



**UNIVERSAL**

*Acoustic & Emission Technologies*

# Blower Silencers

## Technical Literature

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*Universal AET retains the right to update this technical sheet without notice.  
Please contact your Universal representative to verify the timelines of this technical literature sheet.*





In a closed blower discharge system, structure-borne noise—such as that radiated by pipe wall and silencer shell—may be a consideration, particularly where a stringent, close-proximity noise specification applies.

For these applications, various means are available to treat the pipe and shell radiated noise, such that most reasonable specifications may be met.

For instance, it is possible to lag the silencer shell externally and reduce any shell noise contribution

to below the casing and mechanical noise of the blower and driving machinery.

Universal invites your inquiries concerning special applications where EPA, OSHA or other noise specifications apply. Special applications are handled on an individual basis and recommendations are made according to specific requirements of the installation.



# General Information

## Blower Silencers

### Rotary Positive Blowers

The Rotary Positive Blower is a two impeller compressor that delivers a large quantity of gas or air relative to the individual pulses. Blower capacities are expressed in CFM at inlet conditions (ICFM). Blower size is usually expressed as gear diameter by rotor length. Pitch Line Velocity (PLV) is the peripheral velocity of the timing gear—equal to the product of the gear circumference and the rotative speed of the blower, usually expressed in feet per minute (FPM).

The blower presents two problems:

- 1) pulsation within the piping system and,
- 2) noise radiation in the vicinity of the blower and piping.

The importance of these relative to each other is a function of blower size and speed; both increase proportionately to the blower size and the square of the speed.

Pulsation is more pronounced on the discharge side. Peak pulse pressures are quite severe and can result in unsilenced discharge sound power levels up to 140–145 dB. The inlet, although producing less severe pulsation and noise, receives equal attention since the inlet is usually open to atmosphere and the noise much more apparent.

### Silencers

There is little question that silencers are a necessity on any blower installation. Regardless of the size or speed of the blower, silencers of some type are nearly always used.

In the selection of blower silencers, there are two basic considerations: 1) the silencer must be the correct size (i.e., sufficient capacity for the volume flow) and, 2) the silencer must be the proper type for the application. The nominal silencer size need only be based on the gas volume, (i.e., the CFM of the gas or air at the operating conditions). However, the silencer (design) must be selected with consideration of the blower size and operating speed. Complete application and capacity information is given on page 3.

There are two types of silencers commonly used on positive blowers: a reactive type silencer which consists of a series of expansion chambers having interconnecting tubes, a more sophisticated silencer design. is the combination

chamber-absorptive type. This combination silencer is similar to the reactive type with the exception that an acoustically-packed, sound absorbing section is included, comprising an extension of the silencer connection closest to the blower. The inlet of a discharge silencer and the outlet of an inlet silencer are the ends having the packed section.

A third basic type of silencer—the simple, straight-through packed type—is occasionally used on blowers. This type of silencer is usually used on small, high speed machines which characteristically produce significant high frequency noise and relatively mild pulsations.

The PLV is normally the criterion for silencer type selection. If the blower is operating in the critical PLV range, it will generate objectionable high frequency noise which may cause shell ring or tank hammer in the piping and silencer. These critical PLV conditions will always require a combination chamber-absorptive silencer for satisfactory results.

### Inlet Silencers

For inlet service, a PLV of 3,300 ft/min or greater is considered critical. This transition speed is empirically established and is somewhat arbitrary, however, it is commonly accepted that blowers operating at or above 3,300 ft/min are considered critical for the purpose of inlet silencer application. Those operating below 3,300 ft/min are considered subcritical. Subcritical PLV applications can usually be silenced adequately with a chamber-type silencer, such as Universal URB or UCI Series. Blowers operating above the critical PLV of 3,300 ft/min will invariably require the RIS Series combination chamber-absorptive type silencer. Inlet Filters or Filter Silencers are commonly used on blower inlets, either individually or in series with a separate inlet silencer. Please reference Filters and Filter Silencers Technical Literature booklet #94-1553.

### Discharge Silencers

For the more severe discharge conditions of typical blower installations, a PLV of 2,700 ft/min is accepted as the critical transition speed. Blowers operating below 2,700 ft/min are considered subcritical and can usually be adequately silenced on the discharge side by use of a chamber-type silencer UCD or URD Series. Machines operating

above the 2,700 ft/min transition speed will require combination chamber-absorptive silencers such as SD or RD Series.

In some larger blower installations, piping requirements or space restrictions may preclude the use of a large, single discharge silencer such as the SD or RD Series.

Where two or more blowers discharge into a common header, individual silencers upstream of the header are required to subdue the individual blower pulsations. Otherwise, the pulsations tend to beat with each other and can be extremely objectionable.

**Note:** Silencers should be mounted as close to the blower as possible since any piping between the blower and silencer will radiate noise. Standard silencer connections are not designed to carry external piping or valve loads, so good piping support practices should be used to prevent stresses that cause fatigue and eventual fracture of the silencer or piping. It is also good practice to isolate the blower from the silencer with a flexible expansion joint. Contact Universal for special design considerations where loading is a factor.

### Attenuation Curves

Noise attenuation curves are given for the various models within this catalog.

The curves represent insertion loss of airborne noise for typical applications under average conditions. It is not feasible to chart the expected performance of a silencer over a wide range of applications and conditions, therefore, the curves must be used with discretion. Structure-borne noise (see above) may be a consideration and will require separate analysis, since it is not airborne noise and not used for silencer performance rating.

**Use our online Blower Silencer calculator at [www.universalAET.com](http://www.universalAET.com).**



# General Information

## Rotary Positive Blowers

The silencers shown below are more fully described on the individual catalog pages. These units are designed specifically for use on Rotary Positive Blowers.

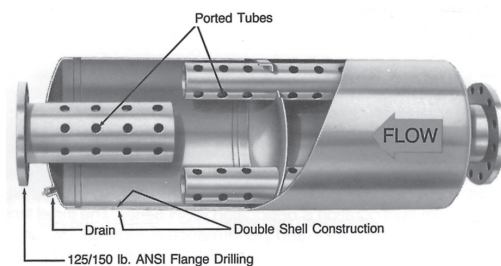
There are fundamental similarities between blower silencers and other types, particularly reciprocating engine silencers, which also require a silencer design that provides effective pulse control as well as noise attenuation. However, blower silencers

generally must be constructed more ruggedly to withstand prolonged exposure to severe pulsations produced by the blower.

All silencers described are of standard with end in, end-out design. Low or high side inlet and outlet connections are available and are described on the individual catalog pages.

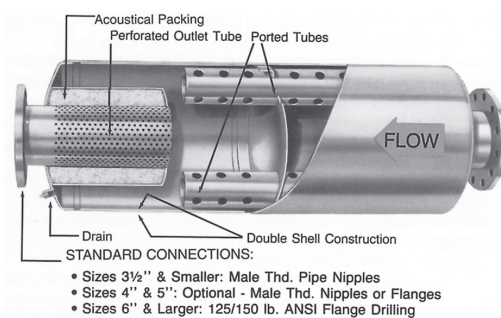
### Accessories, Special Features

- ✦ Mounting Brackets
- ✦ Inspection Openings
- ✦ Pressure Vessel Construction
- ✦ Oversize Flanges
- ✦ Special Finishes
- ✦ Special Materials



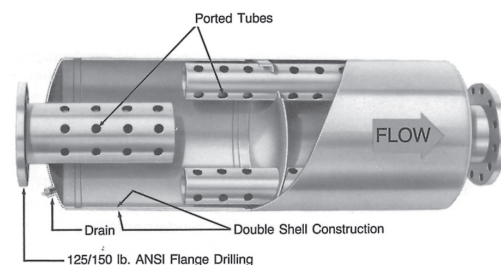
### UCI Series Inlet Silencer

Chamber-type inlet silencer for use on sub-critical PLV applications. Available in pipe sizes 8"-30". Smaller sizes use URB Series. Available with side connections and mounting brackets.



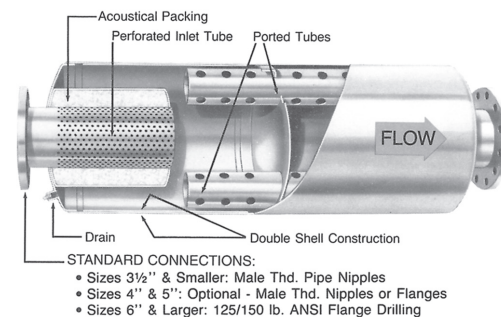
### RIS Series Inlet Silencer

Combustion chamber-absorptive type inlet silencer for critical PLV applications. Available in pipe sizes 2"-30". Low or high side outlet and mounting brackets available on most sizes.



### UCD Series URB/URD Series Discharge Silencers

Chamber-type discharge silencer for use on sub-critical PLV applications. Available in pipe sizes 8"-30". (Smaller sizes use URB Series). Low, high, or opposed side connections and mounting brackets available.



### SD Series RD Series Discharge Silencers

Combination chamber-absorptive type discharge silencers for critical PLV applications. Available in pipe sizes 2"-30". Low, high, or opposed side connections and mounting brackets available on most sizes.



## Silencer Recommendations

As mentioned on page 2 pitch line velocity (PLV) is the speed of the timing gear in feet per minute (ft/min). For purposes of silencer application, PLV is considered "critical" at 3,300 ft/min for intake and 2,700 ft/min for discharge.

Table 1 gives transition speeds in RPM. Blowers running at these speeds or greater will have critical PLV. Operating speeds below transition will be in the sub-critical range. Blowers operating in the sub-critical speed range usually require only simple chamber-type silencers while those in the critical range require combination chamber-absorptive type silencers. If there is doubt, it is best to use the combination-type silencers. When gear size and operating speeds are known, the proper type silencer is easily selected.

## Silencer Size Selection, Capacity

Table 3 gives the nominal capacity of the various size silencers. "Size" in this table refers to the silencer "nominal size," or its "inlet size." Capacities are expressed in inlet CFM (ICFM), thus, discharge silencers are rated at higher capacities than inlet silencers since the air is compressed to reduced volume at the discharge operating pressure.

**A** From Table 1 determine whether blower RPM is above or below the transition speed for critical PLV.

**B** Consult Table 2 for recommended silencer models.

## Pressure Drop

The following formulas may be used to calculate pressure drop through the silencers covered in this catalog.

$$\Delta P = \left( \frac{V}{4005} \right)^2 c$$

Inlet: (assumes silencer inlet is open to atmosphere)

$$\Delta P = \left( \frac{V}{4005} \right)^2 c \times \frac{P}{14.7} \times \frac{530}{T}$$

$\Delta P$  = pressure drop through silencer, inches of water

$V$  = air velocity through silencer, ft/min\*

$c$  = individual silencer restriction coefficient—empirical constant (see Table 4)

$P$  = discharge pressure, PSIA (operating pressure in PSIG + 14.7)

$T$  = discharge temperature, °R absolute (operating temperature in °F + 460)

\* To calculate velocity through silencer, divide flow in ACFM by cross-sectional area of silencer inlet diameter in square feet.

## 3 Silencer Capacity

Size	Inlet Silencer	Capacity (Inlet CFM 14.7 PSIA at 70°F)				
		Discharge Silencer				
		4 PSIG	6 PSIG	8 PSIG	10 PSIG	15 PSIG
1	30	35	40	40	40	45
1.5	70	80	85	90	95	105
2	120	140	150	160	165	185
2.5	190	220	235	245	255	285
3	270	320	335	355	370	415
3.5	370	430	455	480	505	560
4	480	560	600	630	660	735
5	750	880	935	985	1,030	1,150
6	1,080	1,260	1,340	1,410	1,480	1,650
8	1,920	2,250	2,390	2,510	2,630	2,940
10	3,000	3,520	3,730	3,930	4,110	4,590
12	4,300	5,070	5,370	5,660	5,920	6,600
14	5,900	6,890	7,310	7,700	8,060	8,990
16	7,700	9,000	9,550	10,000	10,500	11,800
18	9,700	11,400	12,100	12,700	13,300	14,900
20	12,000	14,000	14,900	15,700	16,400	18,400
22	14,500	17,000	18,100	19,000	19,900	22,200
24	17,300	20,200	21,500	22,600	23,700	26,400
26	20,300	23,800	25,200	26,600	27,800	31,000
28	23,500	27,600	29,300	30,800	32,200	36,000
30	27,000	31,700	33,600	35,400	37,000	41,300
Est Temp.	70°F	115°F	140°F	165°F	190°F	240°F

# Application, Capacity, Pressure Drop Data

## Blower Silencers

## 1 Blower Transition Speed

Blower Gear Size	Transition Speed-RPM	
	Inlet	Discharge
2	6,300	5,155
2.5	5,040	4,125
3	4,200	3,435
4	3,150	2,575
5	2,520	2,060
6	2,100	1,720
7	1,800	1,470
8	1,575	1,290
10	1,260	1,030
12	1,050	860
14	900	735
16	785	645
18	700	570
20	630	515
22	570	470
24	525	430

## 2 Silencer Model Specifications

Pitch Line Velocity	Inlet Silencer	Discharge Silencer
Below Transition	UCI, URB	URB, UCD, URD
Above Transition	RIS	SD, RD

## 4 Pressure Drop Coefficients

Model	Pressure Drop Coefficient (C)
URB, URBV	4.2
UCI, UCIY, UCIH	4.2
RIS, RISH, RISH	4.2
UCD, UCDY	4.2
URD, URDY, URDH	4.2
SD, SDY, SDH	4.2
RD, RDY, RDH	4.2
RDS, SDS, URDS	7.0

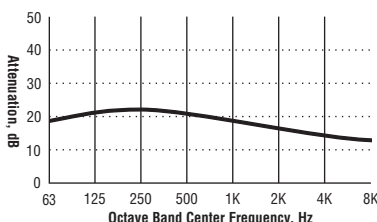


# Specifications UCI Group

## Chamber Type Inlet Silencer

The UCI Series Inlet Silencer is a heavy-duty, all welded unit constructed of carbon steel sheet and plate. It provides pulse control and silencing for most subcritical PLV applications. Sizes 8" and larger are equipped with flanged connections drilled to 125/150 lb ANSI specifications. Exterior surfaces receive a shop coat of rust-inhibitive primer and may be finish painted in the field if desired. The UCI Series is the basic inlet model and is the conventional end-in, end-out version. The low side inlet model is designated UCII Series and the high side inlet type is designated UCIH Series. The three types are fundamentally alike and performance is identical. Mounting brackets and other options are available—see page 11.

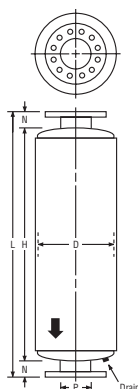
Typical Attenuation Curve



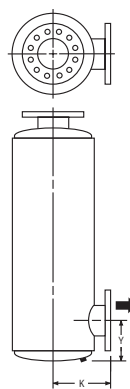
## Pressure Vessel Construction

Silencers may be fabricated in accordance with Div. 1, Section VIII—ASME Code for Unfired Pressure Vessels. Dimensions are similar to standard models, but material types and thicknesses are selected to meet code requirements. Prices are quoted on application to meet your pressure and temperature conditions.

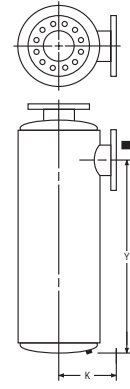
### UCI Series



### UCII Series (Low Side Outlet)



### UCIH Series (High Side Outlet)



## Chamber Type Inlet Silencers

P (Size)	Part Number	D	L	N	H	K	Y		UCIH	Weight
							Min	Max	Min	
1										
1.5										
2										
2.5										
3										
3.5										
4										
5										
6										
8	53-108-AA	22	61	3.5	54	14.5	9	21	28.5	240
10	53-110-AA	26	74	3.5	67	16.5	11	27	34.5	345
12	53-112-AA	30	87	3.5	80	18.5	12.5	34	41	575
14	53-114-AA	30	99	3.5	92	18.5	13.5	40	47.5	635
16	53-116-AA	36	113	3.5	106	21.5	15.5	48	53.5	925
18	53-118-AA	42	126	3.5	119	24.5	17.5	55.5	59.5	1,200
20	53-120-AA	42	140	4.5	131	25.5	19	60.5	67	1,350
22	53-122-AA	48	153	4.5	144	28.5	20.5	66.5	75	1,950
24	53-124-AA	54	167	4.5	158	31.5	22.5	72	83	2,500
26	53-126-AA	54	179	4.5	170	31.5	23.5	85	84	2,750
28	53-128-AA	60	193	4.5	184	34.5	25.5	87	91	3,445
30	53-130-AA	66	206	4.5	197	37.5	27.5	95	100	4,650

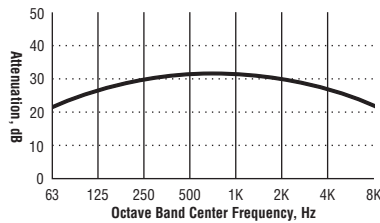
**Note:** Dimensions and weights are nominal and may vary slightly with production models. Request certified drawings of specific models for exact dimensions.



## Pressure Vessel Construction

Silencers may be fabricated in accordance with Div. 1, Section VIII—ASME Code for Unfired Pressure Vessels. Dimensions are similar to standard models, but material types and thicknesses are selected to meet code requirements. Prices are quoted on application to meet your pressure and temperature conditions.

## Typical Attenuation Curve



# Specifications RIS Group

## Combination Chamber-Absorptive Type Inlet Silencer

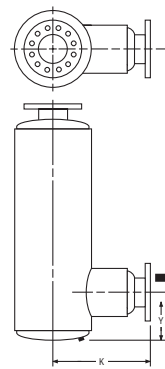
The RIS Series Inlet Silencer is a heavy-duty, all welded unit constructed of carbon steel sheet and plate. It features an acoustically-treated outlet and will provide pulse control and silencing suitable for critical PLV applications. Sizes 4" and larger are equipped with flanged connections drilled to 125/150 lb ANSI specifications. Smaller sizes are standard with male threaded pipe nipples. Units sized 4" and 5" are available in either flanged or male pipe threads. Exterior surfaces receive a shop coat of rust inhibitive primer and may be finish painted in the field if desired.

The RIS Series is the basic model, having conventional end-in, end-out configuration. A low side outlet version is designated RISY Series and high side outlet configuration is designated RISH Series. The three types are fundamentally alike and performance is identical. Mounting brackets and other options are available—see page 11.

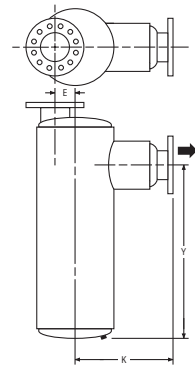
### RIS Series



### RISY Series (Low Side Outlet)



### RISH Series (High Side Outlet)



## Combination Chamber-Absorptive Type Inlet Silencers

P (Size)	Part Number	D	L	N	H	K		E	Y		RISH		Weight
						RISY	RISH		Min	Max	Min	Max	
1	Sizes 1"—1.5" use U5 Series (Absorptive Silencers Technical Literature booklet #94-1549 page 2)												
1.5													
2	54-102-AA	8	28.5	3	22.5	8.5	—	—		FIXED AT 6			25
2.5	54-125-AA	8	33	3	27	9	—	—		FIXED AT 7	2.5" THRU 3.5"		30
3	54-103-AA	8	39	3	33	10	—	—		FIXED AT 7	AVAILABLE ON		25
3.5	54-135-AA	10	39.5	3	33.5	11	—	—		FIXED AT 8	SPECIAL ORDER		40
4	54-104-AA*	10	45	3	39	12.5	14.5	2.25	7.5	16.5	30.5	32.5	50
5	54-105-AA*	12	57.5	3	51.5	15.5	17.5	2.75	9	23	40	43.5	80
6	54-106-AA	14	64	3	58	17	20	3.25	9	25.5	43.5	49	110
8	54-108-AA	18	72	3.5	65	21.5	26.5	4	12	30.5	49.5	54	190
10	54-110-AA	22	85	3.5	78	25.5	32.5	5	13.5	37	61.5	65.5	380
12	54-112-AA	26	98	3.5	91	29.5	38	6	15	44	69	77	550
14	54-114-AA	30	111	3.5	104	30	40	7.5	16.5	50	81	89.5	800
16	54-116-AA	36	113	3.5	106	35.5	49.5	0	18.5	51	56.5	88.5	1,050
18	54-118-AA	42	126	3.5	119	41	57.5	0	20.5	58.5	62.5	100.5	1,350
20	54-120-AA	42	140	4.5	131	47	62.5	0	22	63.5	70	111	1,500
22	54-122-AA	48	153	4.5	144	46.5	65.5	0	23.5	69.5	78	123	2,100
24	54-124-AA	54	167	4.5	158	54	75.5	0	25.5	75	86	135	2,700
26	54-126-AA	54	179	4.5	170	55.5	76	0	25.5	87	86	147	3,050
28	54-128-AA	60	193	4.5	184	61	84.5	0	29.5	91	95	157	3,850
30	54-130-AA	66	206	4.5	197	66.5	93.5	0	30.5	98	103	170	5,150

**Note:** Dimensions and weights are nominal and may vary slightly with production models. Request certified drawings of specific models for exact dimensions.

\*Specify -TT for male pipe threaded units.



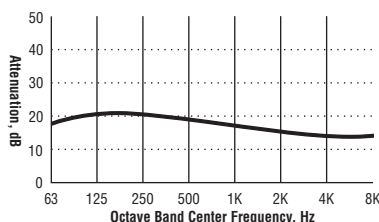


# Specifications UCD Group

## Chamber Type Discharge Silencer

The UCD Series Discharge Silencer is a heavy-duty, all welded unit constructed of carbon steel sheet and plate. It provides pulse control and silencing for subcritical PLV applications where the higher performance of the URD Series on page 7 is not warranted. Sizes 8" and larger are equipped with flanged connections drilled to 125/150 lb ANSI specifications. Exterior surfaces receive a shop coat of rust-inhibitive primer and may be finish painted in the field if desired. The UCD Series is the basic end-in, end-out configuration. A low side inlet version is designated UCDY Series. The two types are fundamentally alike and performance characteristics are identical. Mounting brackets and other options are available—see page 11.

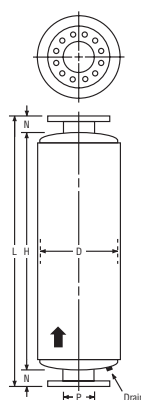
### Typical Attenuation Curve



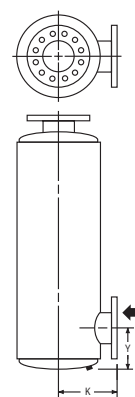
### Pressure Vessel Construction

Silencers may be fabricated in accordance with Div. 1, Section VIII—ASME Code for Unfired Pressure Vessels. Dimensions are similar to standard models, but material types and thicknesses are selected to meet code requirements. Prices are quoted on application to meet your pressure and temperature conditions.

### UCD Series



### UCDY Series (Low Side Inlet)



### Chamber Type Discharge Silencers

P (Size)	Part Number	D	L	N	H	K	Y		Weight
		Min					Max		
1									
1.5									
2									
2.5									
3									
3.5									
4									
5									
6									
8	56-108-AA	22	61	3.5	54	14.5	9	21	240
10	56-110-AA	26	74	3.5	67	16.5	11	27	340
12	56-112-AA	30	87	3.5	80	18.5	12.5	34	520
14	56-114-AA	30	99	3.5	92	18.5	13.5	40	595
16	56-116-AA	36	113	3.5	106	21.5	15.5	48	950
18	56-118-AA	42	126	3.5	119	24.5	17.5	55.5	1,200
20	56-120-AA	42	140	4.5	131	25.5	19	60.5	1,350
22	56-122-AA	48	153	4.5	144	28.5	20.5	66.5	1,950
24	56-124-AA	54	167	4.5	158	31.5	22.5	72	2,450
26	56-126-AA	54	179	4.5	170	31.5	23.5	85	2,750
28	56-128-AA	60	193	4.5	184	34.5	25.5	87	3,445
30	56-130-AA	66	206	4.5	197	37.5	27.5	95	4,650

**Note:** Dimensions and weights are nominal and may vary slightly with production models. Request certified drawings of specific models for exact dimensions.



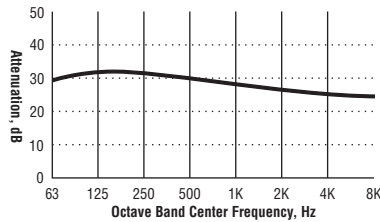


## Pressure Vessel Construction

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**Note:** Sizes 1"–6" are URB Series; sizes 8"–30" are URD Series. Both series are fundamentally the same in design and the performance characteristics are identical.

Typical Attenuation Curve



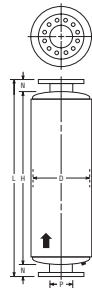
# Specifications URB Group URD Group

Chamber Type  
Discharge Silencer

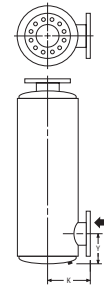
The URB/URD Series Discharge Silencer is a heavy-duty, all welded unit constructed of carbon steel sheet and plate. It provides pulse control and silencing for subcritical PLV applications. Sizes 4" and larger are equipped with flanged connections drilled to 125/150 lb ANSI specifications. Smaller sizes are standard with male threaded pipe nipples. Units sized 4" and 5" are available in either flanged or male pipe threads. Exterior surfaces receive a shop coat of rust-inhibitive primer and may be finish painted in the field if desired. The URB/URD Series is the basic end-in, end-out configuration. A low side inlet version is designated URB/URDY Series; high side inlet is designated URDH Series;

and low opposed connection is designated URDS Series. The four types are fundamentally alike and performance characteristics are identical. Mounting brackets and other options are available—see page 11.

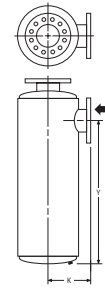
URB,  
URD Series



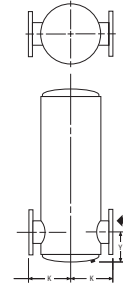
URBY,  
URDY Series  
(Low Side Inlet)



URDH Series  
(High Side Inlet)



URDS Series  
(Opposed Connections)



## Chamber Type Discharge Silencers

P (Size)	Part Number	D	L	N	H	K	Y		Y		Y		Weight
							URBY, URDY Min	URDY Max	URDH Min	URDH Max	URDS Min	URDS Max	
1	55-101-AA	4.5	21	2	17	—	—	—	—	—	—	—	10
1.5	55-115-AA	6.5	24	2	20	—	—	—	—	—	—	—	15
2	55-102-AA	8	33	3	27	7	FIXED AT 6		—	—	—	—	25
2.5	55-125-AA	10	34	3	28	8	FIXED AT 7		—	—	—	—	30
3	55-103-AA	10	46	3	40	8	FIXED AT 7		—	—	—	—	40
3.5	55-135-AA	12	52	3	46	9	FIXED AT 8		—	—	—	—	65
4	55-104-AA*	14	53	3	47	10	6	22	—	—	8	16	75
5	55-105-AA*	16	65	3	59	11	6.5	29	28	52	9	19	115
6	55-106-AA	18	72	3	66	12	8	32	31	59	10	22	150
8	55-108-AA	22	97	3.5	90	14.5	9	48	62	82	12	29	355
10	55-110-AA	26	122	3.5	115	16.5	11	63.5	76.5	106	14	40.5	545
12	55-112-AA	30	135	3.5	128	18.5	12.5	69	88	117.5	15.5	42	775
14	55-114-AA	36	161	3.5	154	21.5	14.5	81	107	141	17.5	49	1,240
16	55-116-AA	42	181	3.5	174	24.5	16.5	92.5	119.5	158.5	19.5	55.5	1,600
18	55-118-AA	48	188	3.5	181	27.5	18.5	98	126.5	164.5	21.5	56.5	2,300
20	55-120-AA	48	202	4.5	193	28.5	19.5	103	134	175.5	22.5	61	2,500
22	55-122-AA	54	204	4.5	195	31.5	21.5	103	137	175.5	24.5	60	2,950
24	55-124-AA	54	239	4.5	230	31.5	22.5	126	156.5	210.5	25.5	76.5	3,450
26	55-126-AA	60	259	4.5	250	34.5	25	132	175	228	27	78	4,400
28	55-128-AA	66	279	4.5	270	37.5	27	144	188	246	31	85	6,150
30	55-130-AA	72	304	4.5	295	40.5	29	161	203	272	32	96	7,250

**Note:** Dimensions and weights are nominal and may vary slightly with production models. Request certified drawings of specific models for exact dimensions.

\*Specify -TT for male pipe threaded units.



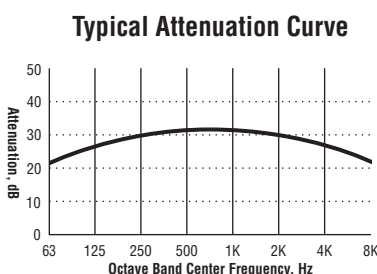
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# Specifications SD Group

## Combination Chamber-Absorptive Type Discharge Silencer

The SD Series Discharge Silencer is a heavy-duty, all welded unit constructed of carbon steel sheet and plate. It will provide excellent pulse control and is equipped with an acoustically-treated inlet for use on critical PLV applications. Its pulse and noise performance is recommended for all but the most demanding applications, which may require the RD Series on page 9. Sizes 4" and larger are equipped with flanged connections drilled to 125/150 lb ANSI specifications. Smaller sizes are standard with male threaded pipe nipples. Units sized 4" and 5" are available in either flanged or male pipe threads. Exterior surfaces receive a shop coat of rust-inhibitive primer and may be finish painted in the field if desired. The SD Series is the basic end-in, end-out configuration. A low side inlet is designated the SDY Series; high side inlet, SDH Series; and low opposed connection, SDS Series. The four types are fundamentally alike and performance characteristics are identical. Mounting brackets and other options are available—see page 11.

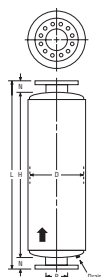


## Pressure Vessel Construction

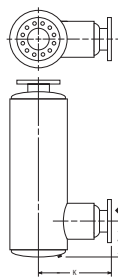
Silencers may be fabricated in accordance with Div. 1, Section VIII—ASME Code for Unfired Pressure Vessels. Dimensions are similar to standard models, but material types and thicknesses are selected to meet code requirements. Prices are quoted on application to meet your pressure and temperature conditions.

Acoustical packing is suitable for 325°F

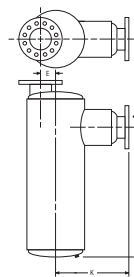
**SD Series**



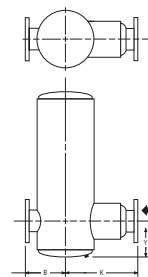
**SDY Series**  
(Low Side Inlet)



**SDH Series**  
(High Side Inlet)



**SDS Series**  
(Opposed Connection)



## Combination Chamber-Absorptive Type Discharge Silencers

P (Size)	Part Number	D	L	N	H	K			B	E	SDY		Y SDS		SDH		Weight
						SDY	SDH	SDS			Min	Max	Min	Max	Min	Max	
1	Sizes 1" and 1.5" use URB Series (page 7)																
1.5																	
2	54-102-AA	8	28.5	3	22.5	8.5	—	—	—	—	—	—	—	—	—	—	20
2.5	54-125-AA	8	33	3	27	9	—	—	—	—	—	—	—	—	—	—	25
3	54-103-AA	8	39	3	33	10	—	—	—	—	—	—	—	—	—	—	30
3.5	54-135-AA	10	39.5	3	33.5	11	—	—	—	—	—	—	—	—	—	—	40
4	54-104-AA*	10	45	3	39	12.5	14.5	14.5	8	2.25	7.5	16.5	7.5	9.5	30.5	32.5	50
5	54-105-AA*	12	57.5	3	51.5	15.5	17.5	17.5	9	2.75	9	23	9	12.5	40	43.5	80
6	54-106-AA	14	64	3	58	17	20	20	10	3.25	9	25.5	10	15.5	43.5	49	115
8	54-108-AA	18	72	3.5	65	21.5	26.5	26.5	12.5	4	12	30.5	12	16.5	49.5	54	185
10	54-110-AA	22	85	3.5	78	25.5	32.5	32.5	14.5	5	13.5	37	13.5	18	61.5	65.5	405
12	54-112-AA	26	98	3.5	91	29.5	38	38	16.5	6	15	44	15	24	69	77	535
14	54-114-AA	30	111	3.5	104	30	40	40	18.5	7.5	16.5	50	16.5	25	81	89.5	820
16	58-116-AA	36	137	3.5	130	35.5	47	47	21.5	9.5	18.5	65	18.5	36	96	113.5	1,265
18	58-118-AA	42	150	3.5	143	41	52	52	24.5	11.5	20.5	70.5	20.5	40.5	104.5	124.5	1,640
20	58-120-AA	42	176	4.5	167	47	62	62	25.5	10.5	21.5	87.5	21.5	48.5	120.5	147.5	1,900
22	58-122-AA	48	195	4.5	186	47	61	61	28.5	12.5	23.5	93.5	23.5	50.5	138.5	165.5	2,710
24	58-124-AA	48	213	4.5	204	55.5	72	72	28.5	11.5	24.5	110.5	24.5	60.5	146.5	182.5	3,030
26	58-126-AA	54	233	4.5	224	55	76	76	31.5	13.5	26	117	26	70	157.5	201.5	3,915
28	58-128-AA	54	250	4.5	241	62	81	81	31.5	12.5	28.5	126.5	28.5	71.5	173.5	216.5	4,400
30	58-130-AA	60	276	4.5	267	68	90	90	34.5	14.5	29.5	139	29.5	81	190	241.5	5,425

Note: Dimensions and weights are nominal and may vary slightly with production models. Request certified drawings of specific models for exact dimensions.

\*Specify -TT for male pipe threaded units.

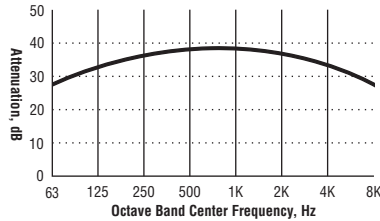


## Pressure Vessel Construction

Silencers may be fabricated in accordance with Div. 1, Section VIII—ASME Code for Unfired Pressure Vessels. Dimensions are similar to standard models, but material types and thicknesses are selected to meet code requirements. Prices are quoted on application to meet your pressure and temperature conditions.

**Acoustical packing is suitable for 325°F**

## Typical Attenuation Curve



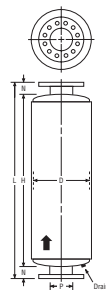
# Specifications RD Group

**Combination Chamber-Absorptive Type  
Discharge Silencer**

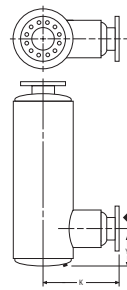
The RD Series Discharge Silencer is a heavy-duty, all welded unit constructed of carbon steel sheet and plate. It provides excellent pulse control and is equipped with an acoustically treated inlet for use on critical PLV applications. Pulse control and noise attenuation provided by the RD Series is the ultimate and is necessary for only the most demanding installations. Sizes 4" and larger are equipped with flanged connections drilled to 125/150 lb ANSI specifications. Smaller sizes are standard with male threaded pipe nipples. Units sized 4" and 5" are available in either flanged or male pipe threads. Exterior surfaces receive a shop coat of rust inhibitive primer and may be finish painted in the field if desired. The RD Series is the basic end-in, end-out configuration. A low side inlet is designated the RDY Series; high side inlet, RDH Series; and low opposed connections, RDS

Series. The four types are fundamentally alike and performance is identical. Mounting brackets and other options are available—see page 11.

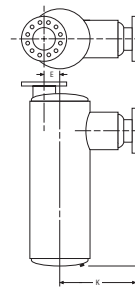
**RD Series**



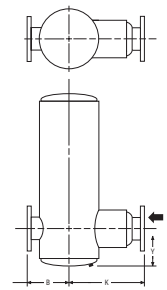
**RDY Series**  
(Low Side Inlet)



**RDH Series**  
(High Side Inlet)



**RDS Series**  
(Opposed Connection)



## Combination Chamber-Absorptive Type Discharge Silencers

P (Size)	Part Number	D	L	N	H	K			B	E	RDY		Y RDS		RDH		Weight
						RDY	RDH	RDS			Min	Max	Min	Max	Min	Max	
1	Sizes 1"–1.5" use URB Series (page 7) or use U5 Series: (Absorptive Silencers Technical Literature booklet #94-1549 page 2)																
1.5																	
2	57-102-AA	8	33	3	27	9	—	—	—	—	FIXED AT 6		—	—	—	—	25
2.5	57-125-AA	10	34	3	28	10	—	—	—	—	FIXED AT 7		—	—	—	—	30
3	57-103-AA	10	43	3	40	10	—	—	—	—	FIXED AT 7		—	—	—	—	40
3.5	57-135-AA	12	52	3	46	11	—	—	—	—	FIXED AT 8		—	—	—	—	75
4	57-104-AA*	14	53	3	47	14.5	16	14.5	10	4	8	20	8	14	33	39	80
5	57-105-AA*	16	65	3	59	16.5	18	16.5	11	4.5	9	26.5	9	16.5	43.5	51	155
6	57-106-AA	18	72	3	66	20.5	22.5	20.5	12	5	10	30	10	20	46	56	200
8	57-108-AA	22	97	3.5	90	24.5	28.5	26	14.5	6	12	45	12	26	65	79	430
10	57-110-AA	26	122	3.5	115	28.5	34	32	16.5	7	14	60.5	14	37.5	79.5	103	600
12	57-112-AA	30	135	3.5	128	35	42	39.5	18.5	8	15.5	66	15.5	39	91	114.5	880
14	57-114-AA	36	161	3.5	154	40.5	47.5	45.5	21.5	10.5	17.5	78	17.5	46	110	138	1,410
16	57-116-AA	42	181	3.5	174	44.5	52.5	50	24.5	12.5	19.5	89.5	19.5	52.5	122.5	155.5	1,825
18	57-118-AA	48	188	3.5	181	47	54	52.5	27.5	14.5	21.5	95	21.5	53.5	129.5	161.5	2,550
20	57-120-AA	48	202	4.5	193	53.5	65	63.5	28.5	13.5	22.5	100	22.5	58	137	172.5	2,795
22	57-122-AA	54	204	4.5	195	59.5	72	70	31.5	15.5	24.5	100	24.5	57	140	172.5	3,300
24	57-124-AA	54	239	4.5	230	66	81.5	79.5	31.5	14.5	25.5	123	25.5	73.5	159.5	207.5	3,885
26	57-126-AA	60	259	4.5	250	72	87	85	34.5	16.5	27	130	27	76	177	226	5,025
28	57-128-AA	66	279	4.5	270	78	93.5	91	37.5	18.5	31	140	31	81	192	242	7,030
30	57-130-AA	72	304	4.5	295	78	95.5	94	40.5	20.5	32	158	32	93	205	266	8,140

**Note:** Dimensions and weights are nominal and may vary slightly with production models. Request certified drawings of specific models for exact dimensions.

\*Specify -TT for male pipe threaded units.



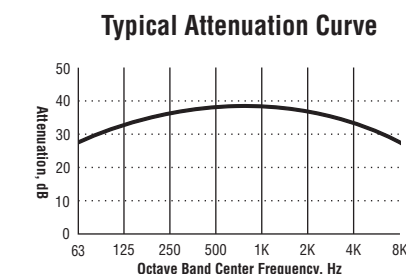
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# Specifications SURS Group

## Chamber Type Multi-Use Silencer

SURS Series blower silencers are heavy-duty, all welded steel construction, suitable for application as either an inlet or discharge silencer on rotary positive. These units are designed for blowers running above critical transition speed, and therefore, no acoustic packing material is included in the design. Instead, these units have a specially designed, high-performance, three chamber system which incorporates a diffuser on the blower side of the silencer units. The unit will provide excellent pulse control and is designed for the most demanding applications.



## Pressure Vessel Construction

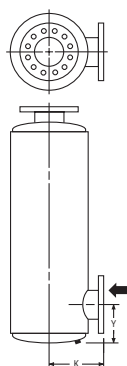
Silencers may be fabricated in accordance with Div. 1, Section VIII—ASME Code for Unfired Pressure Vessels. Dimensions are similar to standard models, but material types and thicknesses are selected to meet code requirements. Prices are quoted on application to meet your pressure and temperature conditions.

Sizes smaller than four inches are equipped with standard male threaded pipe nipples, while the 4" and larger units have flanged connections drilled to 125/150 lb ANSI specifications. The SURS Series employs a high-heat aluminum paint system.

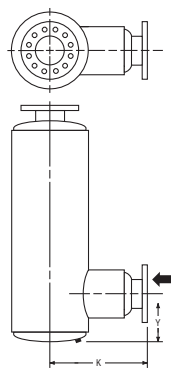
The SURS is a basic end-in, end-out configuration. A low-side inlet model is designated as the SURSY Series; the SURSY is fundamentally identical to the

SURS series in both dimension and attenuation performance. Both series are designed to operate at pressures to 15 psi. Mounting brackets, shell lagging and other accessories are available for both series of blower silencers.

### SURS Series



### SURSY Series (Low Side Inlet)



## Combination Chamber Type Multi-Use Discharge Silencers

SURS		SURSY		P	D	L	N	H	K	Y		Weight
Model	Part	Model	Part							Min.	Max	
SURS-2	55-A02-SS	SURSY-2	55-B02-SS	2	12	40	3	34	9	4.5	13	55
SURS-2.5	55-A25-SS	SURSY-2.5	55-B25-SS	2.5	12	40	3	34	9	4.5	13	55
SURS-3	55-A03-SS	SURSY-3	55-B03-SS	3	12	46	3	40	9	5	15	65
SURS-3.5	55-A35-SS	SURSY-3.5	55-B35-SS	3.5	14	59	3	53	10	5.5	20	90
SURS-4	55-A04-SS*	SURSY-4	55-B04-SS*	4	14*	59	3	53	10	6	20	100
SURS-5	55-A05-SS*	SURSY-5	55-B05-SS*	5	16*	71	3	65	11	7	25	165
SURS-6	55-A06-SS	SURSY-6	55-B06-SS	6	18	72	3	66	12	8	25	195
SURS-8	55-A08-SS	SURSY-8	55-B08-SS	8	26	111	3.5	104	16.5	10	41	575
SURS-10	55-A10-SS	SURSY-10	55-B10-SS	10	30	136	3.5	129	18.5	12	51	800
SURS-12	55-A12-SS	SURSY-12	55-B12-SS	12	36	138	3.5	131	21.5	14	50	1,275
SURS-14	55-A14-SS	SURSY-14	55-B14-SS	14	36	168	3.5	161	21.5	16	63	1,380
SURS-16	55-A16-SS	SURSY-16	55-B16-SS	16	42	181	3.5	174	24.5	18	51	1,815
SURS-18	55-A18-SS	SURSY-18	55-B18-SS	18	48	188	3.5	181	27.5	20	48	2,520
SURS-20	55-A20-SS	SURSY-20	55-B20-SS	20	48	214	4.5	205	28.5	22	56	2,880

\*Specify -TT for male pipe threaded units.



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# CBF/CBFI Series

## Compact Blower Inlet Filter-Silencer

### Pressure Vessel Construction

Silencers may be fabricated in accordance with Div. 1, Section VIII—ASME Code for Unfired Pressure Vessels. Dimensions are similar to standard models, but material types and thicknesses are selected to meet code requirements. Prices are quoted on application to meet your pressure and temperature conditions.

### Filter and silencer combined in one unit.

The CBF and CBFI have the acoustic capabilities of the Universal Silencer RIS Series silencers and the filtration performance of CC series filters.

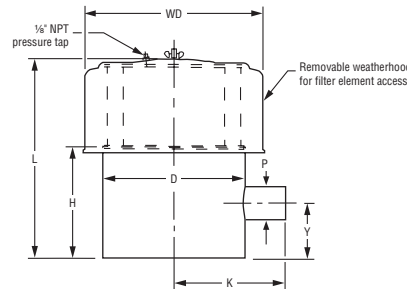
**Reduced cost**, overall package size, weight, storage space, freight cost and damage.

**Approximately one third the size of conventional blower silencer**, with the added benefit of excellent, high-efficiency filtration.

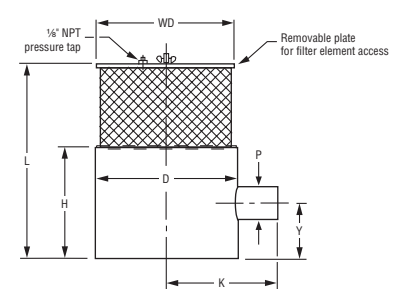
**Reduced overall package noise** without further acoustic treatment.

**Versatile**—Suitable for inlet applications in confined areas, outdoor or indoor, without compromising acoustic or pressure drop performance.

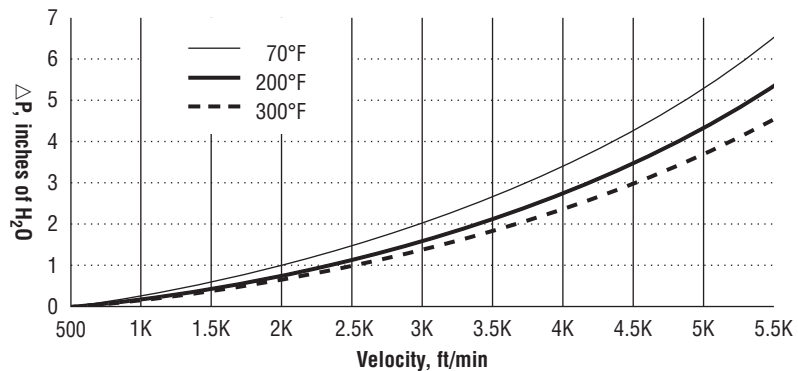
### CBF Series (outdoor use)



### CBFI Series (indoor use)



### Pressure Drop Curves



P (nom.)	Element Part Number		
	Paper	Felt	Wire
2	81-0471*	81-1203*	81-1036*
2.5	81-0471*	81-1203*	81-1036*
3	81-1063	81-1205	81-1038
4	81-1063	81-1205	81-1038
5	81-0475	81-1207	81-1040
6	81-0475	81-1207	81-1040
8	81-1163	81-1209	81-1200
10	81-1163	81-1209	81-1200
12	81-1164	81-1210	81-1201

\*Pair of elements required (stacked).

### Models, Dimensions, Weights and Elements

P (nom.)	CBF/CBFI					CBF				CBFI			
	D	H	Y	K	CFM CAP	Part	WD	L	Weight	Part	WD	L <sub>1</sub>	Weight
2	8	8	4	7	120	34-702-AA	10	13.25	25	34-G02-AA	6.5	13	20
2.5	8	9.5	4.75	7	175	34-725-AA	10	14.75	25	34-G25-AA	6.5	14.5	25
3	12	10.5	5.25	9	275	34-703-AA	16	17	50	34-G03-AA	10.5	16.5	40
4	12	15	7.5	9	500	34-704-AA	16	21.25	60	34-G04-AA	10.5	20.875	55
5	16	17	8.5	11	750	34-705-AA	20	26	85	34-G05-AA	14	25.625	85
6	16	23	11.5	11	1,100	34-706-AA	20	32	105	34-G06-AA	14	31.625	100
8	24	27.5	13.75	15.5	2,200	34-708-AA	30	39	215	34-G08-AA	17	37.5	195
10	30	35.5	17.75	18.5	3,000	34-710-AA	36	46.44	335	34-G10-AA	17	45.375	305
12	34	39.5	19.75	20.5	4,300	34-712-AA	40	54.5	430	34-G12-AA	24	53.75	370

Notes: 1. Non-ASME Code construction suitable for 15" Hg vacuum.

2. Weights are approximate and do not include the weight of the filter element.



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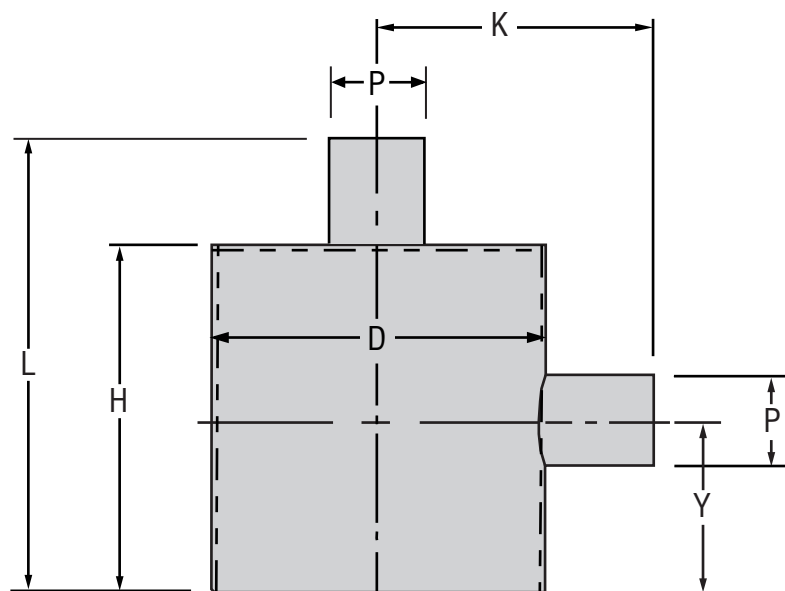
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94-1547 Rev 0

## Pressure Vessel Construction

Silencers may be fabricated in accordance with Div. 1, Section VIII—ASME Code for Unfired Pressure Vessels. Dimensions are similar to standard models, but material types and thicknesses are selected to meet code requirements. Prices are quoted on application to meet your pressure and temperature conditions.

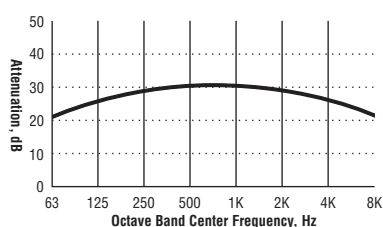
## CB Series

### Compact Blower Silencer

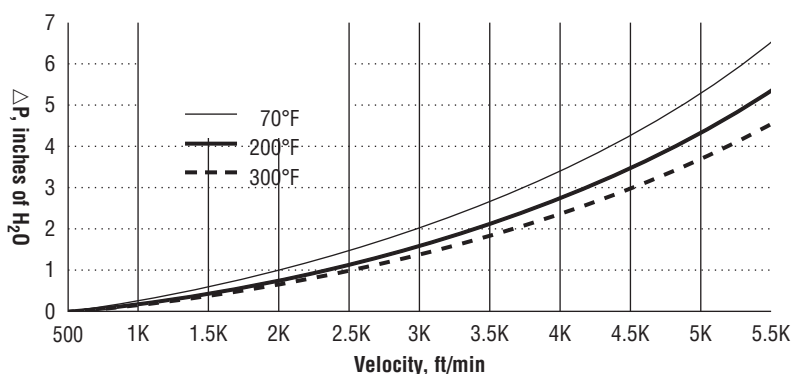


This extremely compact blower silencer works as either an inlet or discharge silencer on rotary positive blowers. It is about one-third the size of a standard silencer, and reduces overall package size, cost, weight and storage space. The unit's internal pack material is suitable for temperatures up to 325 degrees. The unit is operable in conditions up to 15 psig. Flanged or threaded connections are available. Exterior surfaces receive a shop coat of rust inhibitive primer.

Typical Attenuation Curve



Pressure Drop Curves



Compact Blower Silencers

Model	Part Number	P (nom.)	D	L	H	Y	K	Weight	CFM CAP
CB-2	56-702-AA	2	8	11	8	4	7	15	120
CB-2.5	56-725-AA	2.5	8	12.5	9.5	4.75	7	20	187
CB-3	56-703-AA	3	12	13.5	10.5	5.25	9	40	270
CB-4	56-704-AA	4	12	18	15	7.5	9	50	480
CB-5	56-705-AA	5	16	20	17	8.5	11	75	750
CB-6	56-706-AA	6	16	26	23	11.5	11	105	1,080
CB-8	56-708-AA	8	24	31	27.5	13.75	15.5	250	1,920
CB-10	56-710-AA	10	30	39	35.5	17.75	18.5	440	3,000
CB-12	56-712-AA	12	34	43	39.5	19.75	20.5	510	4,320



# UNI-BASE Ultra-Wide Base Plates/Components

## Rotary Positive Blowers

These wide base plate products accommodate a variety of blower package designs. The UNI-BASE package and the USI-BASE base plate use the same basic base plate and discharge silencer. The UNI-BASE package includes the Universal Silencer model URBN high-side inlet silencer and CCF inlet air filter, while the UNI-BASE base plate is only the basic plate and the

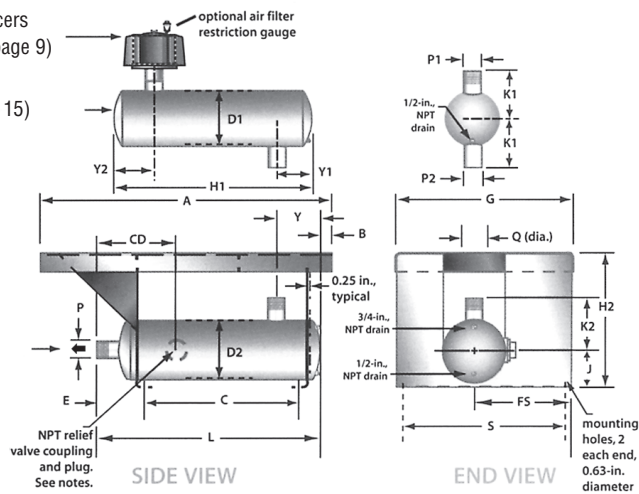
URBY discharge silencer. Please see page 2 for performance and sizing information for the URBY series silencers, page 2 for information on the URBN series silencers, and page 9 in Filters and Filter-Silencers (#94-1553) for performance data, weights and dimensions of CCF filters.

### UNI-BASE Package

CCF (see Filter and Filter-Silencers  
Technical Literature #94-1553 page 9)

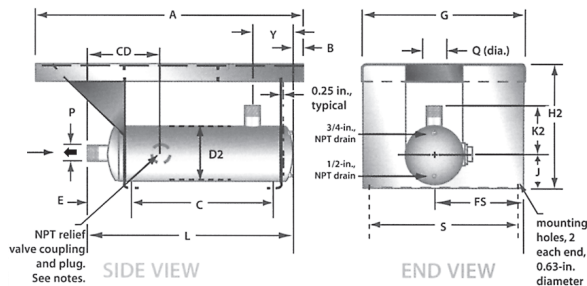
URBN (see page 15)

URBY (see page 7)



### UNI-BASE Base Plate Only

URBY (see page 7)



### UNI-BASE Base Plates/Components Part Numbers

Size	UNI-BASE Package	Base Plate Only	URBN Only	URBY Only	CCF Only
2	80-1873	55-202-ABP	55-502-AA	55-202-AA	34-L02-TT*
2.5	80-1874	55-225-ABP	55-525-AA	55-225-AA	34-L25-TT*
3	80-1875	55-203-ABP	55-503-AA	55-203-AA	34-L03-TT*
4	80-1876	55-204-ABP	55-504-AA	55-204-AA	34-L04-TT*
5	80-1877	55-205-ABP	55-505-AA	55-205-AA	34-L05-TT*
6	80-1878	55-206-ABP	55-506-AA	55-206-AA	34-L06-TT*

\*Specify "P" at end of part number for unit with pleated paper elements, "F" for pleated felt or "W" for wire mesh.  
Refer to Filter and Filter-Silencers Technical Literature booklet #94-1553 for filter element details.





# UNI-BASE Ultra-Wide Base Plates/Components

Rotary Positive Blowers

## Dimensions and Weights

### UNI-BASE Base Plate (w/URBY)

P (nom.)	A	B	C	CD	D2	E	FS	G	H2	J	K2	L	Q (Dia.)	S	Y	Approx. Weight
2	39	1.5	20.75	10.75	8	6.5	13	23.5	16	5	7	30	3.5	21	6	125
2.5	44.5	1.5	20.88	11.375	10	6.75	14.25	27.5	17	6	8	31	4	25	7	160
3	55.5	4	31.5	12	10	7.5	15.25	29.75	17	6	8	43	4.75	26.25	7	250
4	56	—	37.5	15.5	14	8	16.5	33	24.5	8	10	50	6	29.75	11	335
5	66	—	43.5	18.25	16	13.75	14.75	35	23.5	9	11	62.5	11	30.5	12	460
6	66	—	52	18.25	18	10.5	15.25	35.25	26.5	10.25	12	69	12	30.5	12	600

**Notes:** 1. Sizes 2"–3" URBY discharge silencers are shipped standard with male pipe threaded connections. 4" and 5" URBY discharge silencers are shipped standard with male pipe threaded discharge connections and plain pipe blower connections. 6" URBY discharge silencers are shipped standard with flanged discharge connection drilled to 125/150 lb. ANSI specifications and plain pipe blower connections.  
2. Sizes 2"–3" URBY discharge silencers have a 2" NPT relief valve coupling and plug. Sizes 4"–6" URBY discharge silencers have a 3" NPT relief valve coupling and plug.

### URBN Silencers

P1/P2 (nom.)	D1	H1	K1	Y1	Y2	Approx. Weight
2	8	27	7	6	3.5	25
2.5	10	28	8	7	4.5	35
3	10	40	8	7	4.5	50
4	14	47	10	6	5.5	80
5	16	60	11	6.5	6.5	140
6	18	66	12	8	7.5	170

**Notes:** 1. Sizes 2"–4" URBN inlet silencers are shipped with male pipe threaded inlets and plain pipe outlets. Sizes 5" and 6" URBN inlet silencers are shipped standard with flanged inlet connections drilled to 125/150 lb ANSI specifications and plain pipe outlets.

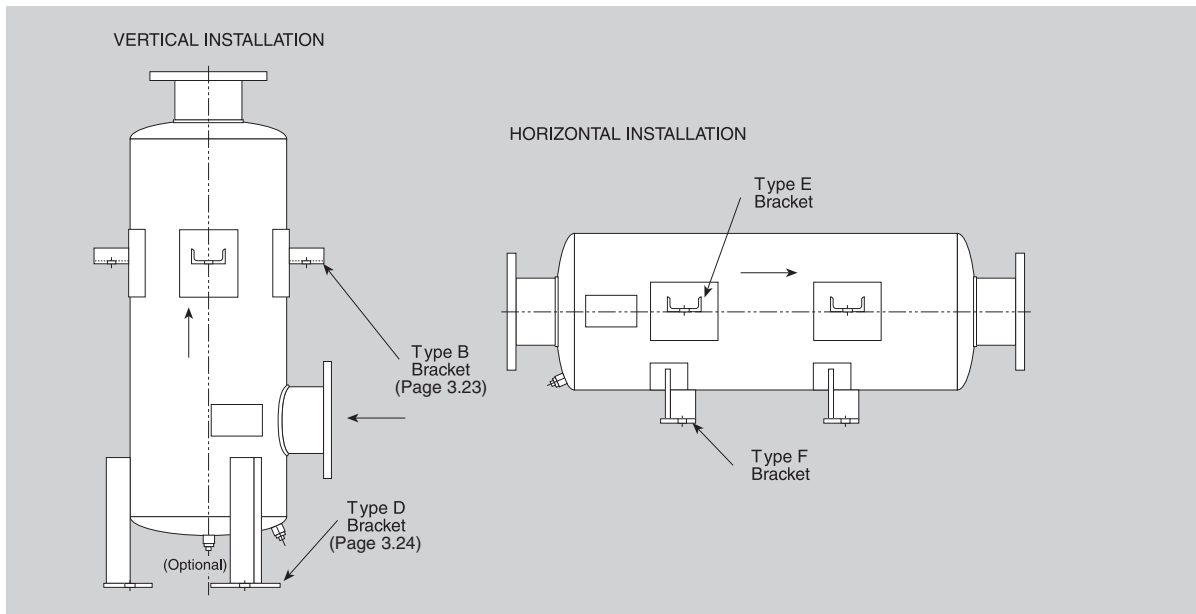


✧ All information correct at time of printing. Universal has a policy of continuous improvement. Therefore we reserve the right to change the specifications of these silencers without notice.

## Weld-On Attachment Brackets

✧ All dimensions are in inches unless otherwise stated. All weights are in lbs and are approximate.

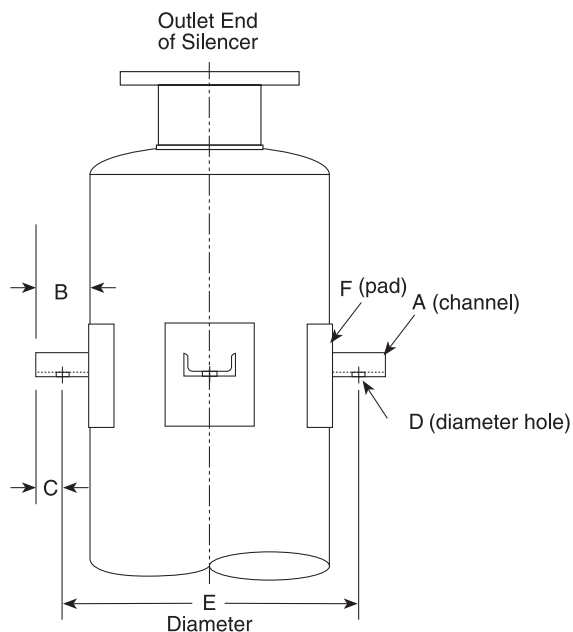
Universal provides several options for attaching the silencer to a structure or floor. Vertical silencer installations have a Type B or D attachment option. Horizontal silencer installations have a Type E or Type F attachment option. Please indicate attachment option on order. The brackets and legs will be factory installed so no field welding is required.



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## Weld-On Attachment Brackets



**Type "B" Mounting Brackets\***

Body Diameter	A	B	C	D	E
10.12	C4 7.25	4.0	2.0	0.500	14.3
11.12	C4 7.25	4.0	2.0	0.500	15.3
12.12	C4 7.25	4.0	2.0	0.500	16.3
14.12	C4 7.25	4.0	2.0	0.500	18.3
16.12	C4 7.25	4.0	2.0	0.500	20.3
18.12	C4 7.25	4.0	2.0	0.500	22.3
22.12	C4 7.25	4.0	2.0	0.500	26.4
26.12	C4 7.25	4.0	2.0	0.625	30.4
30.12	C4 7.25	4.0	2.0	0.625	34.4
36.12	C4 7.25	4.0	2.0	0.625	40.4
42.25	C4 7.25	4.0	2.0	0.625	46.5
48.25	C4 7.25	4.0	2.0	0.625	52.5
54.25	C4 7.25	4.0	2.0	0.875	58.5
60.25	C4 7.25	4.0	2.0	0.875	64.5

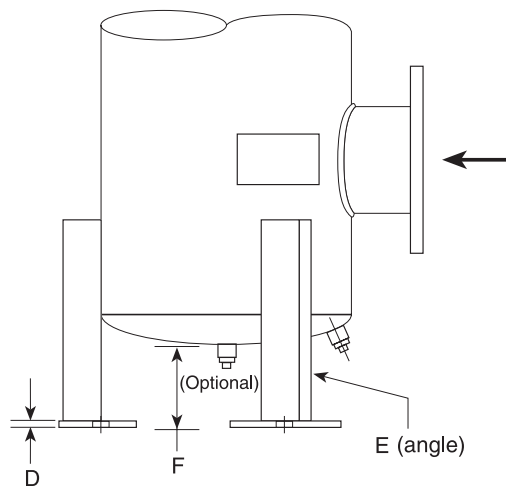
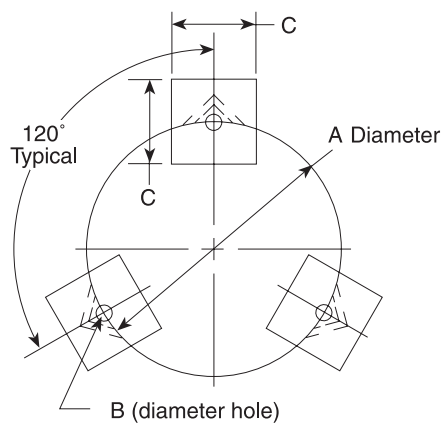
\*Add "N" to the part number when ordering a silencer with Type B brackets (for example, a 61308F would be ordered as 61308N).



✧ All information correct at time of printing. Universal has a policy of continuous improvement. Therefore we reserve the right to change the specifications of these silencers without notice.

## Weld-On Legs

✧ All dimensions are in inches unless otherwise stated. All weights are in lbs and are approximate.



### Type "D" Mounting Brackets\* - Legs

Body Diameter	A	Hole Diameter	Foot Width	Foot Gauge	Leg Angles	F
10.12	10.0	0.500	6.0	0.5	2.0 2.0 .187	5.0
11.12	11.0	0.500	6.0	0.5	2.0 2.0 .187	5.0
12.12	12.0	0.500	6.0	0.5	2.0 2.0 .187	5.0
14.12	14.0	0.500	6.0	0.5	2.0 2.0 .187	5.0
16.12	16.0	0.500	6.0	0.5	2.0 2.0 .187	5.0
18.12	18.0	0.500	6.0	0.5	2.0 2.0 .187	5.0
22.12	22.0	0.625	6.0	0.5	3.0 3.0 .500	5.0
26.12	26.0	0.625	6.0	0.5	3.0 3.0 .500	5.0
30.12	30.0	0.625	6.0	0.5	3.0 3.0 .500	5.0
36.12	36.0	0.875	6.0	0.5	3.0 3.0 .500	5.0
42.25	42.0	0.875	7.0	0.5	4.0 4.0 .500	5.0
48.25	48.0	1.125	7.0	0.5	4.0 4.0 .500	5.0
54.25	54.0	1.125	7.0	0.5	4.0 4.0 .500	5.0
60.25	60.0	1.125	7.0	0.5	4.0 4.0 .500	5.0

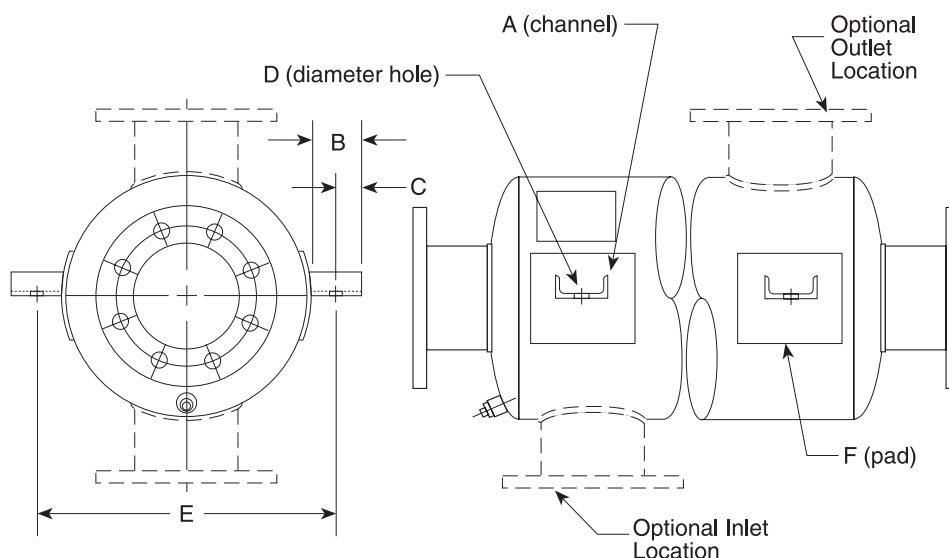
\*Add "E" to the part number when ordering a silencer with Type D brackets (for example, a 61308F would be ordered as 61308E).



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• All dimensions are in inches unless otherwise stated. All weights are in lbs and are approximate.

## Weld-On Attachment Brackets



### Type "E" Mounting Brackets\*

Body Diameter	A	B	C	D	E
10.12	C4 7.25	4.0	2.0	0.500	14.3
11.12	C4 7.25	4.0	2.0	0.500	15.3
12.12	C4 7.25	4.0	2.0	0.500	16.3
14.12	C4 7.25	4.0	2.0	0.500	18.3
16.12	C4 7.25	4.0	2.0	0.500	20.3
18.12	C4 7.25	4.0	2.0	0.500	22.3
22.12	C4 7.25	4.0	2.0	0.500	26.4
26.12	C4 7.25	4.0	2.0	0.625	30.4
30.12	C4 7.25	4.0	2.0	0.625	34.4
36.12	C4 7.25	4.0	2.0	0.625	40.4
42.25	C4 7.25	4.0	2.0	0.625	46.5
48.25	C4 7.25	4.0	2.0	0.625	52.5
54.25	C4 7.25	4.0	2.0	0.875	58.5
60.25	C4 7.25	4.0	2.0	0.875	64.5

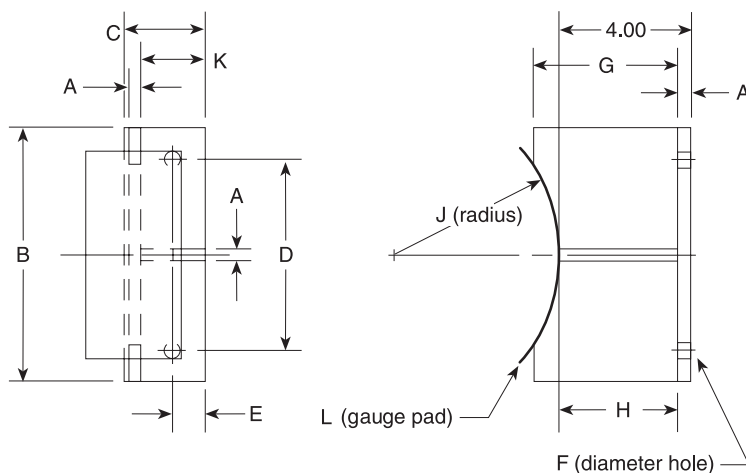
\*Add "C" to the part number when ordering a silencer with Type E brackets (for example, a 61308F would be ordered as 61308C).



✧ All information correct at time of printing. Universal has a policy of continuous improvement. Therefore we reserve the right to change the specifications of these silencers without notice.

## Weld-On Attachment Brackets

✧ All dimensions are in inches unless otherwise stated. All weights are in lbs and are approximate.



### Type "F" Mounting Brackets\*

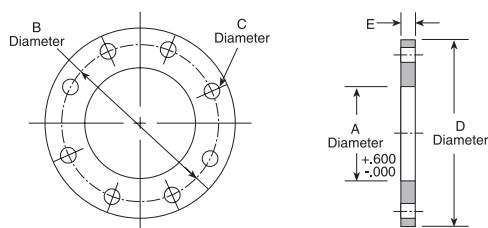
Body Diameter	A	B	C	D	E	F	G	H	J	K	L
8.12	0.250	7.0	2.0	5.0	0.75	0.438	5.0	3.69	4.11	1.5	16.0
9.00	0.250	7.0	2.0	5.0	0.75	0.438	4.5	3.69	4.55	1.5	16.0
10.12	0.375	8.0	2.5	6.0	1.00	0.500	1.5	3.55	5.14	2.0	14.0
11.12	0.375	9.0	2.5	7.0	1.00	0.500	5.0	3.55	5.64	2.0	14.0
12.12	0.375	10.0	2.5	8.0	1.00	0.500	5.5	3.55	6.14	2.0	14.0
14.12	0.375	13.0	2.5	11.0	1.00	0.500	6.0	3.55	7.14	2.0	14.0
16.12	0.375	15.0	2.5	13.0	1.00	1.00	6.5	3.52	8.17	2.0	12.0
18.12	0.375	17.0	2.5	15.0	1.00	1.00	7.0	3.52	9.17	2.0	12.0
22.12	0.500	20.0	3.0	18.0	1.00	1.00	7.0	3.36	11.22	2.0	10.0
26.12	0.500	24.0	3.0	22.0	1.00	1.00	8.0	3.36	13.24	2.0	10.0
30.12	0.500	29.0	4.0	26.0	1.50	1.50	9.0	3.36	15.24	3.0	10.0
36.12	0.500	32.0	4.0	28.0	1.50	1.50	10.0	3.36	18.26	3.0	10.0
42.25	0.500	34.0	4.0	30.0	1.50	1.50	10.0	3.36	21.26	3.0	10.0
48.25	0.500	39.0	4.0	35.0	1.50	1.50	11.0	3.32	24.30	3.0	7.0
54.25	0.500	44.0	4.0	40.0	1.50	1.50	11.0	3.32	27.33	3.0	7.0
60.25	0.500	49.0	4.0	45.0	1.50	1.50	12.0	3.32	30.33	3.0	7.0

\*Add "Y" to the part number when ordering a silencer with Type F brackets (for example, a 61308F would be ordered as 61308Y).



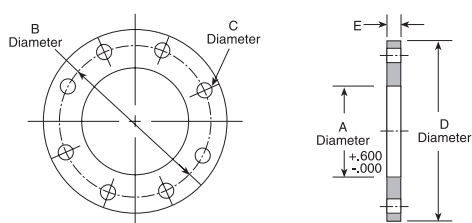
Frequently the engine's flange size is larger than the required silencer's connection. Rather than use a larger silencer, it is usually more economical to use an oversize reducing flange on the silencer. Universal offers single reduction and double reduction ANSI Flange.

## Reduction/Oversize Flange Kits



**Reduction Flange: Single**

Pipe Size Reduction	Part Number	A	D	# of Holes	B	C	E	Weight
5x4	82-1015	4.56	10.00	8	8.50	0.875	0.375	6
6x5	82-1016	5.63	11.00	8	9.50	0.875	0.500	9
8x6	82-1017	6.69	13.50	8	11.75	0.875	0.500	14.5
10x8	82-1018	8.75	16.00	12	14.25	1.000	0.500	17
12x10	82-1019	10.88	19.00	12	17.00	1.000	0.500	26
14x12	82-1020	12.88	21.00	12	18.75	1.125	0.500	29
16x14	82-1021	14.19	23.50	16	21.25	1.125	0.500	37
18x16	82-1022	16.19	25.00	16	22.75	1.250	0.500	38
20x18	82-1023	18.19	27.50	20	25.00	1.250	0.500	44
22x20	82-1024	20.19	29.50	20	27.25	1.375	0.500	47
24x22	82-1025	22.19	32	20	29.50	1.375	0.500	55



**Reduction Flange: Double**

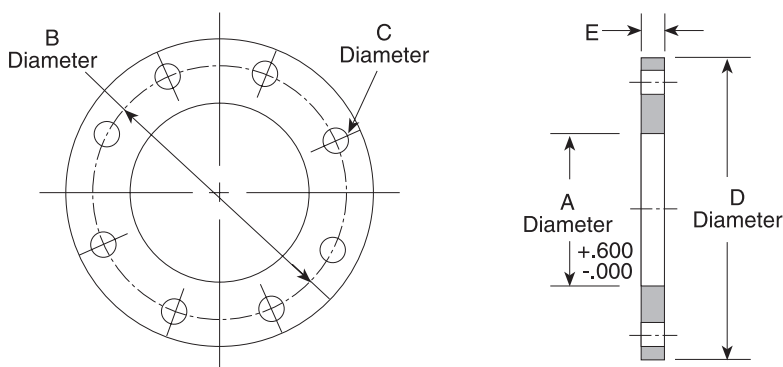
Pipe Size Reduction	Part Number	A	D	# of Holes	B	C	E	Weight
6x4	82-1039	4.56	11.00	8	9.50	0.875	0.500	10.5
8x5	82-1040	5.63	13.50	8	11.75	0.875	0.500	16
10x6	82-1041	6.69	16.00	12	14.25	1.000	0.500	22
12x8	82-1042	8.75	19.00	12	17.00	1.000	0.500	30
14x10	82-1043	10.88	21.00	12	18.75	1.125	0.500	34
16x12	82-1044	12.88	23.50	16	21.25	1.125	0.500	41
18x14	82-1045	14.19	25.00	16	22.75	1.250	0.500	44
20x16	82-1046	16.19	27.50	20	25.00	1.250	0.500	52
22x18	82-1047	18.19	29.50	20	27.25	1.375	0.500	56
24x20	82-1048	20.19	32.00	20	29.50	1.375	0.500	64
26x22	82-1049	22.19	34.25	24	31.75	1.375	0.750	106





# Companion Flange Kits

Field repairs, retrofits and custom projects sometimes require flanges to be installed on a bare pipe end. Universal offers weld-on flanges. Each flange kit includes two flanges, gaskets, and bolt and nut for each hole.



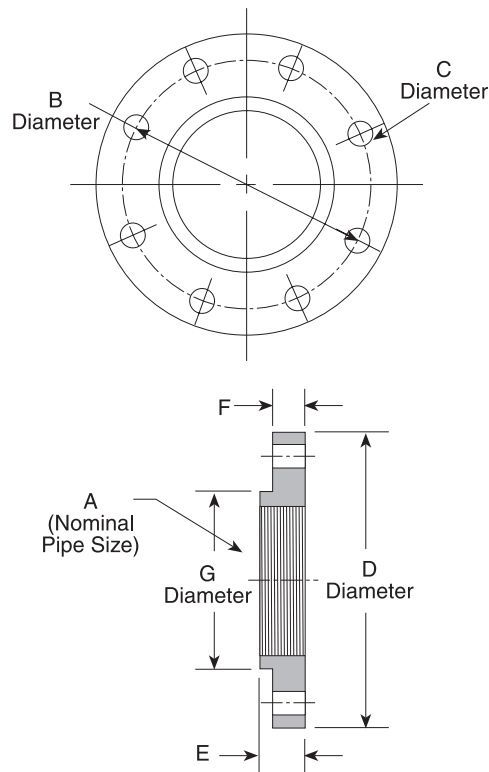
## Companion Flange

Pipe Size	Part Number	A Inner Diameter	D Outer Diameter	# of Holes	C Hole Diameter	T Flange Thickness	Weight
4	82-1117	4.56	9.00	8	0.750	0.375	8
5	82-1118	5.63	10.00	8	0.875	0.375	10
6	82-1119	6.69	11.00	8	0.875	0.500	13
8	82-1120	8.75	13.50	8	0.875	0.500	16
10	82-1121	10.88	16.00	12	1.000	0.500	25
12	82-1122	12.88	19.00	12	1.000	0.500	32
14	82-1123	14.19	21.00	12	1.125	0.500	39
16	82-1124	16.19	23.50	16	1.125	0.500	49
18	82-1125	18.19	25.00	16	1.250	0.500	57
20	82-1126	20.19	27.50	20	1.250	0.500	69
22	82-1127	22.19	29.50	20	1.375	0.500	110



Field repairs, retrofits and custom projects sometimes require flanges to be installed on a bare pipe end. Universal offers weld-on flanges. Each flange kit includes two flanges, gaskets, and bolt and nut for each hole.

## Companion Flange Kits



### Dual Mounting Flanges Kits (Threaded)

Part Number	A	B	C	D	E	F	G	# of Holes	Weight
40040K	4	7.50	0.750	9.0	1.31	0.94	5.31	8	30
40050K	5	8.50	0.875	10.0	1.44	0.94	6.44	8	35
40060K	6	9.50	0.875	11.0	1.56	1.00	7.56	8	54
40080K	8	11.75	0.875	13.5	1.75	1.12	9.75	8	67

- ✧ A "kit" consists of a mounting flange, a gasket, and one capscrew and nut for each mounting hole. Available in dual or single flange kits. Listed part number for dual flange kits. Please call for single flange kits.



## **GLOBAL HEADQUARTERS**

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