

Hi-Flo Jet Diffusers

RWH / RWH-P

Introduction

The Waterloo RWH diffusers have been designed to handle high air flow rates and provide relatively long throws which makes them particularly suitable for conditioning of large spaces such as halls, auditoria, terminal buildings, warehouses and factories.

The diffusers are versatile in application by virtue of the novel "reversible and rotatable" core design which allows the air jet to be adjusted for both pattern and deflection. Units may be mounted individually or in banks, in bulkhead arrangements or directly into stub ducts.

The diffusers are constructed from aluminium spinnings supported on a studding and spacer assembly. The core may be rotated through 180° to expose either a straight or diffused core assembly. In addition, the diffuser spigot may be rotated within the mounting plate (if supplied) to enable a full 360° adjustment, by releasing the tension holts.

Product Description

RWH Complete diffuser assembly including diffuser core, spigot and mounting plate (wall or ceiling mounting).

RWH-P Diffuser core and spigot only (suitable for mounting onto bulkheads or stub ducts thus eliminating the large mounting plate)

- Simple and effective air diffusion for large spaces
- Long throw characteristics
- High air handling capacity
- Easy to install and adjust
- Reversible core to produce long throw jet or short throw diffuser patterns
- Core rotatable through 360° for "eyeball" jet direction
- Jet may be deflected off axis by up to 15°
- Available in four sizes
- Multiple outlet arrangements

Finished

PPG9010 (RAL 9010 Gloss - 80% Gloss White) PPM9010 (RAL 9010 Matt - 20% Gloss White) PPM9006 (RAL 9006 Matt - 30% Gloss Silver) Performance Table

Other colours available on request

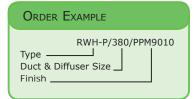
Selection Criteria

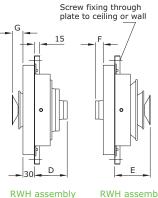
All data is for the diffuser set for 0° deflection and operating under isothermal conditions in either "jet" or "diffuser" pattern. Correction factors for 15° deflection are given below. When diffusers are mounted on a common plate/plenum the noise level and throw will increase.

Correction factors are given in the table below. Noise level = Peak level on dBA curves based on SWL ref 10⁻¹² W less 8dB room absorption. Throw = Forward distance to the point where the jet velocity has retarded to a terminal velocity of 0.5 m/s.

P_s = Static pressure loss (Pa).

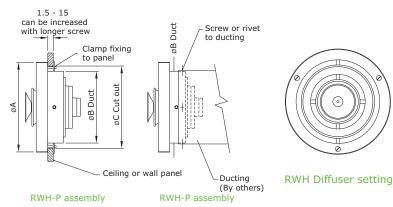
weights		
Size	RWH	RWH-P
200	1.6 kg	1.2 kg
250	2.5 kg	1.8 kg
315	4.2 kg	3.1 kg
380	5.3 kg	4.1 ka











Nom. size	ØΑ	ØВ	ØС	D	E	F	G
200	247	198	235	92	98	22	28
250	312	248	285	104	116	34	34
315	377	313	350	124	154	47	68
380	447	378	415	159	155	80	65

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	RWH							Air Vol	ume					
		m³/h	360	450	540	720	900	1080	1440	1800	2160	2880	3600	4320
R'	WH-P	l/s	100	125	150	200	250	300	400	500	600	800	1000	1200
		T _m	5.7	7.0	8.2	11.5	15.0	17.0						
	Jet	L _w	<20	23	29	37	43	49						
200		Ps	18	28	40	65	110	160						
Dia		T _m	2.8	3.5	4.1	5.8	7.5	8.5						
	Diffuser	L _w	<20	<20	25	36	44	51						
		Ps	18	28	40	65	110	160						
		T _m	4.0	5.1	6.0	7.2	10	12.0	16.5					
	Jet	L _w	<20	22	27	35	41	46	53					
250		P _s	6	10	14	21	31	48	80					
Dia		T _m	2.0	2.6	3.0	3.6	5.0	6.0	8.3					
	Diffuser	L _w	<20	<20	<20	29	37	43	54					
		P_s	6	10	14	21	31	48	80					
		T _m			5.0	6.8	8.5	9.8	13.0	16.0	20.0	26.0		
	Jet	L _w			<20	<20	24	29	38	44	49	58		
315		P_s			4	8	13	18	30	45	60	105		
Dia		T _m			2.5	3.4	4.3	4.9	6.5	8.0	10.0	13.0		
	Diffuser	L _w			<20	<20	<20	25	36	44	51	62		
		Ps			4	8	13	18	30	45	60	105		
		T _m				5.4	6.8	8.0	10.5	14.0	16.4	22.0	28.0	35.0
	Jet	L _w				<20	<20	<20	26	33	38	46	53	58
380		Ps				3	5	7	12	20	30	50	70	100
Dia		T _m				2.7	3.4	4.0	5.3	7.0	8.2	11.0	14.0	17.5
	Diffuser	L _w				<20	<20	<20	<20	28	35	46	55	62
		Ps				3	5	7	12	20	30	50	70	100



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RWH-P Jet Setting

The above data is based on isothermal supply air conditions. To estimate maximum vertical projection under warming conditions multiply "jet" throw data above by the relevant factor.



RWH Diffuser Setting



RWH Jet Setting

SWL Spectrum Correction Data By Octaves								
Frequency (Hz)	125	250	500	1K	2K	4K		
Diffuser / 0 °	-1	+1	+3	+8	+7	0		
Diffuser / 15 °	0	+2	+4	+8	+7	+2		
Jet/ 0°	-3	-1	+3	+8	+6	+5		
Jet/ 15°	+1	+3	+4	+7	+6	+1		

Terminal Velocity Correction Factors							
Vt (m/s) 0.2 0.3 0.4 0.5 1.0 1.5							
Factor	2.5	1.7	1.25	1.0	0.5	0.3	

Multiple Unit Correction Factors								
No. of units	1	2	3	4				
dBA addition	0	+3	+5	+6				
Throw factor	1.0	1.37	1.86	2.06				

15° Core Setting Correction Factors						
	Jet	Diffuser				
dBA addition	+11dB	+4dB				
Pressure Loss Factor	1.25	1.25				

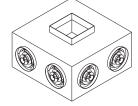
Heating Differential							
Size	5°C	10°C	20°C				
RWH-200	0.95	0.90	0.65				
RWH-250	0.90	0.85	0.60				
RWH-315	0.80	0.75	0.55				
RWH-380	0.70	0.65	0.45				

To estimate vertical projection under cooling conditions multiply throw (to relevant terminal velocity) by factors as follows 10°C cooling x 1.15 5°C cooling x 1.10

Plenums



Full details of standard plenums are available from Head Office. Typical standard plenum arrangement with optional circular or rectangular connections



Special designs are available to suit nonstandard applications, for example, rooftop air handling units and high level ducting

Mounting Plates

1- Element

Size	А	B1	ØD
Ø 200	299	299	Ø 235
Ø 250	349	349	Ø 285
Ø 315	399	399	Ø 350
Ø 380	449	449	Ø 415

2- Element

Size	А	B2	С	ØD
Ø 200	299	598	299	Ø 235
Ø 250	349	698	349	Ø 285
Ø 315	399	798	399	Ø 350
Ø 380	449	898	499	Ø 415

3- Element

Size	А	В3	С	ØD
Ø 200	299	897	299	Ø 235
Ø 250	349	1047	349	Ø 285
Ø 315	399	1197	399	Ø 350
Ø 380	449	1347	499	Ø 415

4- Element

Size	А	B4	С	ØD
Ø 200	299	1196	299	Ø 235
Ø 250	349	1396	349	Ø 285
Ø 315	399	1596	399	Ø 350
Ø 380	449	1796	499	Ø 415

