OSH

Swirl Diffuser with
Adjustable Blades

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DOĞU

OSH

FEATURES

- Engineered to provide uniform air distribution within the occupied zone of high-ceiling spaces.
- Ideal for use in conference halls, sports facilities, atriums, hypermarkets, and industrial production areas.
- Equipped with an adjustable blade mechanism for optimized air throw in both heating and cooling modes.
- Decorative design that blends seamlessly with architectural interiors.
- Suitable for ceiling heights of 3.80 meters or higher.

OPERATION

OSH Swirl Diffuser with Adjustable Blades is designed to redirect supply air and modify the throw pattern in response to varying thermal loads within the space during heating and cooling modes.

The blade positions of the OSH diffuser can be adjusted for either vertical or horizontal discharge. This flexibility allows supply air to enter the occupied zone in the most effective manner depending on the operating mode—heating or cooling.

By doing so, the diffuser ensures optimal air distribution and meets comfort criteria at the highest level.

MATERIAL AND SURFACE COATING

OSH Swirl Diffuser with Adjustable Blades consists of three main components: the outer flange, blade assembly, and connection neck.

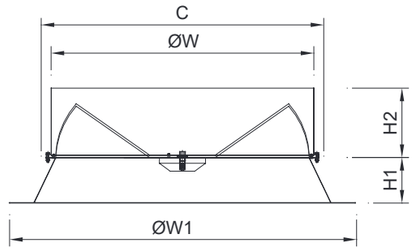
The outer flange is formed from aluminum sheet, while the other parts are manufactured from galvanized steel.

As standard, the product is coated with electrostatic powder paint in RAL 9010 and RAL 9016
Upon request, it can be painted in other RAL colors, or delivered in an uncoated raw finish for a metallic appearance.

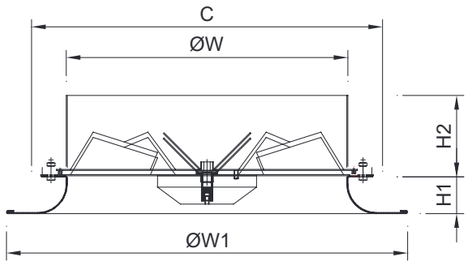
OPTIONAL FEATURES

Duct Connection Adapter:Used for connecting the swirl diffuser to circular air ducts.
Volume Control Damper: Allows adjustment of the airflow rate through the swirl diffuser.
Servo Motor:Enables electrical control of the diffuser blade positions.
Depending on automation requirements, the motor can be 24V or 230V, and configured as either on/off or modulating (proportional).

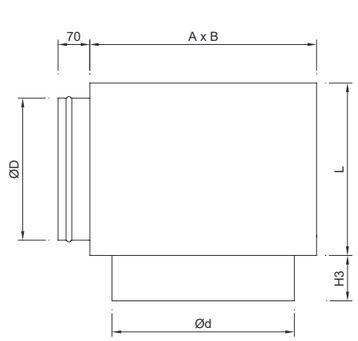
STANDARD DIMENSIONS

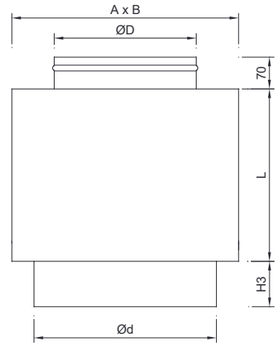


OSH-800



OSH-315-400-500-630





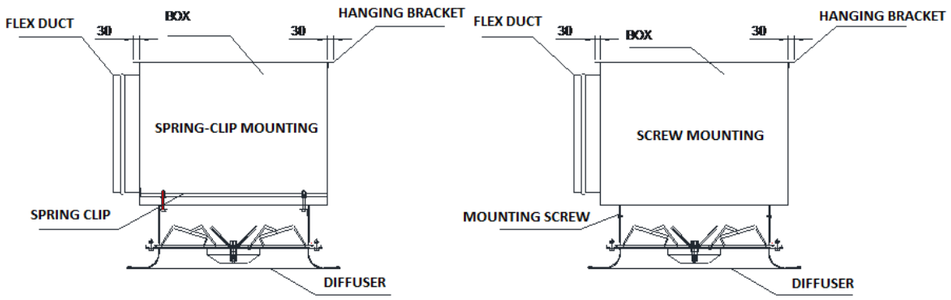
Dimesions	ØW [mm]	H1 [mm]	H2 [mm]	H3 [mm]	Ød [mm]	A [mm]	B [mm]	ØC [mm]	ØD [mm]	ØW1 [mm]	L [mm]
OSH-315	313	60	80	100	319	435	435	400	248	480	280
OSH-400	398	60	90	150	402	500	500	485	313	575	379
OSH-500	498	60	115	150	504	600	600	566	398	570	470
OSH-630	628	80	100	170	632	750	750	715	398	800	470
OSH-800	798	80	110	200	802	1000	1000	845	498	980	570

Table 1: Standard Dimensions

Note: Dimension C refers to the cut-off clearance that must be left in the wall for installation.

OSH

ASSEMBLY



Note: In strap mounting, the product is manufactured together with the plenum box. In screw mounting, it is also possible to order the product without the plenum box.

PERFORMANCE DATA

OSH	Aeff (m^2)	Flow Rate (m^3/h)	250	375	500	625	750	875	1000	1500	2000	2500	3000	3500	4000	5000	7500
Ø315	0,023	Vb(m/s)	0,9	1,3	1,8	2,2	2,7	3,1	3,6								
		P(Pa)	3	6	11	18	26	36	47								
		La(m)	2	4	5	7	9	11	13								
		N[dB(A)]	24	31	40	47	54	59	69								
Ø400	0,031	Vb(m/s)			1,1	1,4	1,7	1,9	2,2	3,3							
		P(Pa)			4	7	10	13	18	40							
		La(m)			4	5	7	8	10	16							
		N[dB(A)]			22	27	32	36	40	54							
Ø500	0,049	Vb(m/s)				0,9	1,1	1,2	1,4	2,1	2,8	3,5					
		P(Pa)				3	4	5	7	16	29	45					
		La(m)				3	4	5	5	9	13	15					
		N[dB(A)]				22	25	32	30	49	56	65					
Ø630	0,078	Vb(m/s)							0,9	1,3	1,8	2,2	2,7	3,1			
		P(Pa)							3	6	12	17	27	35			
		La(m)							5	9	12	17	21	25			
		N[dB(A)]							23	34	42	48	54	58			
Ø800	0,111	Vb(m/s)								0,8	1,1	1,4	1,7	1,9	2,2	2,8	4,1
		P(Pa)								2	4	7	10	13	17	28	64
		La(m)								6	9	12	15	19	22	26	41
		N[dB(A)]								26	34	41	47	53	58	63	76

Table 2: Performance Data
Performance data was measured with an air temperature difference ΔT of 0°C and the diffuser blades positioned vertically.

Throw Distance Multiplier Based on Blade Position

Horizontal Position | 45° Position (Isothermal) | Vertical Position (Heating Mode)

Blade Position	Pressure Multipler	Sound Multipler	Throw Distance Multipler
Horizontal Position	2	1.6	0.4
45° Position (Isothermal)	1.5	1.4	0.7
Vertical Position (Heating Mode)	1	1	1

Table 3: Throw Distance by Blade Position

Example:
Ø400 OSH
Flow Rate: 1000 m^3/h
Pressure Loss: 18 Pa
Throw Distance: 10 m
Sound Pressure Level: 40 dBA

Pressure Drop
Blade Position: Horizontal
(Blade Multiplier = 2)
Corrected Pressure: 18 x 2 = 36 Pa

Throw Distance
Blade Position: Horizontal (Blade Multiplier = 0.4)
Air Temperature: ΔT = +4 (Temperature Multiplier =0.88)
Corrected Shooting Distance: 10 x 0.4 x 0.88 = 3.52 m

Sound Pressure Level
Blade Position: Horizontal (Blade Multiplier = 1.6)
Corrected Sound Pressure Level: 40 x 1.6 = 64 dBA

Throw Distance Multiplier Based on Air Temperature

Heating Mode (ΔT)	4	6	8	10	12
Throw Distance Multiplier	0.88	0.82	0.81	0.71	0.64
Cooling Mode (ΔT)	4	6	8	10	12
Throw Distance Multiplier	1.11	1.17	1.23	1.29	1.35

Table 4: Throw Distance Based on Air Temperature

ACTUATORS

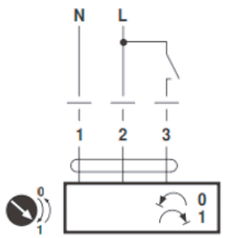
The OSH diffuser is manually adjustable as standard. Instead of mechanical adjustment via a hand lever, an optional actuator can be used. Servo motor actuators are available with both on/off and modulating (proportional) control options.

	Order Code	Model Name / Description	Control Type	Voltage	Torque	Switch Option
On/Off Actuators	S66	LM230A	1 wire control (On/Off) 2 wire control (3-point / Floating Control)	100 – 240 V AC	5Nm	-
	S59	LM24A	1 wire control (On/Off) 2 wire control (3-point / Floating Control)	24 V AC/DC	5Nm	-
	S44	LM230A	1 wire control (On/Off) 2 wire control (3-point / Floating Control)	100 – 240 V AC	5Nm	S2A
	S20	LM24A	1 wire control (On/Off) 2 wire control (3-point / Floating Control)	24 V AC/DC	5Nm	S2A
Modulating Actuators	S61	LM24A-SR	2 – 10 V DC	24 V AC/DC	5Nm	-
	S92	LM230A-SR	2 – 10 V DC	100 – 240 V AC	5Nm	-

Table 5: Actuator Selection Table

ACTUATOR WIRING DIAGRAMS

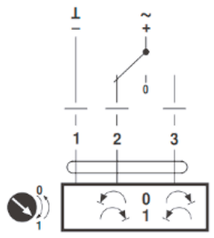
1 Wire Control AC 230V (On/Off)



Wire colors:

1 = blue
2 = brown
3 = white

2 Wire Control AC/DC 24V (3-Point Control)



Wire colors:

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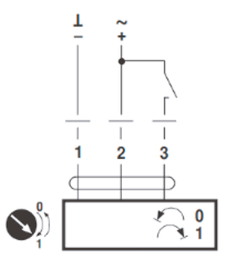
1 Wire Control AC/DC 24V (On/Off)



Wire colors:

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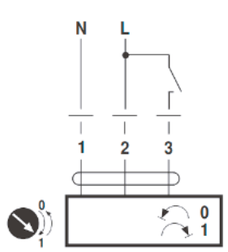
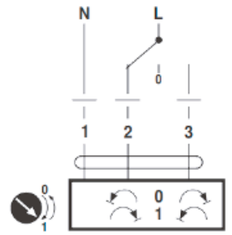
2–10 V DC Modulating (AC/DC 24 V)



Wire colors:

1 = blue
2 = brown
3 = white

2 Wire Control AC 230V (3 - Point Control)



Wire colors:

1 = blue
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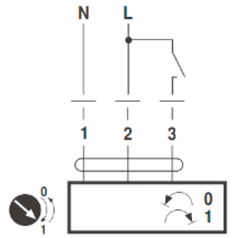
3 = white

2–10 V DC Modulating Control (AC 230 V)



Wire colors:

1 = blue
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3 = white

PRODUCT ORDER CODES

You can place your orders according to the coding format below.

OSH_D.ALM. < A > . < B > . < C > . < D >

A	**Mounting Type**	
	VD	Screw Mounting
	KP	Strap Mounting
	MD	Concealed Mounting (No Drilling Required)
B	**Mechanism**	
	MEK	Mechanical
	MBU	Compatible with Actuator Connection
C	**Product Diameter [mm]**	315 - 400 - 500 - 630 - 800
D	**Paint**	
	00	Unpainted
	S1	Standard Painted – RAL 9010
	S2	Standard Painted – RAL 9016
	XX	Custom Painted / Special RAL Color Available

Sample Coding: OSH_D.ALM.VD.MEK.400.S1

SUSTAINABILITY SOLUTIONS AT DOGU HVAC

3 GOOD HEALTH and WELL- BEING

We offer supplementary health insurance to our employees to promote healthy living. We also plan health-focused initiatives such as smoking cessation programs.

4 QUALITY EDUCATION

Through the DOGU HVAC CLUB project, we organize technical tours of our factory, participate in career events, and provide sponsorships to support the skill development of university and technical high school students.

5 GENDER EQUALITY

In 2024, we increased female employment in our administrative and production departments. This step aims to contribute to gender equality by offering a workplace with equal rights for all employees.

7 AFFORDABLE and CLEAN ENERGY

Our R&D center's 2,500 m² solar panels and 0.6 MW annual capacity solar energy systems reduce our carbon footprint. We generate our electricity, ensuring a reliable, sustainable, and accessible clean energy source.

8 DECENT WORK and ECONOMIC GROWTH

Decent Work and Economic Growth: As an employer brand, our primary goal is to protect our employees' rights and create a workplace founded on equality and justice for all employees.

11 SUSTAINABLE CITIES and COMMUNITIES

We enhance indoor air quality with environmentally friendly and energy-efficient products, ensuring adherence to European standards.

12 RESPONSIBLE CONSUMPTION and PRODUCTION

We minimize waste through lean production policies and emphasize recycling, simultaneously increasing efficiency in our production processes.

13 CLIMATE ACTION

We support environmental protection through our eco-friendly, sustainable, energy-efficient product lines and R&D efforts focused on reducing waste that could contribute to climate change.

16 PEACE, JUSTICE and STRONG INSTITIONS

We value transparency and accountability, working with associations like ISKAV to prevent corruption and unfair competition, aligning with sectoral ethical values.

*"DOGU HVAC" reserves the right to introduce changes of parameters and sizes in the process of improvement of the devices.

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