

Process Automation

Sustainable agricultural technology for the future of farming

Pure Life Carbon, Red Deer, Canada

**Innovative growing mediums for
food production with solutions
by GF Piping Systems**

CO₂-negative growing mediums for the agricultural industry thanks to Process Automation

The agricultural industry is currently facing a difficult challenge – it has to supply food to a growing number of people while simultaneously becoming more sustainable. As a result, Canadian company Pure Life Carbon has developed carbon-based growing mediums for indoor farming applications. Compared to traditional growing mediums, they are not only carbon-neutral but also require 90% less material volume during plant cultivation. GF Piping Systems provides solutions for an automated and efficient production.

Project background

During production, the company subjects wood to high temperatures and turns it into carbon. This carbon is then transferred to 4.000-liter tanks where it is enriched with nutrients that are essential for cultivation. For this step, Pure Life Carbon uses a combination of process water and special chemicals that transform the carbon into a sustainable growing medium. In order to make production more efficient and meet the requirements of the agricultural sector, a modern piping system is necessary.

Selected technical solution

Pure Life Carbon uses a complete solution by GF Piping Systems. It consists of valves, actuators, measuring technology and controllers that close the control loop and offer complete process automation. The system transports the carbon from large silos to the tanks where it is enriched with nutrients. At the same time, the piping system collects the used process water and purifies it in a filtration plant before it is used for the next cycle.

Achieved improvement

The control loop, which is closed with the help of Process Automation, not only makes life easier for the employees but also significantly increases the efficiency of the production. In addition, all components supplied by GF Piping Systems are made of modern plastics and therefore guarantee a corrosion-free and long-lasting operation. At the same time, they are a sustainable alternative to metal products as they have a lower CO₂ footprint during their production phase as well as a prolonged service life. For Pure Life Carbon, a close collaboration with GF Piping Systems is also an important factor in order to optimize the production processes of their growing mediums.

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Carbon is turned into a sustainable growing medium thanks to process automation.



The CO₂-negative growing mediums require up to 90% less material volume compared to traditional products.

Customer benefits

- From valves and actuators all the way to measuring technology and controllers – GF Piping Systems offers complete ecosystems for process automation.
- Products by GF Piping Systems combine modern technology with sustainable materials that make industrial plants future-proof.
- The plastic components are corrosion-free and require very little maintenance. This leads to a longer service life and lower costs compared to metal components.

