WATERLOO
A Swegon Group Company

Hi-Flo Jet Diffusers

RWH Complete diffuser assembly

RWH-P Diffuser core and spigot only

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 bolts.

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)

Features

- 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

Finishes

PPG9010 (RAL 9010 Gloss - 80% Gloss White)

PPM9010 (RAL 9010 Matt - 20% Gloss White)

PPM9006 (RAL 9006 Matt - 30% Gloss Silver)

Other colours available on request

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 kg

Sizes

Nom. size	ØA	ØB	ØC	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

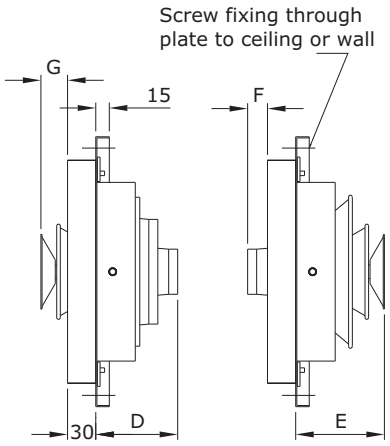
Order Example

RWH-P/380dia/9010-Matt

Type

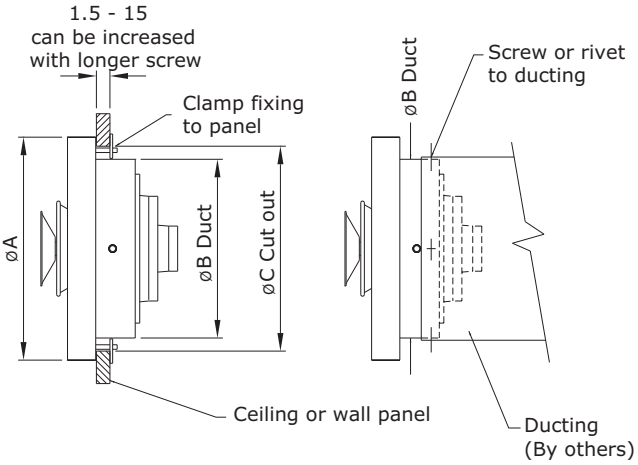
Duct & Diffuser Size

Finish



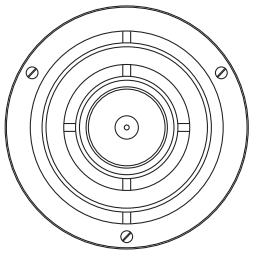
RWH assembly Diffuser setting

RWH assembly Jet setting



RWH-P assembly

RWH-P assembly



RWH Diffuser setting

Hi-Flo Jet Diffusers

RWH / RWH-P

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.

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

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.

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).

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

Performance Table

RWH / RWH-P		Air Volume											
		m^3/h	360	450	540	720	900	1080	1440	1800	2160	2880	3600	4320
		l/s	100	125	150	200	250	300	400	500	600	800	1000	1200
200 Dia	Jet	T_m	5.7	7.0	8.2	11.5	15.0	17.0						
		L_w	<20	23	29	37	43	49						
		P_s	18	28	40	65	110	160						
	Diffuser	T_m	2.8	3.5	4.1	5.8	7.5	8.5						
		L_w	<20	<20	25	36	44	51						
		P_s	18	28	40	65	110	160						
250 Dia	Jet	T_m	4.0	5.1	6.0	7.2	10	12.0	16.5					
		L_w	<20	22	27	35	41	46	53					
		P_s	6	10	14	21	31	48	80					
	Diffuser	T_m	2.0	2.6	3.0	3.6	5.0	6.0	8.3					
		L_w	<20	<20	<20	29	37	43	54					
		P_s	6	10	14	21	31	48	80					
315 Dia	Jet	T_m			5.0	6.8	8.5	9.8	13.0	16.0	20.0	26.0		
		L_w			<20	<20	24	29	38	44	49	58		
		P_s			4	8	13	18	30	45	60	105		
	Diffuser	T_m			2.5	3.4	4.3	4.9	6.5	8.0	10.0	13.0		
		L_w			<20	<20	<20	25	36	44	51	62		
		P_s			4	8	13	18	30	45	60	105		
380 Dia	Jet	T_m				5.4	6.8	8.0	10.5	14.0	16.4	22.0	28.0	35.0
		L_w				<20	<20	<20	26	33	38	46	53	58
		P_s				3	5	7	12	20	30	50	70	100
	Diffuser	T_m				2.7	3.4	4.0	5.3	7.0	8.2	11.0	14.0	17.5
		L_w				<20	<20	<20	<20	28	35	46	55	62
		P_s				3	5	7	12	20	30	50	70	100

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RWH-P Diffuser Setting

RWH-P Jet Setting

RWH Diffuser Setting

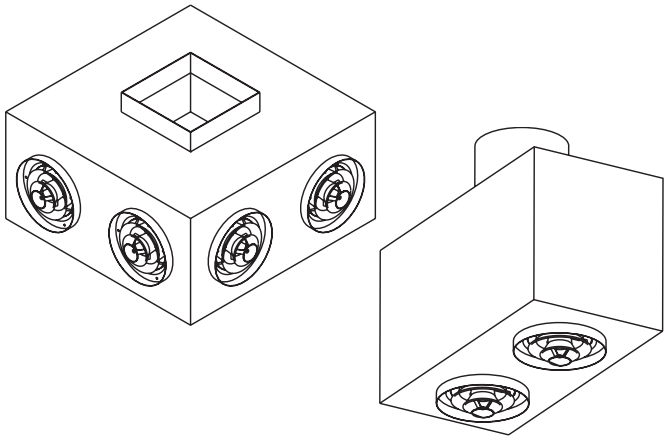
RWH Jet Setting

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 non- standard applications, for example, rooftop air handling units and high level ducting

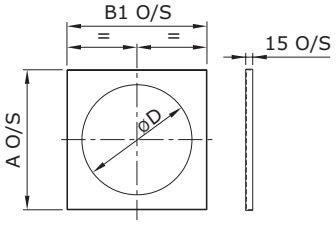
Note: The connection between the diffuser and plenum is adequately sealed for most installations, although secondary additional sealing may be required at the discretion of the installers, if the leakage rate required is particularly low.



Mounting Plates

1- Element

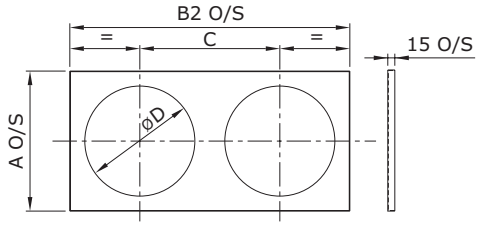
Size	A	B1	Ø D
Ø 200	299	299	Ø 235
Ø 250	349	349	Ø 285
Ø 315	399	399	Ø 350
Ø 380	499	499	Ø 415



1 Element

2- Element

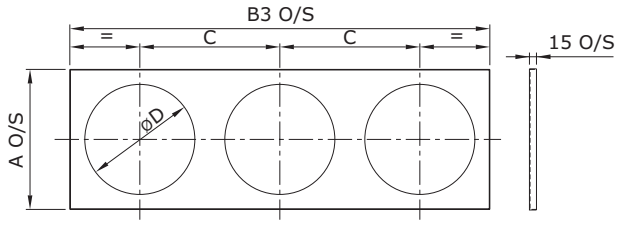
Size	A	B2	C	Ø D
Ø 200	299	598	299	Ø 235
Ø 250	349	698	349	Ø 285
Ø 315	399	798	399	Ø 350
Ø 380	499	998	499	Ø 415



2 Elements

3- Element

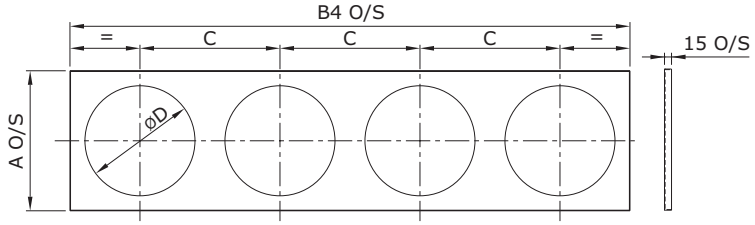
Size	A	B3	C	Ø D
Ø 200	299	897	299	Ø 235
Ø 250	349	1047	349	Ø 285
Ø 315	399	1197	399	Ø 350
Ø 380	499	1497	499	Ø 415



3 Elements

4- Element

Size	A	B4	C	Ø D
Ø 200	299	1196	299	Ø 235
Ø 250	349	1396	349	Ø 285
Ø 315	399	1596	399	Ø 350
Ø 380	499	1996	499	Ø 415



4 Elements

Waterloo Product Range

GRILLES

A complete range of products suitable for all wall, ceiling and floor applications. Most grilles are made from aluminium and have a range of fixed or moveable blades designed to give performance whilst remaining aesthetically pleasing to the eye. Grilles are made to customer specified sizes and colours (PPM/G); standard colour PPM9010 (20% Gloss White). The range is complemented by the Aircell range of polymer Grilles.

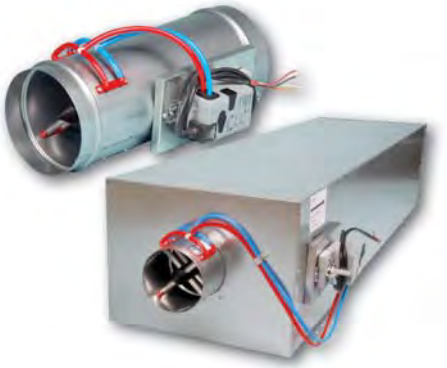
DIFFUSERS

Designed to be installed in various ceiling systems, we have a complete range to suit both performance and aesthetical requirements. Most diffusers are made from aluminium and can be ordered with or without plenum boxes for easy duct work. Diffusers can be ordered in customer specified colours (PPM/G); standard colour is PPM 9010 (20% Gloss White). This range is complemented by the Aircell range of polymer Diffusers.

ACTIVE AND PASSIVE CHILLED BEAMS

The finest quality range of high output active beams, used for ventilated heating and cooling applications. These units have 4 pipe coils to allow heating and cooling circuits to run simultaneously, giving constant and responsive control. The design allows a large optimum capacity and also allows the customer to specify the nozzle type and pitch for individual circumstances.

Active beams are made from steel to a large range of customer specified sizes and as such are suitable for various different ceiling systems. Standard finish is PPM 9010, however other (PPM/G) colours are available on request.



AIR VOLUME CONTROL DAMPERS

Pressure independent Variable Air Volume and Constant Air Volume dampers made from zintec plate. Most volume dampers are regulated with an electronic motor and sensors and are calibrated to customer specifications before delivery.

The Constant Air Volume damper requires no power source as it is controlled via a mechanical device and calibrated before delivery. All volume dampers can be ordered with a single or double (insulation) skin.

EXTERNAL LOUVRES

A quality range of products for external wall applications. Made from aluminium, with birdscreen or insect screen options. All louvres are made to customer specified sizes and (PPM/G) colours; standard colour is PPM 9006.

DISPLACEMENT

A full range of recessed, semi-recessed, floor, wall and corner units providing high ventilation efficiency and excellent comfort. The very low pressure involved also offer quiet installations. Displacement units are available as wall or floor mounted, or indeed integrated within the architectural design.

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Waterloo declare that, at the time of print, all products are in accordance with relevant directives, as identified by HEVAC and other European Organisations and will display the CE Marking where required.

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