

 nebiam





Latourell Falls, Oregon

Our Vision for Nebia

We wanted to take a moment to thank you for all of your support, share our motivation for building this product, and outline our vision for the future.

Nebia is first and foremost about a worldview that our place on this planet is shared, and we are all fortunate to be here. We aim to make products that the world truly needs. Through our company and the products we create, we hope to change how people interact with water in their daily lives and, in doing so, inspire a generation of people to innovate towards a more sustainable future.

The world's population is projected to grow from seven and a half billion to ten billion people by 2050. It is paramount to the success and wellbeing of future generations that we find ways to use Earth's limited supply of water more efficiently. Achieving this will require commitment across countries and industries to rebuild infrastructure, develop novel solutions, and change our daily habits.

At Nebia, we plan to address this challenge by reinventing the major touchpoints we have with water in our homes. We decided to start with the shower, where we experience some of the most intimate and restorative moments we have with water. Showers are a part of our daily ritual, and provide some of the only moments we have alone, just to ourselves, free from distractions and notifications. Though water efficient showers have existed for some time, they have achieved limited success. Your Nebia Shower System is our answer to this. We have designed it to challenge the conventional norm that "more water is better". Through meticulous research and thoughtful human-centered design we believe we can, in fact, create a better experience that saves a meaningful amount of water.

Looking ahead, we plan to bring this same approach to reinvent the other key moments we have with water in the home. The Nebia Shower System represents the first step of this journey.

Thank you for joining us!



Nebia Co-Founders

Carlos Gomez Andonaegui, Philip Winter, Gabriel Parisi-Amon



Mexico City



San Francisco

How It All Began

Nebia was born in 2010 in Mexico City, where 20 million people reside in a sprawling metropolis 8,000 feet above sea level.

At the time, Carlos ran a national health club chain and endeavored to reduce the water used by the club's 25,000 daily visitors. While searching for a solution, he uncovered Nebia's formative question: How much water is needed for a truly great shower? To answer this, he turned to his father, Emilio, a retired engineer and lifelong tinkerer. Together, they began building prototypes to test in the gyms.

Not long after, Philip met Carlos after joining a non-profit focused on entrepreneurship as

a means for economic development. Philip had previously directed his passion for sustainability working at a social enterprise building compostable toilets for the developing world. He was immediately intrigued by the challenge of building water efficient showers that people would want to use.

In 2014, Nebia moved to San Francisco to build a product that would resonate on a global scale. Here they met Gabriel a mechanical engineer with a background in thermofluids who was equally enthusiastic about building a product with a core technological challenge and a compelling impact on the planet. The Nebia team began to grow, bringing together

thermofluids experts, product designers, and passionate storytellers. Meanwhile, the expanding team garnered feedback on how to improve prototypes with various pilot tests at Equinox Gyms, Stanford University, Google, and Apple.

Five years after its conception, Nebia launched a Kickstarter campaign. Eight thousand three hundred backers from around the world empowered the team to take the Nebia Shower System from prototype to product.

The Nebia Shower System is our company's first step in a greater movement towards using

our planet's resources more efficiently. We have a responsibility and an opportunity to make great products that have a positive impact on the world—and be profitable while doing so. Water conservation is a global issue. Our vision is to scale our technology to reach areas of the world where sanitation and water conservation are most pressing.

Nebia was born in the developing world and our goal has always been to make it affordable enough to go back.

Why Water?

The world's population is rising and our water supply is increasingly stressed.

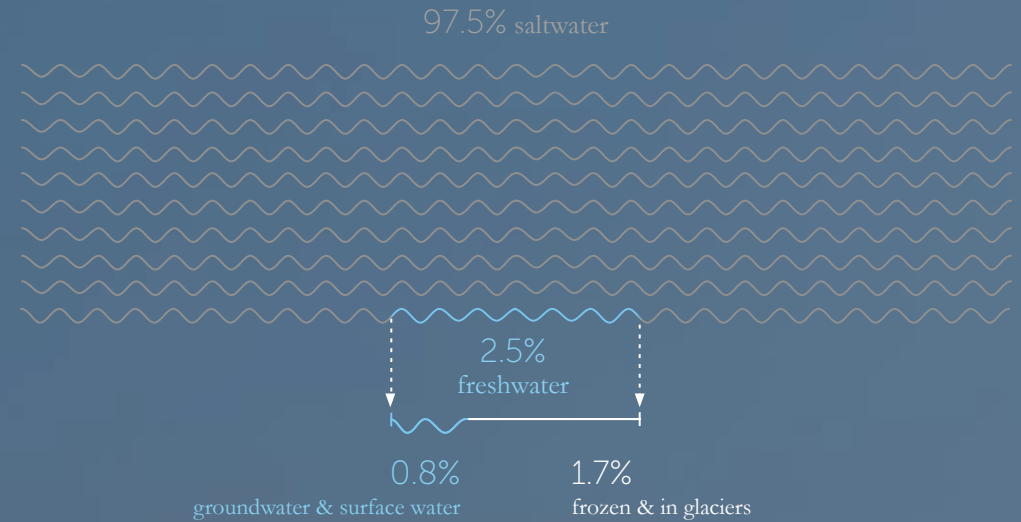
The global population will likely increase by two and a half billion people in the next few decades. As a result, we will need to distribute the same amount of freshwater among 25% more people.

Meanwhile, the U.S. uses nearly two times more water than the global average. We have become accustomed to a lifestyle that relies heavily on water, from the food we eat to the clothes we wear. This cannot be sustained as our population increases and droughts become more frequent as a result of climate change.

Our future depends on conserving our water supplies, but conservation cannot be the sole method we take to create meaningful change.

Over the last century virtually every household appliance has been completely re-invented, but shower technology has not changed. As a society, we must create solutions that address inefficiencies in the water industry more directly. Let's not just take shorter showers; let's reinvent the way we interact with water altogether.

Global Water Supply



Only 0.8%
of the **total water volume** on Earth is usable.

Global population will grow by
2.5 billion people
by 2050, putting an immense strain on our
water supply.

Water demand has grown at more
than twice the rate of the population
in the last century.

Water demand is projected to
increase by 55% globally from 2000
and 2050.

By 2025
1.8 billion people
will be living in regions with absolute water scarcity.

To meet the growing strain on the global water supply, we must
innovate in all of the ways we use water on a daily basis.

Green Home, Happy Home

In many parts of the world, clean water flows out of taps at very little cost and with very little effort. It is easy to forget how valuable this limited resource is when it magically appears in our houses. However, clean water will not be plentiful forever. As climate change brings increased droughts and extreme weather events, all of us will need to adapt to a world with more people and fewer resources to go around. We can start by changing what we have the most control over: our water usage at home.

From the clothes we wash to the dishes we scrub and the showers we take, we rely on water for many essential activities in the home. Sometimes it can be difficult to visualize how much water we use in a single day. A traditional shower, for example, uses 20 gallons of warm water in only about 8 minutes. Showers alone account for 20% of water usage and 39% of hot water usage in the home.

The Nebia Shower System establishes an entirely new standard in shower usage, reducing water consumption by up to 70%, using just 6 gallons of water in 8 minutes. The savings in both water and energy translate to a lower environmental footprint and lower utility bills.



Average Yearly Savings

for a household of 4 in California



20,951 gallons = 335,216 glasses of clean drinking water



135 therms* = 78 days of heat for the average home

= \$ 502 per year

The Evolution of the Nebia Shower System

Over the years, we have iterated hundreds of times and utilized a wide array of prototyping methods. Below is a collection of our most memorable prototypes.



JAN 2014

This design dates back to the company's beginnings in Mexico and was used by over 250 people in gyms across Silicon Valley. Our first backers showered under this version!



JAN 2015

To increase the temperature profile, we created a perimeter spray. Using hot sand, we bent PVC tubes. Though the epoxy survived only a few minutes before bursting, it was enough time to validate this key concept.



FEB 2015

This version of Nebia prioritized adaptability over aesthetics and was designed to enable assembly of dozens of prototypes in one day. Our testers often referred to it as our 'steampunk prototype' for its retro-futuristic characteristics.



OCT 2015

To optimize the Nebia experience, we needed to control the flow of water to the nozzles. We utilized simulation software for the first time, and we laser cut acrylic to create paths for water to flow.



DEC 2015

This prototype set the golden standard for our sliding mechanism. Though it may not look like much, the ability to smoothly change the height of the Nebia Head allows people of nearly all heights to share and customize their Nebia experiences.



APR 2016

As our final prototype build before kicking off tools for mass production, we used this iteration to finalize design features and to pinpoint areas where design for assembly changes were needed.



AUG 2016

As one of our first 75 units built at our manufacturing facility, this unit was one of the first built with real and scalable manufacturing processes during our Engineering Validation Testing.



OCT 2016

Our Design Validation Testing units gave us a first look at the tuned in aesthetics of our design. This was our final prototype build before building Nebia Shower Systems ready to send to our customers.



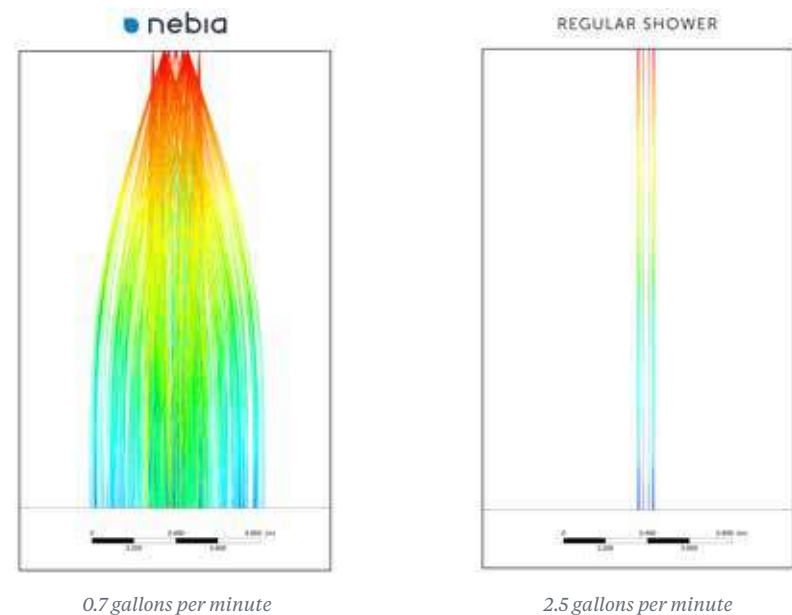
Engineering an Experience

In order to both reduce water usage and improve user experience, the engineering team faced a challenge: how do you simulate the sensation of more water while actually using less? Our answer was to break water into smaller droplets dispersed over a larger area—a technique known as atomization.

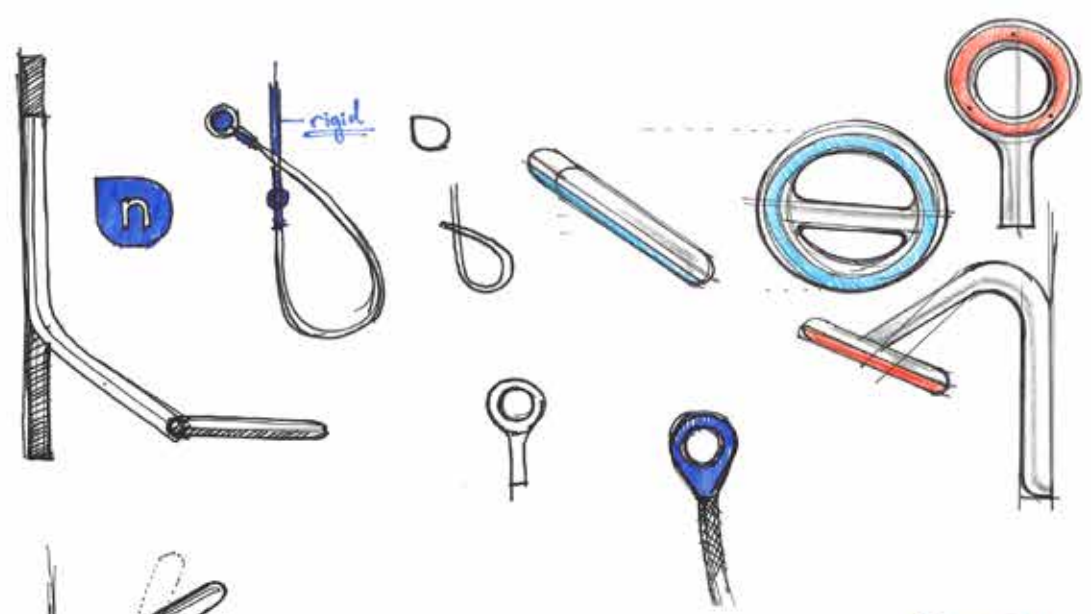
Nebia's H₂Micro™ technology creates millions of tiny droplets, increasing the surface area of water by 10X all while saving up to 70% of the water used in conventional showers. This forms a warm, enveloping curtain of water that embraces you.

Atomization has long been used in applications ranging from rocket engines to agriculture. However, it was not immediately obvious how to adapt this technology for use in showers, as smaller droplets also introduce thermal engineering challenges. As droplets decrease in size, their surface area to volume ratio increases, making them lose heat to the surrounding air more quickly. In contrast, larger droplets retain heat better, but their sensation can be uncomfortable for the user. Seeking a balance between these two competing phenomena became one of our engineering team's primary challenges.

Our team first used physical nozzle arrays to test the temperature and sensation of different droplet sizes. To expedite our progress we utilized computer modeling software to simulate thousands of nozzles and spray arrays to thoroughly understand the dependencies between droplet size, velocity, spray angle, pressure, and nozzle geometry. This enabled our team to achieve the optimal balance between temperature and sensation.







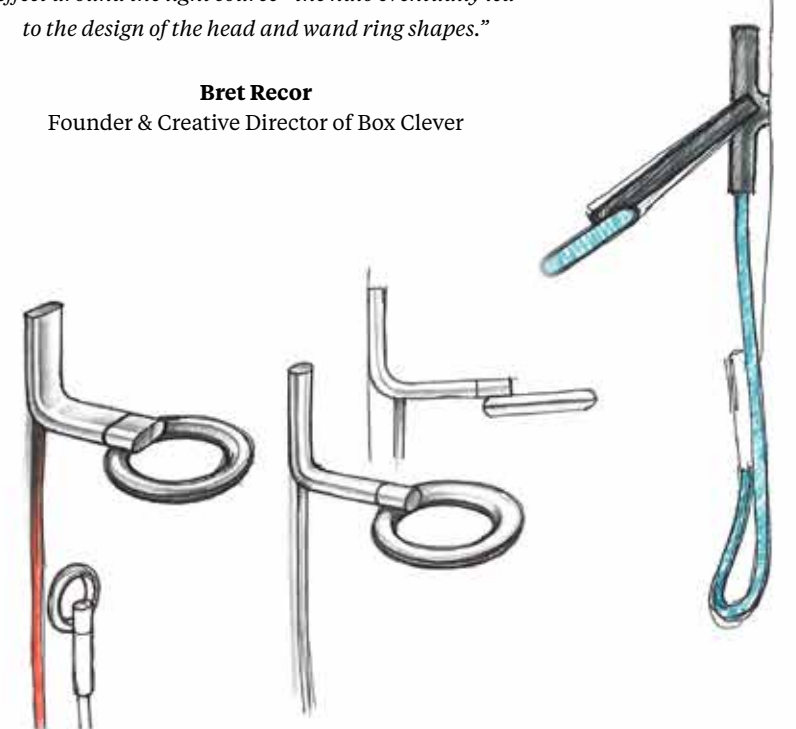
Considered Design

"After I tried the first prototype, I knew there was tremendous potential. We approached the design process from the experience and then worked backwards, removing complexity at each step."

"Our priority was to create a design that is iconic yet universal and representative of Nebia's mission. It had to last both physically and visually. For inspiration, we looked at all things water, thinking about how to create clouds, which is not easy. We were inspired by how light reacts with atomized water to create a halo effect around the light source - the halo eventually led to the design of the head and wand ring shapes."

Bret Recor

Founder & Creative Director of Box Clever





Design for Minimal Impact

We selected the materials, manufacturing processes, and manufacturing locations with a focus on minimizing the environmental impact of making the Nebia Shower System.

Extrusion

The arm and bracket of the Nebia Shower System are extruded: a process that pushes molten aluminum through a two dimensional die forming its final shape with minimal wasted material.

Aluminum

Aluminum is one of the most sustainable metals. It can be remelted and reused repeatedly. Recycling aluminum takes just 5% of the energy needed to mine and process new aluminum.

Plastic Regrind

The process of injection molding plastic creates excess material that is often wasted. At scale, we will regrind this remaining plastic and use it to make new parts.

Sustainable PVC-Free Hose

Our hose is the first in the industry free of PVC (polyvinyl chloride). Despite its prevalence in the plumbing industry, PVC is one of the most environmentally harmful plastics. Its production and disposal releases toxic contaminants to the environment.

Recyclable Packaging

Packaging waste makes up one third of all trash. We designed our packaging to be entirely recyclable with the exception of a handful of small pieces to protect the product in shipping.

rPET

Nebia's cleaning caps are made from rPET (recycled polyethylene terephthalate), a plastic made from recycled bottles.



Behind the Manufacturing

The Nebia Shower System is manufactured and assembled in the U.S.A. We made this decision for three primary reasons: to guarantee the highest quality craftsmanship, to minimize the environmental impact of our supply chain, and to ensure that the workers involved in our project have fair wages and good working conditions.





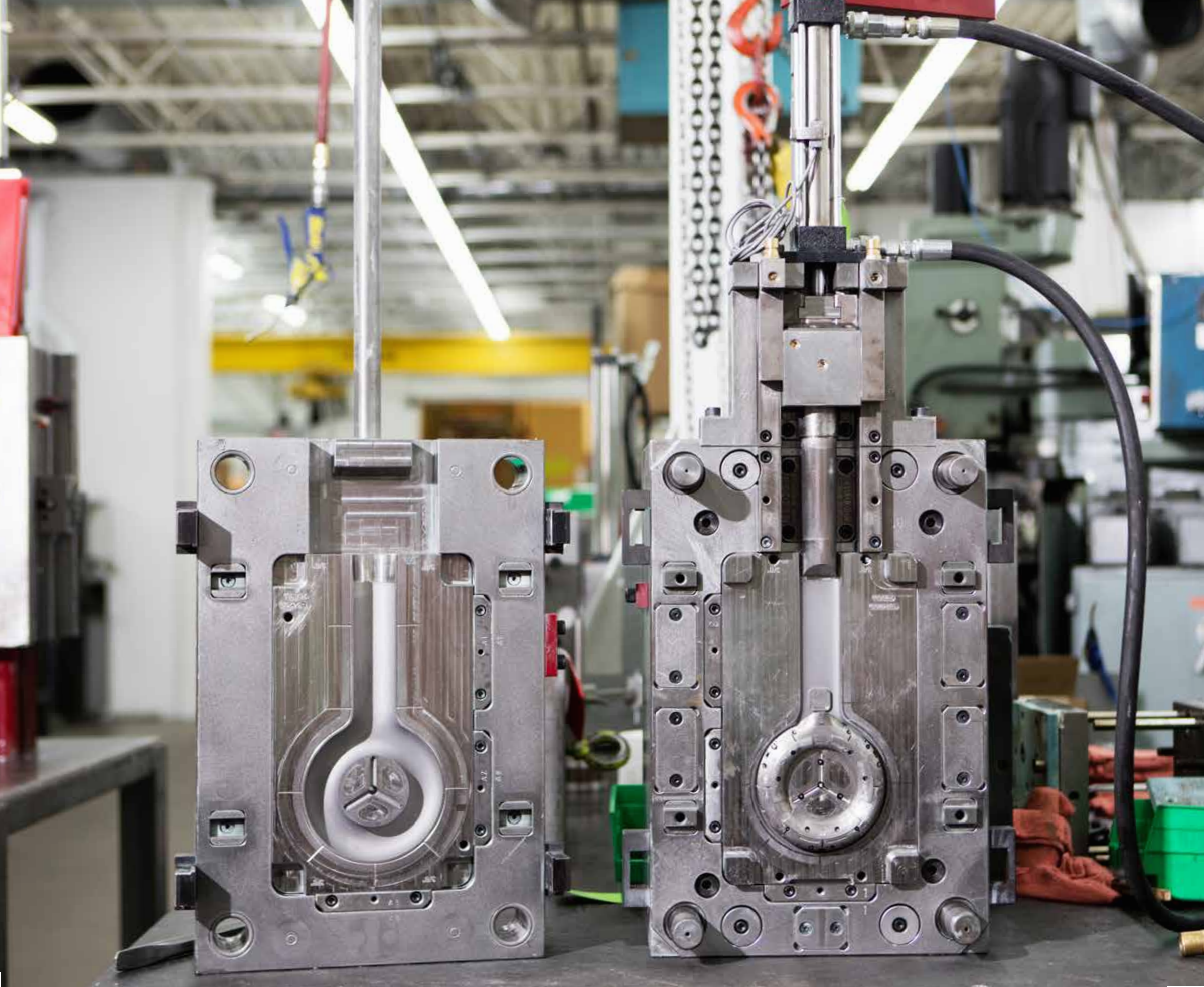
Craftsmanship

Our goal was to leave you with a sense of awe and satisfaction each time you interact with your Nebia Shower System.

To ensure high quality craftsmanship, we selected a manufacturing partner with decades of experience, a love for building, and painstaking attention to detail. We have been fortunate to partner with a group of seasoned manufacturers in the Midwest with whom we hope to work for many years. Our primary contract manufacturer is owned by former toolmakers, who provide apprenticeships to ensure their craft is passed down through generations.

Over 95% of the components in the Nebia Shower System are sourced in the U.S., with a large concentration in the Midwest.

We are proud to build the Nebia Shower System in the U.S.A., and grateful for the environmental benefits this provides by reducing transport distance. However, there are still many areas where we can improve our supply chain to reduce our environmental footprint even further and transform our industry to be more conscientious of the environmental ramifications of manufacturing.





This booklet was produced using sustainable green printing practices.



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