

KW Automation: Excellence in Nursery Automation

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Summary

Founded in 1979 by Kurt Weisenberger, KW Automation has grown from humble beginnings into a leading provider of nursery automation solutions. Kurt, originally an avocado orchard owner on Queensland's Sunshine Coast, transformed his engineering expertise into innovative machinery for fruit and vegetable post-harvest processing. Recognizing a niche in the nursery industry, he developed the revolutionary KW needle seeder, which set a new standard for efficiency and productivity.

Today, as a third-generation family-owned business, KW Automation continues Kurt's

legacy of quality and innovation. Our diverse range of machinery includes soil mixers; hoppers, conveyors, & elevators; pot & bag fillers; needle seeding; tray fillers; potting machines; tray & pot washers; watering tunnels; customizable equipment and more.

Each product is designed with durability, reliability, and customization in mind. Our stainless-steel soil mixing systems, for instance, deliver consistent results with options for high-volume production rates and features like nutrient hoppers and customizable mixing recipes.

We pride ourselves on being a one-stop shop, offering tailored solutions such as boom conveyors and advanced potting machines. Customers like Matt from Hope Valley Nurseries attest to our commitment to quality, recounting decades of flawless operation with minimal maintenance.

Our cleaning solutions, including tray washers, support sustainability by enabling the reuse of trays and pots. With the capacity to clean up to 1,000 trays per hour, they help reduce waste while maintaining sterile conditions.

INTRODUCTION

As the third generation in the Company it is an honour to be able to describe what we do here at KW Automation. Our company started as KW Engineering, Founded by Kurt Weisenberger my grandfather in 1979. Originally, Kurt travelled from Germany with his wife and purchased an Avocado orchard in Queensland on the lovely Sunshine coast. With his creative thinking and experience in engineering, he started to concentrate on solutions for post-harvest equipment for avocados (**Fig. 1**) and eventually moved into all types of solutions for fruit and vegetables. However, in the 1980s, Kurt recognized an opportunity to support the nursery industry, leading us to develop specialized nursery equipment such as the KW needle seeder which had made a huge impact at the time. This shift allowed us to align our expertise with the specific needs of nursery operators, making a significant impact on the nursery industry's efficiency and productivity. KW has now evolved into a third-generation family-owned and operated business.

At KW Automation, we value customer feedback, using it to refine and improve our products. From pioneering designs like the needle seeder to modern innovations, our goal is to help customers build efficient, dependable operations. As automation becomes essential in overcoming industry challenges, KW remains committed to delivering robust, user-friendly machinery backed by dedicated service and support. Trust KW Automation to provide consistent results and a reliable partnership for years to come.

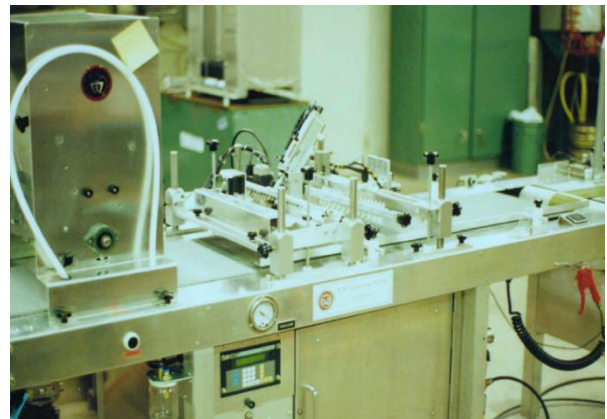


Figure 1. With his creative thinking and experience in engineering, Kurt recognized an opportunity to support the nursery industry, leading us to develop specialized nursery equipment such as the KW needle seeder which had made a huge impact at the time.

So How Can You Use Kw Automation to Help You?

With almost five decades of experience in the nursery industry, our expertise encompasses a wide array of units designed to help you create an efficient and successful business. Our offerings include soil mixing systems (**Fig. 2**), storage hoppers, conveyors,

elevators (**Fig. 3**), multiple seeding systems, plug popping machines, pot and bag filling machines, tray fillers and potting machines, and tray and pot washing equipment.

Additionally, we are always interested in what is best for our customers so we do offer custom equipment as we know one solution doesn't always work for everyone, this ensures our ability to meet your unique needs with tailored solutions.



Figure 2. Soil mixing systems developed and offered by KW Automation.



Figure 3. From left: 4Cbm Soil Storage Hopper (Left), 4Cbm Soil Storage Hopper (Middle), 2 Cubic Meter Soil Mixer with Soil Bagging Conveyor (Right).

Soil Mixing

If you had to ask any of our customers what words come to mind when thinking about our machines, you would hear "Quality," "Reliability," and "Robust" among others. We pride ourselves on this image, especially in the soil mixing sector where long-lasting quality machines that consistently provide quality results time & time again

whilst minimising downtime, to keep you focused on what matters most. This paired with our ability to customise machinery and layouts with our dedicated in-house engineering team can set you and your business up for success. Our focus on quality and robust designs is clearly displayed in our range of standalone soil mixers. With fully constructed stainless steel frames, they are

built to provide results for the many years ahead, available in one, two, and three cubic meter options. Additional options such as replaceable body liners and hard-faced spirals increase the longevity of your investment.

KW Automation's inline continuous soil mixing lines (**Fig. 2**) leverage our experience and knowledge, giving our customers reliable and consistent soil mixing systems that require on demand high-volume production with rates starting at 40 cubic metres per hour. Incorporating bale breakers, large stainless-steel peat or coir storage hoppers, nutrient storage hoppers, vermiculite/perlite hoppers and unique mixing heads combined with HMI driven potting mix recipe menus, these all add up to providing the end user with a flexible system with the ability to make changes to your recipe when the time comes. These systems can be setup to automatically fill tray fillers or potting machine hoppers using soil sensing devices to drive the inline soil mixing systems as required.

Hoppers, Conveyors & Elevators

The great thing about KW Automation, is the range of storage hoppers, conveyors & elevators we have. We do our best to set ourselves up as the one stop shop for our customers. If you have a conveying need that doesn't sound like a straightforward solution, run your idea past us and we can provide the support you need to make that idea come to life. A couple of months ago we had a customer who had an idea for a boom conveyor that could balance itself to reach over their greenhouse benches, this conveyor was used to layout their seedling blocks or trays for the growing process and then retrieving them for dispatch. We were able to design and provide a working conveyor for them.

If it's just a straightforward solution we have the standard equipment ready to go for you. Most frames are constructed from aluminium and or stainless steel. We produce all different size hoppers from 40 L nutrient hoppers all the way up to our largest soil hoppers which reach up to ten cubic meters. We can do any size conveyors and elevators where required and we also provide handy little additions to soil mixers like this Bagging conveyor attached to our Soil mixer to fill pots quickly & easily with a foot pedal control.

Pot and Bag Fillers

Our Pot & Bag filler was developed by Grandpa back in the eighties but has recently undergone a revamp to keep our machines at the fore front of automation, it is available in single and dual outlet platforms (**Fig. 4**). It can be mounted on our standard adjustable fixed legs or have a forklift frame to make transport easy around your nursery, we can even make this on its own trailer style frame with large tyres to be easily moved through your nursery. These units can fill all types of pot & bags up to a 45-litre capacity container. To give you an idea of figures, each outlet is capable of filling 240 28ltr pots, and up to 400 5ltr grow bags per hour.

One great addition that's available with these machines is our fertiliser dispenser. This allows ease of mind with consistent accurate dosing with each fill designed to consistently produce quality products with every pot or bag. Dosages can be changed with the on-board HMI Screen so if you're using larger or smaller containers you can change this to suit whatever vessel you wish to fill. The Hoppers are specially designed to stop bridging as well, so once your hopper is full, you can fill with the knowledge that your mix won't bridge and stop your production halfway through.



Figure 4. Pot and bag fillers are available in single and dual outlet platforms.

Needle Seeding With KW

With one of the longest standing platforms at KW Automation the Needle seeder holds a special place in our hearts. Developed by my grandfather Kurt Weisenberger who came up with the idea after looking at medical needles on one of his visits to the hospital and thought, "I bet I could pick up single seeds with these!"

Sadly, my Pa recently passed away in the last 2 years, so it is great to see his invention still thriving & performing so well to this day. After 3 decades of experience and testing with the needle seeders we have been able to evolve the seeder to deliver a great seeding platform to service all types of operations. The pneumatic seeding options come in 4 different platforms, From semi-automatic, automatic with Vermiculite dispensers, Watering bars to PLC programming on our high range seeder, this has the ability to multi-seed in cells & switch between different tray & seed programs easily. With the versatility of our multiple needle sizes we are able to pick up a large range of seeds used in your industry.

If required, our seeders can be optioned with our wide body solution, so you are able to feed your trays in width ways to speed up tray fill times even more. Just a testament to our reliability and build quality; two weeks ago we had a customer drop off a seeder which was built in 1998, that's when I was born. Probably in better condition than I am. We changed a couple filters, air hoses and fittings and sent this back to our customer ready for more seeding.

Tray Filler's and Potting Machines

I was speaking with one of our long standing customers, Matt from Hope Valley Nurseries yesterday to ask him for his honest opinion on KW, he said "KW's it, he wouldn't go to anyone else, his parents purchased their first potting machine back in 1999 and the unit has been awesome, the only components he's needed to replace is two Augers & two Gearboxes. It's Still in operation and still pumping out pots to this day" since then he has also purchased a tray filler in 2009 which can do 130mm pots in shuttle trays, and 100mm square pots in 10 and 6 packs. Matt said he produces 40,000

units a day with this machine. He purchased another Potting Machine in 2018 for his new facility & finally another potting machine which is currently in production at our factory for a new pot size. We also has another potting machine out at Pohlman's Nursery since 2004, after doing a few calculations, we worked out their unit has

filled an estimate of over 50 million pots in its time and is still going strong. It has been the constant narrative of our story. The simple, low maintenance designs that can provide great results and a smile on our customers faces over & over again, it's the reason we do it.

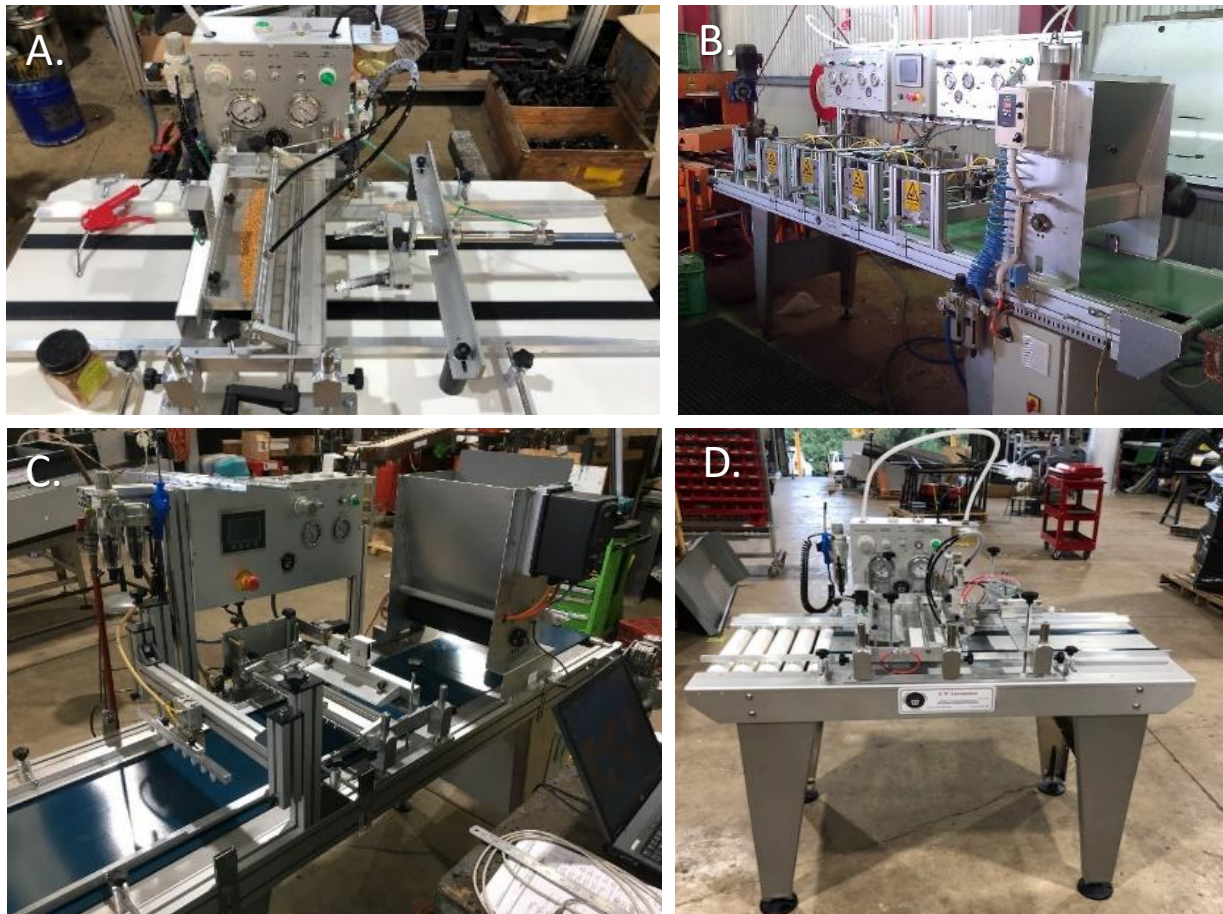


Figure 5. Needle seeders developed at KW automation: **A)** H35 Semi-Automatic hand seeder. **B)** Multi seeding head 100EM automatic seeder. **C)** 100EM Low Drop automatic seeder, **D)** A35 automatic seeder on an aluminium base.

Cleaning Solutions and Watering Tunnels

Living on the beautiful Sunshine coast all my life you can't help but develop an appreciation for creation. Our KW site is situated in Palmwoods which if you've had the pleasure of visiting, is an amazing place. My grandfather loved his garden which he planted around his house and the KW premises, it makes it a special place to be around,

once you've seen it you can understand why he had such a fascination for the nursery industry. We would love to preserve this creation we've been blessed with and create a more sustainable future in the nursery industry. KW Automation has a wide range of cleaning solutions for trays & pots. This allows us to reduce on single use plastics and make a viable way for reusable trays & pots

to be recycled as much as we can and still have clean sterile products to reuse.

KW has a tray washer at one of our local Nurseries just down the road at Cedar Hill and I was speaking to James and Rose last week and I asked them how their tray washer was going, he responded with, "Everyone loves it, our employees are fighting to be the ones who can use the tray washer."

What once was a daily chore of cleaning trays has now become a set time to clean all their trays once a week. With the ability to clean up to 1000 trays an hour they are able to save time, money and know it's one step closer towards a more sustainable future.

CONCLUSION

Customer success is our commitment, and KW has a dedicated service team so if customers have any issues or a breakdown, we have an experienced team that is able to get the equipment up and running ASAP. Our best advice is to always keep the machines in good condition with regular check-ups from the KW team.

Our ability to be able to look at our customers' history with a full set of detailed drawings and parts list and know every single part on that machine, gives us the ability to quickly supply replacement parts when they need it most. Every customised job is designed in our 3D drawing software, and we are able to show our customers what the machine will look like before it's even produced and go through any changes that might need to be made before manufacture.

Automation is important and it can help you survive the difficult times. We had

a larger customer who had done a large automation project in the early 2000's; he stated that if he hadn't made this decision to automate his operations he would most likely not be in business today.

At KW Automation:

- we endeavour to prioritize our customers
- we have been specialising in the nursery automation industry for almost five decades
- we collaborate with our customers to deliver tailored solutions
- we value feedback from our customers no matter good or bad. This is what makes our equipment more user-friendly and long-lasting. We have incorporated many customer ideas into making our equipment into what it is today. Like the IPPS say's, to seek and to share our knowledge, we can grow together.

We are trusted by many and have had the pleasure of being able to provide so many customers with awesome machines across the world. The most important thing for us is to be able to build the best operation for the customers with a manufacturer they can trust; trust in the build quality and trust that we will be here to help whenever you need it. We want you to know when you press that go button your machines are going to produce consistent results for the future to come. If that's what you want in your operations, keep KW at mind.

ACKNOWLEDGEMENT

I Thank IPPS Australia for giving me the opportunity to share our story with its members and a massive thank you to the IPPS for publishing this story.