



**INNOVATION!**

**In Sewn Products**

**Manufacturing**

**SEAMS Association**

**NATIONAL NETWORKING CONFERENCE**

**OCT 18-20, 2017**

**HILTON HEAD, SC**

# What is Innovation ?

➤ THE PROCESS OF INTRODUCING NEW IDEAS, NEW TECHNOLOGY, NEW WORKFLOWS, NEW METHODOLOGIES, NEW PRODUCTS, SERVICES AND SOLUTIONS TO ATTAIN VALUABLE RESULTS

➤ INNOVATION IS ABOUT THE SUCCESSFUL EXPLOITATION OF NEW IDEAS...



# UNDER ARMOUR opens UA Lighthouse to Kick off Local-for-Local Manufacturing



Under Armour's vision for the future of manufacturing – bringing products closer to where the brand's products are sold – began taking shape with the opening of UA Lighthouse, the company's New Manufacturing and Design Center in Port Covington, MD



# ADIDAS NEW USA MANUFACTURING PLANT... “SPEEDFACTORY”



**Cherokee County, Georgia**



**The Atlanta  
Journal-Constitution**

# COLEMAN COMPANY



Exterior view of the **Coleman Manufacturing Company**, the **first African American** owned and operated **textile mill**, located in **Concord, North Carolina**, late nineteenth century. **January 01, 1890**  
[nchistorytoday.wordpress.com](http://nchistorytoday.wordpress.com)



# NEW BALANCE



**NEW BALANCE, Boston, MA. FIVE Manufacturing Facilities in the USA;  
FOUR Million Pairs of Athletic Footwear per Year that Are Made in America**

**“MADE IN AMERICA MATTERS”**

**“Let’s challenge the Conventions of the Industry” *Jim and Anne Davis***

# NIKE Innovation



## NIKE COMBINES 3D KNITTING WITH 3D PRINTING IN NEW SPORTS FOOTWEAR

Nike is yet **again** breaking new ground in **sports footwear** with the introduction of its new Nike Vapor Ultimate Cleat American football boot, which combines its proprietary flat knitted **Flyknit technology** and game-changing **3D printed carbon fiber sole plate technology** for unprecedented lightweight speed and strength.

# COBALT BOATS

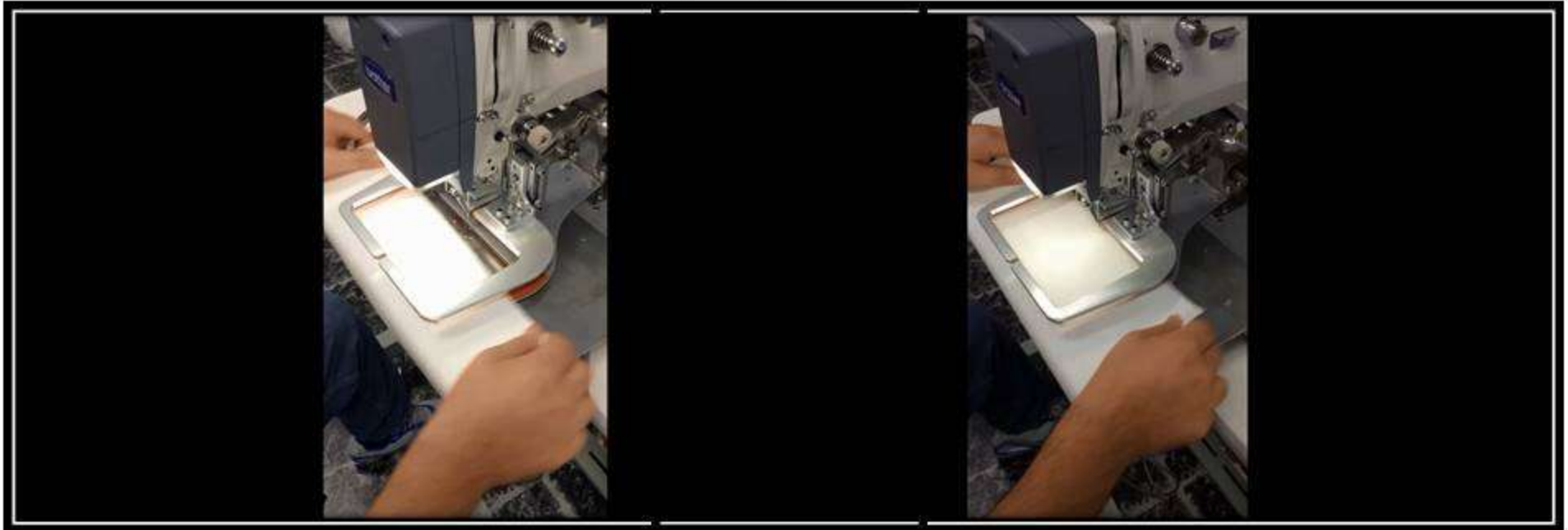


**At Home in Neodesha, Kansas, we're Tirelessly Designing and Crafting the Most Innovative, Well Engineered, and Best Performing Boats Imaginable. We Seek Out the Appropriate Balance Between Hand Craftsmanship and Technological Advances that Will Deliver the Most Innovative, Well Appointed, Stylish and Best Built Boats.**

[cobaltboats.com](http://cobaltboats.com)



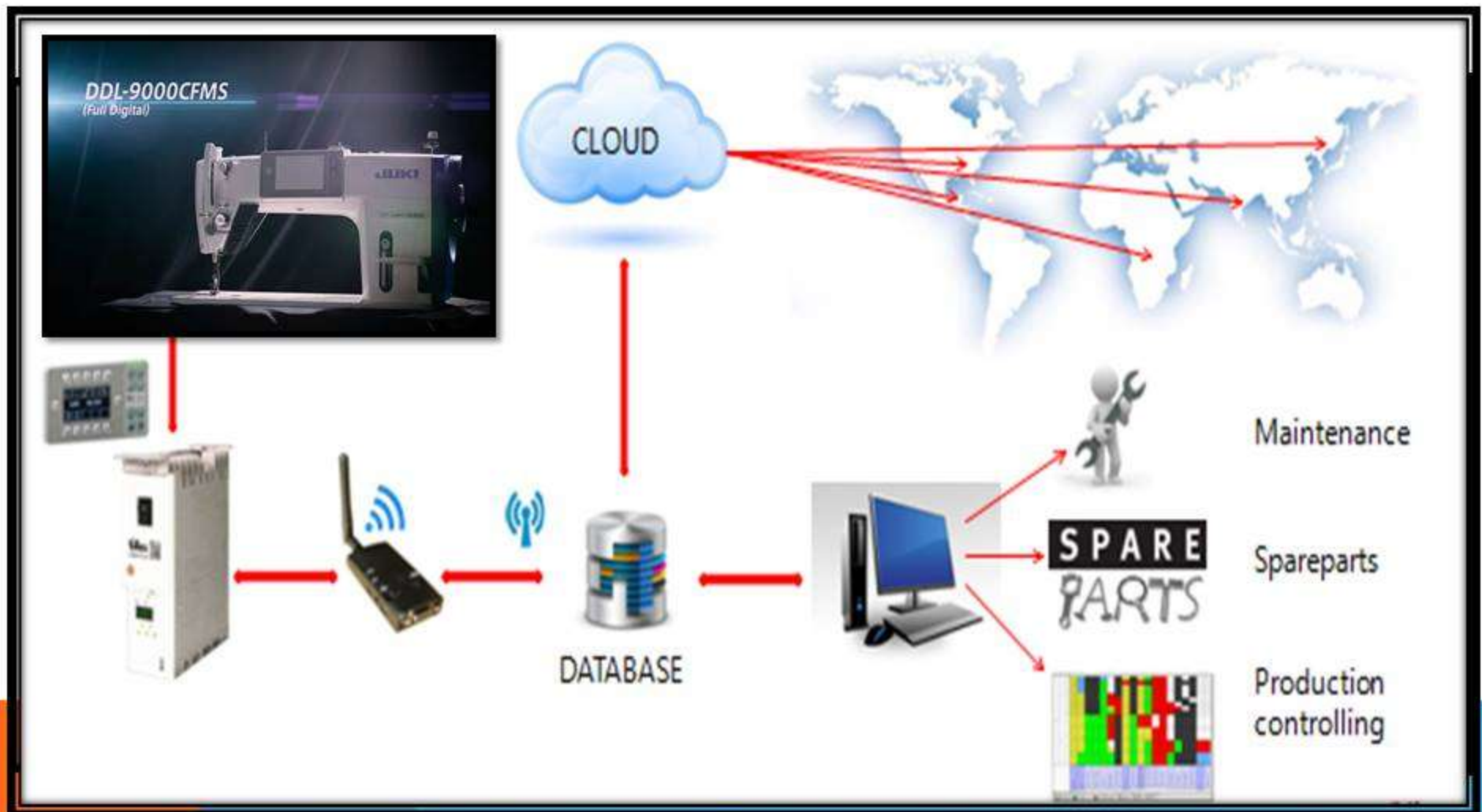
# VISION INTEGRATION INTO SEWING



## VISION "DIRECTED" SEWING

The **system** is designed using the programmable **PC Custom Camera** and lighting to automatically Create a Stitch Pattern around **irregular shaped objects** like Patches, Labels, Appliques, Letters, Numbers, etc.

# Digital FACTORY AUTOMATION

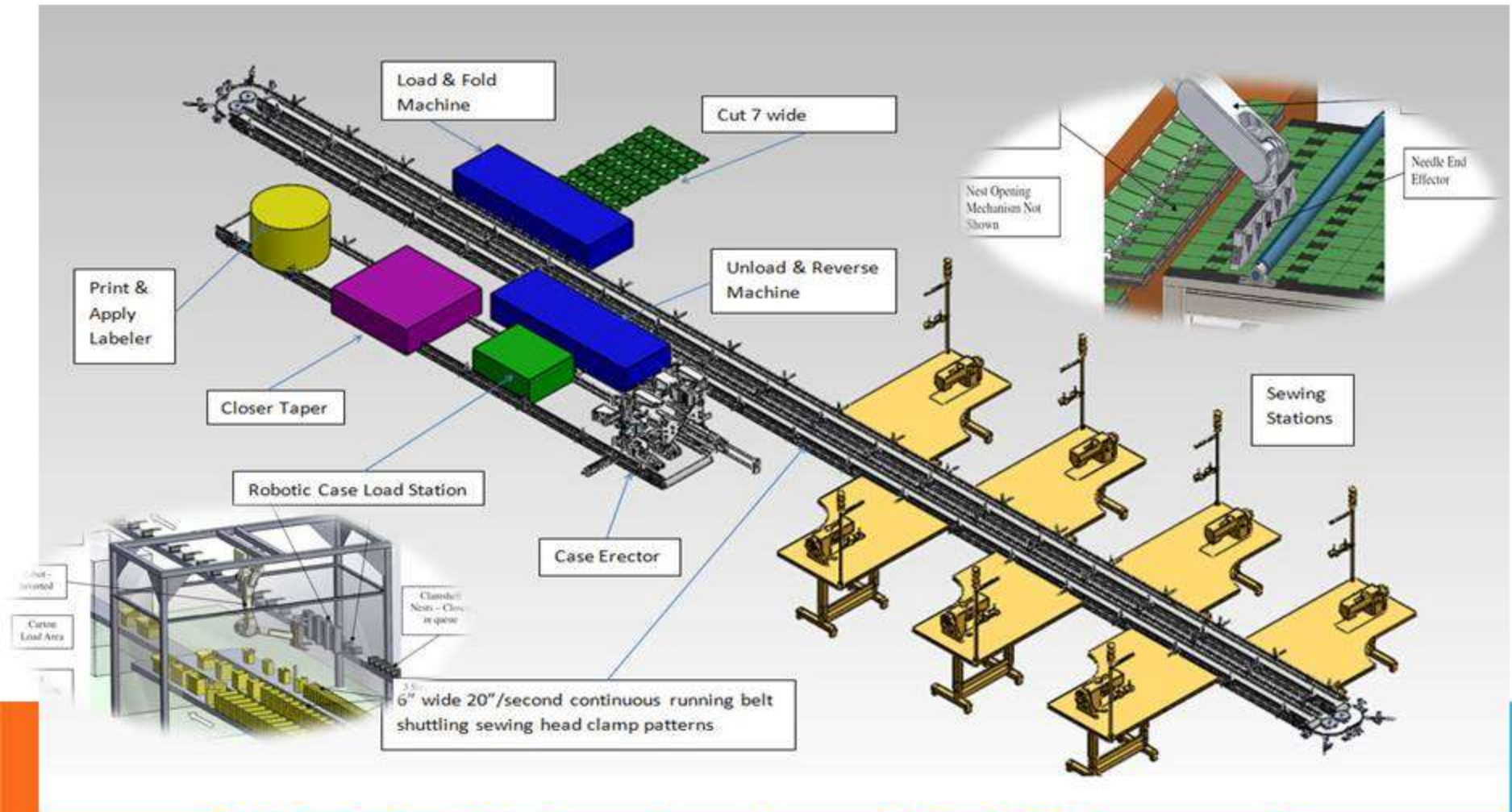


**Automated Machines and Devices Producing Products with Electronic, Interconnected Reporting of Production Output, Maintenance Issues and Efficiencies of Operation**

# Vision Alignment & Inspection Of Products



# AUTONOMOUS WORK CELLS

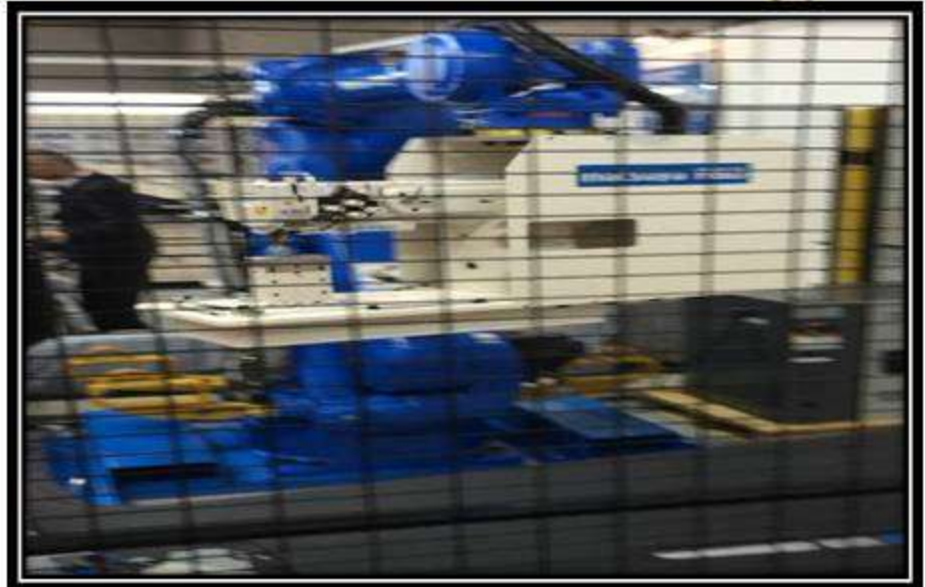


**“Making Products with Little or No Human Intervention”**

# **“THREE”** Dimensional Sewing



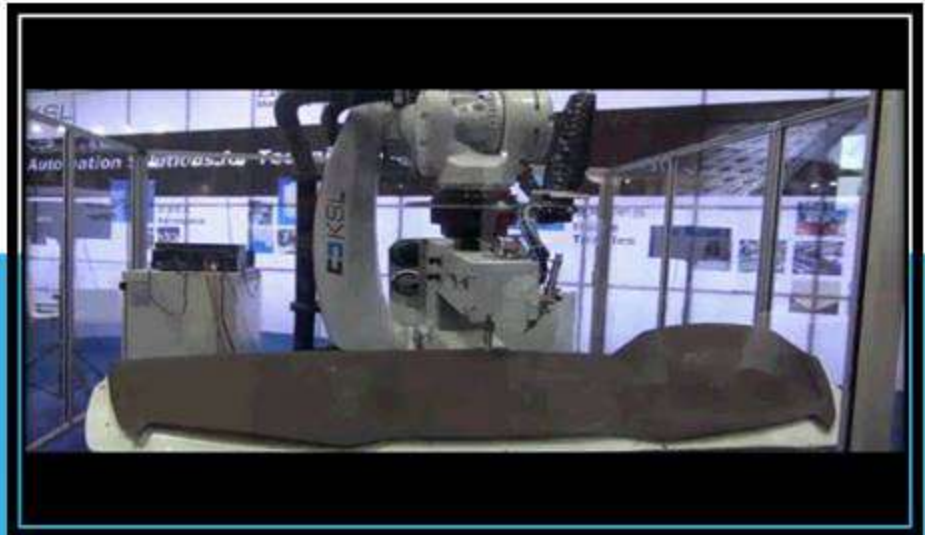
**3-D Sleeve Set**



**3-D Post Bed Sewing Station**



**3-D Shoe Sewing**



**3-D Dash Board Sew**

**INNOVATION** BRINGS ...

**DISRUPTIVE  
TECHNOLOGY**



**WHAT IS DISRUPTIVE  
TECHNOLOGY?**

# DISRUPTIVE TECHNOLOGY

REFERS TO ANY ENHANCED OR  
COMPLETELY NEW TECHNOLOGY  
THAT REPLACES AND DISRUPTS  
AN EXISTING TECHNOLOGY...  
RENDERING IT OBSOLETE....

IT IS DESIGNED TO **Replace** SIMILAR  
TECHNOLOGY THAT IS ALREADY IN USE.

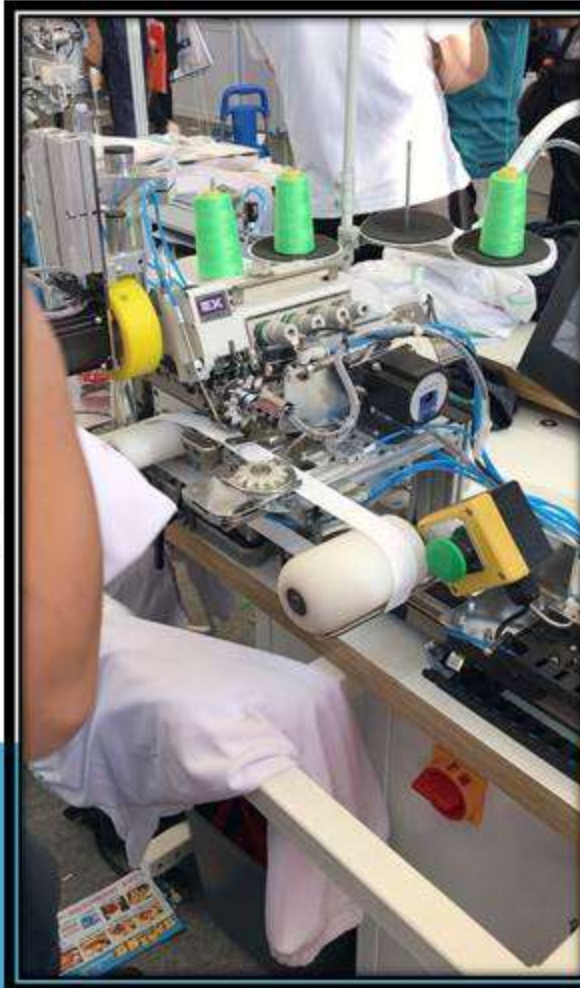
# Repetitive Motion Manufacturing *is* DISRUPTIVE TECHNOLOGY!



Auto Drapery Pleat



Robot Load-Sew Auto Interior



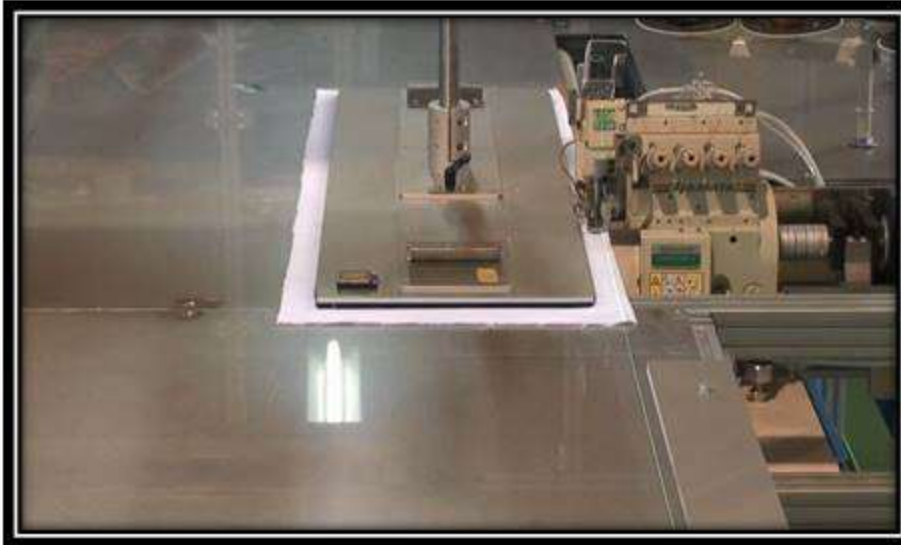
Elastic Attaching on  
Bottoms



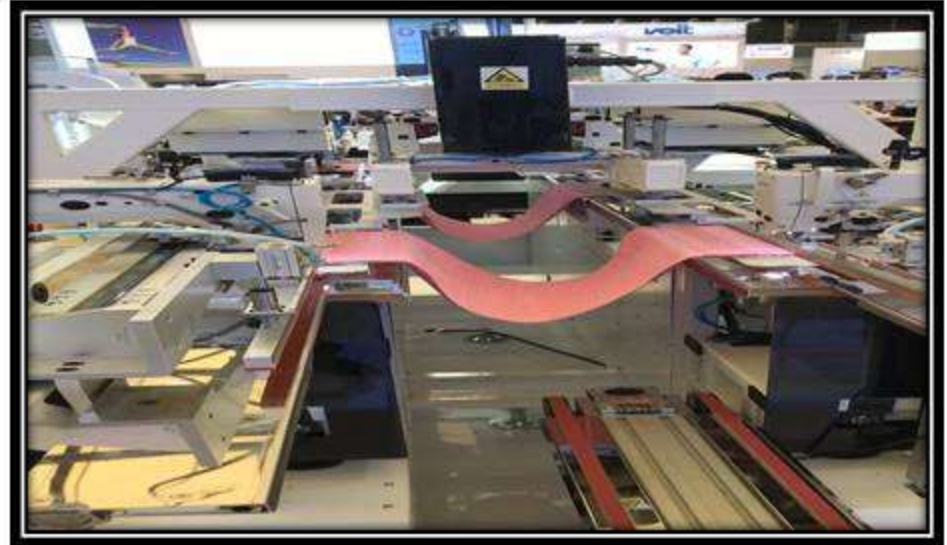
Bath Clothe Seam



# Repetitive Motion *is* DISRUPTIVE!



Robot Towel Sew



Robot Towel Edge Sew



Robot Auto Head Rest



Dual Arm Robot Assembly

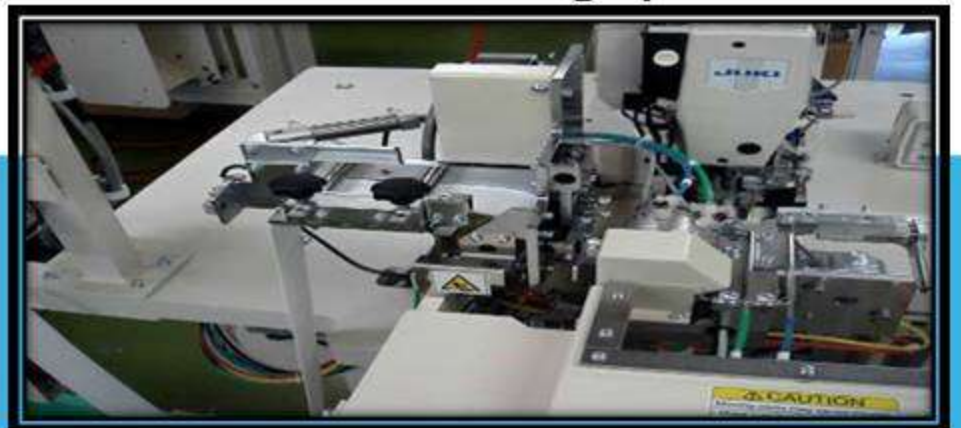
# Automated Machines *and* Robots *are* DISRUPTIVE!



ROBOT - Ironing Board Covers



ROBOT - Auto Air Bag Operation



ROBOT - Auto Elastic Ring

# DISRUPTIVE ... Automated Machines *and* Robots



**Furniture Manufacturing**



**Ultrasonic Cut & Seal**

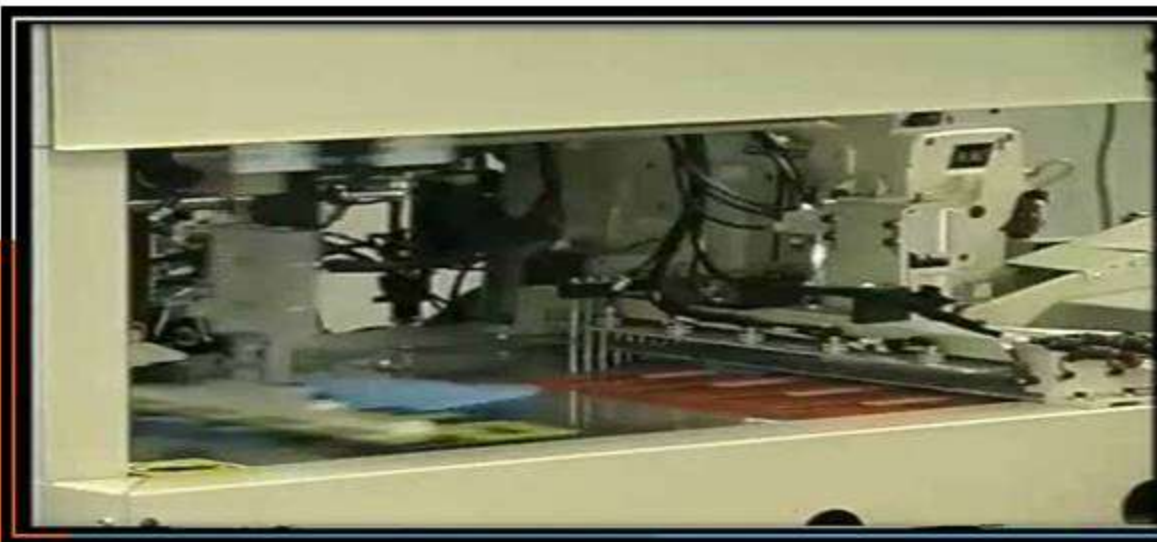
# Routine Jobs Performed by Robots *are* DISRUPTIVE!



Auto Air Bag Cell



Auto Bra Pad



Tee Shirt Hem & Close



Tee Shirt Bottom Hem

SEWBO



*is* **DISRUPTIVE!**

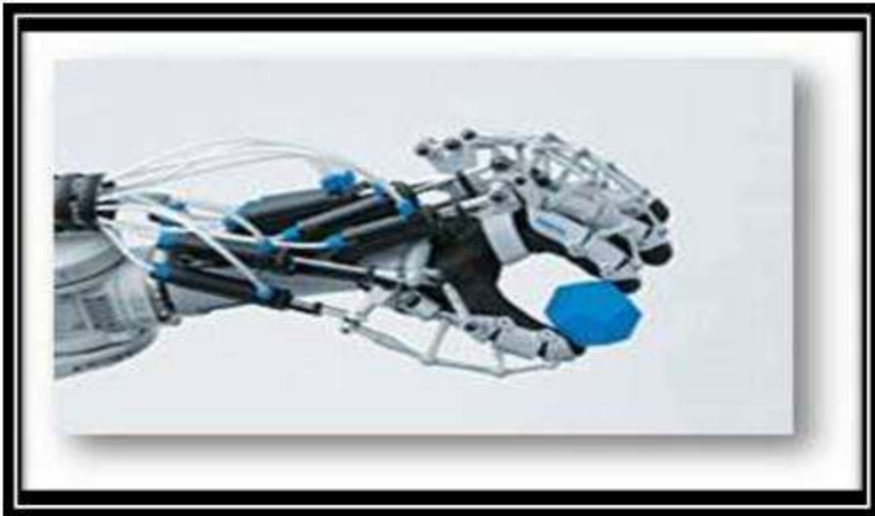


**Jon Zornow ... Inventor**

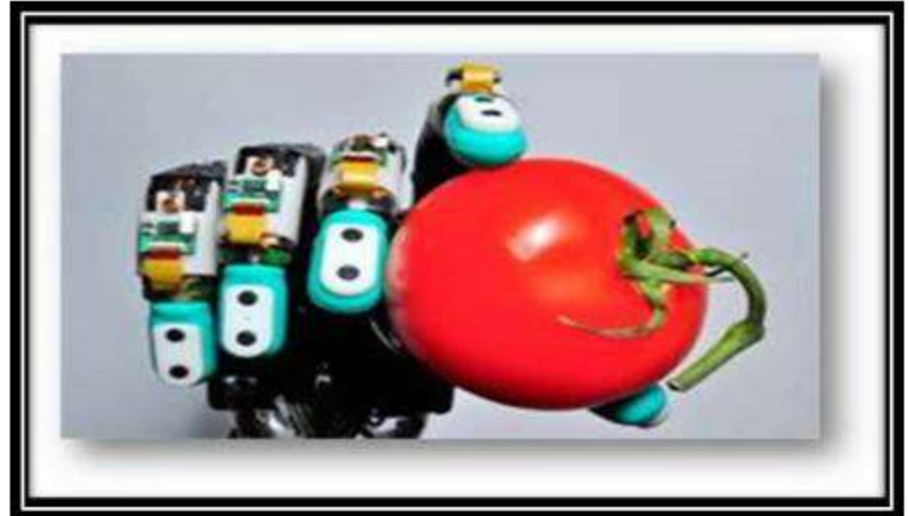
**Sewbo, Inc.** is pleased to Announce that it has Used an Industrial Robot to Sew Together a T-shirt, Achieving the Long Sought Goal of Automation for Garment Production. Seattle Based Start up Company

[WWW.SEWBO.COM](http://WWW.SEWBO.COM)

# Robotic End Effectors are DISRUPTIVE



ExoHand-Human Machine Interaction



SynTouch Texture Discriminating Robotic Finger

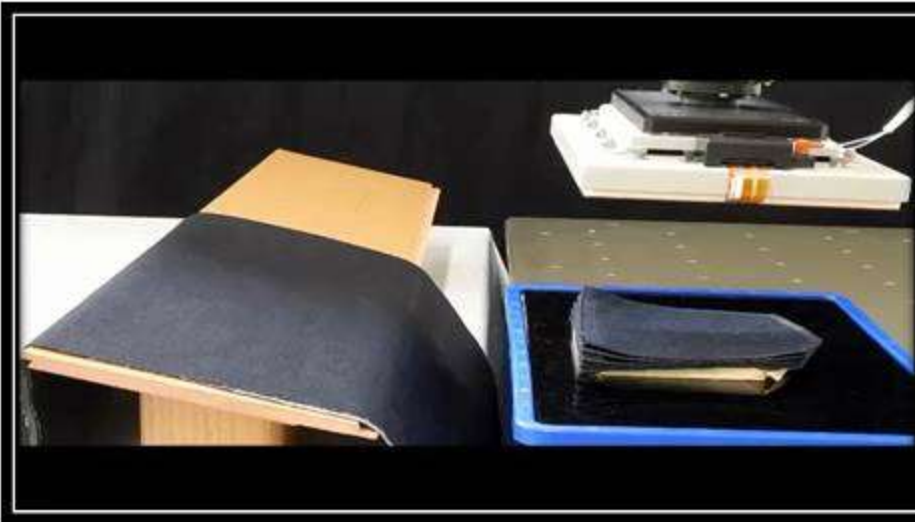


Specialized Needle End Effectors

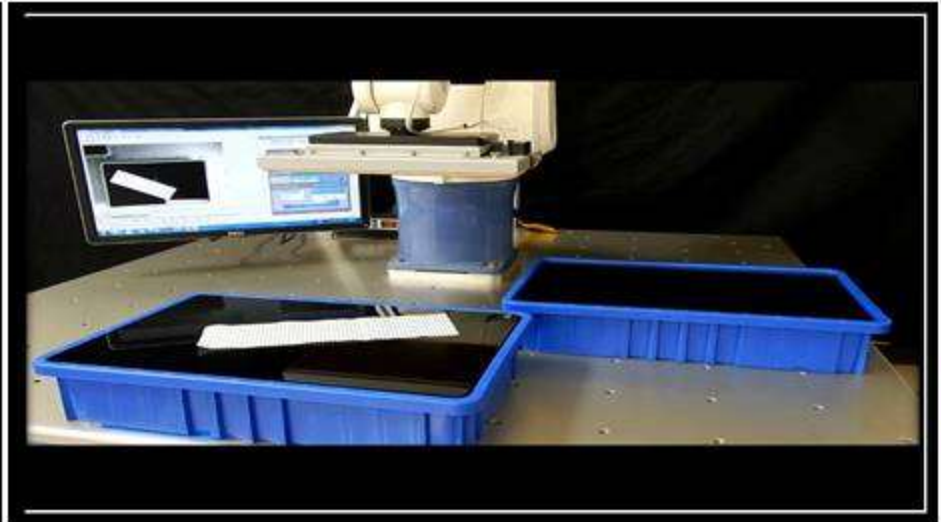


Robotic Human Hands

# Flexible Automation *is* DISRUPTIVE!



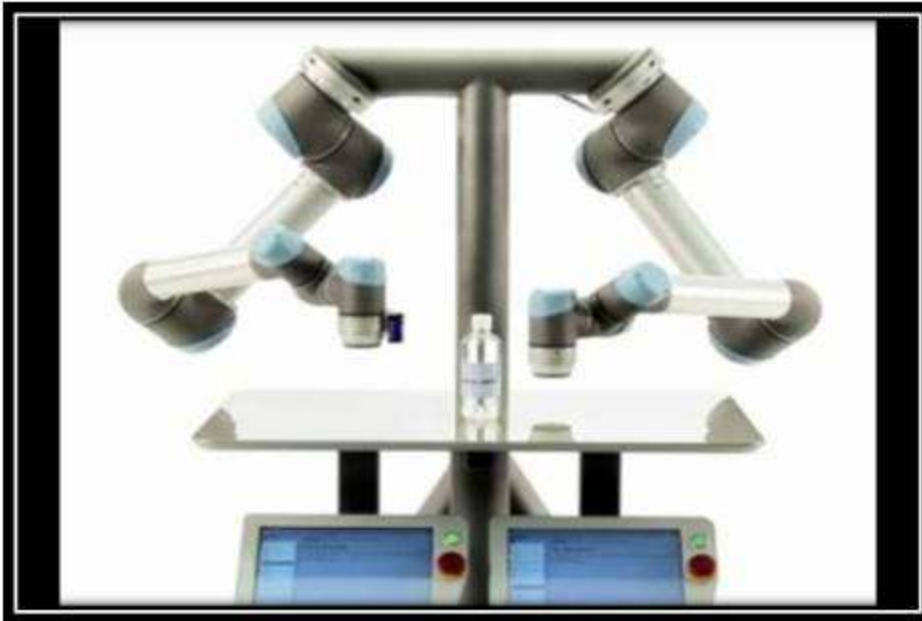
**ElectroAdhesion Pocket De-Stacking**



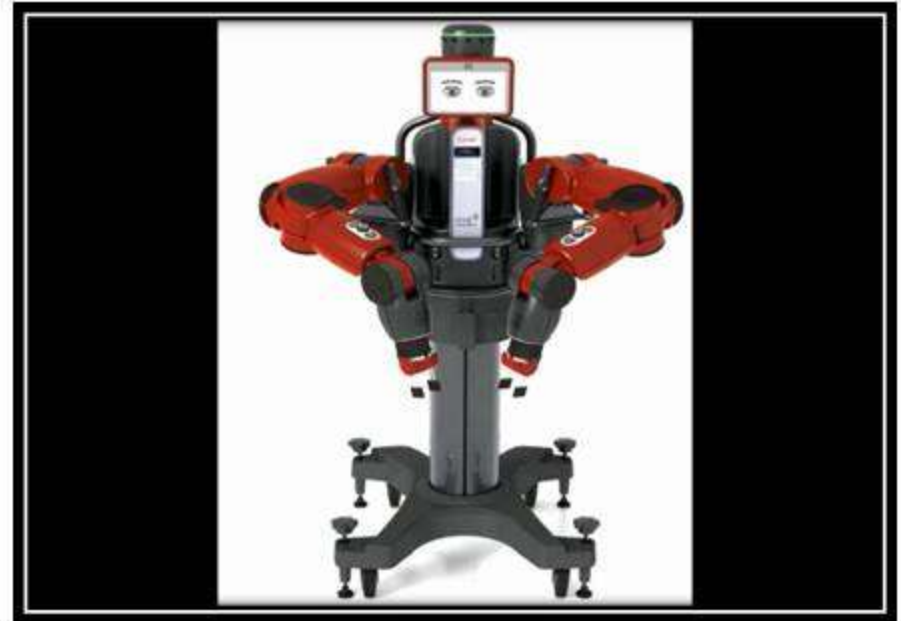
**Vision Guided Collar Assembly**



# Affordable Automation *is* DISRUPTIVE!



**Universal Dual Arm Robot**



**Baxter Dual Arm Robot**



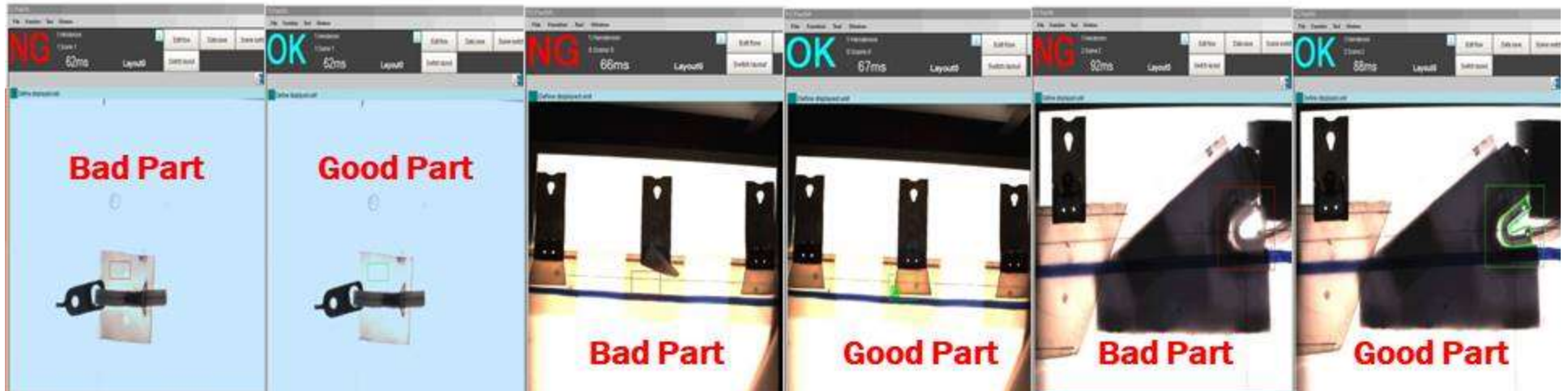
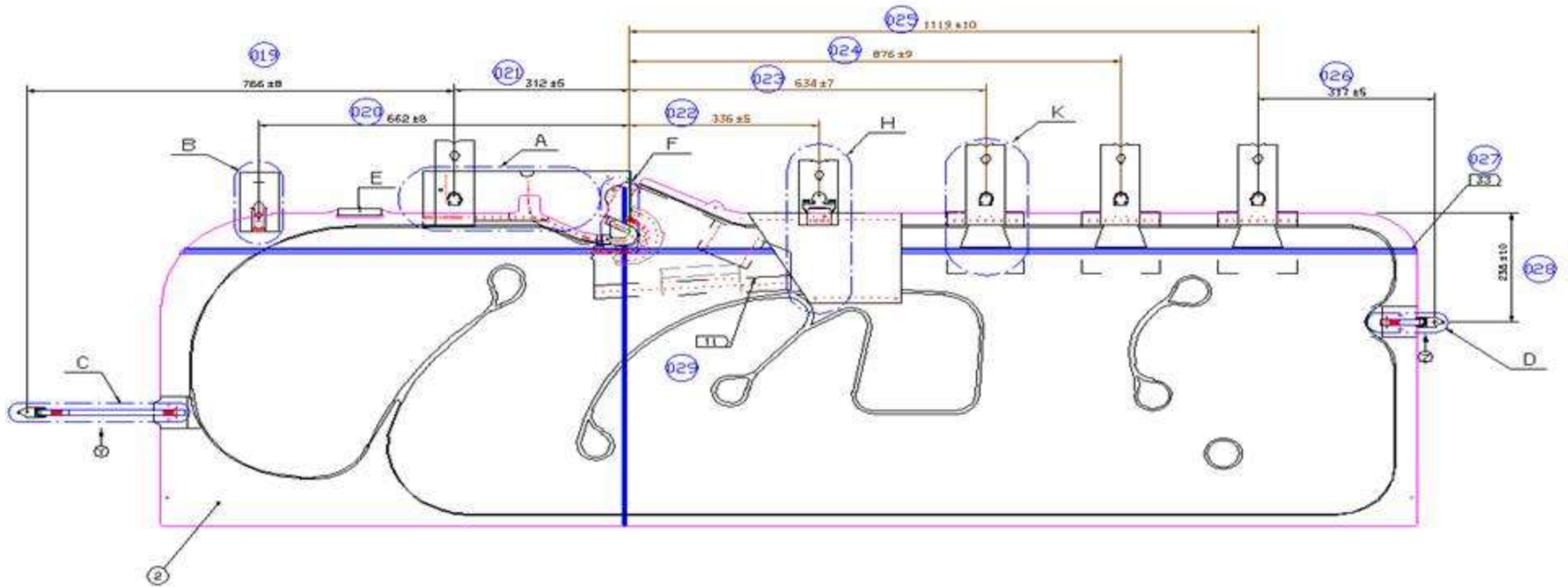
**Adept Autonomous Mobile Robots**



**Robot Shirt Front**



# Vision INSPECTION



**AUTOMATED**  
**Devices**  
*are*  
**DISRUPTIVE!**



**Auto Bobbin  
Checker**



**Auto Skip Catcher**



**Auto Bobbin  
Changer**

# **Robots** and **Automated Machines** *are* **DISRUPTIVE!**



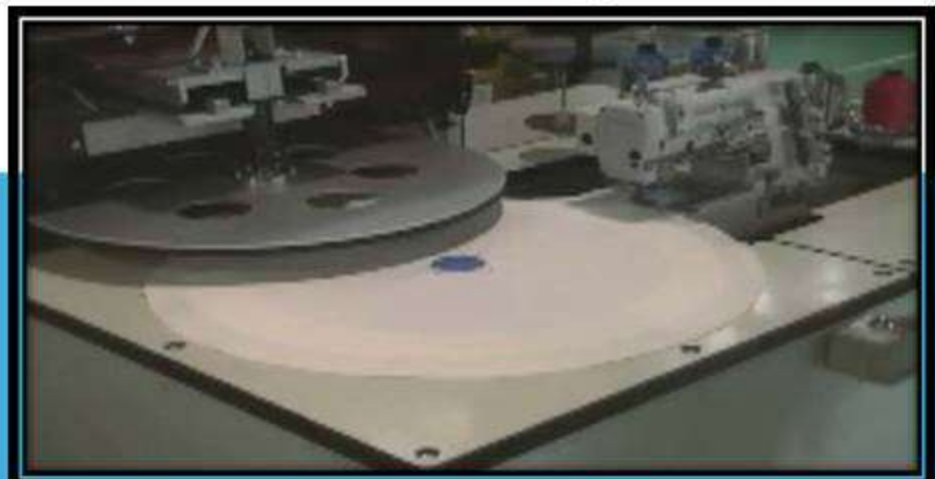
Autonomous Strap System



XY Theta Turning Head



Auto Collar & Cuff Sewing Unit



DAB Air Bag Robot

# AUTOMATIC SEWING



**DISRUPTIVE TECHNOLOGY!**

# Automated Work Cells *are* **DISRUPTIVE!**



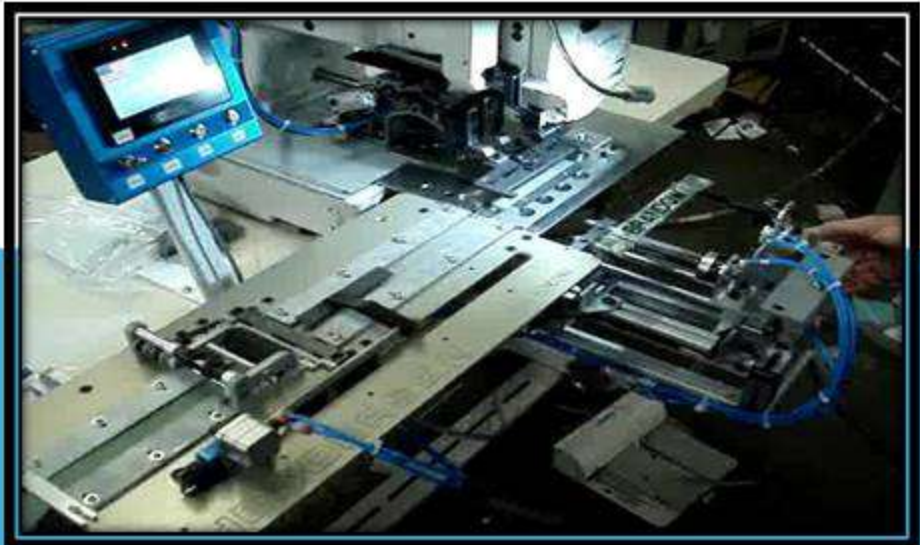
Parachute Line Cord Automation



Twin Head, Auto Velcro Loading, Medical Unit



Webbing End, Turn and Tack



Bottom Velcro Load with Name Tape on Top

# THE AGE OF DISRUPTION



**Our Industry is Dynamically Evolving**

# The USA is Cost Competitive Today



Source: Walmart/Boston Consulting



# AMERICANS

SPENT 14% MORE ON ON  
CLOTHING AND FOOTWEAR IN

2016 AROUND \$350

BILLION ... AND THE TREND IS

SIMILAR OR GREATER IN MUCH OF

THE REST OF THE WORLD

... MARKET RESEARCH FIRM

EUROMONITOR INTERNATIONAL





# **REEBOK** IS BRINGING SOME SHOEMAKING **BACK TO U.S.**



**New manufacturing process uses liquid material.**

**Reebok** is bringing some manufacturing capabilities to the United States as the **athletic-gear maker** unveiled plans to open a new manufacturing lab that relies on futuristic **liquid material** and **3D drawing**.

# NEW MANUFACTURING PROCESSES



**Adidas HURDLES** Manufacturing Limits with  
**Liquid & Light**

**What's the recipe to disrupt shoe manufacturing? Just  
Add Light, Liquid, and Oxygen to the 3D Printing Process.**

# WE CAN COMPETE IN AMERICA TODAY



**Robotic Automation**



**JEANS Automation**

*THANK YOU!*

**FOR YOUR ATTENTION**





**A GLOBAL  
PERSPECTIVE**



Founded in 1968:  
*James F. Henderson*

Current CEO:  
*Frank Henderson*

Employees in USA:  
32

Vendor Base:  
565

Customer Base:  
4650

*Family owned, S Corp*



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**WWW.HENDERSONSEWING.COM**