

**DISPLACEMENT VENTILATION ENGINEERING**

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## Introduction: AFC

The *Krueger by Halton AFC* is ideal for low velocity 360° discharge patterns. The AFC can provide large airflow rates and is ideal for central spaces or column type applications. The detachable face facilitates cleaning of the internal baffle and duct connections.

### MODEL

AFC - Round, Low-Velocity Supply Unit

### FEATURES

- 20 gage front panel.
- Horizontal low velocity discharge at floor level, suitable for mid-space applications.
- Flow pattern at an angle of 360° enables large airflow rates with low residual velocities in the occupied zone.
- Detachable front plate and removable baffle enables cleaning of the unit and duct work.
- Round duct connection with integral rubber gasket on top or bottom of the diffuser.

### OPTIONS

- Stainless Steel (AISI 316) Design
- 16 gage front panel.
- Duct cover (solid or perforated).
- Installation base (2", 4", 6").
- Vinyl trim in white or black.
- Metal trim (painted to match).

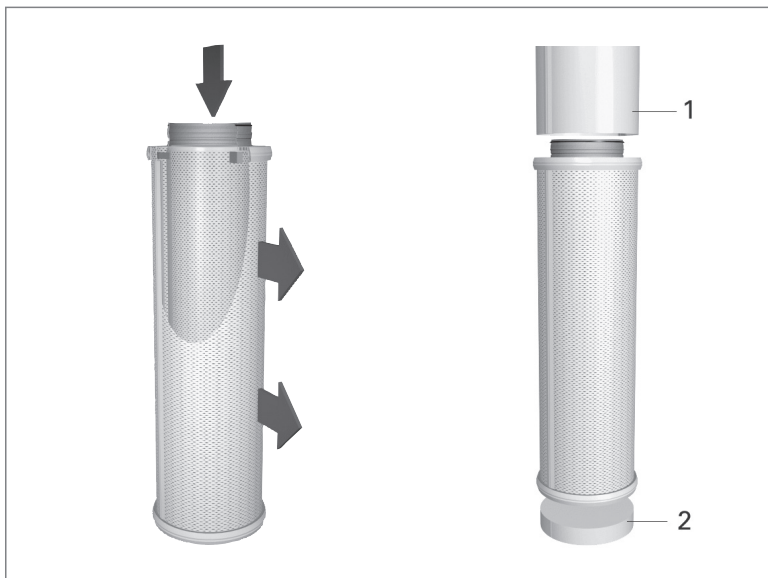
### FINISHES

- Standard is Polyester Painted White (RAL 9010).
- Custom colors available.



AFC

## AFC Application & Installation



### FUNCTION

Air is discharged into the space through the front panel of the unit, normally at a slightly lower temperature than setpoint.

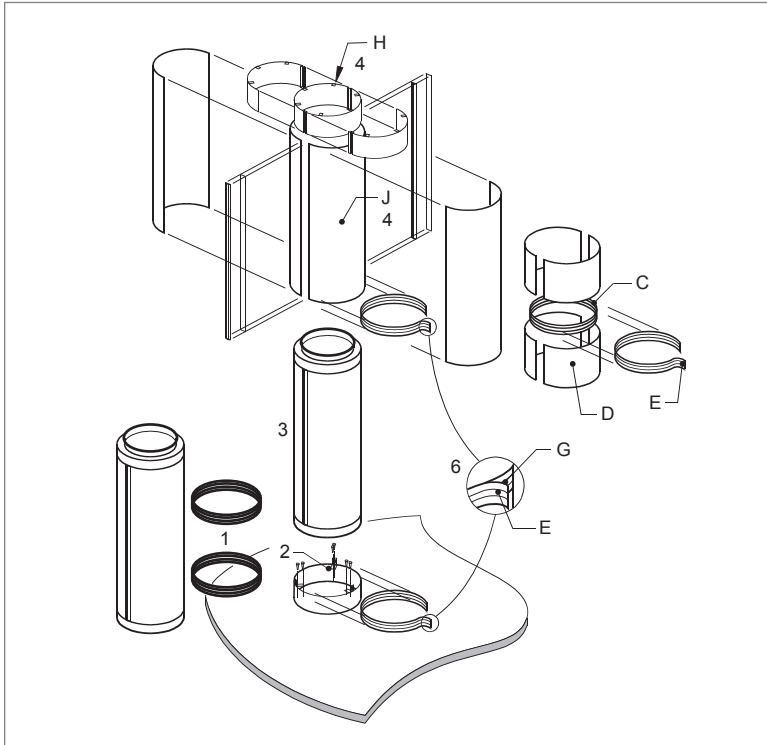
The supply air flows at floor level and gradually pervades through the occupied space before rising due to the convection of warm surfaces.

The low velocity flow is a circular forward directed pattern (360°).

*NOTES: The flow pattern data has been defined for floor installation. (1) Duct cover is for covering the duct work and is optional. (2) Installation base is used to raise the unit off the floor and is also optional.*

**AFC Installation**

**INSTALLATION EXPLODED VIEW**



**INSTALLATION**

Perform the installation in order.

1. Remove trim (E) from unit.
2. Locate base in position on floor and secure in place with angle brackets (3 places equi-spaced).
3. Locate unit onto base.
4. After installation of duct work locate duct cover as follows: Position top sections (H) together against ceiling and fix into position. Locate main sections (J) on top flange of unit and secure to top sections.
5. Secure duct cover with screws.
6. Re-fit trim between duct cover and unit, and between base and unit by bending trim back on itself (E) and pressing bead into groove in flange (G). When multiple sections of duct cover are used (D), an aluminium coupling flange (C) is needed.

DISPLACEMENT VENTILATION

**AFC Service & Maintenance**

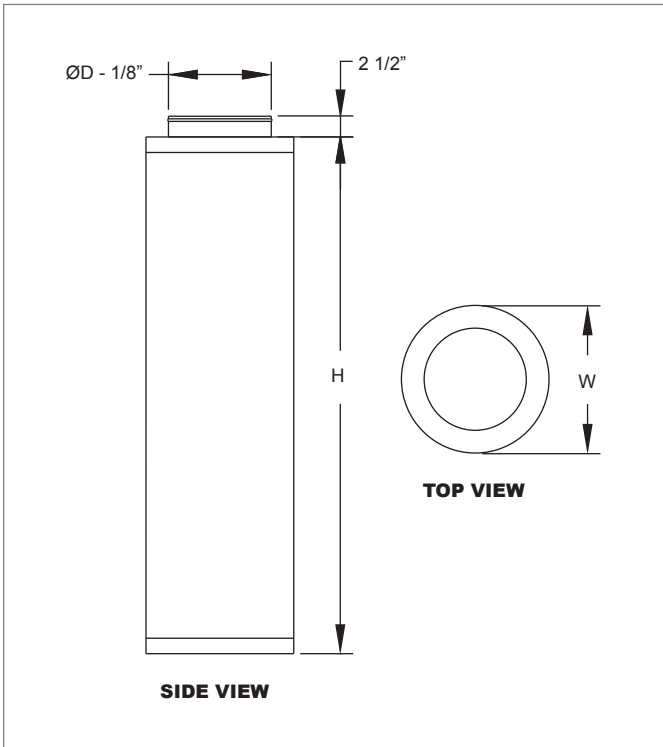
**SERVICING**

Open the front panel (2) by first removing the trim (1) and unscrewing the screws. Pull out the front panel. If required, the internal baffle (3) can be detached by unscrewing the fixing screws. Pull out the inner structure.

Clean the parts with a brush or damp cloth, instead of immersing water. After cleaning, reassemble in reverse order.

Code	Description
1	Trim
2	Front Panel
3	Internal Baffle
4	Casing



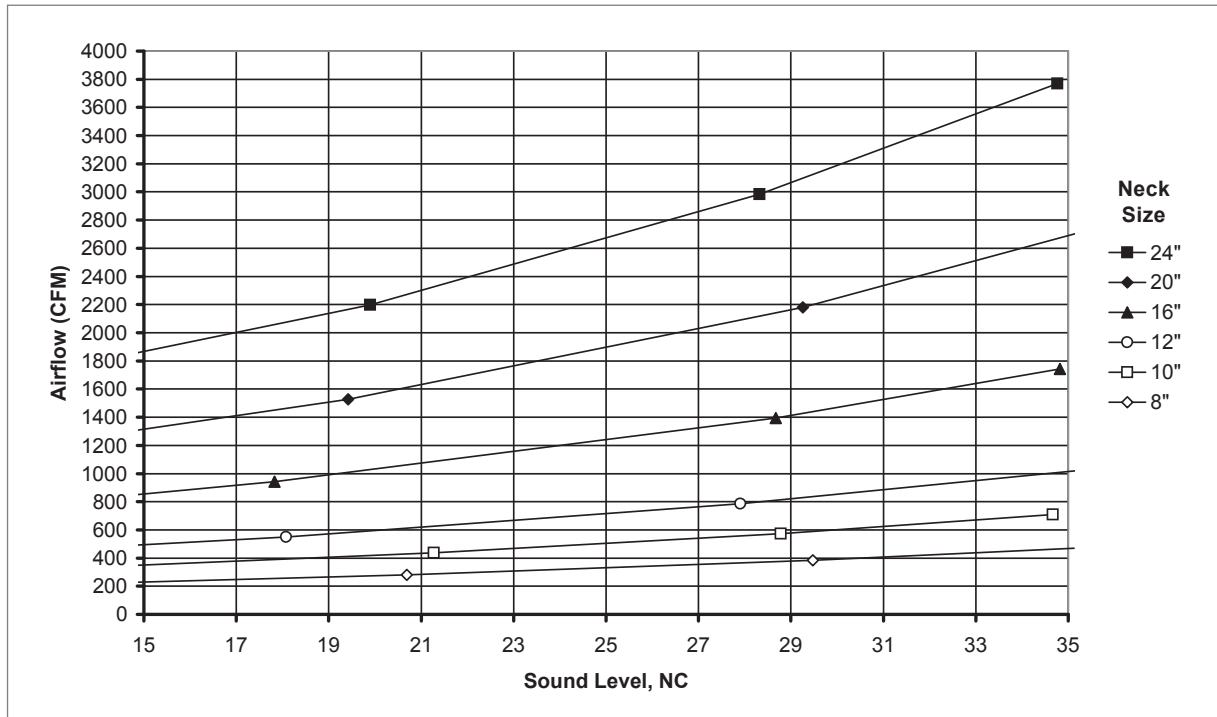
**AFC Dimensional Information**
**AFC SIDE AND TOP VIEWS**

**AFC DIMENSIONAL REFERENCES**

AFC Size (Nominal Dia. x H)	W	H	ØD
12"x40"	11 1/4"	39 3/8"	8"
14"x48"	13 1/4"	47 1/4"	10"
16"x48"	16"	47 1/4"	12"
20"x71"	19 15/16"	70 7/8"	16"
25"x71"	25"	70 7/8"	20"
32"x71"	31 13/16"	71"	24"

**AFC ADDITIONAL SIZES AVAILABLE**

W	H	ØD
12" Dia.	12" - 48" H	8"
18" Dia.	12" - 48" H	14"
24" Dia.	12" - 60" H	14", 16"
30" Dia.	24" - 60" H	14", 16", 18"
36" Dia.	24" - 48" H	14", 16", 18"

NOTE: 'H' is in 2" increments.

**AFC Reference Chart**
**AIRFLOW VS. NC LEVEL: AFC SERIES**


AFC | Round, Low-Velocity Supply

**AFC Performance Data**

IP/METRIC DATA: AFC SERIES

Unit Size	IP Data						NC	Metric Data						Octave Band, dB						
	Neck Vel	Air Flow	Pt	Ps	Near T <sub>50</sub> @ 4 ft	T <sub>50</sub> @ Floor		Neck Vel	Air Flow	Pt	Ps	Near T <sub>.25</sub> @ 1.1 m	T <sub>.25</sub> @ Floor	2	3	4	5	6	7	
	FPM	CFM	"WG	"WG	ft	ft		m/s	L/s	Pa	Pa	m	m							
12"x40"	600	209	.027	0.005	0.1	5	13	3.05	99	6.8	1.2	0.0	1.6	24	21	25	11	-	11	
	800	279	.049	0.009	0.2	6	21	4.06	132	12.1	2.2	0.0	1.9	29	27	31	22	12	15	
	1100	384	.092	0.016	0.3	7	29	5.59	181	22.9	4.1	0.1	2.2	33	34	38	35	24	19	
	1350	471	.138	0.025	0.4	8	35	6.86	222	34.4	6.1	0.1	2.4	36	39	42	43	32	22	
14"x48"	600	327	.028	0.006	0.2	7	13	3.05	154	7.0	1.4	0.1	2.0	25	22	25	-	-	11	
	800	436	.050	0.010	0.4	8	21	4.06	206	12.4	2.4	0.1	2.3	29	28	31	22	12	15	
	1050	572	.086	0.017	0.7	9	29	5.33	270	21.3	4.2	0.2	2.7	33	34	37	33	22	18	
	1300	709	.131	0.026	1.0	10	35	6.60	334	32.7	6.4	0.3	3.0	36	39	41	42	30	21	
16"x48"	550	432	.024	0.005	0.4	8	11	2.79	204	6.0	1.3	0.1	2.3	24	20	23	-	-	-	
	700	550	.039	0.009	0.6	9	18	3.56	259	9.7	2.1	0.2	2.6	27	26	28	16	-	13	
	1000	785	.080	0.017	1.2	10	28	5.08	370	19.9	4.4	0.4	3.1	32	34	35	31	20	18	
	1300	1021	.135	0.030	2.1	12	35	6.60	482	33.6	7.4	0.6	3.6	36	39	41	41	30	21	
20"x71"	550	767	.026	0.007	1.2	10	12	2.79	362	6.4	1.7	0.4	3.1	25	21	22	-	-	-	
	675	942	.039	0.010	1.8	11	18	3.43	444	9.7	2.6	0.5	3.4	28	26	27	14	-	12	
	1000	1395	.085	0.023	3.9	14	29	5.08	658	21.3	5.7	1.2	4.2	33	35	35	30	20	17	
	1250	1744	.133	0.036	6.1	15	35	6.35	823	33.2	9.0	1.9	4.7	36	39	40	39	28	20	
25"x71"	525	1145	.026	0.008	2.6	12	11	2.67	541	6.4	2.1	0.8	3.8	24	21	21	-	-	-	
	700	1527	.045	0.015	4.7	14	19	3.56	721	11.3	3.7	1.4	4.4	29	27	27	16	-	13	
	1000	2182	.093	0.030	7.9	17	29	5.08	1030	23.0	7.5	2.4	5.2	33	35	35	30	20	17	
	1250	2727	.145	0.047	9.9	19	35	6.35	1287	36.0	11.7	3.0	5.9	37	40	39	39	28	20	
32"x71"	500	1571	.025	0.010	5.0	15	11	2.54	741	6.3	2.4	1.5	4.4	24	20	20	-	-	-	
	700	2199	.050	0.019	8.0	17	20	3.56	1038	12.4	4.7	2.4	5.3	29	28	27	15	-	13	
	950	2985	.091	0.035	10.8	20	28	4.83	1409	22.8	8.7	3.3	6.1	33	35	33	28	18	17	
	1200	3770	.146	0.056	13.6	23	35	6.10	1779	36.3	13.9	4.2	6.9	36	40	38	37	27	20	

NOTES: Throw values are given for terminal velocities of 50 fpm (0.25 m/s). Throw values are given for -6°F (-3°C) ΔT conditions. N.C. values are based on Octave Band 2 - 7 sound power levels minus a room absorption of 4dB. Dash in space denotes a NC or dB value of less than 10. Data was obtained from tests conducted in accordance with ANSI / ASHRAE Standard 70-1991.

DISPLACEMENT VENTILATION

AFC

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**AFC Suggested Specification & Configuration**

1. **MODEL: (XXX)**  
AFC - Round, Low-Velocity Supply Unit
2. **UNIT SIZE: (XXxXX)**  
12x40 - Nominal  
14x48 - Nominal  
16x48 - Nominal  
20x71 - Nominal  
25x71 - Nominal  
32x71 - Nominal  
*See Krueger's selection software for additional sizes.*
3. **INLET: (XX) \***  
8, 10, 12, 14, 16, 18, 20, 24
4. **MATERIAL: (XX)**  
GS - Steel  
SS - 316 Stainless Steel \*\*
5. **FRONT PANEL THICKNESS: (XX)**  
20 - 20 Gage (Standard)  
16 - 16 Gage
6. **TRIM: (XXX)**  
WHT - White  
BLK - Black  
MTL - Metal, Painted to Match
7. **DUCT COVER: (XX)**  
00 - None  
DP - Perforated Duct Cover  
DS - Solid Sheet Duct Cover
8. **DUCT COVER LENGTH: (XXX.XXX)**  
xxx.xxx - Length in Inches
9. **INSTALLATION BASE: (XX)**  
00 - None  
B2 - 2" Base Cover  
B4 - 4" Base Cover  
B6 - 6" Base Cover
10. **FINISH: (XX)**  
44 - White (RAL-9010)  
35 - Black  
90 - Polished \*\*\*  
07 - Custom

\* See dimensional information for unit and inlet size offerings.

\*\* Material Code SS (316 stainless steel) not available with Front Panel Thickness code 16 (16 gage). Material Code SS (316 stainless steel) only available with Finish code 90 (polished). If Material Code SS (Stainless Steel) is selected, the Duct Cover and Installation Base, if selected will be Stainless Steel.

\*\*\* Finish code 90 (polished) not available with Material Code GS (steel).

**AFC**

Furnish and install *Krueger by Halton* AFC displacement diffuser as indicated on the drawings and diffuser schedule.

The round low velocity diffuser shall be made of galvanized steel with a polyester powder coat finish. The unit shall include a detachable perforated panel and include an internal equalization baffle. The front panel shall have holes on a staggered pattern providing a well-balanced appearance and enhancement to performance. Both the internal baffle and diffuser face shall be attached securely to the extruded aluminum frame or galvanized housing. The diffuser design will be robust, rigid and sturdy with a 20ga. face and internal structure. The unit shall have a round duct connection as required by the diffuser schedule. Round inlets shall include a fixed rubber gasket located near the edge of the inlet ensuring a proper seal of the attached duct work. The horizontal edges of the diffuser shall include a vinyl or metal trim for aesthetic appeal.

**BASE**

Furnish and install the base as indicated on the drawings and diffuser schedule. The base shall be manufactured of 20ga. steel to match the footprint of the displacement diffuser. The base height will be indicated on the drawings and diffuser schedule. The base will be independently removable from the diffuser allowing access to the duct if supplied from below; or to the area beneath the diffuser. The base finish will match the diffuser.

**DUCT COVER**

Furnish and install the duct cover as indicated on the drawings and diffuser schedule. The duct cover will be supplied in either a solid or perforated 20ga. steel material. The perforated material will match the diffuser in pattern and stagger. The duct cover will be supplied with mounting angles and trim pieces for installation. The duct cover finish will match the diffuser.

**PERFORMANCE**

Unit performance shall be tested in accordance with the following standards: Air flow rate, EN-ISO 5167-1; Pressure Difference, EN-ISO 5135; Sound Power Level, EN-ISO 7235.

**SAMPLE CONFIGURATION: AFC - 25x71 - 10 - GS - 20 - WHT - DP - 120.250 - B4 - 44**