

WITTMANN BATTENFELD USA Opens Recycling Lab



WITTMANN BATTENFELD USA's new Granulator test area includes a wide range of models that can test any kind of regrind.

With the ever-increasing need for the plastics industry to create truly recyclable and biodegradable materials, WITTMANN BATTENFELD has expanded its material test area and created a new Recycling Lab at its USA headquarters in Torrington, CT. The lab includes a large WITTMANN GRANULATOR test area to provide better and more accurate material grinding tests for customers.

"The demand for our granulators has dramatically increased," said Steve Mussman, Division Manager - Material Handling & Auxiliaries. "We are also getting more requests than ever from customers looking for help identifying the best way to regrind and reuse their materials. Because of this, we have opened this lab to help customers test their materials for beside-the-press applications."

The new Recycling Lab features an impressive line-up of granulators, including:

Screenless

1. **S-Max 3** with 7 mm trapezoidal blades
2. **S-Max 2 Plus** with 5 mm square blades
3. **S-Max 2** with 4 mm square blades
4. **JUNIOR DOUBLE 6** with 5 mm trapezoidal blades

Conventional

All come with standard 5mm conical screens (other screen sizes available)

1. **ML 33** with 8 mm straight screen
2. **G-Max 33**
3. **G-Max 23**
4. **G-Max 13** **NEW**
5. **G-Max 9** **NEW**

The **G-Max 13** and **G-Max 9**, WITTMANN's newest granulator models, have been officially introduced for sale in the USA and will be available soon.

In addition to granulators, the new Recycling Lab includes WITTMANN loading and blending equipment, including **FEEDMAX S 3-net** and **IMX 206** for conveying tests. "We are fully equipped to help our customers meet their circular economy goals," said Mussman. "We can provide complete closed loop evaluations by testing materials and recommending the best grinding, loading and blending solution for each customer's specific application."



WITTMANN BATTENFELD WiBa Connect! App: Helping Customers Since 2014!

Since its introduction on April 18, 2014, WITTMANN BATTENFELD's **WiBa Connect!** App has helped thousands of customers communicate directly with WITTMANN service personnel through their mobile phones.

"Our site utilizes the **Wiba Connect!** app often," said Cory Beaupre, Lead Automation Engineer at Flex in Manchester, CT. "It is simple to set up and can quickly get you in direct contact with a WITTMANN representative without the need of a PC on the manufacturing floor."

"This app was created to help our customers connect with us as quickly and as easily as possible," said Adam Nankervis, Director of Field Service at WITTMANN BATTENFELD. "It has been and continues to be a valuable resource for them, and for us."

While all connections are direct, easy and used frequently, the most popular type of connection a customer makes, (talk, email, or text), varies by customer need or situation. Usually the more technical conversations tend to happen in chat sessions, for example in the service or parts departments. More often than not, when a customer is in a very noisy environment such as on their plant floor, this is their go-to choice. For the times when customers would rather have a conversation, the phone option is there. If they prefer email, that is also an option and it can be as detailed as the customer wants.

How it Works

WiBa Connect! is available in both Apple iOS and Android formats.

Smart phone users of Apple iOS or Android styles may:

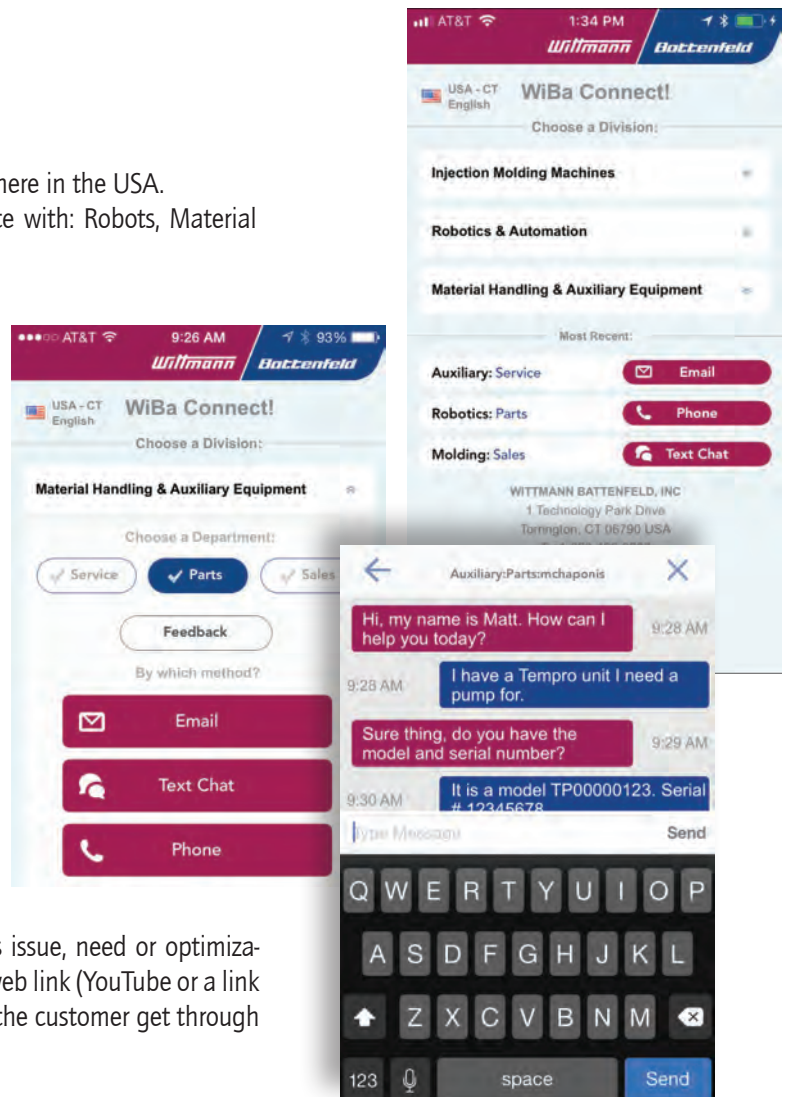
- 1) Download the **WiBa Connect!** App and begin using it from anywhere in the USA.
- 2) Select which of our product divisions they desire to communicate with: Robots, Material Handling & Auxiliaries, or Injection Molding Machines Division.
- 3) Select Sales, Service, Parts, or Feedback.
- 4) Select if they want to text, phone call or email.

Then, the App makes the connection through normal operations for creating the chosen communication path.

WITTMANN BATTENFELD has a multi-level support structure established to immediately support their customers' needs. The App is working 24 hours a day, 7 days a week. After hours nights and weekends, the **WiBa Connect!** App pushes the phone calls through to their Emergency After Hours Tech Support lines.

The Feedback option button in the App prompts an email directly to one of WITTMANN BATTENFELD's Divisional Managers to hear complaints or compliments of the user's experience with the service or support they received. Many requests for quotes on spare parts come via email through use of the app.

Since the customer is on a smart phone, this connection also makes it easy and convenient to take a picture or make a short video to share information with WITTMANN BATTENFELD on the customer's issue, need or optimization. On the support side, WITTMANN service personnel can send a web link (YouTube or a link to our Website Tech Help) or provide a technical tip bulletin to help the customer get through their specific need immediately.



2.5 Million Cycles and Counting - Without a Glitch

Jesco Molding Uses WITTMANN PRIMUS Robots for Cost Savings, Better Accuracy, and Improved Efficiency

Based in Sandy, Utah, Jesco Molding is a custom molder producing a wide variety of parts ranging from dental devices to pool and spa parts, sporting goods and industrial supplies. Founded in 1974 as a tool and die maker, Jesco eventually grew into a custom molder with 11 machines and \$3 million in annual sales. It has a sister company, PMI Mold Making, that builds and maintains injection molds.

For a small molder Jesco is extremely productive; the company employs 10 but has approximately 70 customers and produces over 250 types of parts. A few years ago, the company decided to make their first foray into automation by adding their first robot, a WITTMANN PRIMUS 14, to their operations. The results have been outstanding; their first PRIMUS robot, bought off the show floor at NPE 2018, has run over 2.5 million cycles and counting, without a glitch.

Manpower Challenges

Like most companies in the industry, Jesco struggles to find employees. Their difficulty in finding help led them to explore integrating robots and automation into their operations. At NPE 2018 in Orlando, a visit to the WITTMANN BATTENFELD booth resulted in their first robot purchase.

"The WITTMANN robot that Jesco bought off the show floor was the first PRIMUS sold in the USA," said Jason Long, WITTMANN BATTENFELD's National Sales Manager - Robots & Automation. "The PRIMUS was new at the time, and it's our most cost-efficient robot for pick-and-place applications. It's safe to say that with over 2.5 million cycles and counting, the PRIMUS has exceeded all of Jesco's expectations."

Improved Accuracy

James Schoudel, Vice President at Jesco, said that the PRIMUS robot helped the company achieve better accuracy in its molding operations, and create a win-win situation for its employees. "We worked with WITTMANN to help us design the best way to integrate the new robot into our dental device molding cell," he said. "We also had a custom end-of-arm-tool (EOAT) designed by Richard Savage. By adding a cavity separation



The WITTMANN PRIMUS robot separates cavities, counts and packs dental parts into bags for shipping.

station and cycle count program, we were able to produce and pack the parts more consistently."

The integration of the PRIMUS robot allowed Jesco to increase throughput on the dental device, improve accuracy, and free up manpower to focus on other projects, said Schoudel. "We quickly saw we could achieve better and more accurate part production because of the robot," he said. "This allowed us to give our employees more money, as they were freed up to do other things."



Jesco Vice President James Schoudel (left) and WITTMANN sales representative Andrew Rajkovich stand in front of the molding cell with the WITTMANN PRIMUS robot.

Low Price - High Technology

While the PRIMUS is WITTMANN's lowest cost robot, it is packed with high technology features. Since their purchase of their first PRIMUS in 2018, Jesco has bought a second one and also a more advanced W818 robot to further automate their operations.

"The robots are fantastic, maintenance is minimal, and WITTMANN's service and support has been excellent," said Schoudel. "The PRIMUS is by no means an 'economy' type of robot. The 'teach' program is very easy to use and allows us to write programs in a few simple steps, and WITTMANN is always there to help answer any questions we may have."

An Automated Future

With the new WITTMANN W818 robot coming soon to Jesco, the company will continue its move to further integrate automation and reduce operator parts handling. "Hand touching always add a variable to the part run," said Schoudel. "We are looking at a more complete automation pack-out to ensure our customers get the highest quality products that they deserve."

Andrew Rajkovich, Owner of Ponderosa Plastics Equipment LLC and the WITTMANN BATTENFELD sales representative for Jesco, feels that Jesco's success is a 'triumph' for the company. "By being the first US company to purchase the PRIMUS robot, and their first-ever robot at that, Jesco took a chance that has worked out extremely well for them," he said. "They are now confident, because they have seen the results, that robotics and automation can help them improve their operations."

High Precision "Micro" Insert Molding

Editor's Note: This technical article by Joe Varone of WITTMANN BATTENFELD examines details related to automation techniques for high-precision micro insert molding. Part 1 of the article appeared in our July 2021 newsletter; Part 2 appears below.

Precision "Micro" Insert Molding

Here are a few examples of Micro-Molding Insert applications and their challenges:

Example Project A:

- Electrical part
- IMM tonnage: 110
- Pre-mold insert material: ceramic polymer
- Over-molded material: Polyetherimide PEI/ Ultem
- Insert size: 1.25mm/ 0.0492" dia
- Over-molded part size: < 1.0"
- Tolerance of insert cavity: Locational Clearance Fit: 0.01 mm/0.0005"
- Number of cavities: 8
- Insert shape: cylindrical
- Insert Orientation: pre-over-mold, front to back, (axial upon request)
- Quality Control Vision Inspection:
 - insert present
 - orientation of substrate in over-molded part
 - other criteria upon request, such as dimensional inspections
- Part release of the over-molded part: exit conveyor indexing by shot

The challenges for this project included:

- Ensuring the quality of the pre-mold inserts were consistently within tolerance, they were very clean from contamination such as dust, dirt, specs, static, moisture.
- To ensure the insert was kept at the correct orientation as it moved from a bulk arrangement in the automation feeding station prior to the over-mold process, prior to mold insertion and were correctly seated into the mold cavity before the mold closed and over-molded. Robot integrated cameras and vision sensors handled this requirement.
- Careful engineering calculations had to be made regarding mold steel expansion thermal deltas as this could affect the tolerance of the cavities, seating of the micro-inserts and thus quality of the over-molded part; a cold mold and its features are not the same dimensions as a hot mold. This is especially critical when processing at such tiny scales and very high tolerances.
- Common and typical insert application issues were also handled, such as the mold location on the platen needed to be perfectly consistent, level and square but also this is required for the mating robot end of arm tool as well even if the "Eoat" has alignment mold engagement pins.
- The end of arm tool had to be machined to very high tolerances (+/- .0005") and are not using typical standard delrin, mild steel or rubber

fingers but are of high quality Stainless Steel for the over-molded part gripping. Also Eoat precision vacuum cavities might be used for the insert gripping / handling. The end of arm tool and feed station sections will likely be made of special anodized or special hardened materials for wear and tear surfaces.

Example Project: B

- Electrical Part
- IMM tonnage: 110 ton
- Pre-mold insert material: metal alloy
- Over-molded material: PBT
- Cycle time: 15s
- Insert size: < 2.0 mm
- Tolerance of insert cavity: .03mm / .0012ths
- Number of cavities: 4
- Insert Orientation: front to back
- Insert shape: cylindrical
- Inspection: orientation from feeding to insert loading, via vision sensors
- Quality control:
 - Insert in mold present, pre-molding
 - Insert orientation

The challenges and considerations for this metal micro insert over-molding project were very similar to Project A above. Some of the differences in a micro metal insert handling versus a ceramic insert are qualities such as oxidation and coatings i.e. metal inserts must be free of these contaminants prior to be introduced to the workcell automation. Sometimes ceramic inserts are more abrasive and thus special consideration has to be made for the use of contact hardened surfaces. Also, metal inserts tend to be less fragile and heavier than ceramic inserts so gripping and handling if such inserts might be a tad easier though there is nothing easy about handling a "grain of rice" micro-sized inserts.

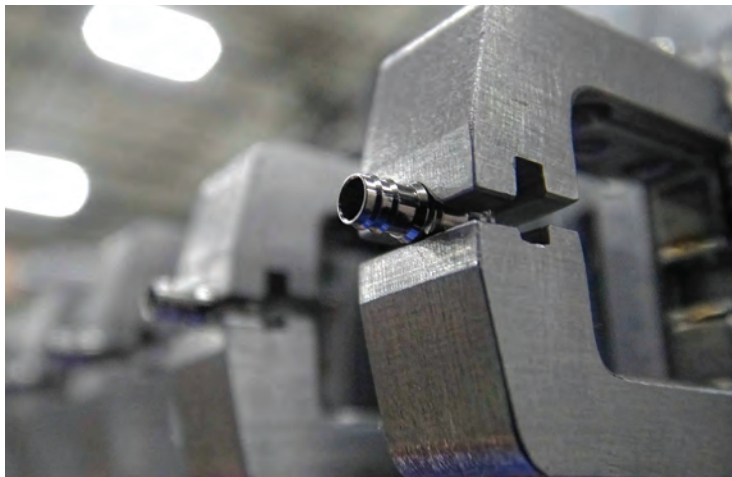
Other common technical considerations of automated handling of micro-Inserts and parts, including:

- Static issues:
 - Even the tiniest small static charges can affect the insert and part and so tests have to be made to determine if the parts / inserts have to be de-static washed or housed in clean de-ionized air.
- Environmental control:
 - Parts / inserts of this tiny scale are more consistently handled if managed and in environments where temperature, humidity and air flow are controlled. For example; ambient temperature changes might change the size of the insert (critical at precise tolerances), humidity might negatively affect any hygroscopic polymers and air flow (such as a nearby door closing or vent) might push the insert or part out of

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position. Well designed workcell enclosures and HEPA filters will often be used to alleviate these risks including foreign particulate control.

- Micro-insert quality control / consistency:
 - Inserts have to be very consistent and highly QC'd (dimension, specs, flash, debris etc) by the supplier "prior" to being introduced to the workcell for consistent inserting and handling.
- Micro-parts detection considerations:
 - The need of a workcell vision cameras versus simple vision sensors will be determined when tested. In likelihood these technologies will be needed for tasks such as orientation, inspection, mold seating con-



Micro Gripper with Insert

firmation, post-mold QC. The naked eye usually can't handle such small scale inspections.

- Micro-Eoat gripper precision considerations:
 - The robot and automation "grippers" and fingers will be machined to very high tolerances and often made of special materials based on the application need.
- Insert feeding:
 - This will not be your 'garden variety" bowl feeder...very careful consideration will be made to the feeder design, materials, high tolerances and creative orientation management with precision sensors confirming each step of the process.
- Mold seating and engagement techniques:
 - Often to assist in making the initial set-up easy the robot End of arm tool will include a docking feature to dock with the mold while locating the micro-inserts. This also makes for assured consistent inserting and demolding as well. The robot End of arm tooling might not include common mechanical grippers because the insert scale is so small but rather dynamic pneumatic tubes on the Eoat might be used to transfer and seat the micro inserts into the mold cavities.
- There are plethora of other fine details that need consideration for optimized insert-

ing, demolding and handling of micro-inserts and micro-parts that an experienced robot supplier will bring to the table during the specifications and design review phase of the project.

A Big Micro Opportunity

Molders, product development specialists and engineers, especially in the electronics and medical molding markets, need to become aware of the possibilities for improved component and product design accordingly. New robot and automation technology for micro insert molding can now offer the possibility of new plastic product designs to small and micro molding that were unheard of just a few year ago...and on a scale size that even the best set of 20-20 vision eyes would struggle to see and appreciate. Now, a tiny part assembly can become more robust single piece design with insert-molding / over-molding, can reduce post molding assembly needs and reduce the overall part numbers in a finished product. All of these advantages improve product quality while reducing cost. The proverbial plastic product design Win-Win.

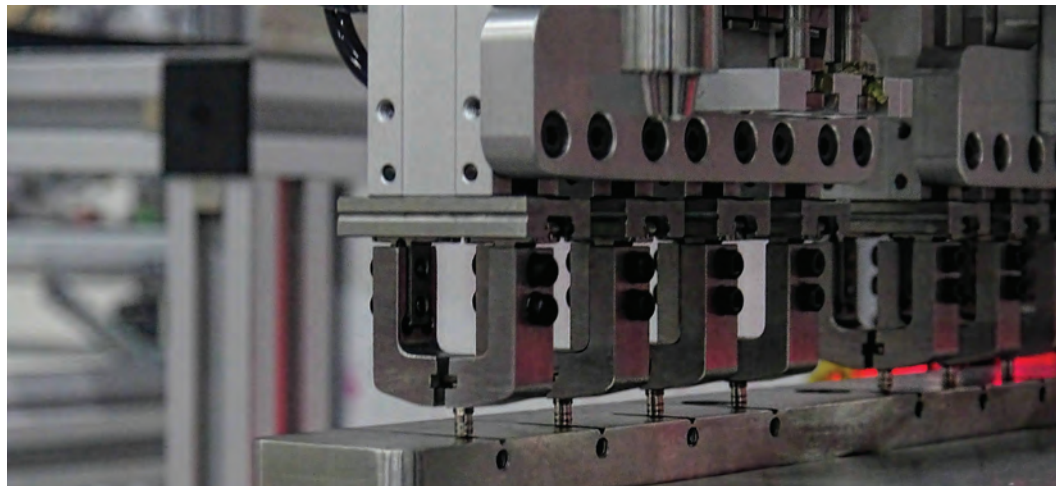
So molders, be encouraged to reach out to your robot suppliers, interview them, inquire about the possibilities. If possible, get the product design development specialist sitting in the same room with the qualified robot supplier and the mold design manager; then discuss what is possible and plausible in your injection molding machine production, do the economic math and move forward. This may very well be your "edge" and competitive advantage in your market segment.

Qualifying the Robot Supplier

How do you select such a high-level robot supplier to collaborate with for high precision small or micro insert molding?

Consider Supplier Features such as:

- The size and expertise of the custom automation engineering group
- It might be best to avoid foreign sources for this type of project as you'll want to partner domestically for complex projects, develop specifications, project management, FAT all here in the US. You'll be rest assured that the robot and automation engineering group are based in



Eoat picking inserts from nest

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➔ (Continued from page 5: High Precision "Micro" Insert Molding)

the US for years of technical support needs going forward for the life of the project. Tour the robot supplier's facility for proof of their ability, size, competencies and application scope claims.

- The locality and experience of the field service support
 - Like the domestic custom automation engineering advantages above, it is just as important to have experienced local / regional field "direct" service tech support for lower cost start-ups, work-cell commissioning's and fast response future tech support needs as part of "uptime-management" assurance. Foreign / offshore custom automation suppliers are usually dispositioned for fast response and "local" workcell support needs.
- US and local project management for successful implementations
 - The third layer of a successful high-tech automation project is the ever critical project management factor. It really should be US based and regionally based to bring all the key project elements together without the time lag and dealing with communication issues and time zones challenges of foreign contacts / entities. Domestic "relation-

ships" are therefore usually better than foreign "contacts" for such intricate high communication projects.


- Top Entry Linear Robots end user programmability capability, motion control of the primary robot and circuit limitations
 - These micro applications are more involved than basic "pick and place" off-the-shelf applications thus the robot must have all the technology to easily integrate into high precision custom automation. The robot should be completely end-user programmable, handle .1 of a mm accuracy or greater, should not require the end-user to purchase custom programs, should not be limited to icon sub-routines, circuits and I/O... But also mechanically modular robots fair the best for special custom applications with their flexible design attributes.


Got Micro?...Start the process today...

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Connect With Us on Social Media!

Make sure to connect with WITTMANN BATTENFELD USA on our social media channels! Here is some of our recent activity:

 WittmannBattenfeldUSA

 wittmann-battenfeld-USA

 @WITTBATT

 wittmannUSA



In-Person Robot Classes Starting Up Again!

We are happy to announce that WITTMANN BATTENFELD USA is starting up its in-person robot training classes again. While we have been happy to provide complete training services remotely over the past year, it will be a welcome sight to have customers visiting us at our three USA locations in Torrington, CT, South Elgin, IL, and Placentia, CA.

Please visit our new website for dates for upcoming training classes: https://www.wittmann-group.com/en_us/customer-service

WITTMANN BATTENFELD Training

Upcoming Events

Our Innovations Roadshow Truck is sanitized and on the road and ready to visit your shop so you can check out our products up close!



Currently making it's way around the **Eastern Midwest (MI, OH,IN, KY, WV)!**

EXPERIENCE WITTMANN 4.0

Learn how it can help you increase your productivity!

LIVE PRODUCT DEMONSTRATIONS:

W822 Robot

B8 Injection Molding Machine Control

Drying, Blending and Water Temperature Control Technologies

Contact Us Today for more information:

Crystal Gagnon, Marketing Communications,

Crystal.Gagnon@wittmann-group.com



Plastics in Motion 2022

March 14 - 16, 2022

Charleston, South Carolina

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Agenda](#)

Don't Miss **Jim Mitchell** presenting "Novel Lightweighting with Foaming and Gas Assist Technology" at 4 pm on March 15th!



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**PT XPO
COME VISIT US AT
BOOTH #706!**

WITTMANN BATTENFELD Inc. Personnel News

Aaron Silver

Field Service Technician
MH and Auxiliaries

Aaron has recently joined our US Headquarters in Torrington, CT as Field Service Technician for our Material Handling & Auxiliaries division. He joins us with many years experience as a field service technician.



Deborah Fudale

IMM Administrative Assistant

Deb has started a new position as IMM Administrative Assistant at our USA Headquarters. She joined us here in our Torrington, CT office in October 2013, as a part time temp employee during the inventory season. She was hired Full-time in January 2014 assisting in both the scheduling/shipping department and robot sales. In April 2016, she became the Scheduler/Logistics Coordinator for the Robot Division, remaining in that position for the past 5 years.

