








RXO

Stamped Swirl Diffusers



RXO SERIES

Stamped Swirl Diffusers

-  Fixed swirl diffusion pattern
-  Available in square or round
-  Heavy-gauge steel construction
-  Matching High Performance PERFAIR Plenums
-  T-bar lay-in or surface mount
-  Ideal for cooling applications
-  Available in imperial and metric standard dimensions



RXO-S



RXO-C

RXO swirl diffusers are designed to be used in air conditioning, ventilation and heating applications. They can be mounted in false ceilings or suspended from the ceiling. The radial stamped blades design forces a swirl air diffusion pattern leveraging the coanda effect. RXO swirl diffusers provide a high level of induction rate, helping reducing room air stratification.

RXO series diffusers admit a flow variation of 60% keeping the air stream stable. These diffusers can be used in premises with ceilings 8.5 up to 13 feet (2.6 up to 4 meters) high and with a temperature differential up to 22°F (12°C).

Model Dimensions and Quick Selection

RXO-S Square Diffusers

Model	Imperial Dim	Metric Dim	Free Area (sqf)	Min cfm	Max cfm
RXO-S 16	16" x 16"	400 x 400 mm	0.178	88	241
RXO-S 20	20" x 20"	500 x 500 mm	0.362	176	353
RXO-S 24	24" x 24"	605 x 605 mm	0.538	294	476
RXO-S400 24	24" x 24"	605 x 605 mm	0.178	88	241
RXO-S500 24	24" x 24"	605 x 605 mm	0.362	176	353

RXO-C Round Diffusers

Model	Imperial Dim	Metric Dim	Free Area (sqf)	Min cfm	Max cfm
RXO-C 16	16" D	400 mm Dia	0.178	88	241
RXO-C 20	20" D	500 mm Dia	0.362	176	353
RXO-C 25	25" D	625 mm Dia	0.538	294	476

Some Applications



Office Spaces and Meeting Rooms



Schools



Restaurants, Bars, Hotels, Stores



VAV Applications



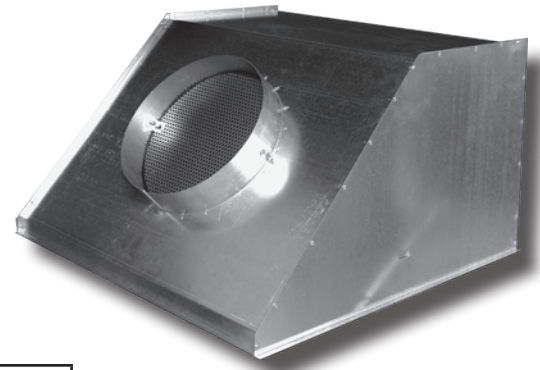
Comfort-critical applications



Plenum Selection

RXO swirl diffusers are available with a wide selection of PERFAIR plenums to suit any type of application. PERFAIR-SS with side connection is the most popular plenum for Square Diffusers and only requires 14" of ceiling space.

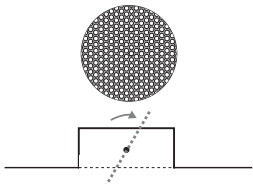
All PERFAIR plenums come with antiseismic tabs and perforated air volume damper / air equalizer.



PERFAIR-SS

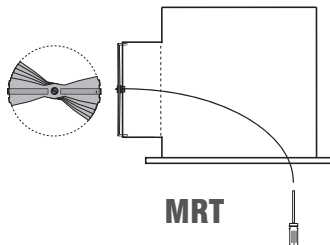
Plenum Model	Face Type	Connection	Recommended For
PERFAIR-CS	Round	Side	False or closed ceiling
PERFAIR-CT	Round	Top	Open ceiling with visible duct coming from top
PERFAIR-SS	Square	Side, Angle	False or closed ceiling
PERFAIR-SSS	Square	Side	Open ceiling with visible duct coming from side
PERFAIR-ST	Square	Top	Open ceiling with visible duct coming from top
PERFAIR-XS	Square	Side, Oval	Very limited ceiling space (6" min)
PERFAIR-XSS	Square	Side, Rect.	Very limited ceiling space (5" min)

Integrated Air Volume Dampers



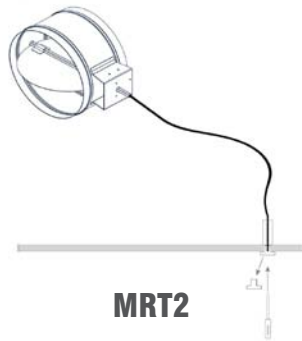
R

Perforated damper + air equalizer (Standard)



MRT

Manually operated damper, cable inside the plenum, adjustment through face



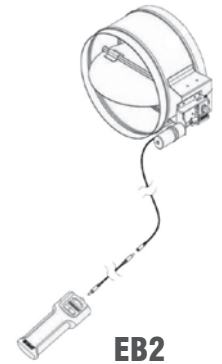
MRT2

Manually operated damper, cable through wall with termination fixture



EB

Battery operated electro-balance damper with remote control, cable through face



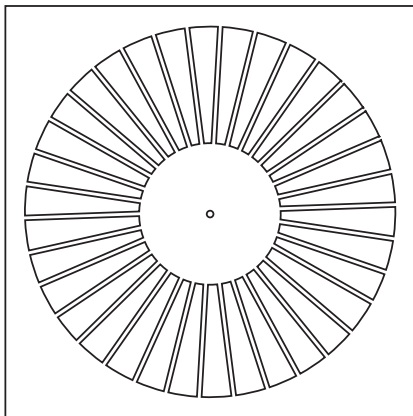
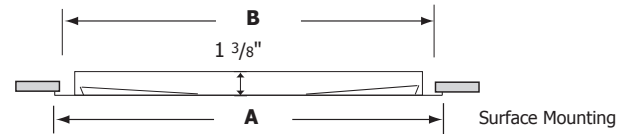
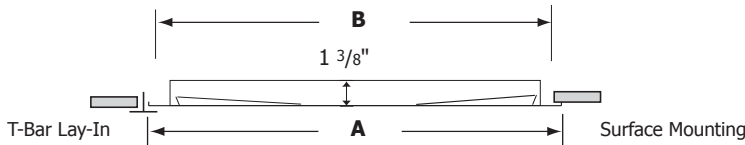
EB2

Battery operated electro-balance damper with remote control, cable through wall with termination fixture

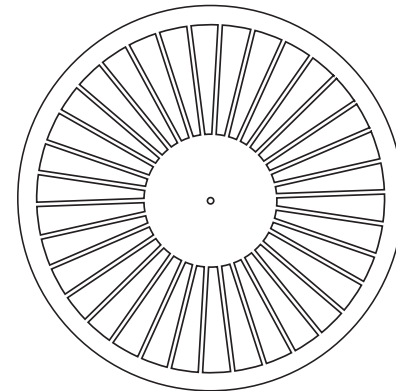
Dimensions

	Listed Size (Imperial)	Listed Size (Metric)	A (Imperial)	A (Metric)
RXO-S	16	400	15 34/64"	395
	20	500	19 31/64"	495
	24	605	23 5/8"	600

	Listed Size (Imperial)	Listed Size (Metric)	A (Imperial)	A (Metric)
RXO-C	16	400	15 3/4"	400
	20	500	19 11/16"	500
	25	600	24 39/64"	625



RXO-S



RXO-C

Performance Data - RXO-S 16 and RXO-S400 24 + PERFAIR

	Neck (fpm) Velocity	200	300	400	500	600	700
	Velocity Pressure (H2O)	.002	.006	.010	.016	.022	.031
Neck Size 8" (200mm)	CFM	70	105	140	175	209	244
	Pressure Loss (in.w.g.)	.013	.028	.048	.075	.105	.133
	NC	< 15	< 15	21	26	31	36
	Throw (ft) - Coanda Effect	1-2-3	2-3-5	3-4-7	4-6-9	4-7-11	5-8-13
	Throw (ft) - No Ceiling Effect	1-2-2	1-2-4	2-3-5	3-4-7	3-5-8	4-6-10

Performance Notes

- NC Value based on 10 db room attenuation
- Throw Values are based on isothermal air and terminal velocities of **100 fpm, 60 fpm and 40 fpm** respectively

Performance Data - RXO-S 20 and RXO-S500 24 + PERFAIR

	Neck (fpm) Velocity	400	500	600	700	800	1000	1200
	Velocity Pressure (H2O)	.010	.016	.022	.031	.041	.062	.090
Neck Size 8" (200mm)	CFM	140	175	209	244	279	349	419
	Pressure Loss (in.w.g.)	.024	.037	.053	.071	.092	.138	.203
	NC	11	16	20	25	28	34	39
	Throw (ft) - Coanda Effect	2-3-5	2-4-6	3-5-7	4-6-9	4-7-10	5-9-13	7-11-16
	Throw (ft) - No Ceiling Effect	1-2-3	2-3-5	2-4-6	3-4-7	3-5-8	4-7-10	5-8-12

Performance Notes

- NC Value based on 10 db room attenuation
- Throw Values are based on isothermal air and terminal velocities of **100 fpm, 60 fpm and 40 fpm** respectively

Performance Data - RXO-S 24 (24" x 24" or 605mm x 605mm) + PERFAIR

	Neck (fpm) Velocity	400	500	600	700	800	1000	1200
	Velocity Pressure (H2O)	.010	.016	.022	.031	.041	.062	.090
Neck Size 10" (250mm)	CFM	218	273	327	382	436	545	654
	Pressure Loss (in.w.g.)	.015	.024	.034	.046	.059	.091	.106
	NC	12	18	23	28	32	38	42
	Throw (ft) - Coanda Effect	2-3-5	3-4-6	3-5-8	4-6-9	4-7-11	6-9-14	6-10-16
	Throw (ft) - No Ceiling Effect	1-2-4	2-3-5	2-4-6	3-5-7	3-5-8	4-7-11	5-8-12

Performance Notes

- NC Value based on 10 db room attenuation
- Throw Values are based on isothermal air and terminal velocities of **100 fpm, 60 fpm and 40 fpm** respectively

Performance Data - RXO-C 16 (16" dia. or 400 mm dia.) + PERFAIR

	Neck (fpm) Velocity	200	300	400	500	600	700
	Velocity Pressure (H2O)	.002	.006	.010	.016	.022	.031
Neck Size 8" (200mm)	CFM	70	105	140	175	209	244
	Pressure Loss (in.w.g.)	.013	.028	.048	.075	.105	.133
	NC	< 15	< 15	21	26	31	36
	Throw (ft) - Coanda Effect	1-2-3	2-3-5	3-4-7	4-6-9	4-7-11	5-8-13
	Throw (ft) - No Ceiling Effect	1-2-2	1-2-4	2-3-5	3-4-7	3-5-8	4-6-10

Performance Notes

- NC Value based on 10 db room attenuation
- Throw Values are based on isothermal air and terminal velocities of **100 fpm, 60 fpm and 40 fpm** respectively

Performance Data - RXO-C 20 (20" dia. or 500 mm dia.) + PERFAIR

	Neck (fpm) Velocity	400	500	600	700	800	1000	1200
	Velocity Pressure (H2O)	.010	.016	.022	.031	.041	.062	.090
Neck Size 8" (200mm)	CFM	140	175	209	244	279	349	419
	Pressure Loss (in.w.g.)	.024	.037	.053	.071	.092	.142	.203
	NC	< 15	15	20	24	27	34	38
	Throw (ft) - Coanda Effect	2-3-5	2-4-6	3-5-7	4-6-9	4-7-10	5-9-13	7-11-16
	Throw (ft) - No Ceiling Effect	1-2-3	2-3-5	2-4-6	3-4-7	3-5-8	4-7-10	5-8-12

Performance Notes

- NC Value based on 10 db room attenuation
- Throw Values are based on isothermal air and terminal velocities of **100 fpm, 60 fpm and 40 fpm** respectively

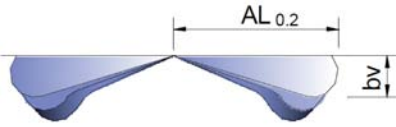
Performance Data - RXO-C 25 (25" dia. or 625 mm dia.) + PERFAIR

	Neck (fpm) Velocity	400	500	600	700	800	1000
	Velocity Pressure (H2O)	.010	.016	.022	.031	.041	.062
Neck Size 10" (250mm)	CFM	218	273	327	382	436	545
	Pressure Loss (in.w.g.)	.015	.024	.034	.046	.059	.091
	NC	< 15	17	23	27	31	38
	Throw (ft) - Coanda Effect	2-4-6	3-5-7	4-6-9	4-7-10	5-8-12	6-10-15
	Throw (ft) - No Ceiling Effect	2-3-4	2-4-5	3-4-7	3-5-8	4-6-9	5-7-11

Performance Notes

- NC Value based on 10 db room attenuation
- Throw Values are based on isothermal air and terminal velocities of **100 fpm, 60 fpm and 40 fpm** respectively

Delta T Correction Factors		
Δ T (F)	Kh	KI
0	0.04	1
-2	0.045	0.945
-4	0.051	0.905
-6	0.055	0.87
-8	0.06	0.84
-10	0.067	0.82
-12	0.077	0.785
-15	0.088	0.78



bv= kh x Throw

Throw'(Δ T)= KI x Throw

Kh = Correction Factor for Vertical Diffusion
 KI = Throw Correction Factor
 AL_{0.2} = Distance at which velocity reaches 40 fpm

RXO Performance Data (continued)

Induction Ratio				
Throw (ft)	i 16" /400	i 20" /500	i 24" /605	i 25" /625
4	12	7	5	5
6	18	12	9	9
8	24	15	12	12
10	29	18	15	15
15	45	28	24	24
20	60	38	31	31
25	76	47	38	38
30	90	57	47	47

induced room air = supplied cfm * i

induced room air = cfm mixed for given throw

Temperature Difference Ratio				
Throw (ft)	Delta T Ratio 16" /400	Delta T Ratio 20" /500	Delta T Ratio 24" /605	Delta T Ratio 25" /625
4	0.15			
6	0.075	0.092	0.115	0.115
8	0.05	0.065	0.08	0.08
10	0.038	0.047	0.06	0.06
15	0.022	0.027	0.034	0.034
20		0.018	0.024	0.024
25			0.017	0.017

Delta T (Throw) = Delta T (Supply) * Delta T Ratio

Delta T (Supply) = T (Room) - T (Supply)
Delta T (Throw) = T (Room) - T (Throw)

How to Specify RXO

Supply and mounting of fixed air pattern swirl diffuser RXO, constructed from galvanized steel and powder coated in white M9016. To be supplied with matching PERFAIR high performance plenum. By EffectiV HVAC / MADEL.

How to Order RXO Series

RXO-	S	24	+ PERFAIR-ST	24	10
			Plenum	Neck Diameter	6" 8", 10" or 12" D
				Face Dimension	Match Product Face
			Face Dimension	PERFAIR-CS	Round, Side Connection
				PERFAIR-CT	Round, Top Connection
				PERFAIR-SCT	Cylindrical for Sq. Face, Top Conn.
				PERFAIR-SS	Square, Side Connection
				PERFAIR-ST	Square, Top Connection
				16	16" Diameter Face
				20	20"x20" or 20" Dia. Face
			24	24"x24" Square Face	
			25	25" Diameter Face	
			400	400 mm Diameter Face	
			500	500x500 mm or 500 mm Dia. Face	
			605	605x605 mm Square Face	
			625	625 mm Diameter Face	
			Model	C	Round
				S	Square

