OPTICLIMATE REVOMAXII - AIR DUCTING GUIDE

6000/10000/15000/15000S/21000/30000

The RevomaxII needs sufficient return and supply air installation for good performance with an air hose to distribute the air evenly into the grow room. Our special designed Free Air model can operate without air hose. Inadequate measurements and/or installation of air intake and outlet can lead to freezing, overheating, malfunction and even permanent damage to your setup. In this document we'll guide you through the process of choosing the correct air hose and air intake.

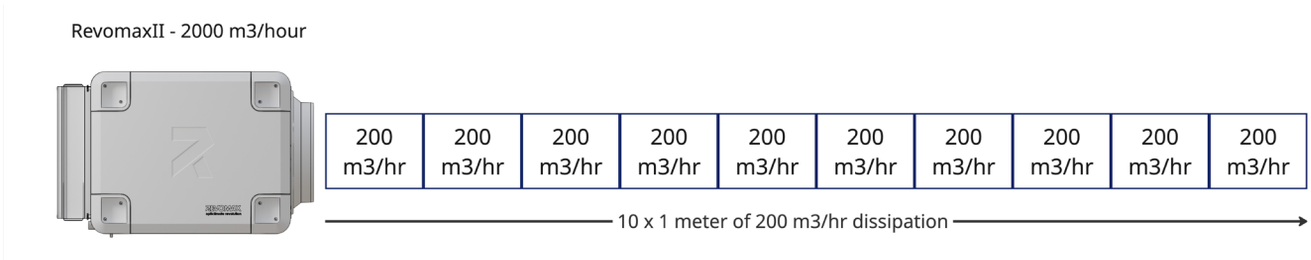


Airhose on RevomaxII

Supply air pressure

RevomaxII and their air hoses units are designed to operate at a static pressure drop of around 70 pascal. For 3rd party air hoses we recommend to keep the pressure drop between 60 and 110 Pascal. If you do not have equipment to measure the pressure drop, consult a professional to make sure the system operates to specification. To reach this pressure drop, we'll use a calculation based on the air supply capacity in m3 per hour of the RevomaxII, devided by the dissipation capacity of the hose in m3 per meter per hour.

Theoretical example: if a RevomaxII outputs 2000 m3/hour and your hose can dissapate 200 m3 per hour per meter, you need a hose of 10 meter.



In this theoretical example, we have a perfect load, in a perfect environment. In practice the growroom is most often the factor that decides the needed lenght of the hose. In theory, when we have only 5 meters to overcome, the capacity per meter needs to double to 400 m3/hr/meter to cope with the flow and pressure. In another example, we need 20 meters of air hose. In that case we need a hose that dissipates only 100 m3/hr/meter. But, we always have to start with the RevomaxII supply air diameter and can only reduce diameter with tee's to prevent pressure to rise above operating values.

Use the tables below to assess what air hose and in what lenght you need for your RevomaxII.

RevomaxII supply air capacity

Model	Capacity	Flange Size
6000	1300 m3/hr	250 mm
10000	1600 m3/hr	315 mm
15000	2200 m3/hr	315 mm
21000	3900 m3/hr	400 mm
30000	6500 m3/hr	450 mm

RevomaxII airhose supply air capacity

Model	Capacity
160 mm	120 m3/hr/mtr
200 mm	160 m3/hr/mtr
250 mm	200 m3/hr/mtr
315 mm	250 m3/hr/mtr

Real life conditions

The goal is to come as close as possible to a perfect one-to-one dissipation. In real life we recommend a maximum margin of 10%. Our calculations and examples are a guideline. Every site, building and grow room is different but always adhere to the basic principles in this document. When going down in diameter size (to increase area coverage), we also need to branche the air ducting. For each size down we need an extra branch. Never reduce the diameter before branching, this will increase pressure. Only use tee's as a reducing method.

For example, when we use a RevomaxII 15000 with a diameter of 315 mm and we need 200 mm (down 2 sizes) because we need to cover a big room, we need to make 3 branches to cope with the increased pressure.

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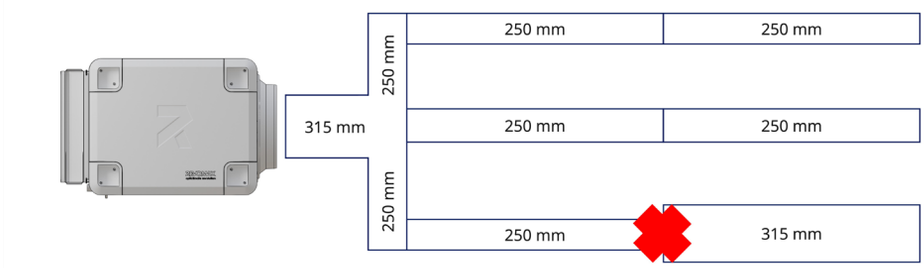
Common practice

A grow room rarely is a perfect shape and we often need to cover a greater area than a single air hose can supply. By using metal splitters you can create as much branches as you need, as long as the total air dissipation of all air hoses combined match the RevomaxII air output capacity and the reducing rule (only with tee's) is applied. As described earlier, start with the diameter the RevomaxII and work down in steps. A new branch for each size down in diameter. Use closed air hoses (preferably metal) with a smooth inside to cover distances to place your hoses in the most effective way to evenly dissipate the air in your grow room.



Standard Metal Air duct T

You can always reduce the diameter along the route with Tee's, but never widen it again later in the branch. There are physical limitations of airflow, pressure and diameters. Consult a professional of contact us at airluxtechnologies.com for special situations or any doubt on the solution you need for your situation.



Air Speed

Airspeed is a direct indicator of good air flow. The air speed must never drop below 70% when the fan is at maximum. When the speeds drops below 70% the air hose is too restrictive and pressure drop is too high. Navigate on you Smart Remote Controller to Menu > Preferences > Sensors > 123 to check the air speed.

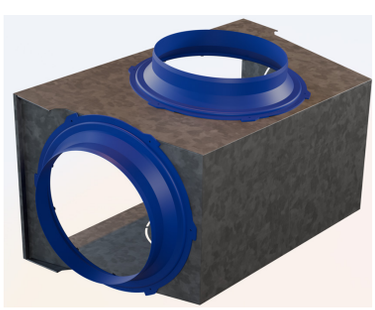


Smart Remote Controller

Return air

For the return air intake we have two distinct options: with, or without a Plenumbox. If you do not use a plenumbox (when the RevomaxII is installed inside the growing area), we only need to make sure the backside of the unit (air intake) has at least 15 cm of free space without obstructions.

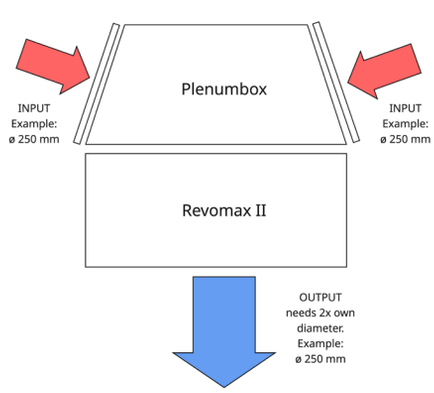
When you do use a Plenumbox, in case the RevomaxII is installed outside the growing area, it is important the connected air intake hose or hoses have sufficient capacity. The diameter of the intake must be at least twice the supply air diameter. More is always better.



Plenum Box

Example: The RevomaxII 6000 has a supply air diameter of 250 mm, the plenumbox needs a minimum of two 250mm air intake hoses for proper cooling power. When only a single air supply hose can be installed, calculate by the surface of the hose, not the diameter.

The surface area of a 250 mm hose is approx. 49000 mm² so we need a minimum of approx. 98000 mm² surface area for sufficient air intake. This translates into a hose with a minimal diameter of 354 mm, not 500 mm.



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