

Packless Silencers for Control Valves

This in-line tubular packless (no acoustic fill) attenuator is specifically designed to be used with exhaust and supply control valves. The CVS has a low profile casing for limited space installations. Performance data is provided for seven diameters – 5”, 6”, 7”, 8”, 9”, 10” and 12”

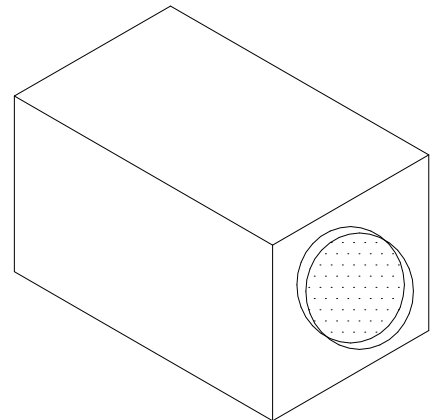
Model CVS is a low-pressure drop unit ideally suited for higher velocities at or near 2,000 fpm.

Low profile outer casing dimensions

<u>Model</u>	<u>B x B</u>
CVS-5/CVS-6:	15” x 15”
CVS-7/CVS-8:	17” x 17”
CVS-9/CVS-10:	19” x 19”
CVS-11/CVS-12:	21” x 21”

Special features of the Packless Fume Hood Attenuators are:

- No acoustic fill or other sound absorptive material
- 22 gauge galvanized steel casings
- 24 gauge perforated galvanized baffle
- Seams are mastic filled to insure airtight units to 8” w.g.



Components also available in stainless steel

Acoustical performance ratings are based on tests conducted by Intertek Testing Services, formerly ETL Testing Laboratories, Inc., Cortland, New York, in accordance with ASTM E477 “Standard Method of Testing Duct Liner Materials and Prefabricated Silencers for Acoustical and Airflow Performance.” Copies of the test reports are available upon request.



Packless Silencer for Control Valves

Model CVS-5/CVS-6

Dynamic Insertion Loss (dB) Octave Band/Center Frequency (Hz)											
Length	Flow	Velocity fpm	Press Drop	1 63	2 125	3 250	4 500	5 1K	6 2K	7 4K	8 8K
36"	Reverse	-2000	0.049	5	11	16	15	9	7	8	6
	Flow	-1000	0.012	5	10	13	14	8	7	8	6
		0		4	10	13	14	8	7	8	6
	Forward	1000	0.012	5	11	13	14	8	7	8	6
	Flow	2000	0.049	5	11	15	15	8	7	8	5
48"	Reverse	-2000	0.050	6	12	19	18	10	8	9	7
	Flow	-1000	0.014	6	11	16	17	9	8	9	7
		0		5	11	16	17	9	8	9	7
	Forward	1000	0.014	6	12	16	17	9	8	9	7
	Flow	2000	0.050	6	12	18	17	9	8	9	6
60"	Reverse	-2000	0.052	7	13	22	21	11	9	10	8
	Flow	-1000	0.015	7	12	19	20	10	9	10	8
		0		6	12	19	20	10	9	10	8
	Forward	1000	0.015	7	13	19	20	10	9	10	8
	Flow	2000	0.052	7	13	21	20	10	9	10	7
72"	Reverse	-2000	0.056	8	14	24	24	12	10	11	9
	Flow	-1000	0.017	8	13	22	23	11	10	11	9
		0		7	13	22	23	11	10	11	9
	Forward	1000	0.017	8	14	22	23	11	10	11	9
	Flow	2000	0.056	8	14	22	23	11	10	11	8

Forward Flow - characteristic of supply or discharge fan systems.
Reverse Flow - typical of return or intake fan systems.

Pressure Drop Calculation for Specific Velocity

$$\text{Actual Velocity (fpm)} = \text{CFM} \times 144 \div [3.14 \times r^2 \text{ (in.)}] \quad r = \text{radius}$$

$$\text{Pressure Drop} = \left(\frac{\text{Actual Velocity}}{2000} \right)^2 \times \text{Catalog Pressure Drop @ 2000 fpm}$$

Standard Construction

22 gauge galvanized casings
24 gauge perforated baffles
No acoustic fill or absorptive material
Casing: 15" x 15"

Optional Features

Stainless Steel Construction

Computer program available that provides attenuator performance at actual job conditions.



Packless Silencer for Control Valves

Model **CVS-7/CVS-8**

				Dynamic Insertion Loss (dB) Octave Band/Center Frequency (Hz)							
Length	Flow	Velocity fpm	Press Drop	1 63	2 125	3 250	4 500	5 1K	6 2K	7 4K	8 8K
36"	Reverse	-2000	0.045	8	9	14	15	6	6	7	6
	Flow	-1000	0.011	9	8	12	14	5	7	7	5
		0		8	7	12	14	5	6	7	5
	Forward	1000	0.011	9	8	12	14	5	6	7	5
	Flow	2000	0.045	9	9	13	14	5	6	7	5
48"	Reverse	-2000	0.048	9	10	17	19	7	7	8	7
	Flow	-1000	0.012	10	9	15	18	6	8	8	6
		0		9	8	15	18	6	7	8	6
	Forward	1000	0.012	10	9	15	18	6	7	8	6
	Flow	2000	0.048	10	10	17	18	6	7	8	6
60"	Reverse	-2000	0.050	10	11	20	22	8	8	9	8
	Flow	-1000	0.014	11	10	18	21	7	9	9	7
		0		10	9	18	21	7	8	9	7
	Forward	1000	0.014	11	10	18	21	7	8	9	7
	Flow	2000	0.050	11	11	20	21	7	8	9	7
72"	Reverse	-2000	0.054	11	12	23	25	9	9	10	9
	Flow	-1000	0.016	12	11	21	24	8	10	10	8
		0		11	10	21	24	8	9	10	8
	Forward	1000	0.016	12	11	21	24	8	9	10	8
	Flow	2000	0.054	12	12	23	24	8	9	10	8

Forward Flow - characteristic of supply or discharge fan systems.
Reverse Flow - typical of return or intake fan systems.

Pressure Drop Calculation for Specific Velocity

$$\text{Actual Velocity (fpm)} = \text{CFM} \times 144 \div [3.14 \times r^2 \text{ (in.)}] \quad r = \text{radius}$$

$$\text{Pressure Drop} = \left(\frac{\text{Actual Velocity}}{2000} \right)^2 \times \text{Catalog Pressure Drop @ 2000 fpm}$$

Standard Construction

22 gauge galvanized casings
24 gauge perforated baffles
No acoustic fill or absorptive material
Casing: 17" x 17"

Optional Features

Stainless Steel Construction

Computer program available that provides attenuator performance at actual job conditions



Packless Silencer for Control Valves

Model **CVS-9/CVS-10**

Dynamic Insertion Loss (dB) Octave Band/Center Frequency (Hz)											
Length	Flow	Velocity fpm	Press Drop	1 63	2 125	3 250	4 500	5 1K	6 2K	7 4K	8 8K
36"	Reverse	-2000	0.028	9	8	12	20	8	5	6	4
	Flow	-1000	0.008	8	7	10	20	8	5	6	4
		0		6	6	9	20	8	5	7	4
	Forward	1000	0.008	7	7	9	20	8	5	7	3
	Flow	2000	0.028	7	8	11	20	9	6	7	3
48"	Reverse	-2000	0.030	10	9	13	23	9	6	7	5
	Flow	-1000	0.010	9	8	11	23	9	6	7	5
		0		7	7	10	23	9	6	8	5
	Forward	1000	0.010	8	8	10	23	9	6	8	4
	Flow	2000	0.030	8	9	12	23	10	7	8	4
60"	Reverse	-2000	0.040	11	10	14	26	10	7	8	6
	Flow	-1000	0.020	10	9	12	26	10	7	8	6
		0		8	8	11	26	10	7	9	6
	Forward	1000	0.020	9	9	11	26	10	7	9	5
	Flow	2000	0.040	9	10	13	26	11	8	9	5
72"	Reverse	-2000	0.060	12	11	15	30	11	8	9	7
	Flow	-1000	0.030	11	10	13	30	11	8	9	7
		0		9	9	12	30	11	8	10	7
	Forward	1000	0.030	10	10	12	30	11	8	10	6
	Flow	2000	0.060	10	11	14	30	12	9	10	6

Forward Flow - characteristic of supply or discharge fan systems.
Reverse Flow - typical of return or intake fan systems.

Pressure Drop Calculation for Specific Velocity

Actual Velocity (fpm) = CFM x 144 ÷ [3.14 x r² (in.)] r = radius

$$\text{Pressure Drop} = \left(\frac{\text{Actual Velocity}}{2000} \right)^2 \times \text{Catalog Pressure Drop @ 2000 fpm}$$

Standard Construction

22 gauge galvanized casings
24 gauge perforated baffles
No acoustic fill or absorptive material
Casing: 19" x 19"

Optional Features

Stainless Steel Construction

Computer program available that provides attenuator performance at actual job conditions



Packless Silencer for Control Valves

Model CVS-11/CVS-12

Dynamic Insertion Loss (dB)											
Octave Band/Center Frequency (Hz)											
Length	Flow	Velocity fpm	Press Drop	1 63	2 125	3 250	4 500	5 1K	6 2K	7 4K	8 8K
36"	Reverse	-2000	0.040	7	9	16	19	7	7	5	4
	Flow	-1000	0.010	7	8	15	19	8	6	5	4
		0		7	8	15	19	8	6	5	4
	Forward	1000	0.010	7	8	15	20	7	6	4	3
	Flow	2000	0.040	6	8	15	20	7	6	4	2
48"	Reverse	-2000	0.030	8	10	18	21	8	8	6	6
	Flow	-1000	0.010	8	9	16	21	8	8	6	6
		0		8	9	16	20	8	8	6	6
	Forward	1000	0.010	8	9	16	20	8	8	7	5
	Flow	2000	0.030	7	9	16	20	8	8	6	
60"	Reverse	-2000	0.040	10	11	19	23	10	10	8	8
	Flow	-1000	0.020	10	11	18	23	9	10	8	8
		0		9	10	18	22	9	9	8	8
	Forward	1000	0.020	9	10	17	22	8	9	8	8
	Flow	2000	0.040	9	10	17	22	8	9	8	8
72"	Reverse	-2000	0.060	12	12	21	25	12	11	9	8
	Flow	-1000	0.030	12	12	21	24	11	11	9	8
		0		12	12	20	24	11	11	9	8
	Forward	1000	0.030	12	12	20	24	10	11	9	8
	Flow	2000	0.060	12	12	20	23	10	11	9	8

Forward Flow - characteristic of supply or discharge fan systems.
Reverse Flow - typical of return or intake fan systems.

Pressure Drop Calculation for Specific Velocity

$$\text{Actual Velocity (fpm)} = \text{CFM} \times 144 \div [3.14 \times r^2 \text{ (in.)}] \quad r = \text{radius}$$

$$\text{Pressure Drop} = \left(\frac{\text{Actual Velocity}}{2000} \right)^2 \times \text{Catalog Pressure Drop @ 2000 fpm}$$

Standard Construction

22 gauge galvanized casings
24 gauge perforated baffles
No acoustic fill or absorptive material
Casing: 21" x 21"

Optional Features

Stainless Steel Construction

Computer program available that provides attenuator performance at actual job conditions