nad KLIMA

MADE IN CANADA

RDD

Duct diffuser

catalog 1.1.4

Exhibitions center, Sherbrooke, Canada

Table of contents

Description, areas of application and benefits 1
Configuration 3
Mode of operation
- General operation 4
- Heating from the ceiling (control) 6
- Heat recovery 7

Scope of application 8
Loss of pressure 9
Dimensions and weight 10
Suspension system 11
Specifications 12
Codification 13
Codification of the accessories 14
Codification for anchoring system 15

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Refer to the digital version on **www. nadklima.com**

Version 2019

Valleyfield Arts and Sports center, Canada

RDD

Presentation and benefits

The RDD is a high induction diffuser made to address the ventilation needs of spaces with very large volumes of air. It is ideal for applications where the technology must be not only efficient, but also integrated into the architectural design.

The RDD diffuser is made of brush steel covered with powder coated paint. The standard manufacture size is 1500 mm (59 in) long. Alternatively, it is available in different lengths to meet your needs.

The precise perforations of the RDD are created by laser, according to the data provided by our special software. These perforations enable air diffusion and maintain homogeny (temperature, humidity and density), offering comfort to the occupants.

The positioning of the perforations creates a de-stratification of the air, in spaces up to 18 meters (60 ft) high. This diffuser is strongly recommended for efficiency and energy saving ; it provides more than 35% savings by de-stratification and more than 75% savings for the majority of applications, when heating fresh air in an industrial setting.

Domaines d'applications

- Commercial industry
- Manufacturing industry
- Food industry
- Warehouses
- Shops
- Shopping malls
- Sports complexes: arenas, swimming pools, gymnasiums, stadiums
- Showroom

Benefits

High induction diffuser which homogenizes the air in a room: the temperature, humidity and air density.

- Increased comfort in the occupied zone
  - Comfortable air movement
  - Low temperature differences
  - Low noise
- Energy efficiency from recovery of heat lost at the ceiling
  - >30% heating savings by air destratification for a ceiling >6 m.
  - >75% heating savings of fresh air in an industrial setting (heat recovery procedures)
- Perforations adapted to the needs according to:
  - The length, width and height of the room
  - Volume of air
  - Δ of temperature (heating and cooling)

- Easy to maintain

- Powder coated paint which minimizes dust collection and makes it easy to clean
- Low accumulation of dust inside because it is purged by the holes.

- Durability

- Chip resistant powder coated paint
- Sealed with PVC joint to prevent leakage and seal degradation
- Aluminum suspension rail and duct in brushed metal covered with a powder coated paint.

- Easy installation

- Installed using a suspension rail
- No sealing required
- Fewer suspension rods and installation screws.

Note :
The RDD is recommended for installations higher than 4.3 m (14 ft).
For installations lower than 4.3 m (14 ft), the RRA is recommended.

Thibault-GM sports center, Sherbrooke, Canada

Configuration

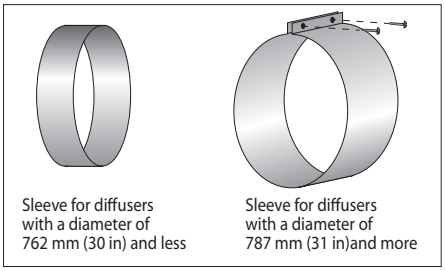
Composition
The RDD diffuser is a smooth circular duct with or without perforations.

The RDD diffuser is available in any diameter from 200 mm (8 in) to 1419 mm (56 in). Metallic reinforcements are installed inside ducts with greater diameters than 400 mm (16 in) to maintain the shape of the duct. At each end, a receiving groove fitted with an integrated PVC gasket ensures a proper seal.

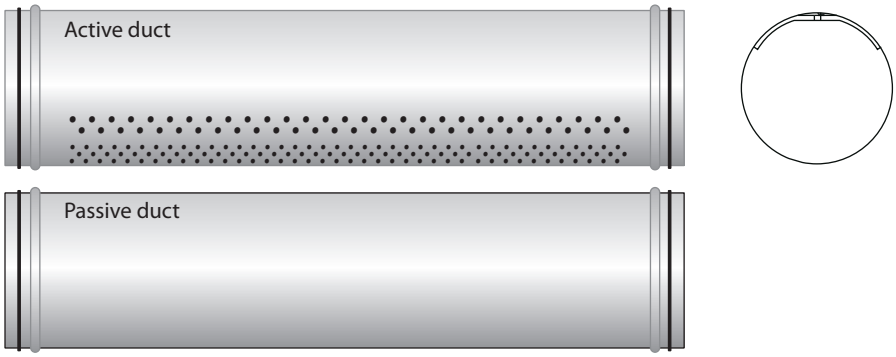
Accessories
All of the standard accessories (elbows, sleeves, reducers, multi-branch connectors, etc.) are available in the precise dimensions of the ducts.

For air balancing reasons, reducers are required between multiple sections. Balancing dampers could be installed on the duct to balance the air flow.

Assembly
The sections of the RDD diffuser are assembled with sleeves, which are adapted to the diameter of the air duct.



Active and passive ducts have a small end (male)



Standard sleeve: 120 mm (4 3/4 in)
(no space between RDD)
X = 0

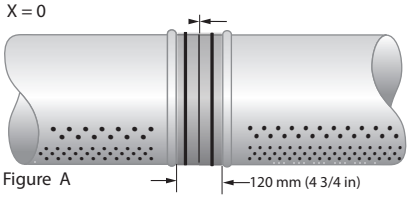


Figure A

Special sleeve (X = spacing between RDD)
X = from 1 mm to 1380 mm

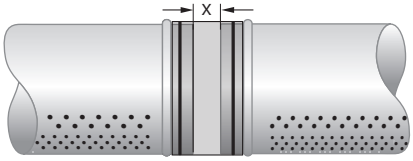
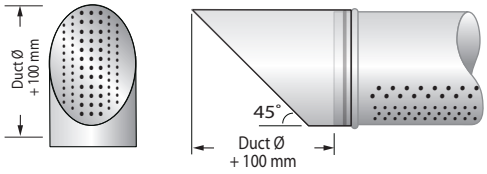


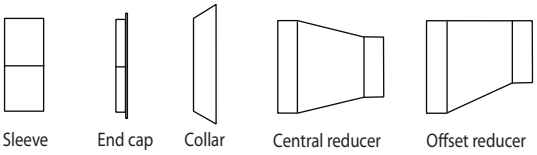
Figure B

Bivelled end-cap with big end (female)

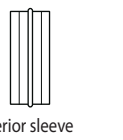


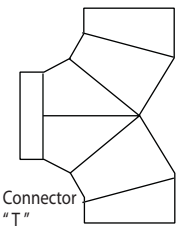
Accessories

female (big-end)

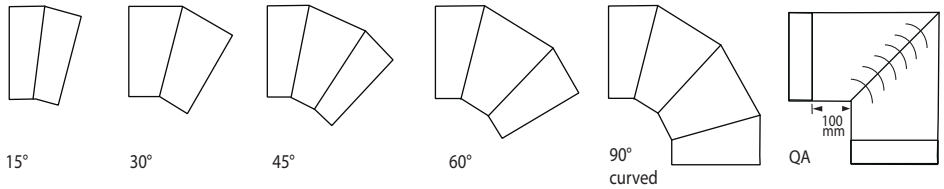


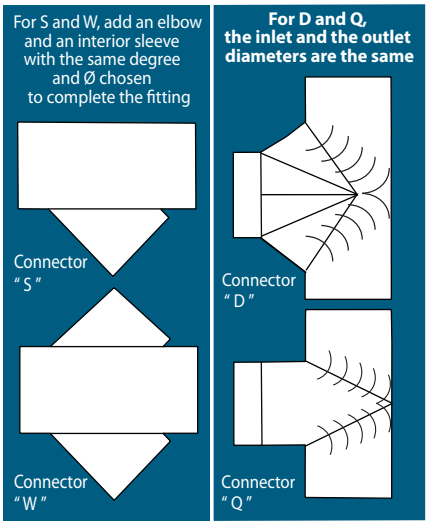
male (small-end)





Elbows: female (big-end)





Mode of operation

General operation

The RDD diffuser is made to surpass the technical limits of traditional air diffusion systems. Its function is based on the principle of high induction diffusion. The perforations of different diameters and their positioning on the RDD promote a displacement of a large quantity of ambient air (see the illustration below).

The thermal exchange between blown air and ambient air occurs close to the RDD and the temperatures rapidly near isothermal levels. The risk of stratification is eliminated, without creating drafts in the occupied zone.

Fabrication and perforation system

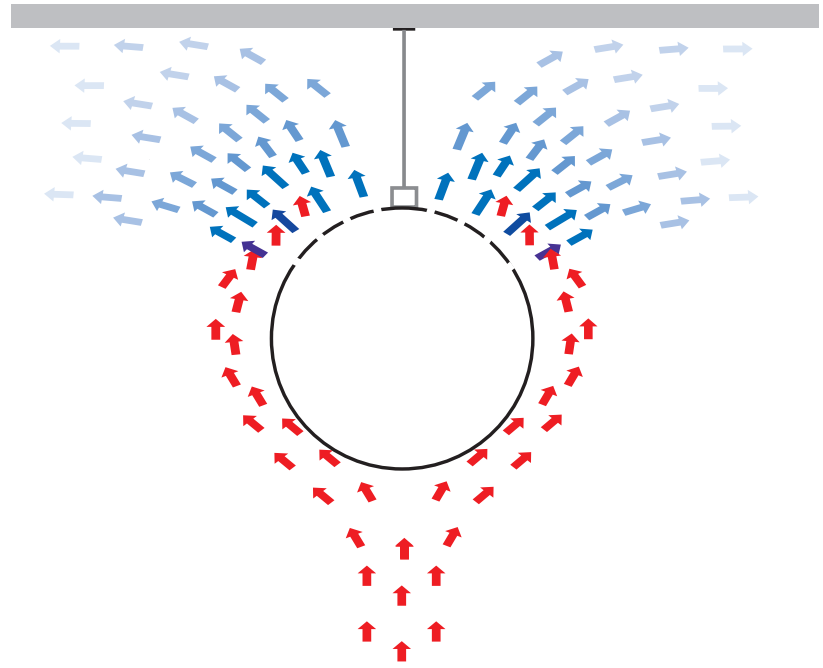
Each RDD duct is made with specific requirements. The RDD achieves a level of performance adapted to the environment and needs of the clients.

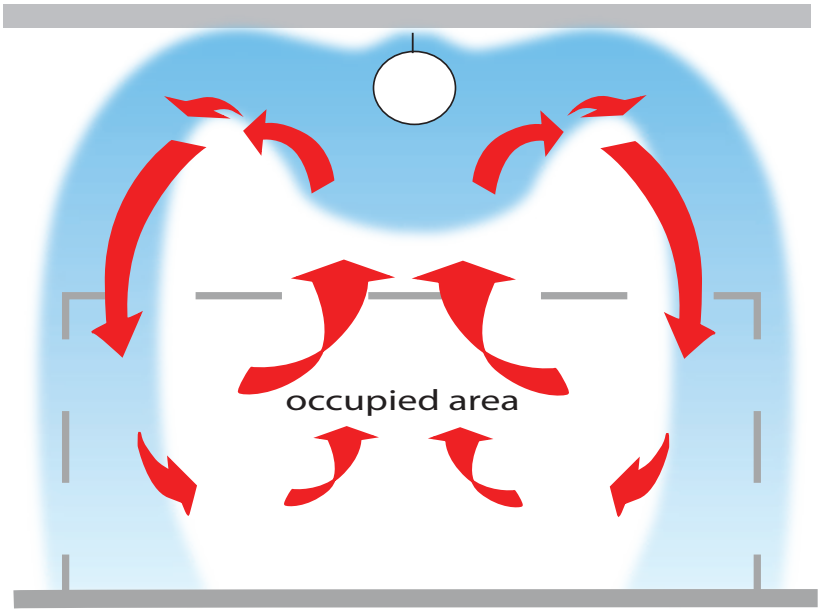
The perforations are made through the RDD with a laser. To determine the quantity, placement, size and distribution of the holes on the RDD duct, NAD Klima enters specific data into software to obtain the necessary hole pattern.

Criteria to be considered for making the RDD:

- Coverage area
- Duct location
- Air volume
- Duct width
- Duct diameter
- Available static pressure
- Height between the floor and the bottom of the duct
- Humidity level in the room
- Temperature in the duct (winter and summer)
- Temperature in the room (winter and summer)
- Desired projection
- Speed at head height (1.8 m) from floor

Representation of the effect of the induction generated by a RDD diffuser.





Mode of operation

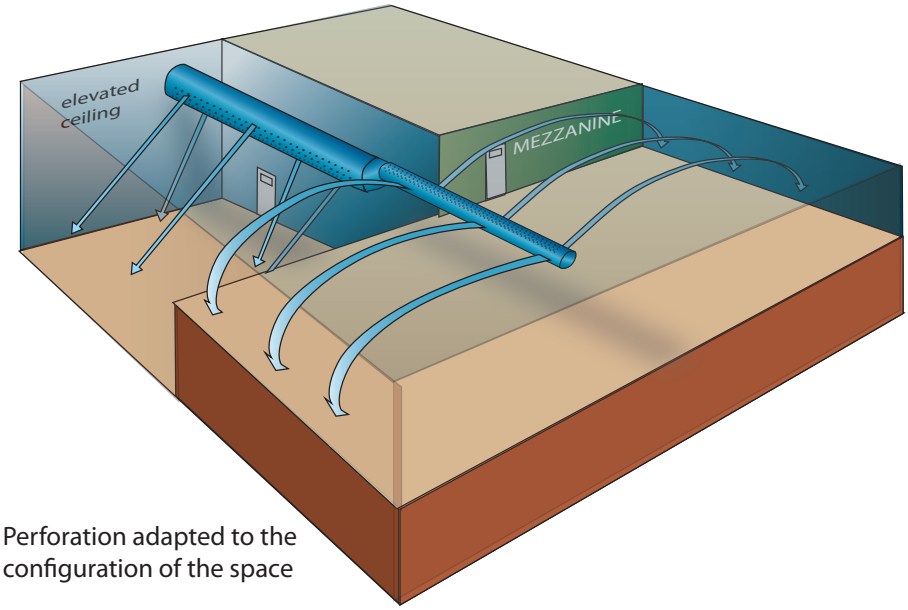
The configuration of the RDD allows the air diffusion to be customized to the room.

Indeed, for areas with **elevated ceilings** (H > 6 m (20 ft)), the RDD is perforated to diffuse air downwards for both heating and cooling modes.

In the case of heating mode, air is directed downwards to combat the force of gravity, both exerted on the different densities of warm blown air and cooler ambient air (figure A). The large mass of air circulates in a controlled manner, from the top to the bottom of the room for an optimal temperature mixture. The difference of temperature throughout the occupied area is not greater than 1°C.

For rooms with **lower ceilings** (H < 6 m (20 ft)), the air is pushed upwards through the RDD (see figure B).
For cooling mode, the multitude of perforations with various diameters allow the air to be pushed upwards, to mix with the rooms hot air which often accumulates towards the ceiling.

The air mixture obtained follows a circular motion through the entire width of the space. This is due of the high induction generated by the RDD and by the air rising, due to the low pressure created below the RDD.



Perforation adapted to the configuration of the space

Height of the room	Diffusion mode
H > 6 m (20 ft)	
H < 6 m (20 ft)	

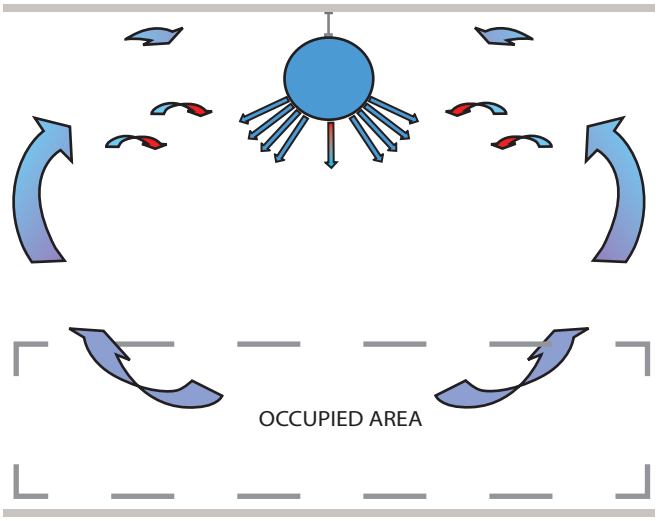


Figure A : Heating mode at an elevated height

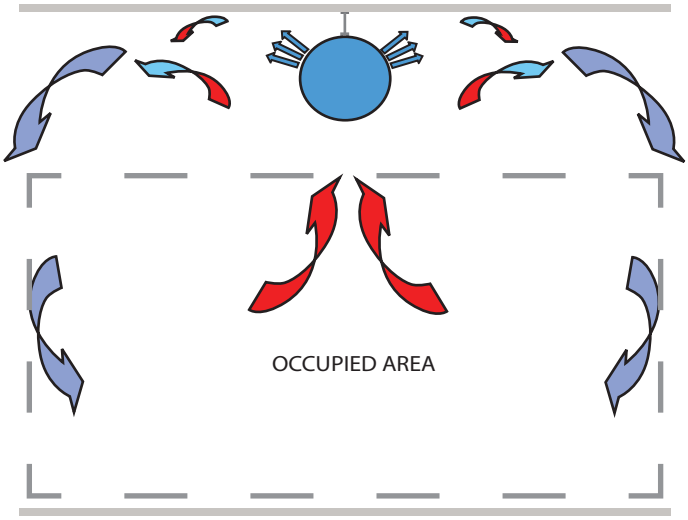


Figure B : Cooling mode at a low height

Mode of operation
Heating height (control)

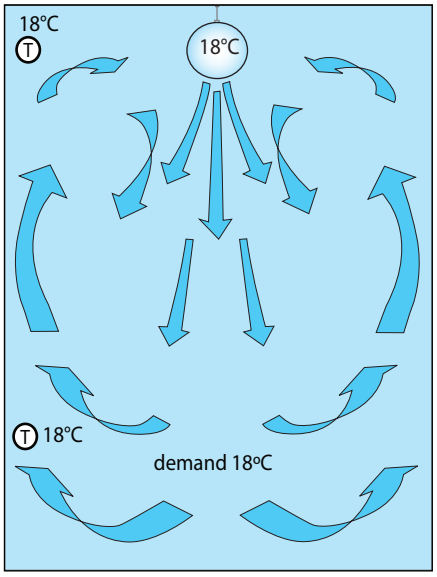
When the duct is installed at 4.6 m (15 ft) and higher and used for heating, it must be controlled with two temperature sensors. Ⓣ

The first sensor is installed at 1.6 m (5 ft) from the ground and the second at the ceiling. The average temperature reading between the two (2) sensors allows the system to start and stop in heating. This will provide the quickest response to heating needs when there is a large difference in temperature. This phenomenon is produced, for example, when there is a shift from night to day or when a garage door is left open for long periods in winter.

The circuit diagrams 1 to 4 illustrate these phenomena well.

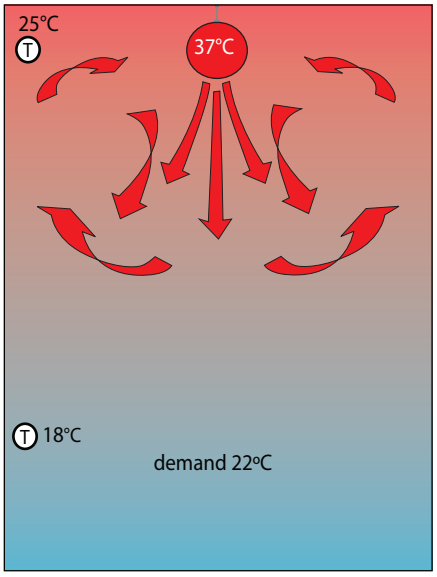
Note:
When there is heating which is external to the system, like a radiant gas system or a heater, it is not necessary to have a double sensor device. A single thermostat in the occupied zone is sufficient.

Circuit diagram 1



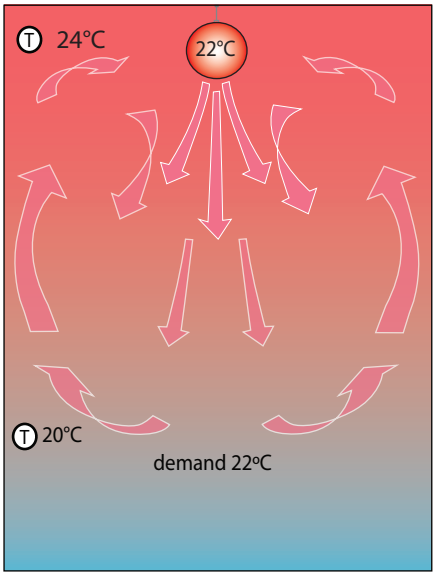
During the night the temperature drops to 18°C.

Circuit diagram 2



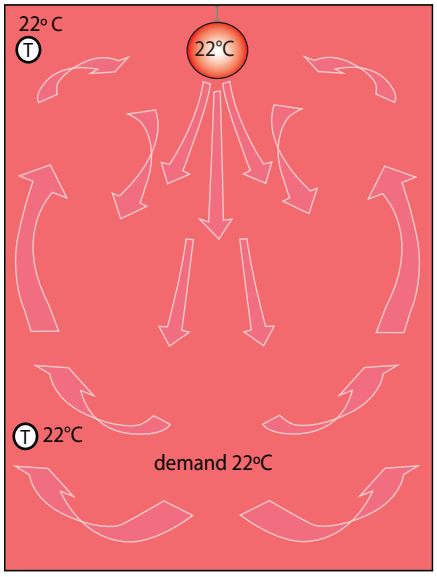
In the morning, a request for 22°C is made. The heating system is switched on.

Circuit diagram 3



The average temperature reaches 22°C, the heating is cut off.
The RDD duct de-stratifies the room; the temperature difference between the two (2) sensors is diminished.

Circuit diagram 4



The demand is met and the temperature is uniform.

Mode of operation

Heat recovering

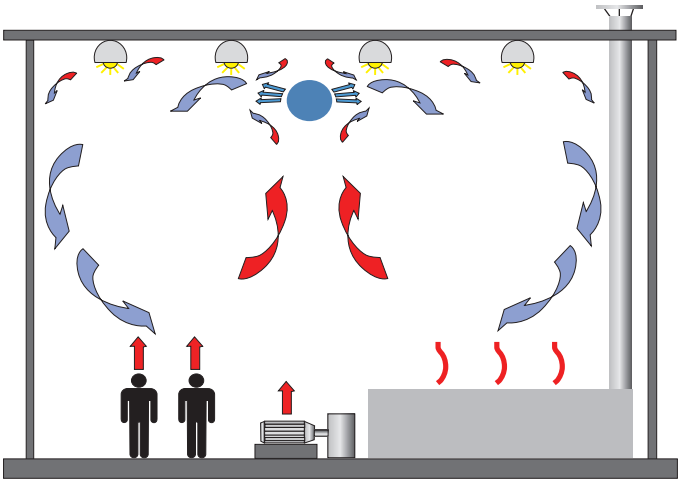
Kraft, Montreal, Canada

All spaces, regardless of their use, require proper ventilation to the applicable standards. This aeration is only possible if the ventilation system in place is efficient. Supplying a room with 100% outside air in winter without heating demand is dependent on external temperatures. The internal heat, generated by heat sources (heat generated by machines, lighting, employees etc.), is possible with the RDD high induction duct diffuser.

In this type of situation, in a space where internal heat sources are very high, it allows for much more significant energy savings. The higher the amount of heat, the more the RDD is efficient.

This efficiency is based on the RDD's single diffusion technique, consisting of the diffusion of a large number of air micro-jets which travel through holes (perforations). The positioning and different diameters of the holes distinguishes the RDD from traditional ventilation systems. Each micro-jet moves a quantity of ambient air, according to the Venturi principle. Induced air flow increases with the speed of the jet. The total volume of displaced air is increased.

Representation of internal heat recovery by the RDD



Range of application

Minimum installation space

Height of the installation of RDD H	Recommended spacing between RDD X MAXIMUM
m (ft)	m (ft)
≤ 4.3 (14)	RRA recommended
≤ 6 (20)	6 (20)
6 - 10 (20-30)	10 (30)
10-15 (30 - 50)	12 (40)

Selecting the diameter for a flow less than 1400 cfm

The RDD diameter duct selection should be made using the parameters on the following table.

Flow range	Ø recommended
below 280 cfm	200 mm (8 in)
281cfm to 460 cfm	251 mm (10 in)
461cfm to 650 cfm	303 mm (12 in)
651 cfm to 1100 cfm	353 mm (14 in)
1101 cfm to 1400 cfm	403 mm (16 in)

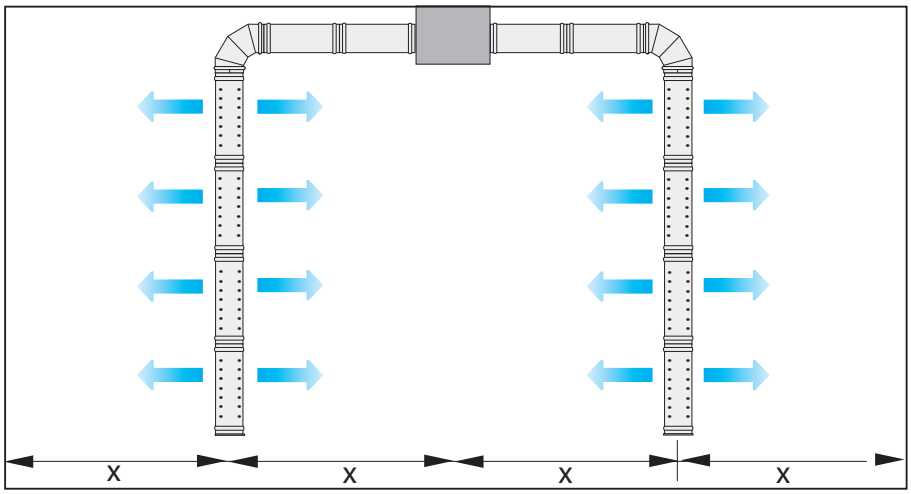
For a higher flow than 1400 cfm, select a duct diameter
(see diameters in the codification on page 13)
for a maximum air speed of 1000 ft/m.

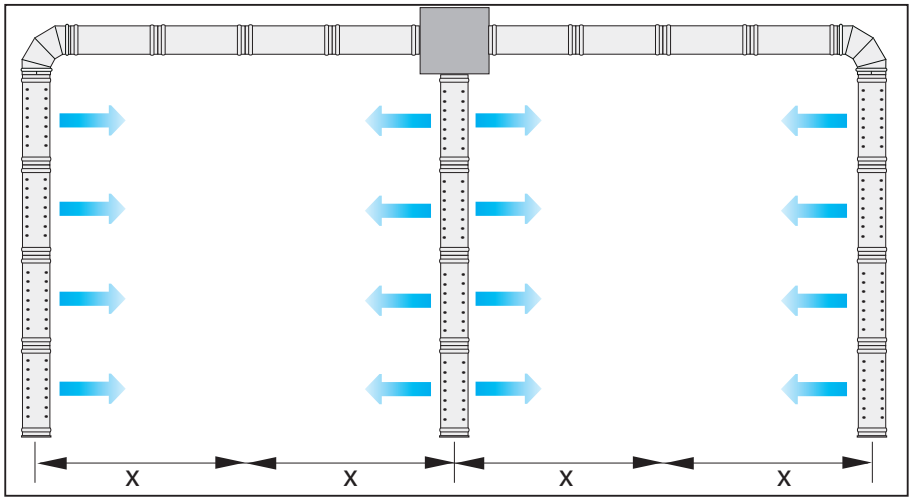
Aerodynamic balancing and reducer placement

To optimize a uniform airflow in the RDD diffuser, its total length must not exceed 15 meters (50 ft) without using a reducer or a balancing damper.

For a diffuser greater than 15 meters (50 ft), a reducer must be installed at the center (see 1) or, to keep the same duct diameter, replace the reducer with a balancing key (see 2).

Spacing of installation





Detailed manufacturing of a transformation

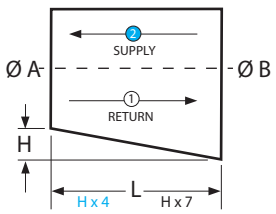
Flat on top Reducer

Orientation of the air flow

② H/L = 1/4
① H/L = 1/7

H = Ø A - Ø B

② L = H x 4
① L = H x 7



Detailed manufacturing of a transformation

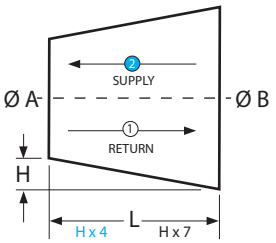
Centered Reducer

Orientation of the air flow

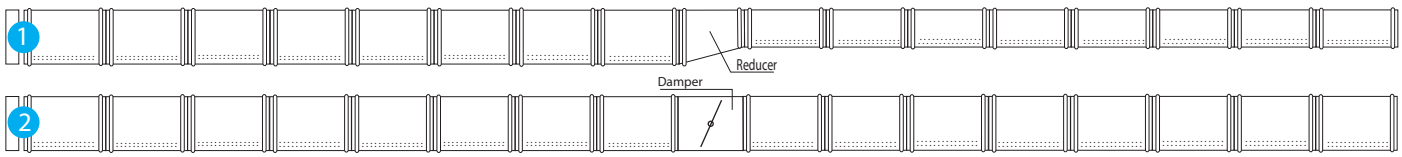
② H/L = 1/4
① H/L = 1/7

H = (Ø A - Ø B) ÷ 2

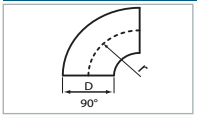
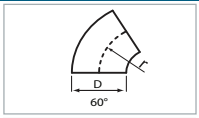
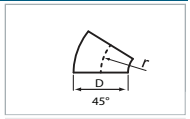
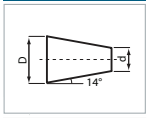
② L = H x 4
① L = H x 7



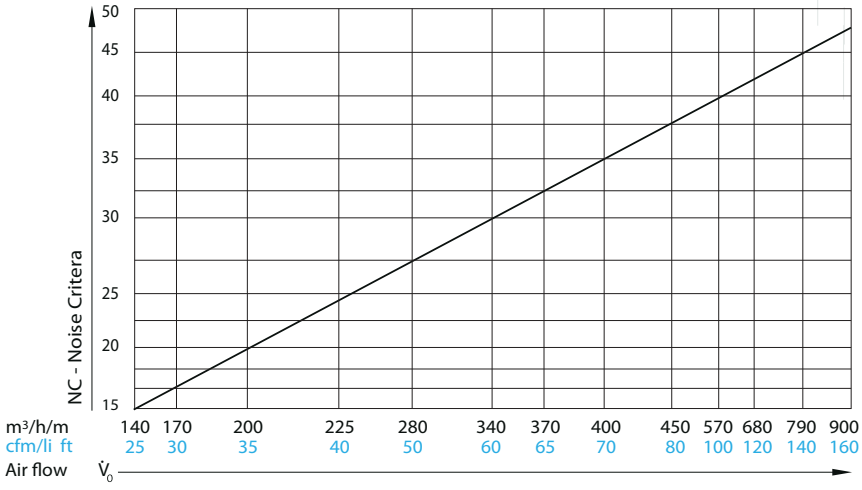
Note: The standard length of reducers is rounded to the next whole foot.
ex.: L = 1.3 ft will be : L = 2 ft



Loss of pressure

ΔP duct		ΔP * Pressure drop $= 1.5 \frac{r}{D}$						Pressure drop	
Duct diameter Ø	ΔP Pressure drop by diameter of the duct 5 m/s (1000 fpm)								
mm (in)	**Pa / m** (inches of water / 100 ft)	Pa	inches of water	**Pa**	inches of water	**Pa**	inches of water	Pa	inches of water
200 (8)	1.63 (0.20)	2.5	0.010	2.0	0.007	1.5	0.005	0.8	0.003
251 (10)	1.31 (0.16)	3.6	0.011	2.1	0.008	1.6	0.006		
302 (12)	1.06 (0.13)	3.0	0.012	2.3	0.009	1.8	0.008		
353 (14)	0.82 (0.10)	3.7	0.014	2.9	0.011	2.3	0.009		
403 (16)	0.73 (0.09)	3.9	0.014	3.0	0.012	2.5	0.010		
454 (18)	0.65 (0.08)	4.1	0.016	3.3	0.013	2.6	0.010		
505 (20)	0.57 (0.07)	4.2	0.017	3.3	0.013	2.8	0.011		
556 (22)	0.49 (0.06)	4.6	0.018	3.5	0.014	3.1	0.011		
607 (24)	0.41 (0.05)	5.0	0.020	3.8	0.016	3.6	0.012		
657 (26)	0.41 (0.05)	5.1	0.020	3.9	0.017	3.6	0.012		
708 (28)	0.37 (0.045)	5.3	0.021	4.0	0.017	3.7	0.014		
759 (30)	0.37 (0.045)	5.4	0.021	4.1	0.018	3.7	0.014		
810 (32)	0.33 (0.040)	5.5	0.022	4.2	0.018	3.9	0.015		
861 (34)	0.29 (0.035)	6.0	0.024	4.4	0.019	4.3	0.016		
911 (36)	0.29 (0.035)	6.1	0.024	4.4	0.019	4.3	0.016		
962 (38)	0.24 (0.030)	6.5	0.025	4.9	0.022	4.8	0.017		
1013 (40)	0.24 (0.030)	6.5	0.025	4.9	0.022	4.8	0.017		
1064 (42)	0.24 (0.030)	6.5	0.025	5.0	0.022	4.8	0.017		
1115 (44)	0.20 (0.025)	6.9	0.027	5.3	0.023	5.3	0.018		
1165 (46)	0.20 (0.025)	7.0	0.029	5.4	0.023	5.3	0.018		
1216 (48)	0.20 (0.025)	7.0	0.029	5.4	0.023	5.3	0.018		
1267 (50)	0.16 (0.020)	8.0	0.031	6.1	0.026	6.3	0.022		
1318 (52)	0.16 (0.020)	8.1	0.032	6.2	0.026	6.3	0.022		
1369 (54)	0.16 (0.020)	8.1	0.032	6.2	0.026	6.3	0.022		
1419 (56)	0.16 (0.020)	8.2	0.033	6.3	0.026	6.3	0.022		

* Based on ΔP = 0.82 Pa/m (0.1 in water / 100 ft)

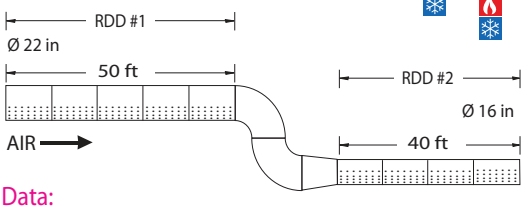


Correction factor for different air velocity in duct:

Air velocity - m/s (fpm)	3 (600)	4 (800)	5 (1000)*	6 (1200)	7 (1400)
NC diagram	- 5	- 3	0	+ 4	+ 7

Height m (ft)	ΔP (at hole) Pa (inches of water)	
≤ 6 (≤20)	75 (0.3)	
6 - 7.6 (20 - 25)	75 (0.3)	125 (0.5)
7.6 - 9.1 (25 - 30)	75 (0.3)	175 (0.7)
9.1 - 12.2 (30 - 40)	125 (0.5)	249 (1)
12.2 - 15.2 (40 - 50)	175 (0.7)	300 (1.2)

Example of calculation



Data:

- Total air flow: 2500 cfm
- Height of installation: 25 ft
- Air speed in the duct: 1000 fpm

Required:

- What are the total pressure drops ΔPt ?

Solution:

The pressure drop in a circuit is due to hole blockage friction and direction change and dimeter change

$\Delta P_t = \Delta P_{holes} + \Delta P_{RDD1} + \Delta P_{elbow\ 90°} + \Delta P_{reducer} + \Delta P_{RDD2}$

ΔP_{holes} = 0.7 in of water, for room height of 25 ft

ΔP_{RDD1} = 50 ft x (0.06/100) = 0.03 in of water, for a duct of 50 ft long and a diameter of 22 in

$\Delta P_{elbow\ 90°}$ = 0.018 in of water

$\Delta P_{reducer}$ = 0.003 in of water

ΔP_{RDD2} = 40 ft x (0.09/100) = 0.036 in of water, for a duct of 40 ft long and a diameter of 16 in

Thus: ΔP_t = 0.8 inche of water

Correction factor for different air velocity in duct:

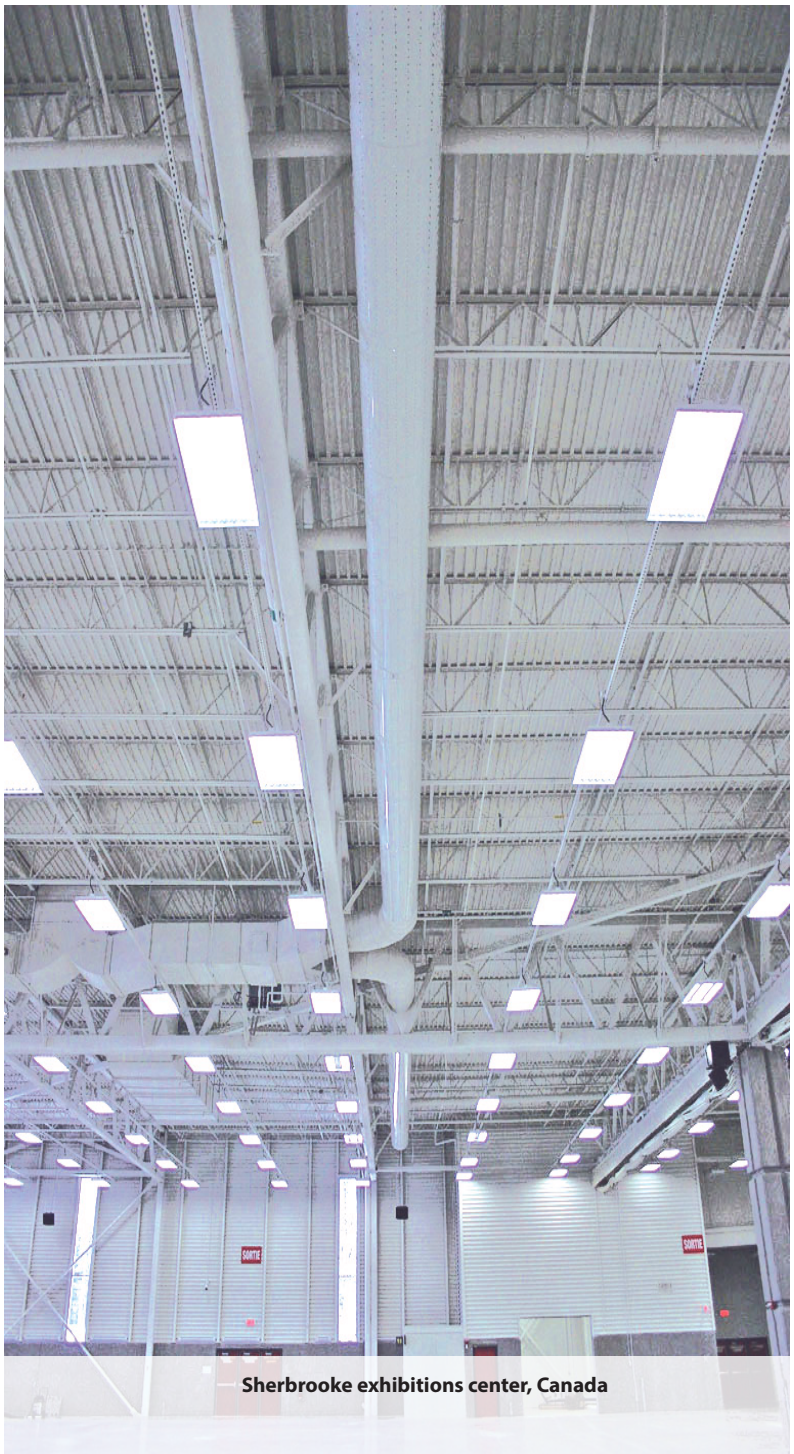
ΔP = F x ΔP (v = 1000 fpm)

Air speed in the duct	ΔP Pressure drop by diameter of straight duct	ΔP Pressure drop in the elbow	ΔP Pressure drop in the reducer
m/s (fpm)	F	F	F
3 (600)	0.4	0.8	0.4
4 (800)	0.7	0.9	0.6
5 (1000)*	1.0	1.0	1.0
6 (1200)	1.4	1.1	1.4
7 (1400)	1.8	1.2	2.0

* Recommended

Dimensions and weight

RDD diameter (mm)	Duct length - L_R 1000	1500	1700
	Weight of passive RDD (kg)		
	Sheet thickness: 0.85 mm		
200	4.20	6.38	7.15
251	5.28	7.92	8.97
302	6.35	9.52	10.79
353	7.42	11.13	12.69
403	8.47	12.71	14.40
	Sheet thickness: 1.00 mm		
454	11.41	17.00	19.30
505	12.67	18.93	21.43
556	13.94	20.83	23.58
607	15.69	23.21	26.22
657	16.93	25.07	28.32
708	18.97	27.74	31.25
759	20.33	29.74	33.50
810	21.70	31.73	35.75
861	23.07	33.73	38.00
911	24.40	35.69	40.21
962	26.40	38.31	43.08
1013	27.79	40.35	45.37
1064	29.19	42.38	47.65
1115	30.59	44.41	49.93
1165	31.96	46.40	52.17
1216	33.36	48.43	54.46
1267	34.76	50.46	56.74
1318	36.16	52.49	59.02
1369	37.56	54.52	61.31
1419	38.93	56.51	63.55
		Standard	

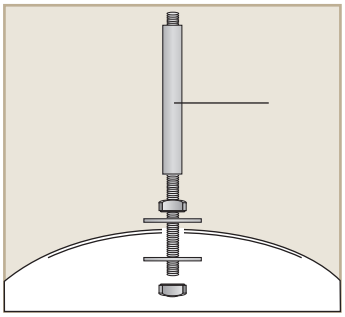


Sherbrooke exhibitions center, Canada

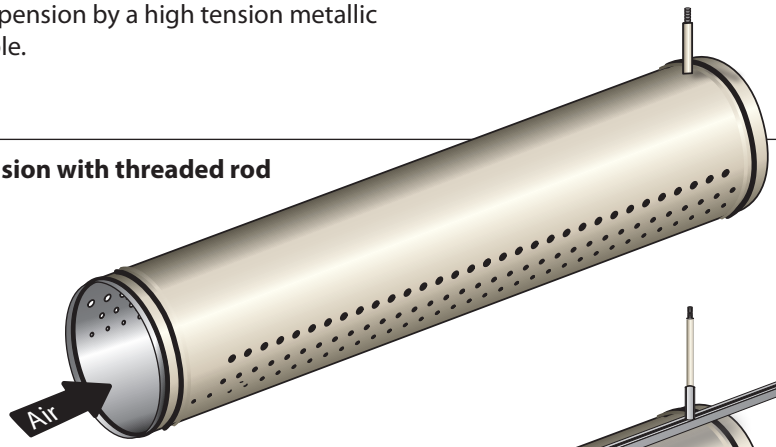
Suspension systems

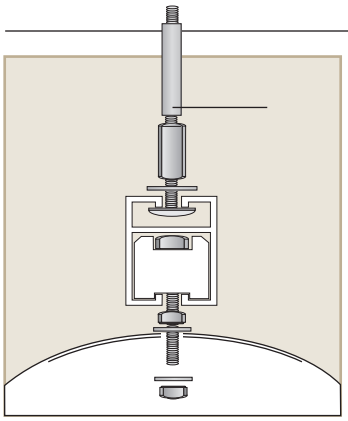
The RDD diffuser's suspension is assured by threaded rods 9.5 mm (3/8 in) provided by the installer.
Upon request, colored rod covers, chosen by the architect, are supplied to cover the threaded rods.

Other methods of suspension are available; the aluminum suspension rail, which greatly simplifies installation, or suspension by a high tension metallic cable.

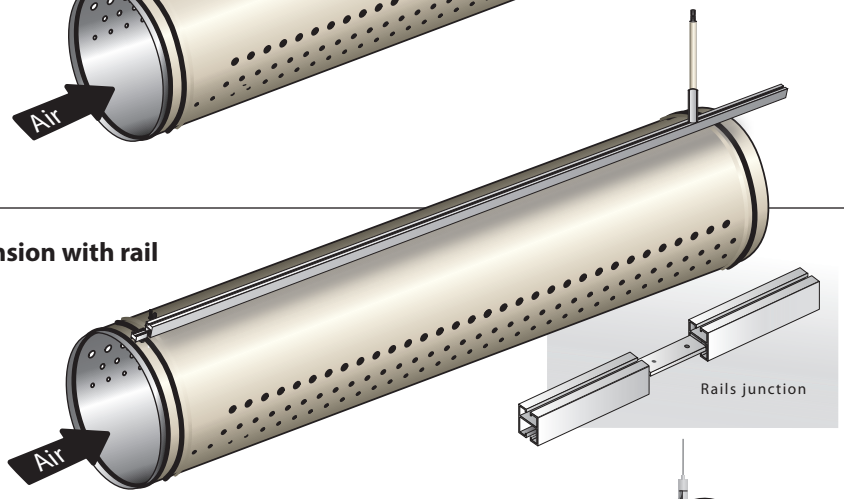


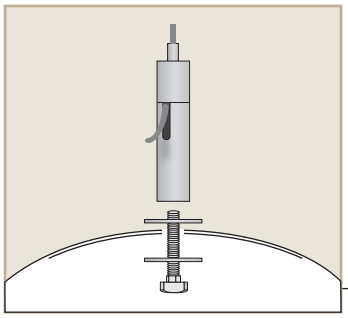
Suspension with threaded rod



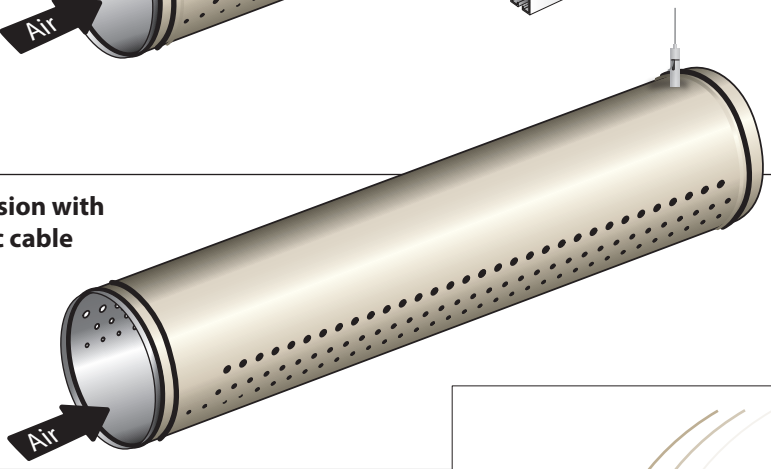


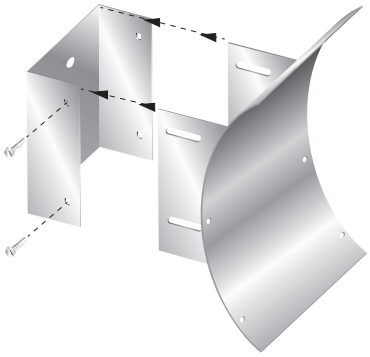
Suspension with rail





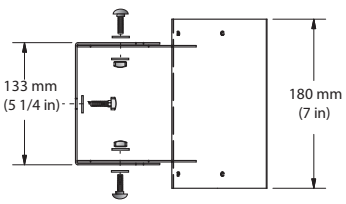
Suspension with metallic cable

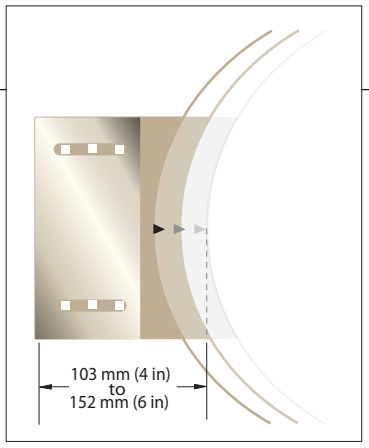




Adjustable wall mount

The two sections of the support allow for a 51 mm (2 in) adjustment.





Specifications

1. Description and physical characteristics

1.1 The high induction duct diffuser shall be made of 22 ga brushed steel for ducts inferior to 457 mm (18 in) in diameter, and 20 ga for ducts with diameter superior or equal to 457 mm (18 in).

1.2 The circular duct diffuser shall be available in diameters ranging from 203 mm (8 in) to 1419 mm (56 in). The duct diffuser shall be grooved at each end and fitted with a PVC gasket, to ensure a tight seal between sections. They shall be assembled using union sleeves.

1.3 Steel reinforcements shall be installed inside ducts of more than 433 mm (17 in) in diameter in order to maintain its shape.

1.4 The duct diffuser shall be painted with a TGIC-free polyester powder coat. It shall have a smooth surface for easy cleaning. The colour shall be chosen by the architect or the customer. The diffuser's paint shall be guaranteed against peeling for a minimum period of 5 years.

1.5 The hole pattern shall be determined with the help of a computer program.

1.6 The burr-free holes shall be made with a laser cutter.

1.7 When required, the duct diffuser shall be equipped with a balancing perforated damper with a self blocking mechanism, allowing for air output from 25% to100%.

1.8 The union sleeves shall not exceed the dimensions of the duct by more than 3 mm (1/8 in), and will be rounded to facilitate cleaning.
The duct shall have a as smooth as possible surface to maintain an architectural appearence.

1.9 The duct diffuser can be passive, without holes.

2. Installation and suspension

2.1 The duct's suspension will be done with threaded rods 96.5 mm (3/8 in) supplied by the installer.

2.2 The threaded rods shall be covered with rod covers, supplied by the diffuser's manufacturer. The colour of the rod covers shall be chosen by the architect or customer, according to the RAL colour chart.

2.3 When required, the duct diffuser's suspension shall be available in three options.

2.3.1 **Rail suspension**
The duct diffuser can be slid into a suspended aluminum rail, offering a solution for varied types of ceilings. The rail can be painted according to the RAL colour chart, the colour being chosen by the architect or customer.

2.3.2 **Suspension by metallic cable**
The duct diffuser can be suspended by metallic cables (aviation style) of galvanised or stainless steel (304 or 316) of medium or high traction resistance.

2.3.3 **Wall suspension**
The duct diffuser can be anchored laterally with an adjustable wall support the same colour as the duct diffuser. This wall support shall be supplied by the diffuser's manufacture.

2.4 When the duct diffuser goes through a wall, a collar adapted to the duct diffuser shall be supplied by the manufacturer.

2.5 The standard accessories shall have the same finish as the duct diffuser (elbows, sleeves, reducers, branches, etc.).

2.6 Each duct diffuser shall be identified with a label. This label shall contain the section number, the direction of the air flow, the number of diffusers and their position.

3. Performances
The manufacturer shall demonstrate for approval:

3.1 A diagram of the air flow, illustrating the air jets' trajectory.

3.2 The pressure loss generated by the system and the duct diffusers supplied by the manufacturer.

4. Balancing

4.1 Balancing of the diffusers shall be done by a ventilation balancing technician, accredited as a qualified professionnal.

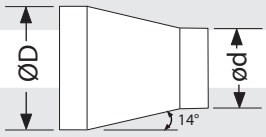
5. Required quality: NAD Klima, model RDD

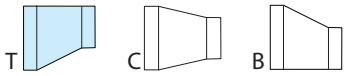
Codification

RDD	**Product**
1000, 1500, 1800	**Lenght L_R**
200, 251, 302, 353, 403, 454, 505, 556, 607, 657, 708, 759, 810, 861, 911, 962, 1013, 1064, 1115, 1165, 1216, 1267, 1318, 1369, 1419	**Duct diameter**
A = Active (with perforation) X = Passive (without perforation)	**Perforation**
9003 = White 9010 = Cream 00SB = Solar Black (standard matte black) 00SM = Silver Matte (standard metallic grey) ____ = RAL color (write the color number of RAL)	**Color of the diffuser**
A = With closed-cell insulation X = Without insulation	**Insulation**
D = With damper X = Without damper	**Balancing damper**
RDD - 1500 - 200 - A - 9003 - X - X	**Example**

Codification for reducers

RDD RED = Reducer	**Product**
254, 305, 356, 406, 457, 508, 559, 610, 660, 711, 762, 813, 864, 914, 965, 1016, 1067, 1118, 1168, 1219, 1270, 1321, 1372, 1422	**Ø D - Input diameter**
203, 254, 305, 356, 406, 457, 508, 559, 610, 660, 711, 762, 813, 864, 914, 965, 1016, 1067, 1118, 1168, 1219, 1270, 1321, 1372	**Ø d - Output diameter**
T = Flat on Top (Standard) C = Centered B = Flat on Bottom	**Configuration**
S = Standard α = 14° A = Other (specify in annotation)	**Length**
9003 = White, 9010 = Cream 00SB = Solar Black (standard matte black) 00SM = Silver Matte (standard metallic grey) ____ = RAL color (write the RAL color number)	**Color**
A = With closed-cell insulation X = Without insulation	**Insulation**
RDD - RED - 305 - 203 - T - S - 9003 - X	**Example**

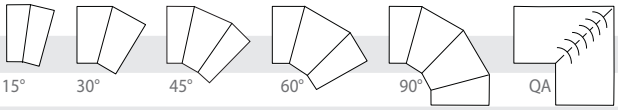




Blue: Standard

Codification of accessories

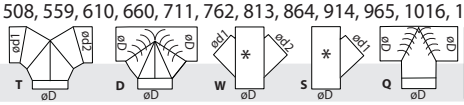
Codification for elbows



RDD	ELB = Elbows	**Product**
	15, 30, 45, 60, 90, QA	**Angle**
	203, 254, 305, 356, 406, 457, 508, 559, 610, 660, 711, 762, 813, 864, 914, 965, 1016, 1067, 1118, 1168, 1219, 1270, 1321, 1372, 1422	**Ø Diameter**
	S = Standard (based on: r = 1.5 D) A = Other (specify in annotation)	**Radius**
	9003 = White 9010 = Cream White 00SB = Standard matte black 00SM = Silver matte (standard metallic grey) ____ = RAL colors (write the RAL color number)	**Color**
	A = With closed-cell insulation X = Without insulation	**Insulation**
RDD - ELB - 15 - 203 - S - 9003 - X		Example

Codification for the branches

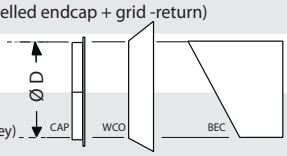
RDD	BRA = Branches	**Product**
	203, 254, 305, 356, 406, 457, 508, 559, 610, 660, 711, 762, 813, 864, 914, 965, 1016, 1067, 1118, 1168, 1219, 1270, 1321, 1372, 1422 (Note : For Q and D, inlet and outlet diameters are the same)	**ØD - Inlet diameter**
	203, 254, 305, 356, 406, 457, 508, 559, 610, 660, 711, 762, 813, 864, 914, 965, 1016, 1067, 1118, 1168, 1219, 1270, 1321, 1372, 1422 (Note : For Q and D, inlet and outlet diameters are the same)	**Ød1 - Outlet diameter** (for T , W and S only)
	203, 254, 305, 356, 406, 457, 508, 559, 610, 660, 711, 762, 813, 864, 914, 965, 1016, 1067, 1118, 1168, 1219, 1270, 1321, 1372, 1422	**Ød2 - Outlet diameter** (for T and W only)
	T, D, W, S, Q	**Configuration**
	9003 = White 9010 = Cream 00SB = Standard Matte Black 00SM = Standard Metallic Grey ____ = RAL colors * (write the color number of RAL)	**Color**
	A = With closed-cell insulation X = Without insulation	**Insulation**
RDD - BRA - 305 - 305 - 203 - T - 9003 - X		**Example**



* for S and W, add an elbow to degree and diameter choosed to completed the fitting

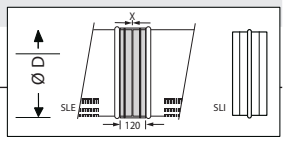
Codification for endcaps and collars

RDD	CAP (End cap), WCO (Collar), BEC (Bevelled endcap), BES (Bevelled endcap + slots -return), BEG (Bevelled endcap + grid -return)	**Product**
	203, 254, 305, 356, 406, 457, 508, 559, 610, 660, 711, 762, 813, 864, 914, 965, 1016, 1067, 1118, 1168, 1219, 1270, 1321, 1372, 1422	**Ø Diameter**
	9003 = White 9010 = Cream White 00SB = Solar Black (standard matte black) 00SM = Silver Matte (standard metallic grey) ____ = RAL colors (write the RAL color number)	**Color**
	A = With closed-cell insulation X = Without insulation	**Insulation**
RDD - CAP - 203 - 9003 - X		**Example**



Codification for sleeves

RDD	SLE (Sleeve) , SLI (Inner sleeve) (no length available)	**Product**
	203, 254, 305, 356, 406, 457, 508, 559, 610, 660, 711, 762, 813, 864, 914, 965, 1016, 1067, 1118, 1168, 1219, 1270, 1321, 1372, 1422	**Ø Diameter of SLE**
	200, 251, 302, 353, 403, 454, 505, 556, 607, 657, 708, 759, 810, 861, 911, 962, 1013, 1064, 1115, 1165, 1216, 1267, 1318, 1369, 1419	**Ø Diameter of SLI**
	XXXX = Non applicable (SLI) 0000 = Standard (The distance between RRA is 0 mm) ____ = Special - write the «x» value (distance between RRA) - from 0001 mm to 1380 mm (54 in) maximum	**Length of the SLE**
	9003 = White, 9010 = Cream white, 00SB = Standard matte Black , 00SM = Silver Matte (standard metallic grey) ____ = RAL colors (write the RAL color number)	**Color**
	A = With closed-cell insulation X = Without insulation	**Insulation**
RDD - SLE - 203 - 0000 - 9003 - X		**Example**

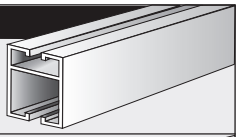
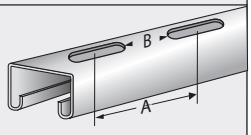


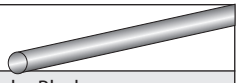
Blue: Standard

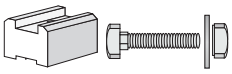
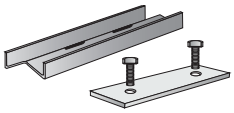
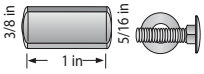
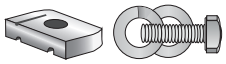
Notes: Our power coated paint are available in the RAL chart colors. Metallic colors are available upon request only.

Codification of the anchorage accessories

Anchorage with rail

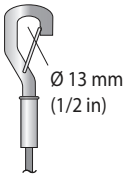
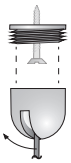
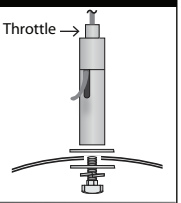
	Description	
RAI	ALU Aluminum rail (1 1/4 in x 1 3/4 in x 10 ft)	
	S33 Steel rail (1 5/8 in x 7/8 in x 10 ft) A : 2″ B : 7/8″	
	9003 = White 00SB = Solar Black 9010 = Cream 00SM = Silver Matte ____ = Color RAL * (write the #) XXXX = Unpainted	**Color**
RAI - ALU - 9003		**Example**

RCT	Rod cover for threaded rod 16 mm X 3.05 m (5/8 in X 10 ft)	
	9003 = White 00SB = Solar Black 9010 = Cream 00SM = Silver Matte ____ = Color RAL * (write the #) XXXX = Unpainted	**Color**
RCT - 9003		**Example**

	Accessories supplied for aluminum rail (ALU)	
RKG	Nylon guides assembly	
RKJ	Junction bar plate 200 mm x 28 mm x 12 mm (7 13/16 x 1/2 X 1 1/16 in) Plate: 60 mm x 16 mm (2 3/8 X 5/8 in)	
RKC	Coupling assembly with bolt and washer for installation with aluminum rail (ALU)	
	Accessories supplied for steel rail (S33)	
RKS	Slider, bolt and washer assembly	
RKG		**Example**

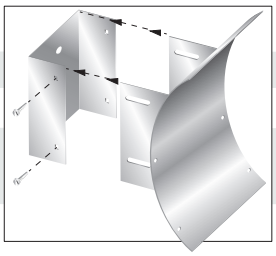
	Touch-up spray paint
CAN 9003	Paint can (RAL 9003)
CAN _____	Paint can (other color RAL) (write the RAL color number)
CAN - 9003	**Example**

Anchorage with cable

	Description of anchors for the ceiling	
CPA	Anchor with hook nickel plated Ø 13 mm x 70 mm x 14.3 mm (Ø 1/2 in x 2 3/4 in x 9/16 in)	
CCP	Swiveling anchor nickel plated Not adjustable Ø 25 x 28.5 mm (Ø 1 in x 1 1/8 in) (screw not supplied)	
	Description of anchor for the diffuser	
CCA	Anchor for duct Adjustment throttle nickel plated Ø 19 x 50 mm (Ø 3/4 in x 2 in)	
	XXXX = Without cable 3048 mm - standard (10 ft)	**Cable length**
	A = Nickel plated steel (standard) S = Stainless Steel (optional)	
CPA - 3048 - A		**Example**

Adjustable wall support

RRA	**AWM**	**Product**
	203, 254, 305, 356, 406, 457, 508, 559, 610, 660, 711, 762, 813, 864, 914, 965	**Ø Diameter of the diffuser**
	9003 = White 9010 = Cream White 00SB = Solar Black (standard matte black) 00SM = Silver Matte (Standard metallic grey) ____ = Color RAL (write the RAL color number)	**Color**
RRA - AWM - 203 - 9003	Annotation	**Example**



www.nadklima.com

NAD Klima
144, rue Léger,
Sherbrooke, QC, J1L 1L9 Canada
T : 819 780-0111 • 1 866 531-1739

info@nadklima.com

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