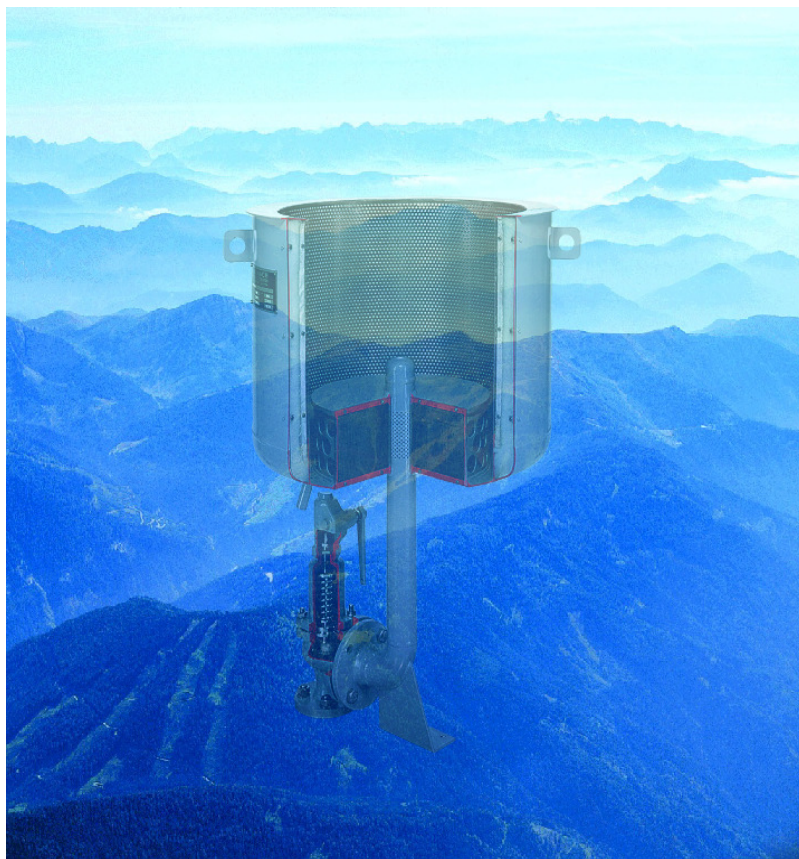


GLAUNACH

THE SILENCER HANDBOOK

SILENCERS

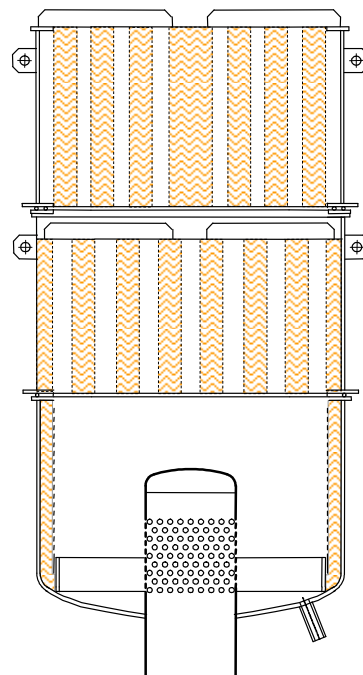
AN OVERVIEW OF OUR PRODUCT PORTFOLIO



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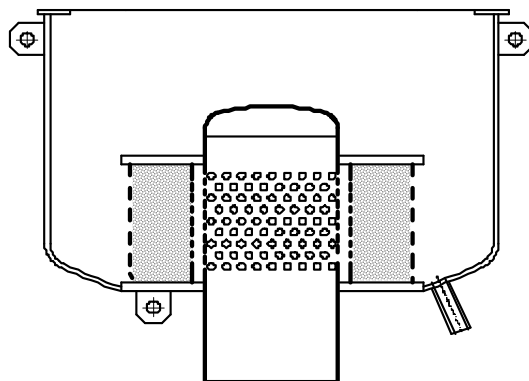
ABSORBING SILENCER

<i>type</i>	A
<i>typical applications</i>	<input type="checkbox"/> any vent or blow-down application <input type="checkbox"/> boiler start-up & purge <input type="checkbox"/> turbine bypass
<i>suitable media</i>	<input type="checkbox"/> air & air constituents <input type="checkbox"/> steam <input type="checkbox"/> natural gas <input type="checkbox"/> technical gases
<i>typical pressure drop</i>	0 bar 0 psi
<i>typical noise reduction</i>	≥ 25 dB <i>depending on design and number of absorber stages</i>
<i>design</i>	<p>circular baffle silencer executed in stainless steel and mineral wool with long-stranded glass fabric lining, combined with an optimised radial diffuser inlet</p> <p><i>The gas flow is redirected and evenly distributed by the diffuser pipe, and the noise absorbed by the absorber baffles. Absorbing silencers can easily be extended with additional absorbers to achieve higher noise reduction.</i></p>



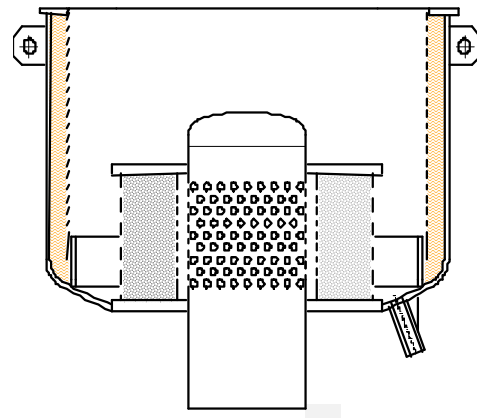
DIFFUSER SILENCER

<i>type</i>	D
<i>typical applications</i>	<input type="checkbox"/> any vent or blow-down application <input type="checkbox"/> boiler start-up & purge <input type="checkbox"/> turbine bypass
<i>suitable media</i>	<input type="checkbox"/> air & air constituents <input type="checkbox"/> steam <input type="checkbox"/> natural gas <input type="checkbox"/> technical gases
<i>typical pressure drop</i>	> 0.2 bar > 3 psi
<i>typical noise reduction</i>	up to 50 dB
<i>design</i>	<p>single- or multi-stage small-bore radial diffuser, surrounded by wrapped, finely woven stainless steel wire mesh</p> <p><i>In comparison to standard absorbing silencers, this technology provides comparable to better noise attenuation in a substantially smaller and lighter design.</i></p>



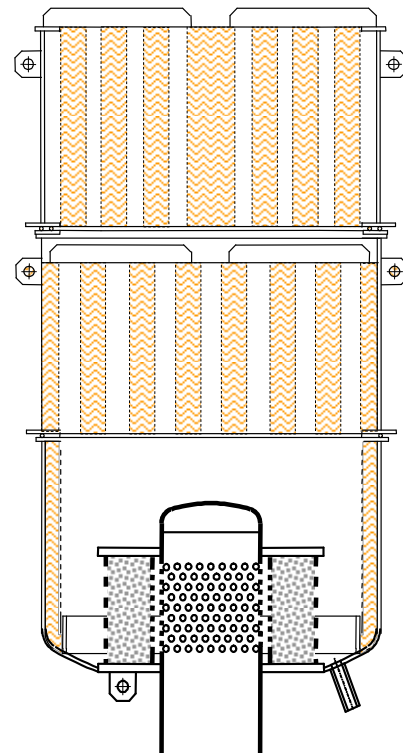
DIFFUSER SILENCER WITH INSULATED SHELL

<i>type</i>	DA
<i>typical applications</i>	<input type="checkbox"/> any vent or blow-down application <input type="checkbox"/> boiler start-up & purge <input type="checkbox"/> turbine bypass
<i>suitable media</i>	<input type="checkbox"/> air & air constituents <input type="checkbox"/> steam <input type="checkbox"/> natural gas <input type="checkbox"/> technical gases
<i>typical pressure drop</i>	> 0.2 bar > 3 psi
<i>typical noise reduction</i>	up to 50 dB
<i>design</i>	type D diffuser silencer, equipped with an additional long-stranded glass fabric / mineral wool insulation of the inner shell surfaces <i>The extra layer provides improved thermal and acoustic insulation of the outer shell.</i>



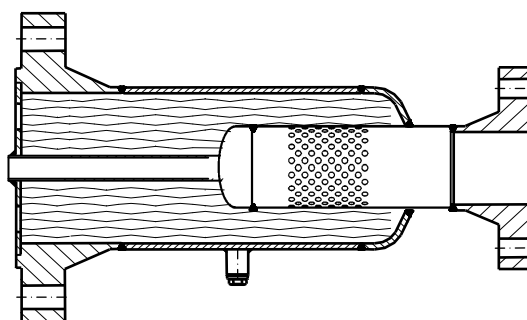
COMBINED SILENCER DIFFUSER / ABSORBER COMBINATION

<i>type</i>	DAA
<i>typical applications</i>	<input type="checkbox"/> any vent or blow-down application <input type="checkbox"/> boiler start-up & purge <input type="checkbox"/> turbine bypass
<i>suitable media</i>	<input type="checkbox"/> air & air constituents <input type="checkbox"/> steam <input type="checkbox"/> natural gas <input type="checkbox"/> technical gases
<i>typical pressure drop</i>	> 0.2 bar > 3 psi
<i>typical noise reduction</i>	≥ 50 dB
<i>design</i>	<p>integrated combination of a type DA diffuser silencer with one or several type A absorbing silencers stages</p> <p><i>The combination of a high-performance diffuser silencer with circular baffle absorber stages enables realising silencers for (almost) any noise reduction requirement.</i></p>



INLINE DIFFUSER SILENCER

<i>type</i>	INLINE
<i>typical applications</i>	<p>closed systems requiring muffled in-line expansion of gaseous fluids under pressure without releasing them into the atmosphere, e.g.</p> <ul style="list-style-type: none"> <input type="checkbox"/> venting / blowing-down into a pipe or pressure vessel <input type="checkbox"/> condenser injection <input type="checkbox"/> turbine bypass
<i>suitable media</i>	<ul style="list-style-type: none"> <input type="checkbox"/> air & air constituents <input type="checkbox"/> steam <input type="checkbox"/> natural gas <input type="checkbox"/> technical gases
<i>typical pressure drop</i>	> 0.2 bar > 3 psi
<i>typical noise reduction</i>	up to 50 dB
<i>design</i>	<p>specialised silencer for noise control in closed systems, based on a suitably modified type D diffuser silencer</p> <p><i>The fluid is expanded through a multitude of small diffuser bores into a finely woven stainless steel wire mesh.</i></p>



DUMP TUBE

type

DUMPTUBE

typical applications

- gas expansion into low-pressure environments
- condenser injection
- turbine bypass
- controlled redirection and distribution of gas flows
- pressure control
- temperature control

suitable media

- air & air constituents
- steam
- natural gas
- technical gases

typical pressure drop

> 0.2 bar | > 3 psi

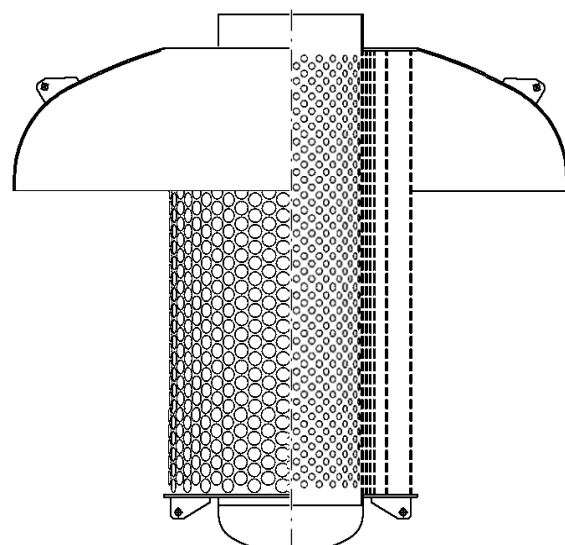
typical noise reduction

up to 35 dB

design

multi-stage dump tube expander with application-specifically optimised number, size and arrangement of diffuser stages and diffuser holes, made from carbon steel or stainless steel

available in customised designs engineered by GLAUNACH, or according to customer specifications



DIFFUSER

type

DIFFUSER

typical applications

dump tube-applications requiring better noise attenuation, in particular

- gas expansion into atmospheric- / high-pressure environments
- condenser injection
- turbine bypass
- controlled redirection and distribution of gas flows
- pressure control
- temperature control

suitable media

- air & air constituents
- steam
- natural gas
- technical gases

typical pressure drop

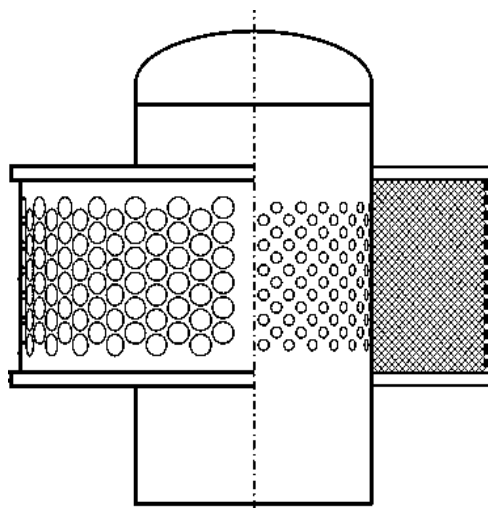
> 0.2 bar | > 3 psi

typical noise reduction

up to 50 dB

design

multi-stage small-bore radial diffuser, surrounded by a pack of finely woven stainless steel wire mesh



COLLECTING PIPE

type

COLLECTING PIPE

typical applications

collection of gas flows from two or more pipes, including such with different gas pressures, e.g. for:

- connecting multiple inlets to a single vent silencer
- pressure matching

suitable media

- air & air constituents
- steam
- natural gas
- technical gases

typical pressure drop

> 0.2 bar | > 3 psi

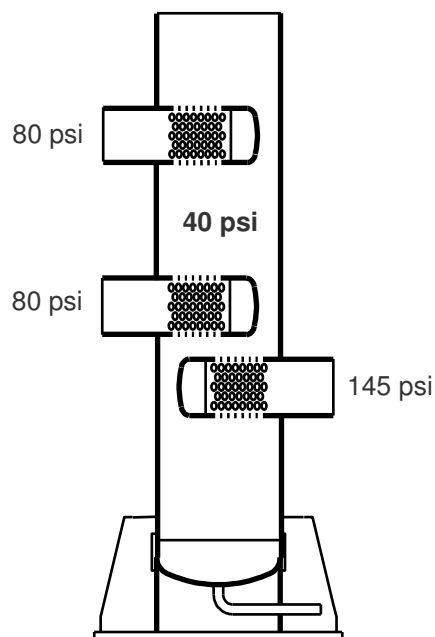
typical noise reduction

up to 15 dB
without silencer

design

application-specifically customised small-bore radial diffusers expand the gas flow(s) laterally into a common collecting pipe designed for the maximum possible flow

- The special design minimises the mechanical load on the collecting pipe, improving operational life-time and safety.*
- When used as outlet collector, the pipe diameter is ideally matched to the vent silencer design.*
- A collecting pipe permits expanding gases from lines with different set pressures to a common pressure; please observe that the permissible downstream idle pressure of the connected valves needs to be equated accordingly.*



RENTAL SILENCER

types

DA & DAA

typical applications

- starting-up, bypassing, venting and blowing down of gases that (potentially) contain solid particles
- purging of (potentially) contaminated installations

During equipment installation, component changes or repairs, solid materials - like debris or metal chipping - can be brought into the piping. These contaminations have to be removed before operating the installation with process gas / steam, usually by a purge blow. The problem is that contained solid particles get trapped in the silencer, rendering most devices ineffective or even dangerous to operate due to obstructions in the diffuser.

suitable media

- air & air constituents
- steam
- natural gas
- technical gases

typical pressure drop

> 0.2 bar | > 3 psi

typical noise reduction

up to 70 dB

design

type **DA** or **DAA** diffuser silencer with exchangeable diffuser cartridge

GLAUNACH's special "rental" silencers allow exchanging the diffuser cartridge as soon as its performance is impeded by debris, and the back pressure becomes too high. GLAUNACH rental silencers can thus be used repeatedly even in contaminated applications that would be an absolute no-go for other silencers.

