

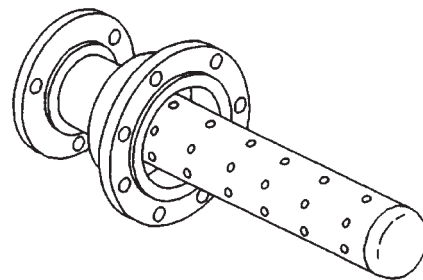
# ACOUSTIC DIFFUSERS

## Applications

The Series S Acoustic Diffuser is designed to reduce pressure reducing valve noise. The diffuser breaks up normal exit turbulence of the steam flow using an engineered orifice pattern in a pipe nozzle, inserted on the downstream side of a pressure reducing valve. Noise reduction of 10 to 15 dBA can be achieved three feet after the pressure reducing valve. (*Consult factory for a different point of measurement.*)

## Construction

Diffusers are designed to ASME Code, Section VIII, Division 1 but are not hydro-tested or code stamped. The flange bolts straddle common centerlines. The nozzles have been designed without any external piping loads taken into account. All external finish is power tool cleaned, then one coat of standard rust inhibitor primer is applied.



Series S Acoustic Diffuser

PILOT OPERATED REGULATORS

**Selection Process #1** – Find diffuser model number by the inlet pressure to the pressure reducing valve and steam capacity required.

Steam Capacity (thousands of lbs/hr)	Valve Inlet Pressure (psig)															
	15	20	25	30	40	50	60	75	90	100	125	150	175	200	225	250
<1	S-1	S-1	S-1	S-1	S-1	S-1	S-1	S-1	S-1	S-1	S-1	S-1	S-1	S-1	S-1	S-1
1	S-1	S-1	S-1	S-1	S-1	S-1	S-1	S-1	S-1	S-1	S-1	S-1	S-1	S-1	S-1	S-1
1.5	S-3	S-3	S-3	S-3	S-3	S-3	S-3	S-3	S-3	S-3	S-3	S-3	S-3	S-3	S-3	S-3
2	S-4	S-4	S-4	S-4	S-4	S-4	S-4	S-4	S-4	S-4	S-4	S-4	S-4	S-4	S-4	S-4
3	S-4	S-4	S-4	S-4	S-4	S-5	S-5	S-5	S-5	S-5	S-5	S-5	S-5	S-5	S-5	S-5
4	S-5	S-5	S-5	S-5	S-5	S-5	S-5	S-5	S-5	S-5	S-5	S-5	S-5	S-5	S-5	S-5
6	S-6	S-6	S-6	S-6	S-6	S-6	S-6	S-6	S-6	S-6	S-6	S-6	S-6	S-6	S-6	S-6
8	S-8	S-8	S-8	S-8	S-8	S-8	S-8	S-8	S-8	S-8	S-8	S-8	S-8	S-8	S-8	S-8
10	S-8	S-8	S-8	S-8	S-8	S-8	S-8	S-8	S-8	S-8	S-8	S-8	S-8	S-8	S-8	S-8
12		S-8	S-8	S-8	S-8	S-8	S-8	S-8	S-8	S-8	S-10	S-10	S-10	S-10	S-10	S-10
15		S-10	S-10	S-10	S-10	S-10	S-10	S-10	S-10	S-10	S-10	S-10	S-10	S-10	S-10	S-10
18			S-10	S-10	S-10	S-10	S-10	S-10	S-12	S-12	S-12	S-12	S-12	S-12	S-12	S-12
20					S-12	S-12	S-12	S-12	S-12	S-12	S-12	S-12	S-12	S-12	S-12	S-12
25						S-12	S-12	S-12	S-12	S-12	S-12	S-12	S-12	S-12	S-12	S-12
30							S-14	S-14	S-14	S-14	S-14	S-14	S-14	S-14	S-14	S-14
35								S-14	S-14	S-14	S-14	S-14	S-14	S-14	S-14	S-14
40									S-16	S-16	S-16	S-16	S-16	S-16	S-16	S-16
50									S-18	S-18	S-18	S-18	S-18	S-18	S-18	S-18
75											S-18	S-20	S-20	S-20	S-20	S-20
100														S-24	S-24	S-24
110																S-24

Watson McDaniel reserves the right to change the designs and/or materials of its products without notice



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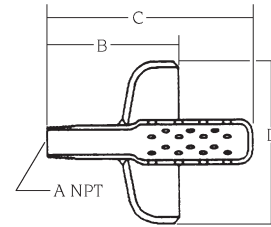


ASME Sect VIII Div I  
**PR-580-1**

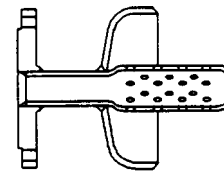
# Acoustic Diffusers Threads & Flanges

Selection Process #2 – Find selected model number to obtain thread and flange sizes.

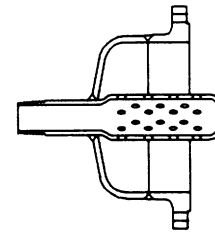
Model	INLET		OUTLET*	NPT x Weld Dimensions		
	A – NPT	150-lb or 300-lb Flange		B	C	D
S-1	1/2"		2"	5 1/2"	10 1/2"	2 3/8"
S-1	3/4"		2"	5 1/2"	10 1/2"	2 3/8"
S-1	1"		2"	5 1/2"	10 1/2"	2 3/8"
S-3	1/2"		2"	5 1/2"	13 1/2"	2 3/8"
S-3	3/4"		2"	5 1/2"	13 1/2"	2 3/8"
S-3	1"		2"	5 1/2"	13 1/2"	2 3/8"
S-4	3/4"		4"	6 1/2"	13 1/2"	4 1/2"
S-4	1"		4"	6 1/2"	13 1/2"	4 1/2"
S-4	1 1/4"		4"	6 1/2"	13 1/2"	4 1/2"
S-4	1 1/2"		4"	6 1/2"	13 1/2"	4 1/2"
S-4	2"		4"	6 1/2"	13 1/2"	4 1/2"
S-5	3/4"		4"	6 1/2"	16 1/2"	4 1/2"
S-5	1"		4"	6 1/2"	16 1/2"	4 1/2"
S-5	1 1/4"		4"	6 1/2"	16 1/2"	4 1/2"
S-5	1 1/2"		4"	6 1/2"	16 1/2"	4 1/2"
S-5	2"		4"	6 1/2"	16 1/2"	4 1/2"
S-5	2 1/2"	2 1/2"	4"	6 1/2"	16 1/2"	4 1/2"
S-6	1 1/4"		6"	8"	14"	6 5/8"
S-6	1 1/2"		6"	8"	14"	6 5/8"
S-6	2"		6"	8"	14"	6 5/8"
S-6	2 1/2"	2 1/2"	6"	8"	14"	6 5/8"
S-6	3"	3"	6"	8"	14"	6 5/8"
S-8	1 1/2"		8"	10"	17"	8 5/8"
S-8	2"		8"	10"	17"	8 5/8"
S-8	2 1/2"	2 1/2"	8"	10"	17"	8 5/8"
S-8	3"	3"	8"	10"	17"	8 5/8"
S-8	4"	4"	8"	10"	17"	8 5/8"
S-10	2"		12"	12"	14"	12 3/4"
S-10	2 1/2"	2 1/2"	12"	12"	14"	12 3/4"
S-10	3"	3"	12"	12"	14"	12 3/4"
S-10	4"	4"	12"	12"	14"	12 3/4"
S-10	6"	6"	12"	12"	14"	12 3/4"
S-12	2 1/2"	2 1/2"	12"	12"	21"	12 3/4"
S-12	3"	3"	12"	12"	21"	12 3/4"
S-12	4"	4"	12"	12"	21"	12 3/4"
S-12	6"	6"	12"	12"	21"	12 3/4"
S-14	3"	3"	14"	12"	28"	12 3/4"
S-14	4"	4"	14"	12"	28"	12 3/4"
S-14	6"	6"	14"	12"	28"	12 3/4"
S-16	4"	4"	16"	12"	24"	16"
S-16	6"	6"	16"	12"	24"	16"
S-18	4"	4"	16"	12"	31"	16"
S-18	6"	6"	16"	12"	31"	16"
S-20	6"	6"	20"	12"	26"	20"
S-24	6"	6"	20"	12"	32"	20"



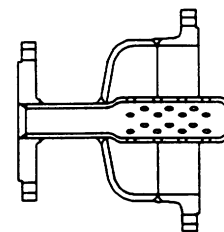
NPT x Weld



Flanged x Weld



NPT x Flanged



Flanged x Flanged

\*Outlet sizes in chart are based on a steam pressure of 15 psig. If outlet pressure is higher, smaller outlet sizes can be used. Please consult with factory for those selections.