



PIPP[®]
HORTICULTURE

Elevate. Cultivate. Grow.™



VERTICAL FARMING SOLUTIONS

The future of cannabis cultivation is **maximizing space and efficiency** with mobile vertical cultivation racks.

*Pipp takes you there by **TAKING YOU UP!***

As LED technology continues to improve and outperform traditional HPS lighting, single-tier facilities are giving way to multi-tiered rolling vertical farms.

Vertical Farming = Greater Output

Vertical farming **reduces operating costs** and can **increase your overall revenue per square foot by as much as 3x.**

The question isn't **IF** you should make the change, it's **WHO** can best help you get the job done?





***Pipp Horticulture is the leading provider
of **movable vertical racking systems!*****

Pipp systems are installed in hundreds of indoor cultivation facilities across North America and Europe! With **over 40 years of experience** serving the nation's top retailers, Pipp has engineered cost-saving solutions that can exponentially increase your production without adding an inch to your footprint. Double or triple your canopy by maximizing your cubic grow space with more efficient workflow.

*Not only can you produce more, **you'll save more.***

Pipp's prices are lower than the industry standard thanks to decades of experience in the price-sensitive retail market, factory direct sales channel, and an efficient team of licensed installers.

Pipp's mobile multi-level rack and tray systems are the **most cost-effective investment you can make.**

- ▶ NSF Certified
- ▶ Efficient
- ▶ Easy to Clean
- ▶ Lightweight
- ▶ ADA & Seismic Compliant Options
- ▶ Sustainable
- ▶ Safe & Durable
- ▶ Includes Full Design & Installation Services



Services



MADE IN THE USA FACTORY DIRECT

Based in Grand Rapids, Michigan, Pipp serves cannabis and traditional cultivators with the same expertise that forged its dominance in the retail industry. You deal directly with us and we design specifically for you. No wasted resources...no mark-ups...**YOU WIN!**



MARINE GRADE ALUMINUM

We build our carriages and tracks with non-corrosive high tensile aluminum extrusions and stainless steel rails to provide premium strength in a lightweight durable system.



SEISMICALLY APPROVED

California might bear the biggest risk for earthquakes, but natural disasters can strike anywhere. We mitigate that risk with ADA and seismic code compliant options.



MOBILE FLEXIBILITY

We do offer fixed racks, however nearly all of our customers enjoy the benefits of going mobile. Choose from our manual or mechanical-assisted systems to easily access all parts of your garden and enjoy a more efficient workflow.



SINGLE LEVEL START

Many cultivators like the idea of starting out single level and evolving into multiple tiers. With the primary infrastructure in place, adding additional supports and trays are relatively easy with minimal down time.

Case Study: REDBUD ROOTS

THE PROBLEM

The facility needed to...

Grow

vertically to maximize canopy space
in three buildings.

Movement

of aisles for a better workflow.

Higher Yield

and return on investment.





Planning

Our team of in-house designers, engineers, and experienced cultivation experts designed a mobile cultivation system that integrated with the other components necessary for successful operation, like lighting, airflow, irrigation and drainage systems.



Solution

Pipp Horticulture provided 2-tier movable grow racks in each of their veg and clone rooms, more than **DOUBLING THEIR CANOPY SPACE**. We also found space to provide movable drying racks with 3 levels of dry products per movable rack.



Results

- ▶ **\$1,552,320 INCREASE** in flower revenue.
- ▶ **HIGHER YIELD** with less overhead costs.
- ▶ **MORE SUSTAINABLE** and environmentally conscious platform.



*“Pipp has been an absolute blessing, they’re the most reliable, and have more than **doubled our grow space.**”*

Hunter Mishler, Director of Production Science



*“By transitioning to Pipp Horticulture’s vertical farming, we maximized canopy space and **more than doubled production** per square foot, while increasing efficiency and a streamlined workflow.”*

Tony Martinez, Cultivation Manager





*“Using Pipp racking is a decision I would make **ten times out of ten!**”*

Sozo Team



*“We chose Pipp racking because its mobile aisles allow us to **grow more of our produce in the same footprint** and helps us deliver the best product to our customers.”*

Planted Detroit Team





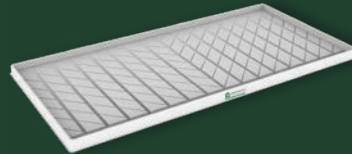
Products



Mobile Carriages



Vertical Racks

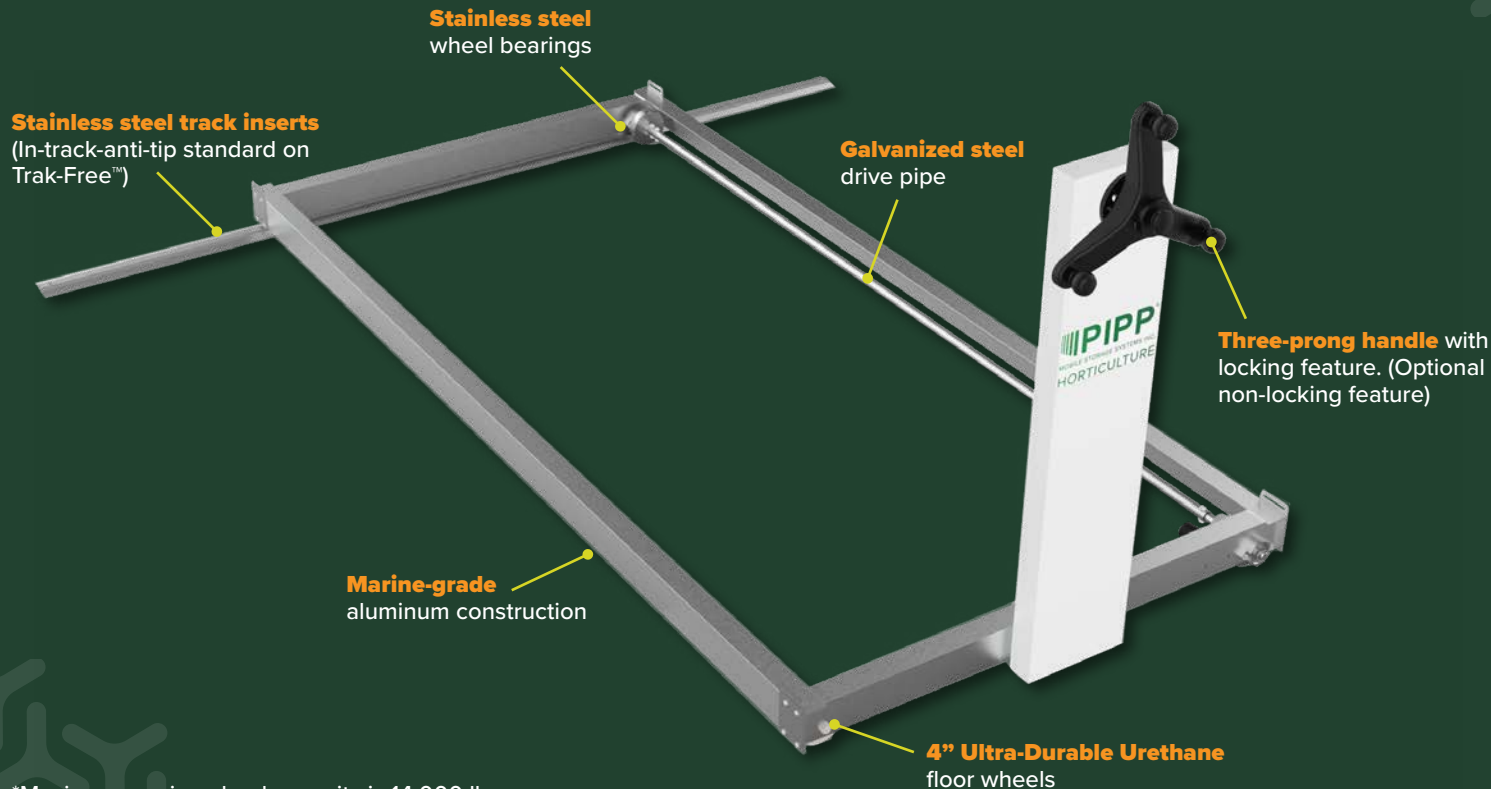


Grow Trays



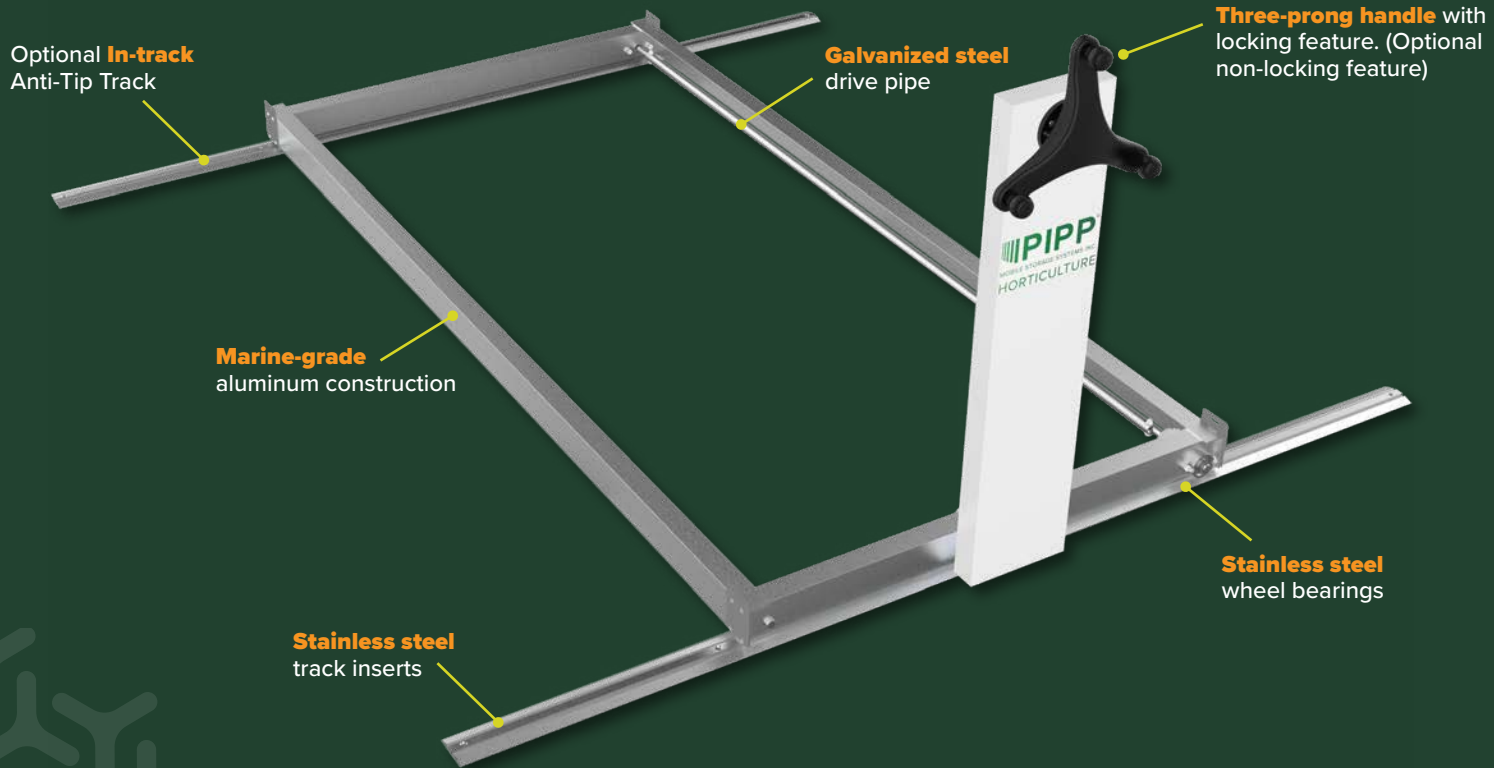
Mobile Carts

TRAK-FREE™ CARRIAGE



*Maximum carriage load capacity is 14,000 lbs.

MECHANICAL-ASSIST **CARRIAGE**



VERTICAL **GROW RACK**

Racks available up to 18' high.
(Racks higher than 18' require engineering approval).

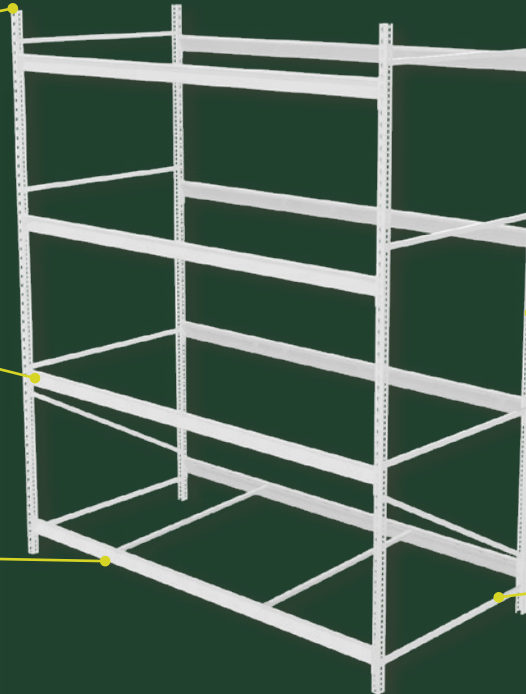
High capacity shelving constructed from high strength steel.

White Powder Coat is UV-stable and contains anti-microbial and fungal-resistant additives.

Uprights can support up to 17,000 lbs.

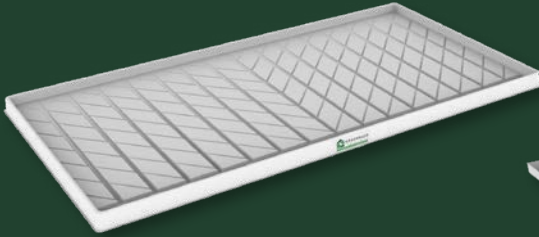
Beams can support up to 2,150 lbs.

Supports accommodate a wide variety of grow trays, accessories, mounting equipment for LED lights and other utilities.



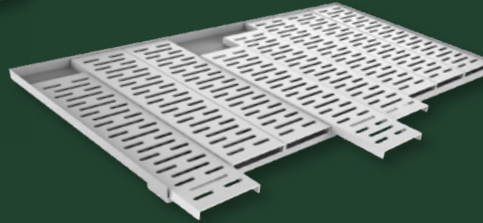
GROW TRAYS

Pipp's grow trays provide connection points for lights, air circulation, and plumbing. They also drain effortlessly with HDPE (high-density polyethylene) inserts that are fungal-resistant and anti-microbial.



ABS Combination Grow Trays

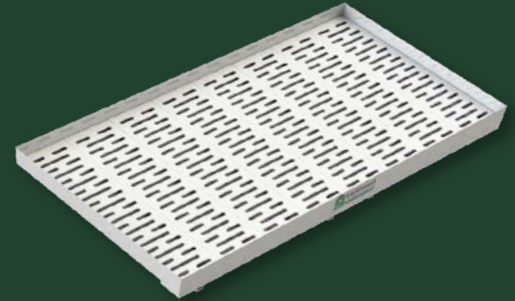
ABS Corrugated Grow Trays can be utilized for both Drip-to-Drain and Ebb-and-Flow irrigation styles. Made from a durable ABS plastic almost 5mm thick, Pipp uses a deep-draw thermoformed process to design a tray with a built-in slope to ensure proper drainage. The ABS material also has a co-extruded acrylic "cap" to provide UV stability as well as anti-microbial and fungal-resistant properties. These trays can be adjusted to provide even greater slope if desired by the customer for unique growing conditions by simply adjusting the support beams. Tray capacity not to exceed 15 lbs./ft². Available in 8'x4', 8'x3', 4'x4', and 4'x3'. *U.S. Patent No. D906,876 S and U.S. Patent No. 11,116,148, additional U.S. patent pending.



Drip-to-Drain Grow Trays with optional HDPE Inserts

Drip-to-Drain Trays are perfect for Drip-to-Drain irrigation vertical grow systems. They feature optional HDPE Inserts that are fungal-resistant and anti-microbial. Tray capacity not to exceed 20 lbs./ft². Available in 8'x4', 8'x3', 4'x4', and 4'x3' (custom sizes available). *U.S. Design Patent No. D925,392.

**Made to order, longer lead times will apply. Check with your sales person for details.*



Combination Grow Trays with optional HDPE Inserts

These trays can be used for Drip-to-Drain irrigation or Ebb-and-Flow. They are combined with our Vertical Grow Racking and Mobile Carriages to provide the most efficient indoor grow space. Available in 8'x4', 8'x3', 4'x4', and 4'x3' (custom sizes available). Tray capacity not to exceed 20 lbs./ft². *U.S. Design Patent No. D906,876.

**Made to order, longer lead times will apply. Check with your sales person for details.*

STATIONARY & ROLLING BENCHES

GGs benches can be **stationary or rolling** and are fabricated in expanded metal covering, ebb & flood trays, or irrigation troughs. The bench assembly is designed for easy installation with snap together aluminum profiles and factory welded stands to make your job easier!

- ▶ All aluminum, snap together top frames.
- ▶ All aluminum, adjustable stands for easy leveling.
- ▶ Strong yet lightweight for easier assembly.
- ▶ Corrosion resistant.
- ▶ Customizable height.
- ▶ Pre-galvanized steel purlin bracing and roll tubes.
- ▶ Rolling benches have 2" roller tubes for easy roll even with freshly watered plants.

GGs
Structures Inc.



MOBILE CARTS

Our high quality manufactured products don't stop at our vertical growing racks. Pipp cannabis drying racks are durable, space-saving and best of all, configurable. Mobile storage carts and drying racks for cannabis allow you to further maximize the space in your facility.



Drying Cart

The Drying Cart is designed to accommodate hanging plants in order to dry and cure them for further processing. It has adjustable cantilever-style finger attachments which allow you to configure the cart as needed.



Shelf Cart

The versatile Shelf Cart can be used for both general storage and transporting goods. The shelf levels are adjustable and additional shelves can easily be added to the cart to customize it to suit your needs.



Combo Cart

The multi-purpose Combo Cart combines our exclusive hanging attachment for drying out plants with adjustable shelves below for general storage and transport needs.



Wire Cart

These durable and highly functional carts are ideal for mobile storage requirements. The open wire construction minimizes dust and dirt accumulation and maximizes airflow as well visibility.

NESTING DRYING RACKS

The Nesting Drying Rack delivers ease of use, safety, and long life. Heavy-duty construction combined with standard 5" swivel non-marring casters provides a 1,000 lb. total load capacity. Z-Base allows for nesting when not in use.



**Nesting
Drying Rack**



**4 Drying Racks
Nested Together**



**Optional Fold-Up
Bottom Shelf**



**Optional Middle
Hangrail**

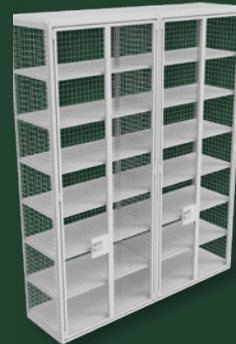
SECURED STORAGE



Pipp's Solid Lockers are built to be durable with their heavy duty steel construction and high grade powder-coat finish. These versatile lockers are available in a variety of configuration options and colors. Several accessories are also available.

Secured Storage Systems feature robust pry-resistant doors, fully welded closed tube frame, and a three-point rod locking mechanism. Store any size product with adjustable shelf spacing on 2-1/2" increments.

10'H Double Secured Storage Unit



6'H Single Secured Storage Unit



ELEVATE™ PLATFORM SYSTEM

The Elevate™ Platform System is a robust, lightweight, and portable deck to allow cultivators to access Pipp's Multi-Tier Mobile Grow Racks quickly, efficiently, and most importantly - safely. This patent-pending system was designed to integrate with Pipp's Bulk Rack Shelving Systems without any modifications. The Elevate™ Platform System can be installed on new or existing mobile vertical grow racks.

- ▶ Quick and simple setup.
- ▶ Lightweight components allows one person to set up the entire system.
- ▶ Aluminum and Galvanized steel components are corrosion resistant.
- ▶ Deck sections are 22" x 49" giving ergonomic access to canopy without giving up overall canopy throughout room.
- ▶ Galvanized steel support rails hold 650 lbs per pair (tested to 4x capacity per OSHA requirements).
- ▶ Purpose built support rails are adjustable and have integrated anti-dislodge protection features to keep beams secure while in use.
- ▶ Multiple people can access and work on the platform at once.
- ▶ Ladders available to cover deck heights between 30" and 120" A.F.F.
- ▶ Mobile Vertical Racking designs that incorporate a 46" or larger mobile access aisle, two separate working rows of the Elevate™ Platform System may be utilized simultaneously.



AIR CIRCULATION SYSTEMS



Vertical Air Solutions' patented air circulation system provides canopies with uniform air circulation while homogenizing the atmosphere in a multi-layered rolling rack platform. Developed by growers for growers. This system provides increased air flow control, by integrating filtration and CO₂ delivery for vertical farming applications.

- ▶ **Increased Savings:** VAS Air Circulation Systems, depending on the rack length, will **save 46 - 68%** in electricity costs per year, compared to circular fans, and will **pay for itself in 12 to 18 months!**
- ▶ **Increased Consistency:** Regulate environmental factors such as temperature, humidity, and CO₂ levels for more consistent yields.
- ▶ **Enhanced Crop Yield:** Increase the quality of your crop at any scale by maximizing control over the indoor growing space.
- ▶ **Decreased Crop Loss:** Eliminate the risk from potential issues like powdery mold or mildew.
- ▶ **U.S. Patents**
U.S. Patent No. 10,694,682 B2
U.S. Patent No. 10,806,099 B2
Other U.S. and foreign patents pending.

DRY ROOM MOBILE STORAGE

Hang Options:

- ▶ 14 gauge steel Rivet Style Shelving which is adjustable on 1-1/2" increments.
- ▶ Rack configuration is fully customizable. Typical rack configuration is 24" wide x 16' high with 3 dry levels and 2 bars per level.
- ▶ **Round Hang Bars** - Hang full plants on our hang bar with simple hook attachments for faster trimming.
- ▶ **Finger Bars** - Easily hang plants from adjustable cantilever prongs without hooks or wires.
- ▶ **Grid Hang** - Hang plants from any position directly on a 4" x 4" wire grid spacing. This allows for greater air circulation with built-in Flue Space.





The vertical farming industry is growing every day!

Grand View Research estimates that the global vertical farming product market will **grow by 25.7%** by 2027. For indoor cultivation, mobile vertical racks are a vital tool for a successful growth system and can increase both yields and annual revenue.

Here are **6 things to consider** when picking a Vertical Rack Provider.

1

Dedication

Are they dedicated to the horticulture market?

2

Innovation

Do they provide innovative tools that enhance your yields?

3

Lead Times

What are the lead times? Are products sourced in the USA?

4

Integration

Do they offer integrated tray systems?

5

Drive System

Is a continuous drive shaft a standard feature?

6

Service

Do they put the customer first from sales to service?

With **over 40 years of experience** in the mobile racking industry, Pipp Horticulture is not just a provider, but a partner. Our certified installation team and the most experienced cultivation experts in the industry provide companies with custom solutions that maximize their grow space!

FAQs

How tall can the racks be?

Mechanical-Assist Cultivation Systems can be built up to 18' high and 56' long. Systems larger than this would require engineering approval.

What kind of track and rails are used? How are they installed?

Our unique track and rail system is marine grade aluminum and stainless steel. It is only ½" high and includes an anti-tip feature to comply with seismic codes. We level and anchor the rails into concrete floors for a high quality, safe installation that performs for decades.

How about irrigation and drainage?

Irrigation and drainage equipment is typically provided by the end user. Our systems can be designed to accommodate a wide range of applications.

Can vertical grow racks tolerate the conditions of a grow room?

Yes. However, prolong exposure to excessive humidity levels (+55% RH) and direct contact with water can eventually cause corrosion and/or oxidation over time. These are merely cosmetic and do not compromise the strength and durability of the grow system. Routine cleaning and maintenance of the system is the best way to mitigate this risk and maximize the system's performance and longevity.

PIPP[®]
HORTICULTURE



CONTACT OUR TEAM
to elevate your cultivation!



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