

EQUIPMENT CO.,LTD.

HVAC

FOUNDATION

SUZHOU



FK-ZH Displacement air diffuser



創建[®] HVAC

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1.General description

FK-ZH series displacement flow diffuser are suitable for use in comfort areas ,e.g.theater,library,waiting room assesmbl rooms etc.

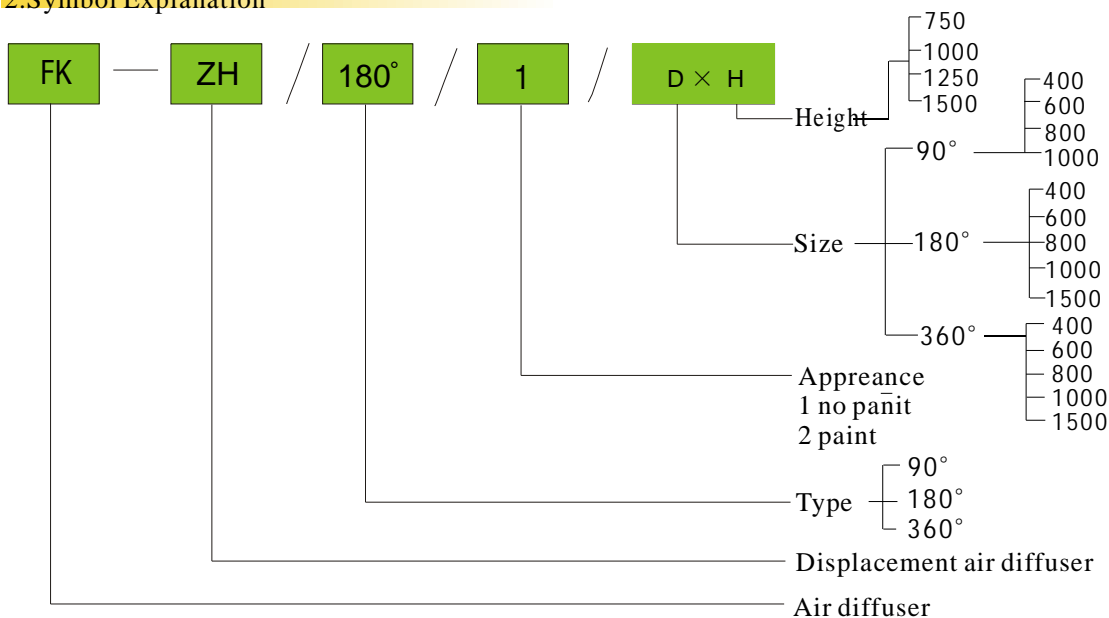
In contrast to the well-known principle of mixed air flow using ceiling diffuser or wall grilles,FK-ZH series replacement flow diffuser's air supply is from down of room to up , which is low discharge velocities ,non-second noise etc.

Depending on the level of activity of individuals in the area in use the supply air can have a temperature differential between 1°C and 6°C with respect to the room .

In this case ,fresh air enter into Occupied zone . the supply air spreads out over the floor and it is conveyed upwards by the convection currents from the people or heat sources. The supply air is therefore forced to find its way to the heat source from which the thermal load is to be removed .

At large halls use displacement flow ventilation , just need to achieve the requirement of humidity and temperature at occupied zone, it is better to dissipat the heating source at above and contamination directly with extract grill at high level , as that air conditioning is economic and hight quality air etc.

2.Symbol Explanation



Example: FK-ZH/180°/2/800/1000 means whose type is 180°, paint , neck size is 800 and height is 1000.

3.Characteristic

FK-ZH
Displacement air diffuser

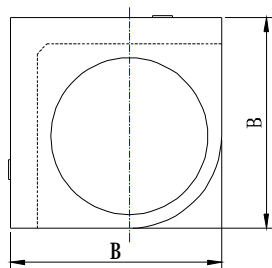
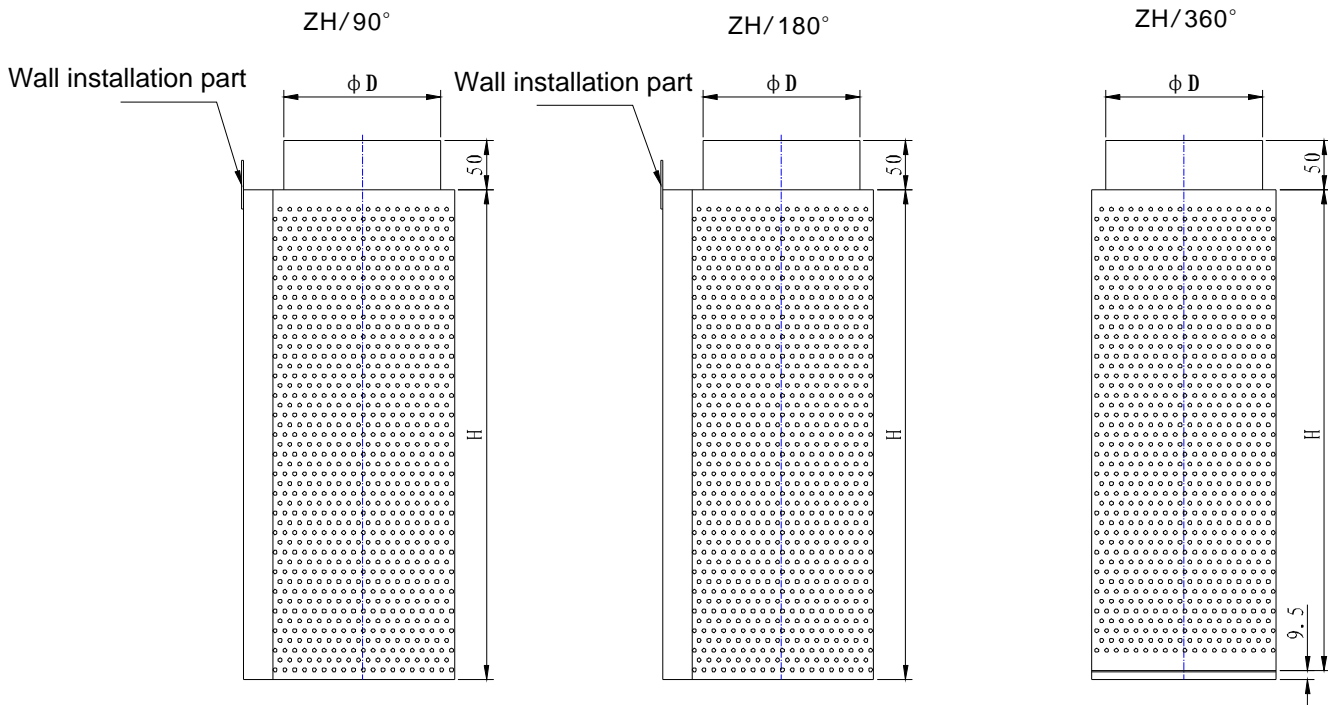


- (1) Displacement flow diffuser are available is a 90° construction for corner installation ,a 180° construction for wall installtion or a 360° construction for free-standing installation .They provide low-turbulence air supply with low discharge velocities , non-second noise etc.
- (2) Diffuser has a connection spigot to connect with air duct on the top to guarantee sealed and reliable when connect.
- (3) The diffuser plate are for air supply panel which is more than 45% holes in which are available filter net on face and interior for air spraying and filter .
- (4) It is easy to take down the air supply panel to clean and ventilation.

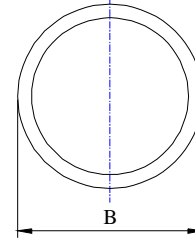
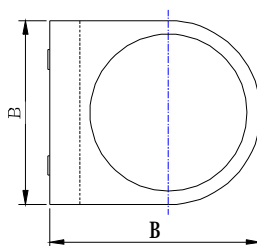
4. Material

Connection spigot and air supply plate are made of galvanization steel . There are air supply holes equally in the air supply plate .The surface is powder-coated RAL standard color .Around the air supply plate use non-woven at the surface.

5. Construction and size



ZH/90°



ZH/180°

φ D	B	D	H
400	500	398	750
600	700	598	1000
800	900	798	1250
1000	1100	998	1500

φ D	B	D	H
400	500	398	750
600	700	598	1000
800	900	798	1250
1000	1100	998	1500
1500	1600	1498	

ZH/360°

φ D	B	D	H
400	500	398	750
600	700	598	1000
800	900	798	1250
1000	1100	998	1500
1500	1600	1498	

Note: φ D is the neck size to connect with

6. Technical Parameter

H	90 °				
	D	400	600	800	1000
750	Air volume(m ³ /h)	710	1500	1950	2400
	Noise dB(A)	<25	<25	<25	<25
	Resistance(Pa)	21	23	26	28
1000	Air volume(m ³ /h)	785	1650	2150	2615
	Noise dB(A)	<25	<25	<25	<25
	Resistance(Pa)	25	28	30	32
1250	Air volume(m ³ /h)	825	1790	2260	2840
	Noise dB(A)	<25	<25	25	26
	Resistance(Pa)	27	29	31	33
1500	Air volume(m ³ /h)	900	1900	2440	3050
	Noise dB(A)	<25	<25	27	29
	Resistance(Pa)	29	31	33	35

H	180 °					
	D	400	600	800	1000	1500
750	Air volume(m ³ /h)	710	1500	1950	2400	3740
	Noise dB(A)	<25	<25	<25	<25	27
	Resistance(Pa)	24	29	30	32	36
1000	Air volume(m ³ /h)	785	1650	2150	2615	4135
	Noise dB(A)	<25	<25	<25	25	28
	Resistance(Pa)	26	31	32	34	38
1250	Air volume(m ³ /h)	825	1790	2260	2840	4310
	Noise dB(A)	<25	<25	25	27	30
	Resistance(Pa)	28	33	34	36	40
1500	Air volume(m ³ /h)	900	1900	2440	3050	4675
	Noise dB(A)	<25	<25	27	29	37
	Resistance(Pa)	30	35	36	38	42

H	360 °					
	D	400	600	800	1000	1500
750	Air volume(m ³ /h)	1580	2435	3285	4135	6585
	Noise dB(A)	<25	<25	<25	<25	<25
	Resistance(Pa)	26	30	31	33	37
1000	Air volume(m ³ /h)	1785	2705	3625	4565	7200
	Noise dB(A)	<25	<25	<25	<25	<25
	Resistance(Pa)	28	32	33	35	39
1250	Air volume(m ³ /h)	1920	2885	3855	4855	7625
	Noise dB(A)	25	27	29	31	33
	Resistance(Pa)	29	33	35	37	41
1500	Air volume(m ³ /h)	2055	3105	4150	5220	8280
	Noise dB(A)	27	29	31	33	36
	Resistance(Pa)	31	35	37	39	43

Effective air area of flow

Size	Calculate formula (m ²)
ZH/90°	0.5*π*B*H*0.455
ZH/180°	
ZH/360°	π*B*H*0.455

Effective throw

It is better to know the the diffuse information at each types of air for user to choose the size .

In order to choose , our formula from our experience for your reference as follows:

$$R_{0.2} = 0.55 * a * e^{1.84 * V_0}$$

In the formula :

$R_{0.2}$ Effective throw when end velocity is 0.2m/s

a is temperature difference correction

$$A = 0.475 + [0.238 + 0.0935(t_r - t_s)] * H$$

In the formula : t_r is air temperature in room °C; t_s temperature difference between supply and room air, °C

H is height from diffuser, in: m

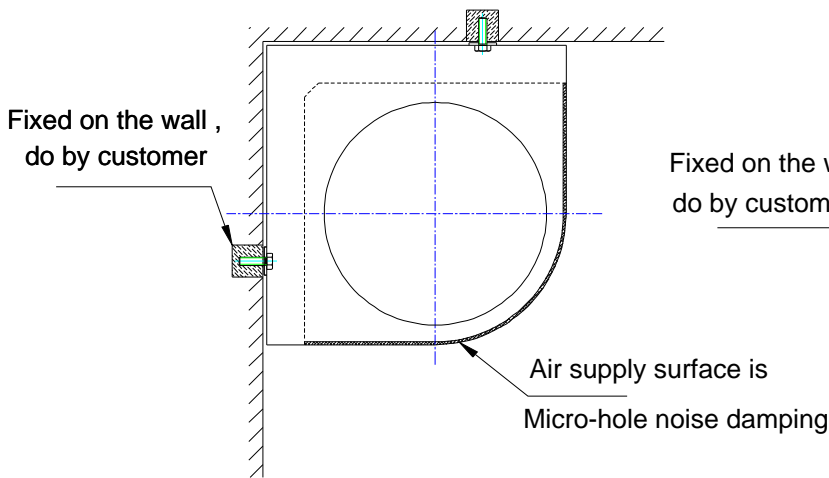
e is constant data , value is 2.718 V_0 is primary velocity at surface, in m/s

The above formula is for all of the size of displacement flow diffuser , when temperature difference between supply and room air is more than 6 ,the error is bigger .

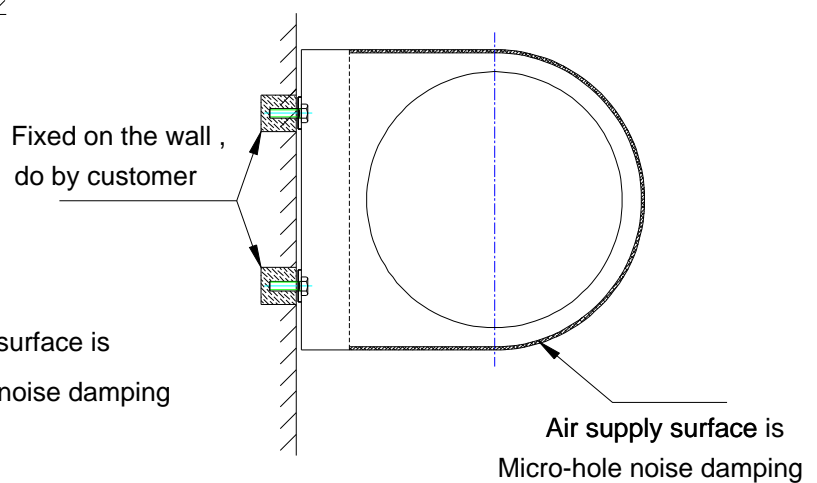
7. Installation

ZH series replacement flow diffuser have three construction, which can be suit for various places to adjust the room air . ZH/90° construction for 90° corner installation ,ZH/180° construction for wall free installtion , ZH/360° construction for free-standing installation .The top of diffuser is round connection spigot. According clients' requirement ,can supply lip seal , installation drawing for each construction as follows:

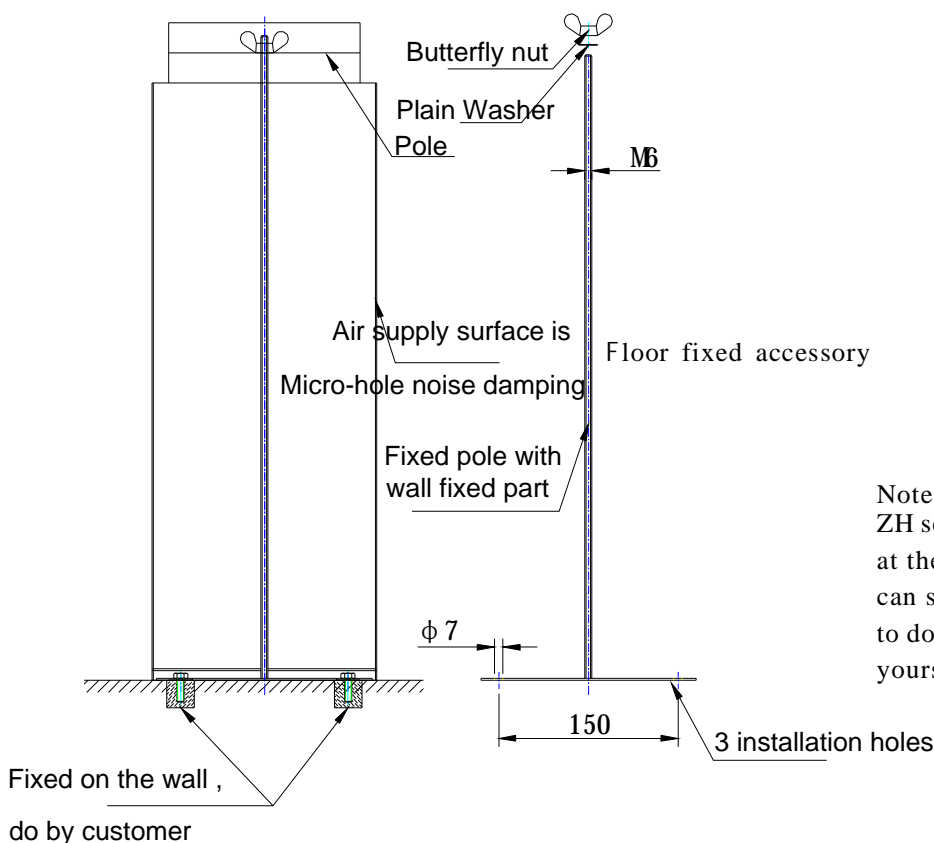
Drawing 1 Install on the wall corner
ZH/90° type



Drawing 2 Install on the wall
ZH/180° type



Drawing 2 Install at any location
ZH/360° type



Note:
ZH series displacement air diffuser can be fixed at the wall or floor as the drawing method .We can supply the fixed accessory. Customer need to do wooden part for fixing to the wall or floor yourselves.Please attention.

8.Order details

- (1) The technical parameters listed in are reckoned in special working conditions (supply air temperature is 20 ,context noise is less than 10db(a)). When use condition is different from the testing condition, the technical parameters in the samples may have a little windage.
- (2) When making orders, you should give the exclusive decision confirmation according to the samples' examples of method.
- (3)Our company retains the rights of interpretation and revision of this sample.