





SAFETY SILENCERS

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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 [Nm ³ /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

SAFETY SILENCERS

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 Nm ³ /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



SIS-03





SIS-10

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 Nm ³ /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

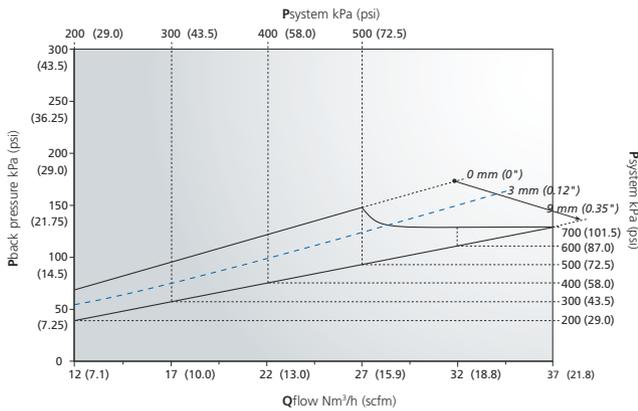


Order no: **SIS-20**
Connection G 2"
2"-11 1/2 NPT

Flow chart for safety silencers SIS 02 – SIS 05

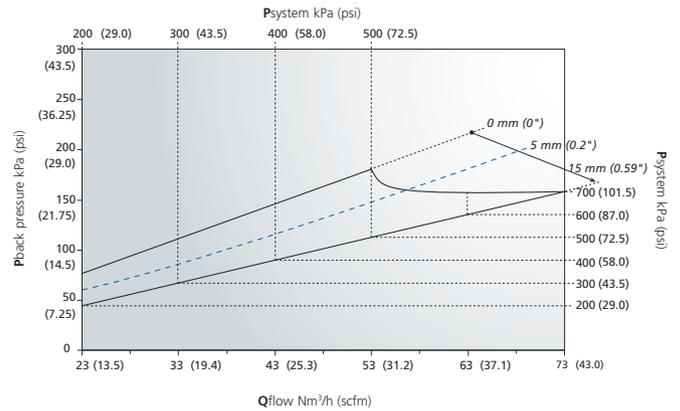
The diagrams show flows and back pressure for different system pressures for each SIS safety silencer. The values in italics state in mm (inches) how much the silencer is triggered. Values range from zero to a maximum recommended triggered mode, where the warning indicator becomes visible.

SIS-02



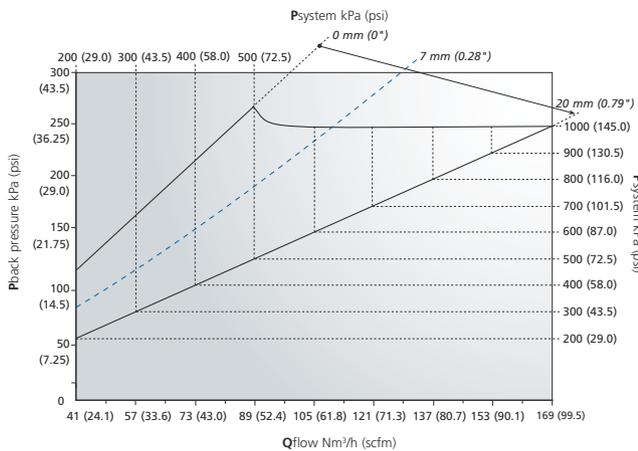
*Continuous operation over 1/8" valve with hose diameter Ø 6/4 mm (Ø 0.236").

SIS-03



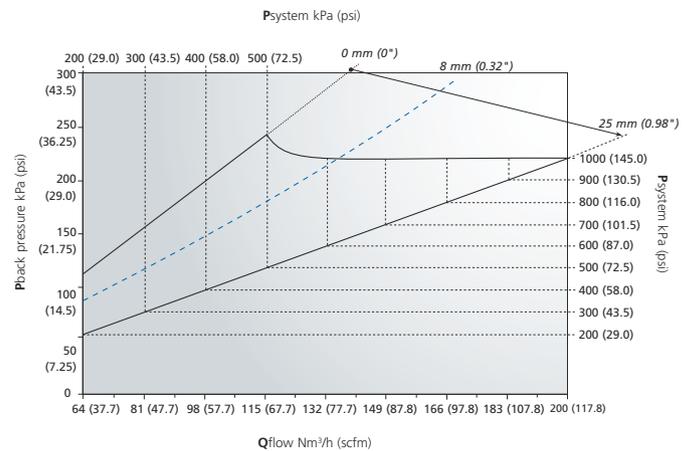
*Continuous operation over 1/4" valve with hose diameter Ø 8/6 mm (Ø 0.315").

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").

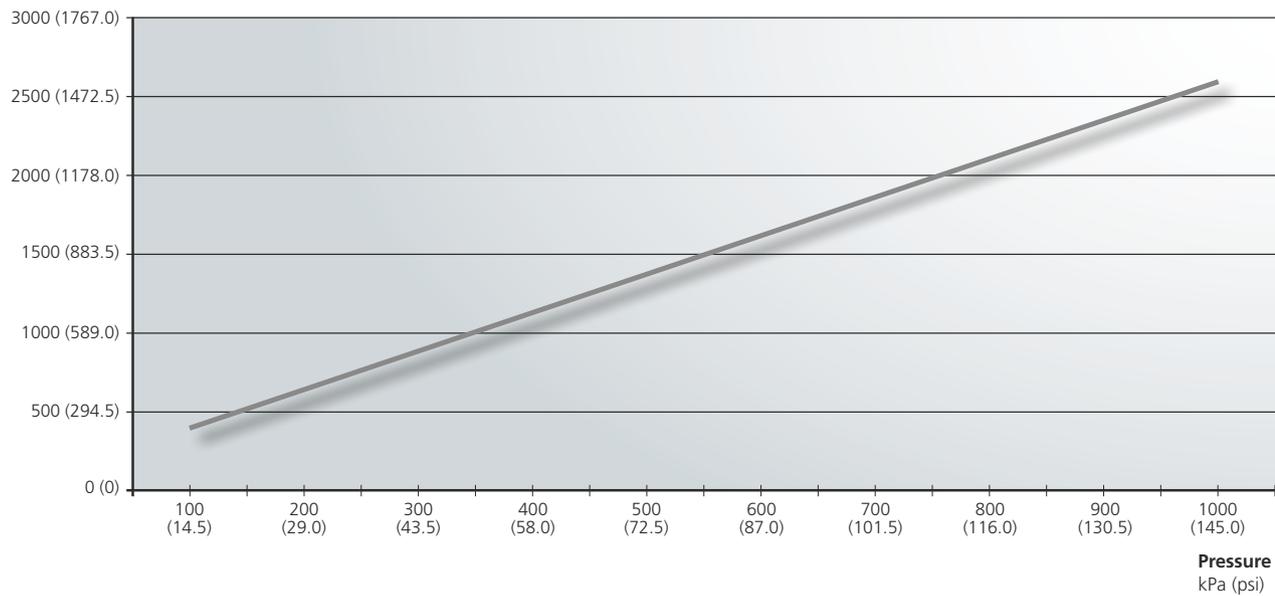


Flow chart for safety silencers SIS 10 – SIS 20

SIS-10

Flow

Nm³/h (scfm)



SIS-20

Flow

Nm³/h (scfm)

