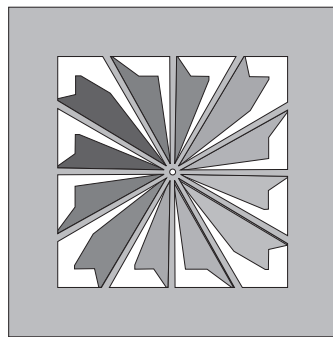
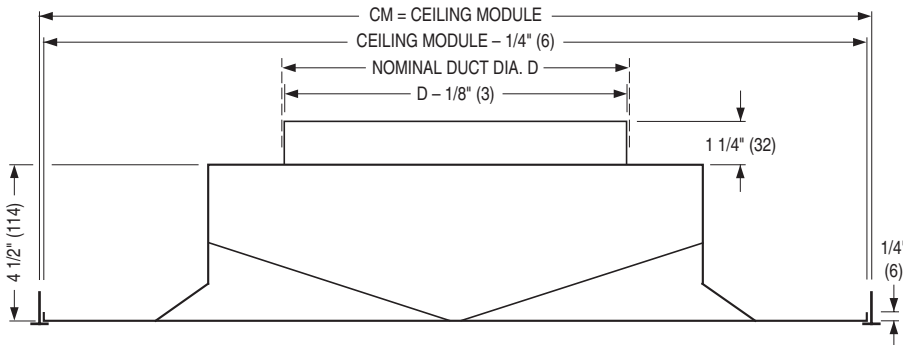




"TWISTER" CEILING SWIRL DIFFUSER
 HIGH INDUCTION • STAMPED FACE
 STEEL • ROUND NECK
 MODEL: TWR

TYPE L LAY-IN T-BAR



FACE VIEW

Dimensional Data

Ceiling Module CM		Nominal Duct Size D	
Imperial Modules (inches)	Metric Modules (mm)	Imperial Units (inches)	Metric Units (mm)
24 x 24	600 x 600	6, 8, 10, 12, 14	152, 203, 254, 305, 356

DESCRIPTION:

1. Material: Corrosion-resistant steel.
2. Model TWR "Twister" Ceiling Swirl Diffuser is a high performance ceiling diffuser ideal for VAV applications. Specially designed radial deflection vanes produce a tight horizontal 360 degree air pattern. The high induction swirl pattern maximizes occupant comfort by minimizing stratification over a wide range of air volumes.
3. Diffuser has a removable plug for screwdriver adjustment of the optional damper from below the face.
4. Standard finish is AW Appliance White.

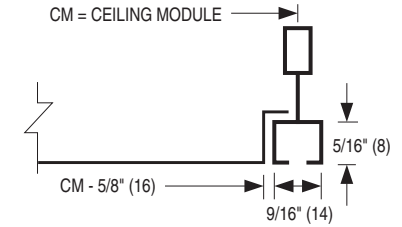
OPTIONS:

- EQT Earthquake Tabs
- SP Special finish. Specify _____.

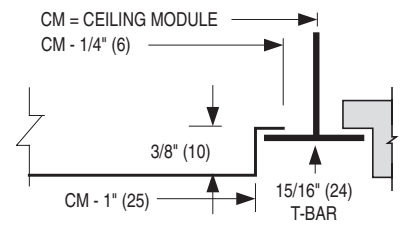
ACCESSORIES (OPTIONAL):

- 4250 Radial Sliding Blade Damper
- 4275 Radial Opposed Blade Damper
- 4675 Butterfly Damper

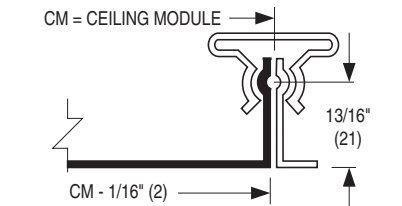
TYPE F FINELINE®



TYPE TL TEGULAR LAY-IN

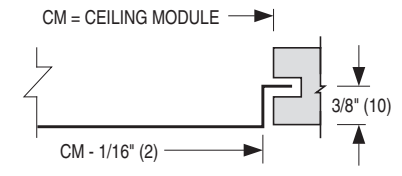


TYPE M METAL PAN (SNAP-IN)



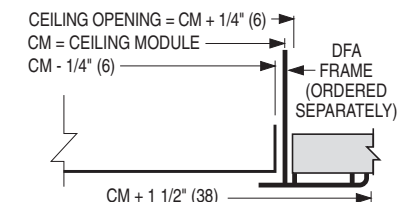
TYPE SP SPLINE

For one directional exposed T-Bar or fully concealed grid. 1 spline on two opposite sides. Steel lift brackets on other.



TYPE L SURFACE MOUNT WITH DFA

Drywall/Plaster frame. Recommended for flexible duct connection and ceiling access



Dimensions are in inches (mm).

SCHEDULE TYPE:

PROJECT:

ENGINEER:

CONTRACTOR:

DATE

B SERIES

SUPERSEDES

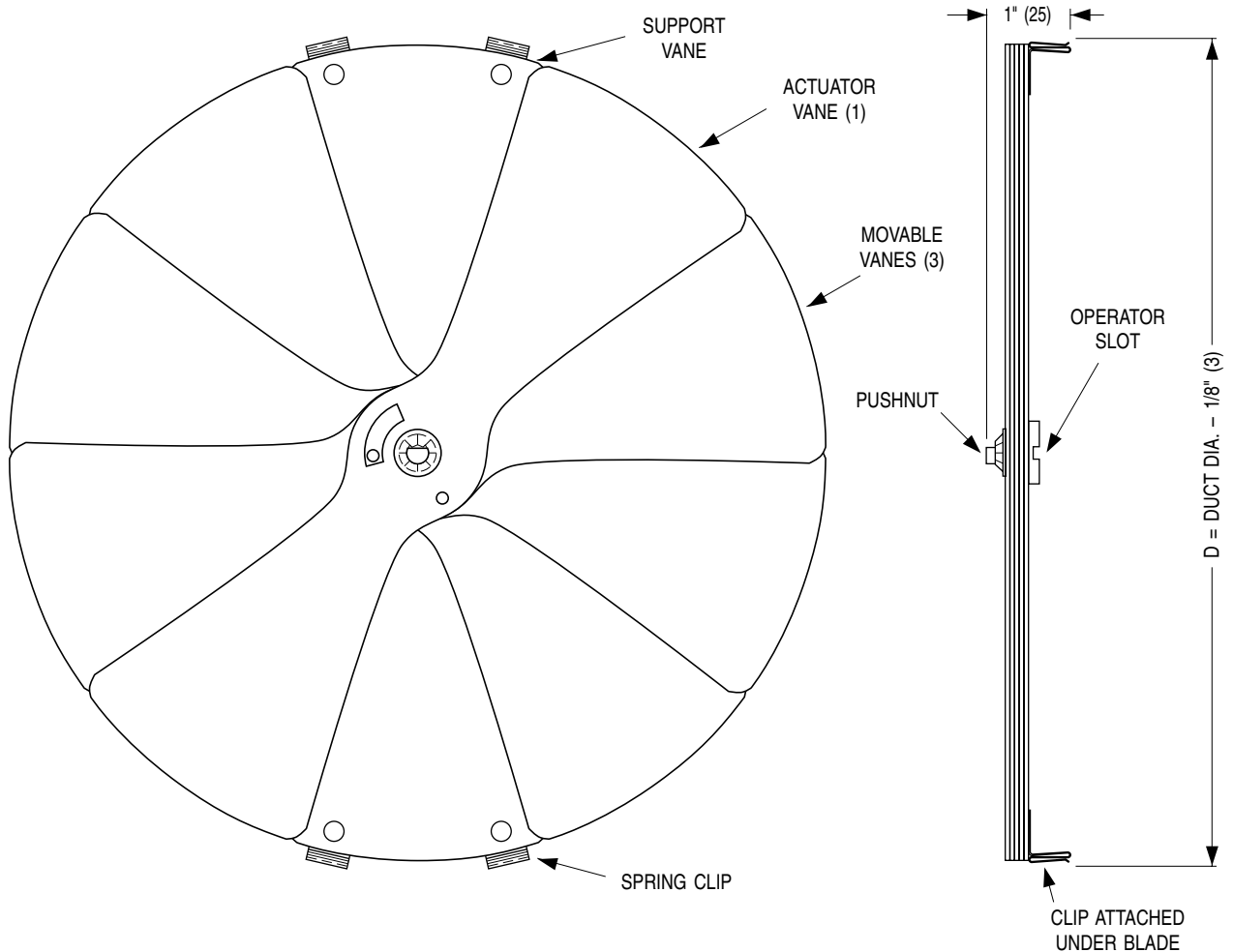
DRAWING NO.

11 - 1 - 18

TWR

1 - 24 - 17

TWR-1


DESCRIPTION:

1. Material: Heavy gauge corrosion-resistant steel.
2. The Nailor Model 4250 is a neck mounted, radial sliding blade damper used in round neck diffuser applications to provide fine volume control.
3. Dampers have gang operated radial blades. Blades slide at right angles to the duct with protrusion above the diffuser neck, allowing the damper to work effectively in flexible duct applications.
4. The 4250 is neck mounted with steel barb clips providing secure attachment.
5. Adjustments are made at the screwdriver operator slot.
6. Available Sizes: 6", 8", 10", 12" and 14" (152, 203, 254, 305 and 356) dia..

SCHEDULE TYPE:
PROJECT:
ENGINEER:
CONTRACTOR:

Dimensions are in inches (mm).

DATE
B SERIES
SUPERSEDES
DRAWING NO.

10 - 24 - 01

ACC.DIF.

25 - 8 - 99R

ABD-4250



AIR BALANCING DEVICE RADIAL OPPOSED BLADE DAMPER STEEL • FOR ROUND NECK DIFFUSERS MODEL: 4275 (5" - 16" DIA.)

DESCRIPTION:

A unique method of controlling volume through a diffuser providing premium design quality and performance. The multi-blade perimeter design offers true radial flow at any setting.

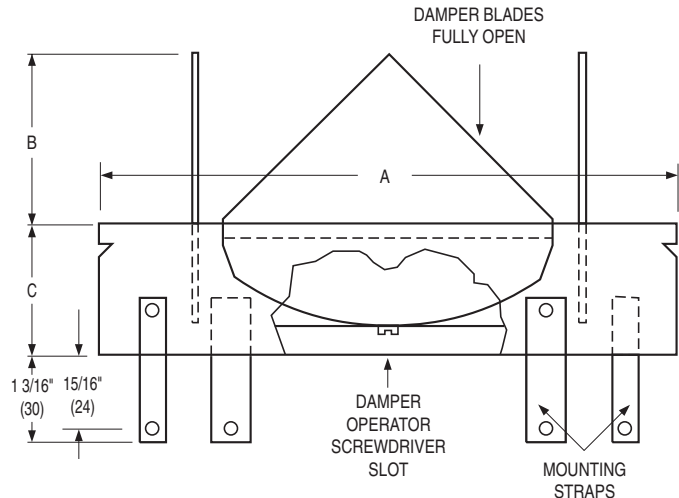
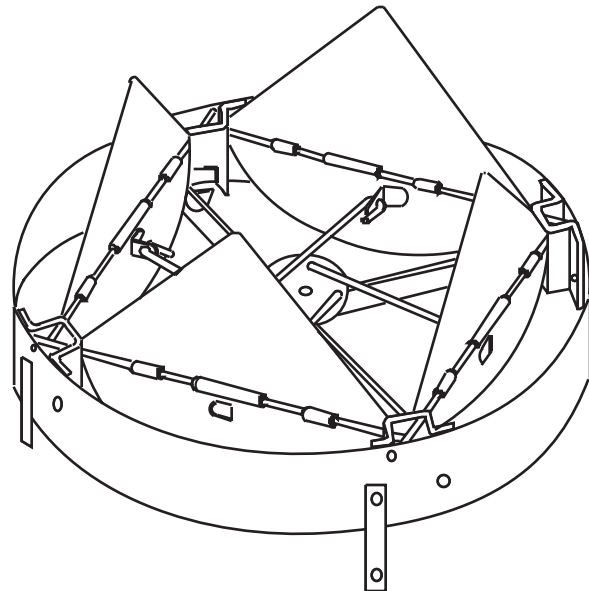
A screwdriver slot, accessible through the diffuser, requires only a half turn to adjust from fully closed to fully open. The damper is designed to fit directly on the neck of the diffuser. Simple convenient and accurate installation and operation.

OPERATION:

Size 5 through 8 are friction type. Use screwdriver and turn operator to adjust damper setting.

Size 10 through 16 use a detent mechanism to positively hold damper setting. Using screwdriver, lift up and turn operator to desired damper setting.

1. Material: Corrosion-resistant steel construction.
2. Damper mounts directly to diffuser collar.
3. Standard Finish: Mill.



	Nominal Size (inches)								Nominal Size (mm)							
	5	6	8	10	12	14	15	16	127	152	203	254	305	356	381	406
A	4 7/8	5 7/8	7 7/8	9 7/8	11 7/8	13 7/8	14 7/8	15 7/8	124	149	200	251	302	352	378	403
B	1 1/8	1 5/8	2 1/2	2 1/4	2 7/8	3 3/8	3 3/4	4 3/8	29	41	64	57	73	86	95	111
C	1 5/8				2 1/2				41				64			

SCHEDULE TYPE:

PROJECT:

ENGINEER:

CONTRACTOR:

Dimensions are in inches (mm).

DATE

B SERIES

SUPERSEDES

DRAWING NO.

8 - 29 - 05

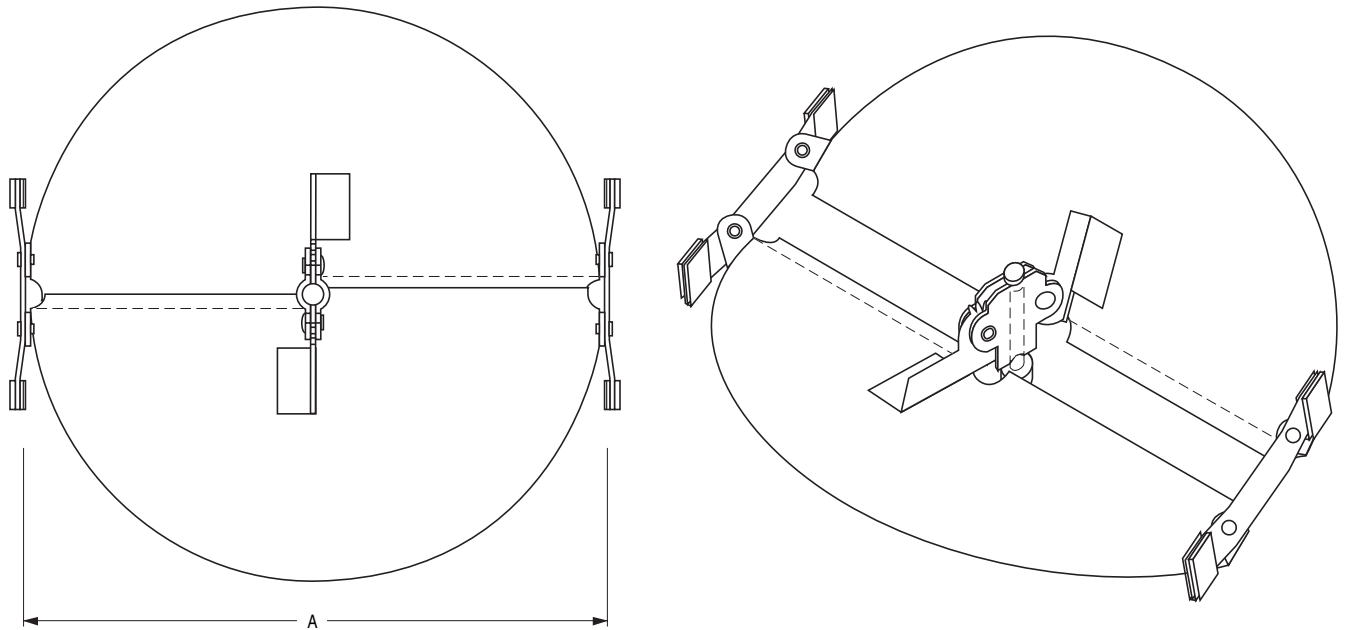
ABD

3 - 1 - 02

ABD-4275-1



**AIR BALANCING DEVICE
BUTTERFLY DAMPER
STEEL • FOR ROUND NECK DIFFUSERS
MODEL: 4675**

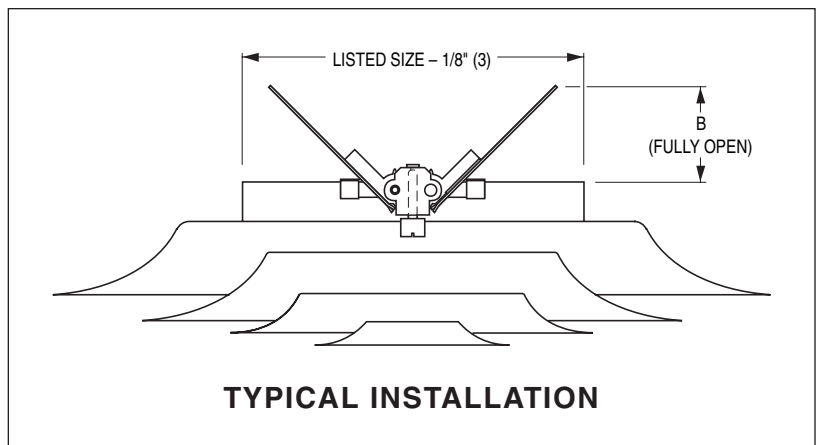


DESCRIPTION:

The Model 4675 Butterfly Damper is an economical damper for volume balancing in round neck diffusers. Adjustable friction pivots hold the blades at the required setting.

1. Material: Corrosion-resistant steel. Mill finish.
2. The 4675 damper mounts directly to diffuser collar. Not compatible with Model Series RNSA, RNR, RNRA1, 6300 or 6300R diffusers.
3. Screwdriver slot operator is adjustable from the face of the diffuser.

	Nominal Size (inches)					Nominal Size (mm)				
	6	8	10	12	14	152	203	254	305	356
A	5 7/8	7 7/8	9 7/8	11 7/8	13 7/8	149	200	251	302	352
B	2 1/2	3 1/2	4 1/2	5 1/2	6 1/2	64	89	114	140	165



TYPICAL INSTALLATION

SCHEDULE TYPE:					Dimensions are in inches (mm).				
PROJECT:									
ENGINEER:					DATE	B SERIES	SUPERSEDES	DRAWING NO.	
CONTRACTOR:					11 - 14 - 08	ACC.DIF.	5 - 28 - 08	ABD-4675	

Nailor offers a selection of standard colors and finishes available on our grilles, registers and diffusers. For painted finishes, our state-of-the-art paint systems provide environmentally friendly finishing solutions with uniform coverage and coating thickness. The result is an exceptionally durable finish that resists scratching, corrosion and general wear. Additional facilities for special requirements, as well as a selection of anodized or brushed finishes, complete our ability to provide unmatched beauty and durability for any application.

NAILOR POWDER COAT PROPERTIES

FILM THICKNESS	2.0 to 3.0 mils
HARDNESS	2 H
IMPACT RESISTANCE	Direct: 160 inch - lbs. Reverse 160 inch - lbs.
SALT SPRAY	1000 hours

ELECTROCOATING PROPERTIES

FILM THICKNESS	.8 to 1.2 mils
HARDNESS	HB TO H
IMPACT RESISTANCE	80 inch - lbs
SALT SPRAY	100 hours


POWDER COAT

Nailor's powder coat is a high-tech thermosetting polyester powder coating with superior physical properties that provide excellent color and gloss retention. The finish offers extreme durability and hardness that resists scratching, chipping and general wear. Surface preparation includes degreasing and a chemical cleaning followed by a clean rinse before a final powder coat finish is applied and baked. The environmentally friendly Nailor powder coat system assures uniform coverage and color consistency resulting in a long lasting superior finish. Colors, including simulated anodizing, which is far more economical than color anodizing, can be selected from Nailor's standard color chart or non-standard colors and can be matched from sample chips provided to Nailor.

ELECTROCOATING

E-Coat is an environmentally friendly coating that provides complete coverage and a wide range of performance properties, formulated to meet corrosion, durability and other performance specifications. Electrocoating is a highly automated process in which paint is electrically deposited onto a metal foundation. Film build thickness is uniform and overall application efficiencies are in excess of 90%. Paint is consistent on all part-to-part surfaces, preventing sags, runs or drips. E-Coat offers flexibility, better first yield pass and quicker production times compared to other forms of paint applications. Electrocoating is an excellent solution that offers superior properties and uniform finish.

CLEAR ANODIZING (Aluminum products only)

Clear anodizing is a clear oxide coating that exemplifies an aluminum surface's natural oxide coating producing a hard, scratch resistant surface that is resistant to general wear and mild chemicals. The process provides a natural looking, virtually maintenance free finish that will endure for many years.

COLOR ANODIZING (Aluminum products only)

Color anodizing is an electrolytic process where, after standard anodizing procedures, colored metallic pigments penetrate the oxide surface pores producing a corrosion resistant, colorfast finish. The process results in a natural metallic appearance that requires little maintenance.

BRUSHED AND CLEAR COAT

Available on specific aluminum products (consult applicable product page for availability). Surface is brushed to achieve a scratch finish texture before being degreased and chemically cleaned. A clear lacquer coating is then applied to provide a durable protective finish.

#4 BRUSHED SATIN POLISHED (Stainless Steel products only)

Surface is polished to ASTM A480 #4 standard to achieve a bright durable finish that is resistant to mild chemicals and corrosion. A final coating is not required due to the inherent anti-corrosion properties of the stainless steel.

PRIME COAT

Prime coat provides a stable base for painting in the field. Surface pretreatment includes degreasing and a chemical cleaning before an alkyd prime coat is applied. After a thorough cleaning for dust, etc. that can contaminate the final finish and cause premature flaking or peeling, finish coat should be field applied as soon as possible.

PAINT PREPARED ALUMINUM (Aluminum products only)

Allows for field applied paint. Surface preparation includes degreasing and a chemical cleaning followed by a clean rinse. Finish coat should be field applied as soon as possible.

MILL FINISH

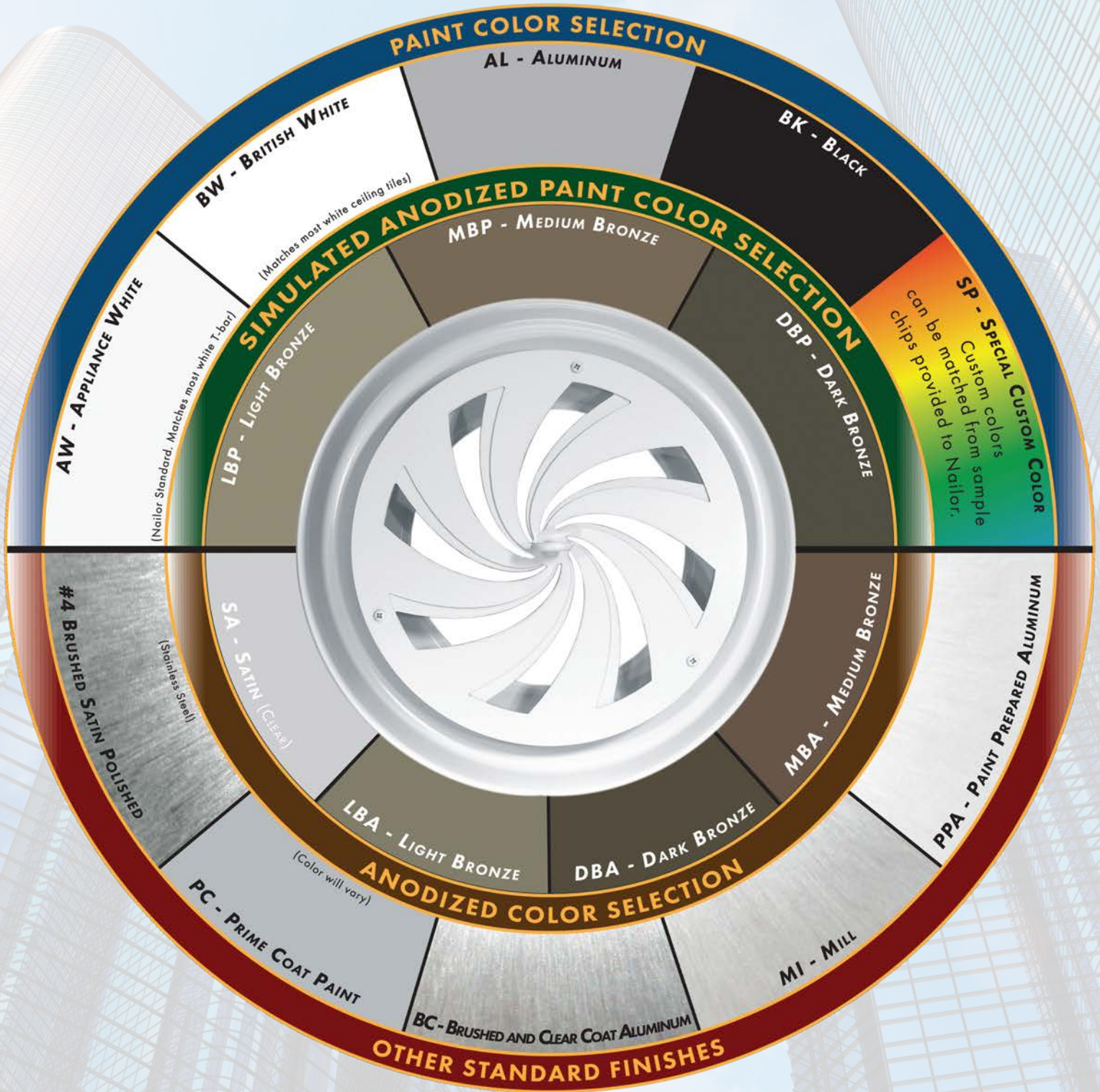
Surface is left untreated and requires cleaning, degreasing, etc. in the field before final finish can be applied if required.



Nailor[®]
Industries Inc.

STANDARD AND OPTIONAL FINISHES FOR GRILLES AND DIFFUSERS

The following standard colors and finishes are available on applicable Nailor air distribution products. Consult individual product pages for availability



The pictured finishes have been represented as best as possible within printing limitations. However, actual finish may vary. Contact your Nailor representative for a color chip sample on the material specified for a more accurate representation.

DBK - Black (for registers ordered with factory mounted dampers) - **BA** - Perforated Diffusers (4300 series only) Appliance White (AW) face with black back pan and pattern controllers.

"Complete Air Control and Distribution Solutions."

WGDSOF2015

www.nailor.com

PERFORMANCE DATA:

Model "TWR" Twister • 24 x 24 (600 x 600) Face Size

Nominal Neck Size	Neck Velocity, FPM	300	400	500	600	700	800	900	1000	1200	1400	1600
	Velocity Pressure	.006	.010	.016	.023	.031	.040	.051	.063	.090	.122	.160
6" Dia.	Total Pressure	.006	.011	.018	.025	.034	.044	.056	.069	.098	.133	.174
	Airflow, CFM	60	80	100	120	140	160	180	200	235	275	315
	Throw	1-1-2	1-1-2	1-2-3	1-2-4	1-2-5	2-3-6	2-3-7	2-3-8	3-4-9	3-6-10	3-7-11
	Noise Criteria	—	—	—	—	—	—	—	15	23	32	34
8" Dia.	Total Pressure	.011	.016	.026	.036	.049	.063	.080	.097	.144	.186	.250
	Airflow, CFM	105	140	175	210	245	280	315	350	420	490	560
	Throw	1-2-3	1-2-4	2-3-5	2-3-7	3-4-8	3-4-9	3-5-9	4-5-10	4-7-11	5-8-12	6-9-12
	Noise Criteria	—	—	—	—	—	—	16	22	28	34	37
10" Dia.	Total Pressure	.013	.023	.035	.050	.067	.087	.108	.132	.197	.244	.309
	Airflow, CFM	165	220	270	330	380	435	490	545	655	765	870
	Throw	2-3-6	2-3-7	3-4-8	3-5-8	4-6-9	4-6-10	5-6-11	5-7-13	6-7-14	7-8-15	8-11-16
	Noise Criteria	—	—	—	—	—	16	20	23	30	38	45
12" Dia.	Total Pressure	.017	.029	.043	.062	.084	.108	.134	.163	.251	.300	.377
	Airflow, CFM	235	315	390	470	550	630	705	785	990	1100	1255
	Throw	2-4-7	3-4-9	3-5-10	4-6-11	5-7-13	5-8-13	6-8-14	7-9-14	8-11-16	10-13-18	12-15-19
	Noise Criteria	—	—	—	—	16	20	24	27	34	40	47
14" Dia.	Total Pressure	.022	.033	.053	.073	.099	.125	.158	.192	.272	.367	.472
	Airflow, CFM	320	425	530	635	745	850	955	1060	1270	1490	1695
	Throw	2-3-9	3-6-11	5-7-13	6-9-14	7-10-15	8-11-16	9-12-17	10-13-17	11-14-19	12-15-21	13-16-21
	Noise Criteria	—	—	16	22	25	27	32	34	39	44	47

Performance Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
2. All pressures are in inches w.g.. To obtain static pressure, subtract the velocity pressure from the total pressure.
3. Noise Criteria (NC) values are based upon 10dB room absorption, re 10⁻¹² watts. Dash (—) in space indicates an Noise Criteria of less than 15.
4. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

Balancing:

It is recommended that a commercially available 'Flow Hood' is used for field balancing. The airflow meter directly reads average flow rate with great accuracy at all volumes. It is a much faster and more accurate alternative to time consuming multiple velocity readings, eliminating the use of Ak factors and the calculations required to convert the average velocity into airflow.

Neck Size Diameter in Inches	Nominal Overall Face Size	Ak Factor
6	24 x 24	0.181
8	24 x 24	0.264
10	24 x 24	0.330
12	24 x 24	0.458
14	24 x 24	0.521