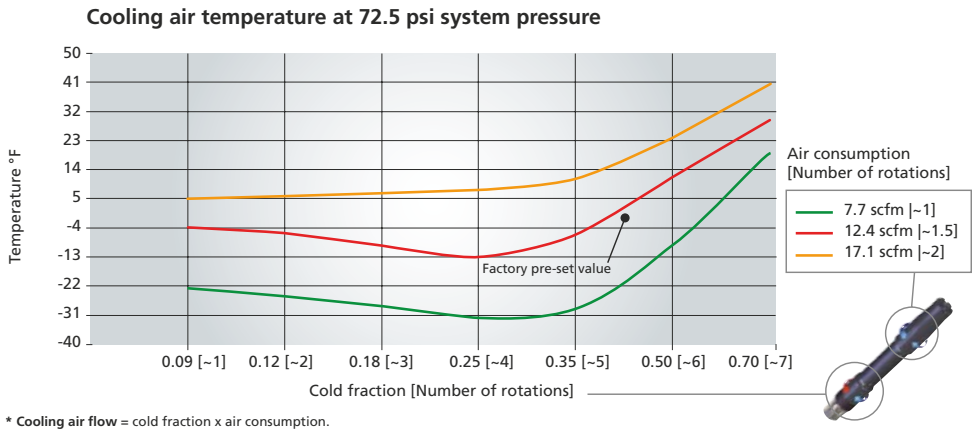
SIS-10



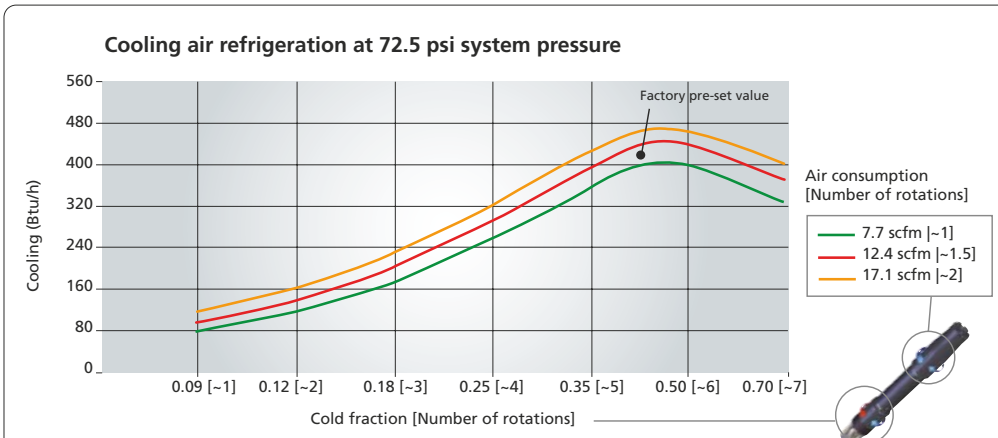
SIS-20



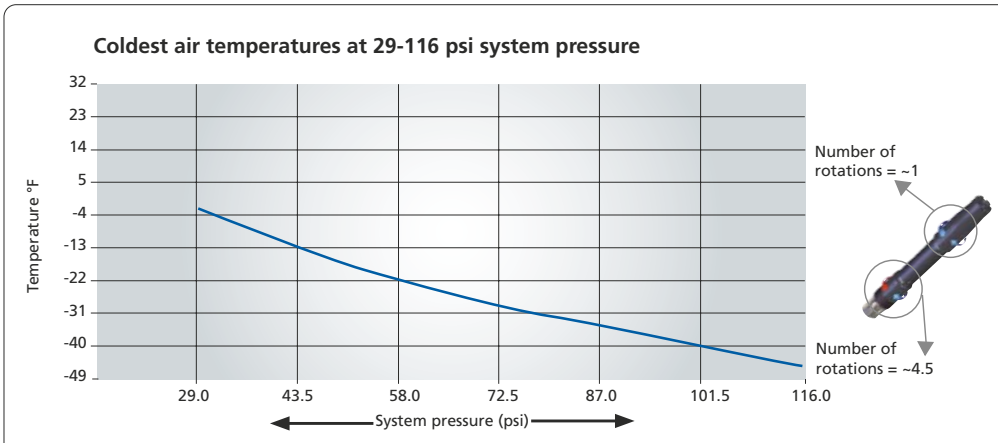
Frigus: temperature and effect diagram



*** Cooling air flow** = cold fraction x air consumption.
The number of rotations is counted from the minus rotation direction end position of each regulator. (Inlet air temperature ~ +70 °F).



*** Cooling air flow** = cold fraction x air consumption.
The number of rotations is counted from the minus rotation direction end position of each regulator. (Inlet air temperature ~ +70 °F).



The number of rotations is counted from the minus rotation direction end position of each regulator. (Inlet air temperature ~ +70 °F).

PRODUCT INDEX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715L

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