

**WILDEN**  
**SOUND SHIELD™**

# Engineering Operation & Maintenance



**WILDEN®**  
A **DOVER** COMPANY

**ALL  
SIZES**

**For All  
AODD  
Pumps**

## SECTION 1

# WILDEN SOUND SHIELD™ - PRODUCT DESCRIPTION

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The Sound Shield™ is an enclosure designed to reduce sound emissions of air-operated, double-diaphragm pumps (AODDP). AODDP sound emission is created from two sources: mechanical and pneumatic. The Sound Shield™ is designed to decrease the overall sound level from these two sources. The Sound Shield™ can also serve as a basic splash guard by acting as a barrier between the pump and personnel. In addition, the Sound Shield™ will protect a pump installed outdoors from potentially harmful UV rays.

The Sound Shield™ is a rigid five-sided enclosure constructed of closed-cell polyethylene foam. The machined foam components interlock, making assembly simple and sturdy. Furthermore, the foam cuts very easily, allowing the end user to customize the Sound Shield™ to the piping configuration. In addition, the closed-cell foam resists absorption of any liquid in the immediate area.

These design characteristics also enable the Sound Shield™ to be easily installed on existing pumps in the field. Disassembly is intuitive and quick making pump inspection and maintenance simple. Six sizes are available for use with all of Wilden's pump models and sizes. Furthermore, the Sound Shield™ can be used on many other pump types and other factory equipment; please consult the factory for details. Wilden has the ability to manufacture additional and unique sizes as your application requires.



## SECTION 2

# WILDEN SOUND SHIELD™ - CAUTIONS - READ FIRST

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1. Pumped media and vapors may come in contact with the Sound Shield™. If these materials are incompatible with the Sound Shield™ polyethylene foam or 18-8 stainless steel retainers, chemical attack may result.
2. Do not install the Sound Shield™ in environments that have a temperature above 71° C (160° F).
3. The Sound Shield™ may trap gases. If this potential situation presents a threat to your process or employees, caution should be exercised when using the Sound Shield™.
4. The Sound Shield™ is not a substitute for proper hearing protection devices.
5. The Sound Shield™ is not designed to support objects placed on the lid.
6. The Sound Shield™ is not designed as a containment vessel.
7. The Sound Shield™ can act as a basic splash guard, but it is important to note that it cannot withstand pressure due to top and sides disengagement.
8. Sound reduction is maximized when the Sound Shield™ is positioned such that it is installed flat on a solid surface.
9. Sound reduction is maximized when the holes cut by the user result in a small clearance between piping and panels.
10. Proper care is required upon removing Sound Shield™ as material being pumped may contact skin or clothing.
11. Note: As the Sound Shield™ is made from a nonconductive material, it cannot be grounded.

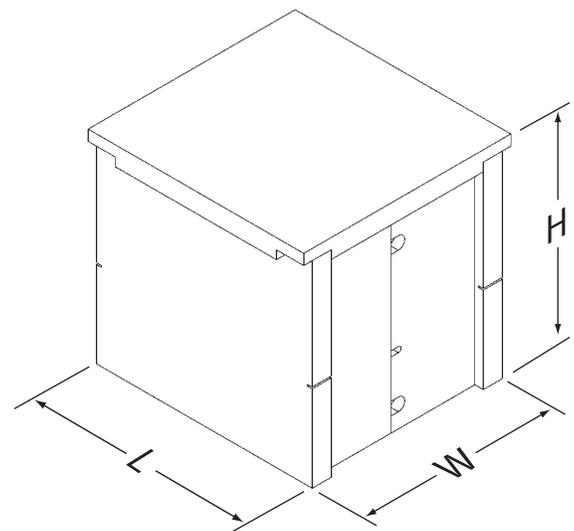


# SECTION 3

## WILDEN SOUND SHIELD™ - SIZING MATRIX

PUMP SIZE & MODEL		Sound Shield™ P/N
1/4"	1/4" Original Plastic	99-9080-99
	1/4" Original Metal	99-9080-99
	1/4" Unitec UA Plastic	99-9080-99
3/8"	3/8" Unitec UX Plastic	99-9080-99
	3/8" Unitec UA Plastic	99-9080-99
1/2"	1/2" Original Plastic	99-9081-99
	1/2" Advanced Plastic	99-9081-99
	1/2" Ultra-Pure II Plastic	99-9081-99
	1/2" P.050 PTFE	99-9081-99
	1/2" Original Metal	99-9081-99
	1/2" Saniflo FDA Metal	99-9081-99
	1/2" Unitec UX Plastic	99-9081-99
	1/2" Unitec UA Plastic	99-9081-99
3/4"	1/2" Unitec UH Plastic	99-9082-99
	3/4" Unitec UX Plastic	99-9081-99
	1" Original Plastic	99-9082-99
	1" Advanced Plastic	99-9082-99
1"	1" Original Metal	99-9082-99
	1" Saniflo FDA Metal	99-9082-99
	1" Saniflo 3A Metal	99-9084-99
	1" Unitec UA Plastic	99-9082-99
	1" Unitec UH Plastic	99-9082-99
	1 1/4" Unitec UX Plastic	99-9081-99
1 1/2"	1 1/2" Original Plastic	99-9084-99
	1 1/2" Advanced Plastic	99-9084-99
	1 1/2" Original Metal	99-9083-99
	1 1/2" Advanced Metal (aluminum)	99-9084-99
	1 1/2" Advanced Metal (stainless)	99-9084-99
	1 1/2" Stallion Metal	99-9083-99
	1 1/2" High Pressure Simplex	99-9084-99
	1 1/2" Saniflo FDA Metal	99-9083-99
	1 1/2" Unitec UA Plastic	99-9083-99
	1 1/2" Unitec UH Plastic	99-9084-99
2"	2" Original Plastic	99-9085-99
	2" Advanced Plastic	99-9085-99
	2" Original Metal	99-9084-99
	2" Advanced Metal (aluminum)	99-9085-99
	2" Advanced Metal (stainless)	99-9085-99
	2" Stallion Metal	99-9085-99
	2" High Pressure Duplex	Consult factory for quote
	2" Saniflo FDA Metal	Consult factory for quote
	2" Saniflo USDA Metal	Consult factory for quote
	2" Saniflo LSH Metal (vertical)	Consult factory for quote
2" Saniflo LSH Metal (horiz.)	Consult factory for quote	
3"	2" Unitec UA Plastic	99-9083-99
	3" Original Plastic	99-9085-99
	3" Advanced Plastic	Consult factory for quote
	3" Original Metal	99-9085-99
	3" Advanced Metal (aluminum)	Consult factory for quote
	3" Advanced Metal (stainless)	99-9085-99
	3" Stallion Metal	Consult factory for quote
	3" Saniflo FDA Metal	Consult factory for quote
4"	3" Saniflo LSH Metal (vertical)	Consult factory for quote
	3" Saniflo LSH Metal (horiz.)	Consult factory for quote
4" Original Metal	Consult factory for quote	

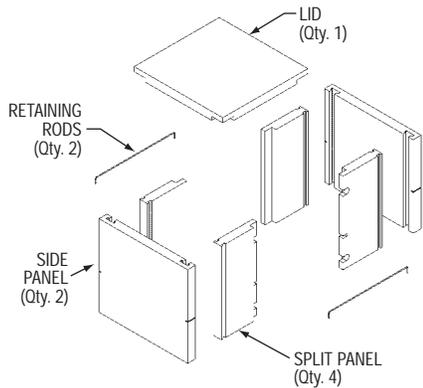
DIMENSIONS	
INTERNAL	EXTERNAL
<b>99-9080-99</b>	
LENGTH: 241 mm (9.5") WIDTH: 216 mm (8.5") HEIGHT 216 mm (8.5")	LENGTH: 404 mm (15.9") WIDTH: 378 mm (14.9") HEIGHT 274 mm (10.8")
<b>99-9081-99</b>	
LENGTH: 343 mm (13.5") WIDTH: 318 mm (12.5") HEIGHT 381 mm (15.0")	LENGTH: 483 mm (19.0") WIDTH: 480 mm (18.9") HEIGHT 439 mm (17.3")
<b>99-9082-99</b>	
LENGTH: 351 mm (13.8") WIDTH: 432 mm (17.0") HEIGHT 445 mm (17.5")	LENGTH: 513 mm (20.2") WIDTH: 594 mm (23.4") HEIGHT 503 mm (19.8")
<b>99-9083-99</b>	
LENGTH: 483 mm (19.0") WIDTH: 457 mm (18.0") HEIGHT 566 mm (22.3")	LENGTH: 645 mm (25.4") WIDTH: 620 mm (24.4") HEIGHT 625 mm (24.6")
<b>99-9084-99</b>	
LENGTH: 572 mm (22.5") WIDTH: 546 mm (21.5") HEIGHT 724 mm (28.5")	LENGTH: 734 mm (28.9") WIDTH: 709 mm (27.9") HEIGHT 782 mm (30.8")
<b>99-9085-99</b>	
LENGTH: 686 mm (27.0") WIDTH: 584 mm (23.0") HEIGHT 914 mm (36.0")	LENGTH: 848 mm (33.4") WIDTH: 747 mm (29.4") HEIGHT 973 mm (38.3")



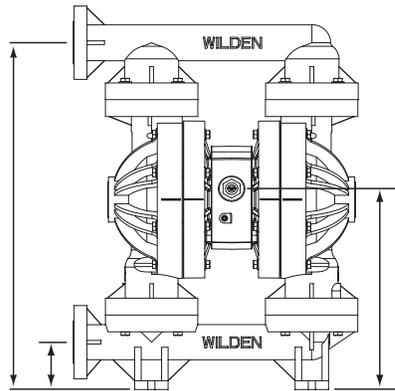
Assembled View of Sound Shield™

## SECTION 4

# WILDEN SOUND SHIELD™ - INSTALLATION

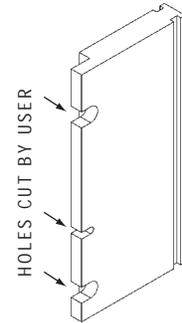


**Exploded View of Sound Shield**



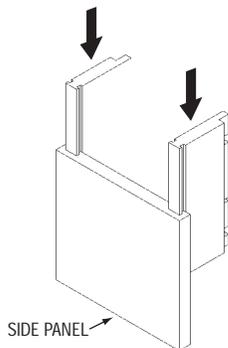
**Step 1:**

Measure the height and diameter of inlet pipe, discharge pipe, and air inlet hose.



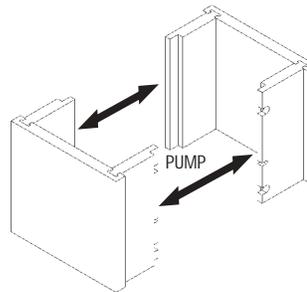
**Step 2:**

Using the information from Step 1, mark corresponding locations and size of the piping on the appropriate split panels. Depending upon how the pump has been plumbed it may only require one set of split panels to be cut. The piping clearance holes may then be cut. The foam is easily cut with a knife or similar sharp instrument. A template to cut plumbing holes has been supplied and is printed on the product box.



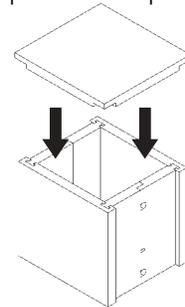
**Step 3:**

Assemble two of the split panels to each side panel by sliding the "T" tongue of the split panel into the corresponding groove of the side panel. The side panel does not have a specific top or bottom.



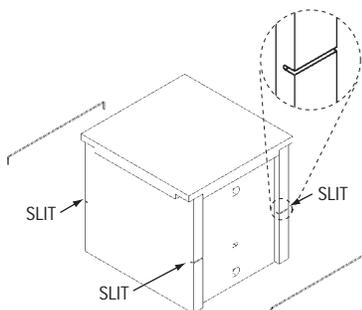
**Step 4:**

Place the two assemblies around the pump and align the cut-out with piping. Ensure that the Sound Shield sits firmly on the floor to maximize sound reduction.



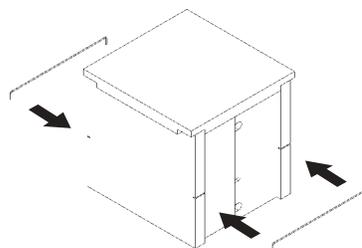
**Step 5:**

Simply push top onto the sides. This is a press-fit, which in most applications will stay in place. If your application requires additional security, a few self-tapping, coarse screws can be used (user supplied).



**Step 6:**

Cut two 1/2" deep slits on each side panel as shown. It is best if these are located towards the bottom but still be between the piping.



**Step 7:**

Push retaining rods into slits. Proper installation of the retaining rods is important to ensure maximum reduction of sound.



**Final Assembly:**

## SECTION 5

# WILDEN SOUND SHIELD™ - PERFORMANCE

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To illustrate the effectiveness of the Sound Shield™, Wilden® tested a few different pump sizes with and without the Sound Shield™ fitted around a pump. These results are shown in the tables below. The sound levels recorded in these tables were obtained using a sound level meter located one meter from the pump and one meter from the floor. To further ensure accuracy, readings were taken in a sound proof room. Actual results will vary depending upon pump size, materials of construction, application parameters, and site location.

### **P1/PPPP/TF/TF/KTV** 13 mm (½") plastic with Teflon® elastomers

PRESSURE (PSIG) (AIR INLET/DISCHARGE HEAD)	SOUND LEVEL IN dBA WITHOUT SOUND SHIELD™	SOUND LEVEL IN dBA WITH SOUND SHIELD™
100 / 0	96.9	74.2
100 / 50	94.7	72.5
80 / 30	86.5	71.3
40 / 20	81.7	66.2

### **P2/APPP/BN/BN/ABN** 25 mm (1") metal with Buna-N elastomers

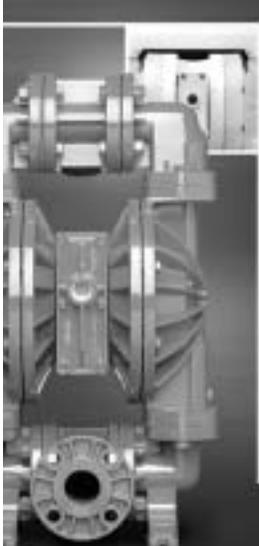
PRESSURE (PSIG) (AIR INLET/DISCHARGE HEAD)	SOUND LEVEL IN dBA WITHOUT SOUND SHIELD™	SOUND LEVEL IN dBA WITH SOUND SHIELD™
100 / 0	95.2	81.0
100 / 50	92.9	79.7
80 / 30	90.8	77.9
40 / 20	81.9	70.8

### **P400/PPPP/TF/TF/KTV** 38 mm (1 ½") plastic with Teflon® elastomers

PRESSURE (PSIG) (AIR INLET/DISCHARGE HEAD)	SOUND LEVEL IN dBA WITHOUT SOUND SHIELD™	SOUND LEVEL IN dBA WITH SOUND SHIELD™
100 / 0	97.0	83.5
100 / 50	94.0	83.0
80 / 30	92.0	81.0
40 / 20	88.0	77.0

### **P15/SAAP/WF/WF/WF** 76 mm (3") metal with Wil-Flex™ elastomers

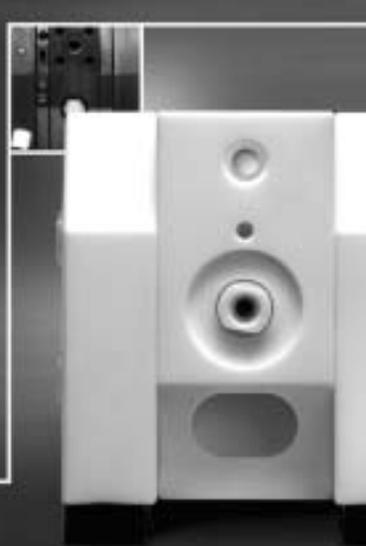
PRESSURE (PSIG) (AIR INLET/DISCHARGE HEAD)	SOUND LEVEL IN dBA WITHOUT SOUND SHIELD™	SOUND LEVEL IN dBA WITH SOUND SHIELD™
100 / 0	87.2	78.5
100 / 50	84.1	73.3
80 / 30	84.0	75.7
40 / 20	78.6	69.0



## ADVANCED™ S E R I E S

### *Advance Your Process*

Advanced wetted path designs  
Lower the cost of operation  
Maximize product containment  
Longer MTBF (Mean Time Between Failures)  
Enhanced internal clearance  
The result of advanced thought



## UNITEC™ S E R I E S

### *Enrich Your Process*

Simplicity of design  
Unique Technology  
Reliable, leak-free & quiet  
Validated & certified  
Intrinsically safe  
The result of unique thought



## SANIFLO™ S A N I T A R Y P U M P T E C H N O L O G Y

### *Refine Your Process*

Designed for sanitary applications  
Minimize product degradation  
Improved production yields  
Easy to inspect, clean & assemble  
Minimized water requirements  
The result of progressive thought



## ULTRAPURE™ T E F L O N P R O C E S S P U M P S

### *Optimize Your Process*

Validated & certified  
Clean room assembled  
Low particle count  
Compact, efficient & quiet  
Runs on clean-dry air  
The result of pure thought



## ORIGINAL™ S E R I E S

### *Simplify Your Process*

Long standing design simplicity  
Portable & submersible  
Variable connection options  
Fewest parts in industry  
Solutions since 1955  
The result of original thought

## ACCESSORIES

### *Maximize Your Process*

Electronic control & monitoring  
Level control & containment  
Pulsation dampening  
Drum unloading systems  
Complete system solutions  
The result of innovative thought



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