

JOHN HATCH



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CHIEF/SENIOR MECHANICAL DESIGN ENGINEER, DFM, SME

AUTOMATION | AEROSPACE | ROBOTICS | ENERGY TECH | DESIGN FOR MANUFACTURING | MACHINE DESIGN | CAD MODELING & DRAFTING

OBJECTIVE

Targeting a Collaborative or Solo Contributor Role on a Fully Remote Basis to Contribute in Design Deliverables and Engineering Expertise. Bring my Wealth of High-Profile, Diversified Experience as an Asset to Your Operation.

SUMMARY

Skilled innovator focused on tangible results, ROI, target development time and cost. Strong, rare talent paired with business KPI focus, with published world-leading technologies launched in an equivalent of over 40 years of experience while in early/mid-career. Keen awareness of market viability, volatility, and risk for every project from bootstrapped startup to enterprise program. Served at many levels, on teams and solo, with tracked, independent third-party rated performance.

Work	Performance	Collaboration
5+ Million Parts: Designs Manufactured	82% Savings in Development	97% Reliability & Collaboration
1,000+ Projects: Completed from Start to Finish	67% Savings in Manufacturing	95% Target Value Achieved
60,000+ Hours: Critical Engineering Time Logged	65% Increases in Quality	97% Trustworthiness with Goals
\$1M-\$1B Budgets: Successful Solutions Delivered	15+ Years Working Remotely	96% Accuracy of Results

QUALITY



SKILLS

40+ Years Combined Total Projects	Controls & PLC Integration	Lights-Out Automation	Prototyping, R&D Testing
ABET BSME Core Education	DDS,ROS Framework	Linear Actuators	Rack Server Hardware
Aircraft Hardware	Design for Manufacturing	Machine Design	Radar & Wireless Systems
Allen Bradley, Beckhoff, Rockwell	Diagnostics & Metrology	Machine Learning, Open Source	Requirements, Project Scope
ANSI Y14.5 GD&T	Drawings & Layouts	Magazines & Payoff/Payout	Reverse Engineering
Artificial Intelligence, Ai	Electro-Optical, Vision, Lighting	Manufacturing, Fabrication	Robotic Arms, Fanuc, SCARA
ASTM PVHO	End-Of-Arm Tooling (EoAT)	Material Handling Systems	Screw Auger Design
AutoCAD & Autodesk Inventor	Engineering Leadership	Materials Selection	Sensor Integration
Avionics & Instrumentation	Exoskeleton Design	Mechanical Aptitude, Visualize	Servo Motors & Arduino
Bearings, Rollers, & Idlers	Factory Automation	Mechanisms, Precision, Geneva	Sheet Metal
Body Panels & Structures	FEA, FMEA, Hazard Identity	Mechatronics	Six Sigma
BOM & Inventory	Firmware Integration	Microsoft Office, Word & Excel	Software Logic Architecture
Brushless Rotary Motors	Fluid Flow Design	Mil Standards	SolidWorks (50,000+hours)
C,C++ Programming	FPGA, Ethernet, CAN Bus	Motion Control, Position Staging	SolidWorks Electrical
Cable Handling, De-reeling, Coiling	Green Fuel: Lithium Ion, Biochar	OCR/BCR Barcode Readers	Sorting, Singulation, Shaking
Cable Routing & Cable Drawings	Humanoid Robotics, Cobotics	Omron, Keyence, Siemens	Sprockets, Idlers, Timing Belts
Calibration Tools & Monuments	Hydraulic Actuators	PLM: Windchill, Teamcenter	Systems Engineering
Capital Equipment, Modules	Indexing, Accumulation, Pickoff	Pick-and-Place Automation	Tooling, Jig, Fixture Design
Carbon Net-Negative Systems	Integrated Code: VHDL, Python	Planetary Gears & Gearboxes	Top-Down Assembly
Carbon Sequestration / Drawdown	Integrated Data Hubs, DIN Rail	Pneumatic Actuators & Vacuum	Tray, Pallet, Module Design
Catia, Creo/Pro/E Equivalent	Kinematics, Linkages, Indexers	Prioritization & Strategy	Vehicle-Mounted Systems
Cognex, Optek, SICK, Radiant	Labelers, Printers, Identifiers	Process Engineering	Welded Frames, Mezzanines
Concept Development & Design	Large Assembly Design	Product Design	Weight-On-The-Fly (WOF)
Conveyors, Diverters, Chutes	Lean Manufacturing	Project Ownership	X-Y, Gantry, Cartesian Robots

EXPERIENCE (SEE PAGE 2)

Internships, Process & Facility, Metallurgy & Analysis	2003 - 2004		
Mechanical Engineer & Drafter, Avionics		2004 - 2006	2021 - 2022
Mechanical Design Engineer, Senior, Automation			2006 - 2009, 2009 - 2019
Mechanical Design Engineer, DFM, SME, Chief/Senior			2009 Present

INDEPENDENT PROJECTS

Hematology	Consumer Products	Mechanical Keyless Lock	Space Structure Pressure Vessel
Aerospace Tooling	Reverse Engineering	Metrology Instrumentation	Construction Materials Innovations
Particle Accelerator	Exoskeleton Technology	Industrial Products & Tools	Biochar Reactors & Power Conversion
Aircraft Avionics	Last Mile Logistics	Outdoor Electrical Enclosure	OSB Plant Factory Technology
Aircraft Modification	Wearable Electronics	Lighting Technologies & Lamps	Work Cells, End-of-Arm Tooling
Humanoid Robotics	Auger Conveyor Systems	High Power Combustion Engine	Warehouse Parcel Sorter Systems
Cockpit Simulator	Vehicle Integrations	Aircraft Testers & Diagnostics	Automated PCB Diagnostics System

MAJOR PROGRAMS

Air Force Research Labs	Brazil Post	FedEx	Lockheed	Pratt & Whitney	U.S. Army
Allstate Insurance	Corning	GF2045	Mayo Clinic	Rockwell Collins	U.S. Dept. Of Energy
Australia Post	Daltile	Humana	Morocco Post	Royal Mail	U.S. Post Office
BBC Studios Nature	DHL	Ingram Micro	NetFlix	TXI Steel	UPS
Berkshire Hathaway	Elbit Systems	L3 Technologies	Norbord	U.S. AirForce	Walt Disney

EDUCATION

Degree, BSME/ET: UT + Excelsior	Mechanical Engineering (ABET BSME with Electromechanical Focus)
Certificate in Ai: NSPE (Member)	Artificial Intelligence in Critical Infrastructure Systems Studies in Infrastructure Engineering
Certificates in Nuclear Engineering	Nuclear Power Plants STEM Essentials (PWR, BWR, HWR) Principles of Power Plants, Reactors
Certificates in LiDAR, 3D Data	Surveys, LiDAR, Maps, Collaboration, Asset Management High-Res Imagery, 3D, in Engineering
Certificate in EPDM	Enterprise Product Data Management (SolidWorks EPDM)

EXPERIENCE (DETAILED)

Chief/Senior Mechanical Design Engineer, DFM, SME US (Remote) Multiple Projects Contract 2009 – 2024

❖ *Accomplished unprecedented benchmark success in several industries with enterprises and startups alike. Delivered on both immediate and iterative R&D projects, resulting in wide range of growth metrics including startup funding, IPO, market share expansion, acquisition, and funding awards from AFRL, U.S. Air Force, U.S. Army, Department of Energy, NSF and others.*

- Very successful engineer in launching pioneered, manufactured technologies for commercial and government programs
- Full cycle projects completed including product design/redesign, rapid prototyping, iterative stage-gate R&D, commercialization
- Broad industry experience in multiple sectors, including robotics, automation, flight controls, avionics, diagnostics, integrated technologies, optical systems/subsystems, RF technologies, submersibles, custom equipment. Project listing, by industry:

Aerospace: Aircraft, Energy, Robotics

Aircraft Test, Radar, Weapons, Vehicles | Elbit Systems
 Humanoid Robot | Air Force Research Labs + Startup
 Aircraft Interiors Engineering, Model-Based Definition | TDA
 Robotic Figure Design, Electric-Hydraulic | Disney Imagineering
 Altitude Pressure Chamber Structure | Mayo Clinic + Startup
 Electronics Hipot-Megohmmeter Tester | HarcoSemco
 Aircraft Completion, Lead Structural Design | Aeros Aviation
 Aerospace Tooling Design Projects | Pratt & Whitney
 Particle Accelerator Design | JP Accelerator Works
 Exoskeleton Prototype R&D | U.S. Army + Startup
 Aircraft Modifications Projects | Leidos
 Aircraft Simulator HSI Instrument | U.S. Air Force

Telecom: Diagnostics, Utilities

Automated PCB Tester | Motorola + Startup
 Modular Electrical Substation | Startup
 RF, Muon Radar Instrument | NSF + Startup

Consumer Products & Electronics

Wearable Technology Product | Ion Loop
 Educational Teaching Product | Startup
 Vinyl PVC Watersports Product | Startup
 Product Packaging Design | Startup
 Wearable Electronic Earpiece | Amazon + Startup
 Cosmetic Nails Stand Product | Startup
 Fully Mechanical Keyless Lock | Keyless Co
 Consumer Lamps & Lighting Products | Startup
 Robot Vacuum Design | Silicon Valley Robotics
 Washing Machine Anti-Vibration | Vizco US
 Cabinet Hardware Design | Atlantic Pacific Industries
 Surfboard Innovation Products | Startup
 Automotive Seat Product | Amazon + Startup

Automation: Conveyance, Manufacturing, Process

Stored Inventory Automated Tracking Indicator | Startup
 OSB Plant Technology | Norbord + Startup
 Lights-Out Automation, Smartphone Grading | Ingram Micro
 Automated Manufacturing, Model-Based Definition | KPS
 Warehouse Sorters, Conveyors | FedEx, UPS + Startups
 Lights-Out Manufacturing & Assembly | Corning
 Automated EV Car Manufacturing Advising | Tesla + Startup
 Automated Metrology Tool System Design | Startup
 Solidworks Data Size Reduction | Startup
 Waste Conveyance & Handling | Stericycle + Startup
 Last Mile Conveyor for Retail | Berkshire Hathaway Company
 Automated Lumber Stacking | UFP + Startup
 Battery Electrode/Anode/Cathode Plant | Siemens + Startup
 Automation of Sheetrock Manufacturing | Global Firm

Industrial Products

Construction Materials R&D | Mohawk/Daltile
 Humanoid Robotic Penguin | BBC Studios + Startup
 High Power Combustion Engine | Startup
 Industrial Robotic Wire Stripper | Startup
 Gate Opener Mechanisms & Covers | Doorking

Energy Sector

Oil & Gas Valves & Pumps | Startup
 EV, Hybrid Electric Systems Chief, Lead Design | Startup
 Mobile Pyrolysis System Design for Manufacturing | Startup
 ISO Energy Generator | U.S. Dept. of Energy + Startup

Medical Industrial Laboratory

Hematology Instrument | Drew Scientific
 Chemical Separation Equipment | United Science
 Clean Room Pick-and-Place Design | Grail
 Injection-Molded Housing | Belmont

Mechanical Design Engineer, Sr, Automation TX Duravant (Subsidiary) Direct 2006 – 2009 (Contract 2009-2019)

❖ *Rapidly succeeded and grew in design engineering of commercialized letter sorters and material handling systems, beating out entire industry with solo design of the world's fastest letter sorter, design of dual-density parcel sorters, leading company to boom in parcel sorting market, and to revenue growth from \$40M class to \$120M class and eventual successful acquisition.*

- Designed or redesigned nearly every machine for peak KPI's, from letter sorting market to leading in parcel sorting market
- Grew from modular design role to project owner, authority on project feasibility and full turn-key machine designs of all systems
- Engineered solo or near-solo large machinery with optimal timeliness, functionality & cost
- Designed modular postal sorter machines with latest sensor and optical technologies
- Created multiple 10,000 - 100,000+ component assembly designs with SolidWorks 3D software
- Designed thousands of sheet metal components and housings, welded steel structures and machined hardware
- Managed CAD data with PDMWorks CAD file vault, Produced engineering documentation (E.C.N., B.O.M., part request)

Mechanical Engineer & Drafter, Avionics TX Simtek (Aerospace) Direct 2004 – 2006 (Contract 2021-2022)

❖ *Established multiple unprecedented performance benchmarks, including design automation, reduction in scrap and rework, and solo mechanical design of the world's first face-removeable and face-lit Horizontal Situation Indicator analog instrument. Contributed to company's first million-dollar month benchmark success, and overall lean manufacturing vision.*

- Coordinated quality, automation to streamline engineering to manufacturing, decreasing time, cost, rework with increased quality
- Design & Drafting of Aircraft Cockpit Instruments and panels for flight simulators, including industry's first face-removeable unit
- Coordinated to meet government and customer specifications, and minimal manufacturing cost
- Developed mechanical components and assemblies with use of SolidWorks 3D software
- Produced hundreds of part & assembly drawings, bills of materials and technical documentation
- Applied concurrent engineering, selection design, sizing design, redesign, & configuration design

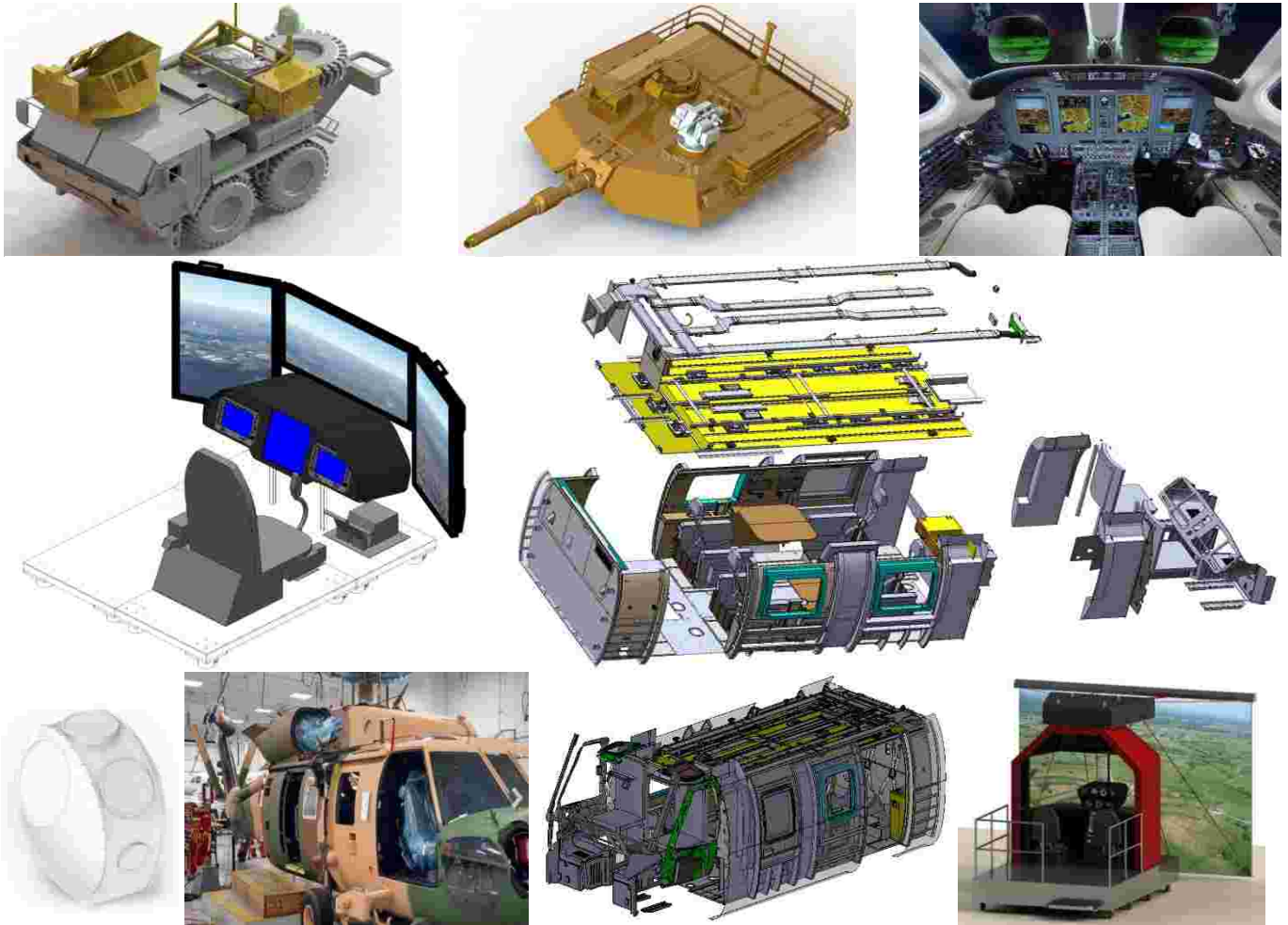
Engineer Intern, Metallurgy & Analysis TX Gerdau Ameristeel (TXI) Intern 2003 – 2004

- ❖ *Contributed to improved walking beam reheat furnace performance, alloy product quality, and shear shaft failure discovery.*
- Assisted in steel metallurgy failure, grain structure analysis and process improvement
 - Analyzed thermal performance of combustion reheat furnace
 - Administered experiment/testing, data collection, & performance monitoring

Engineer Intern, Process & Facility TX Triumph Group (GPAS) Intern 2003 – 2003

- ❖ *Executed short-term MRO site chemical project, leading to OSHA compliance, company's eventual acquisition by Triumph.*
- Six Sigma, Facility Safety Certification, Database Development, Materials Research
 - Identified and managed all on-site chemical data and safety procedures
 - Planned, designed, setup company safety reference area to meet OSHA standards

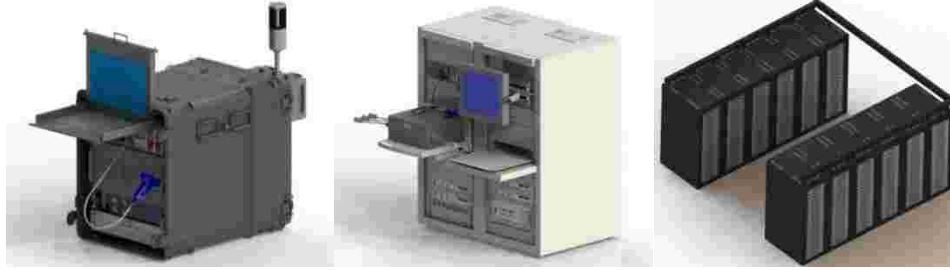
AEROSPACE: DEFENSE AND SPACE TECHNOLOGIES



AEROSPACE: INSTRUMENTS, PANELS & AVIONICS



AEROSPACE: RACK CHASSIS MOUNTED SYSTEMS



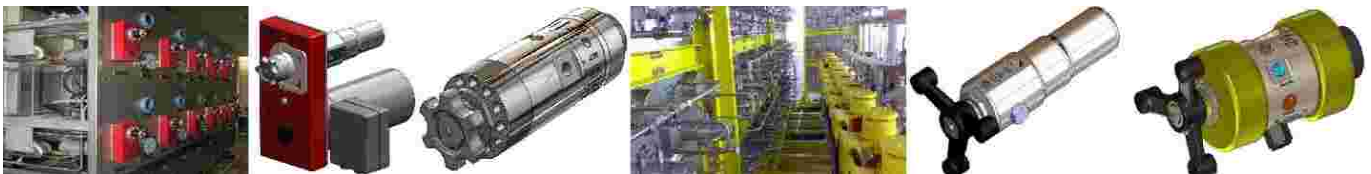
AEROSPACE: ELECTRONICS INTEGRATION, PCB, CABLE ROUTING, PIPE ROUTING



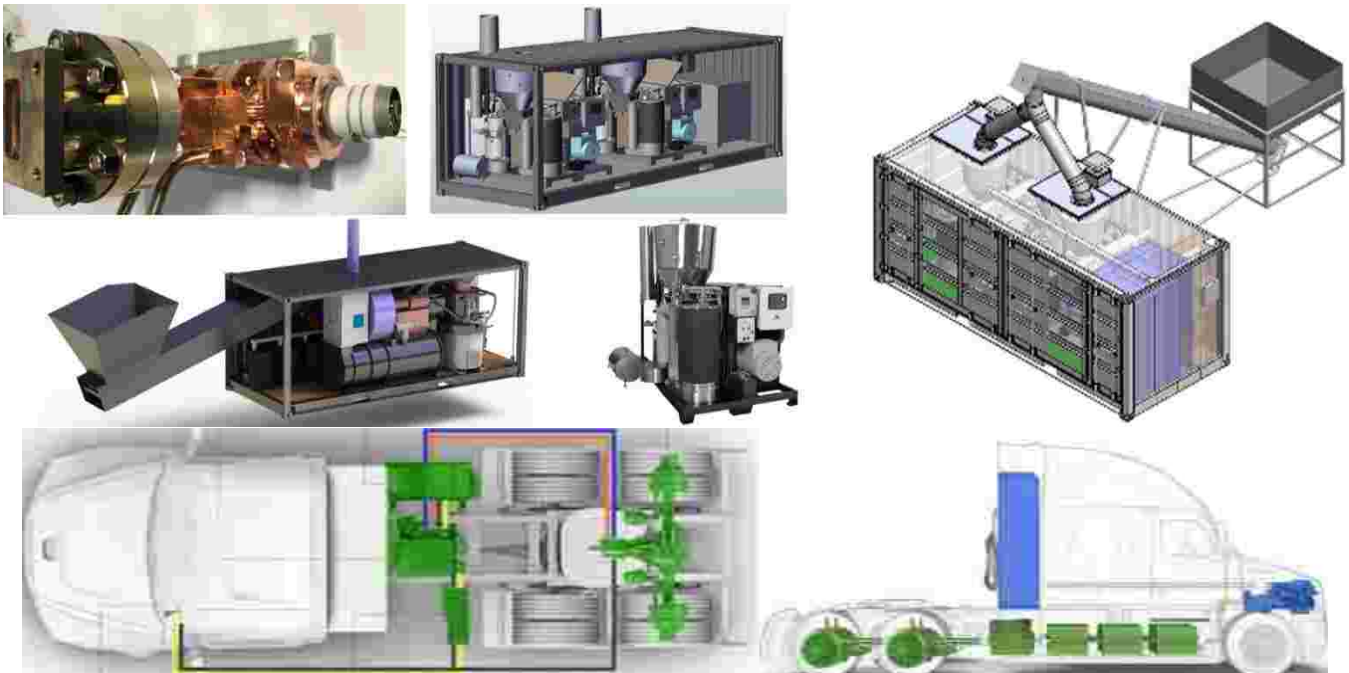
ENERGY TECHNOLOGIES: ELECTRICAL ENCLOSURES & SUBSTATIONS



ENERGY TECHNOLOGIES: OIL & GAS, OFFSHORE PUMPS, VALVES



ENERGY TECHNOLOGIES: PARTICLE ACCELERATION, ISO CONTAINER POWER/PYROLYSIS, EV POWER



ROBOTICS: HUMANOID ROBOTICS, AUTOMATED DIAGNOSTICS



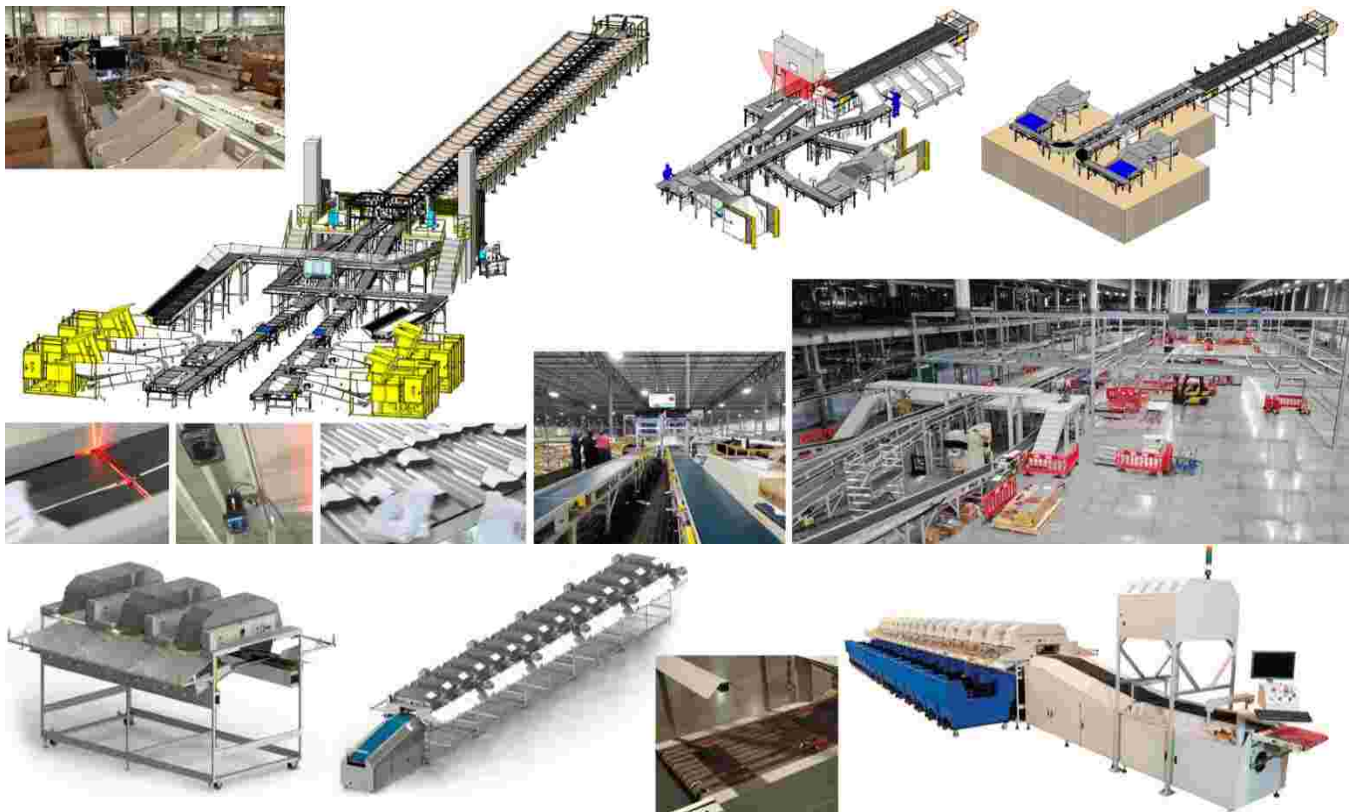
PRODUCT DESIGN: CONSUMER, INDUSTRIAL & MEDICAL PRODUCTS



AUTOMATION: HIGH SPEED LETTER SORTER SYSTEMS



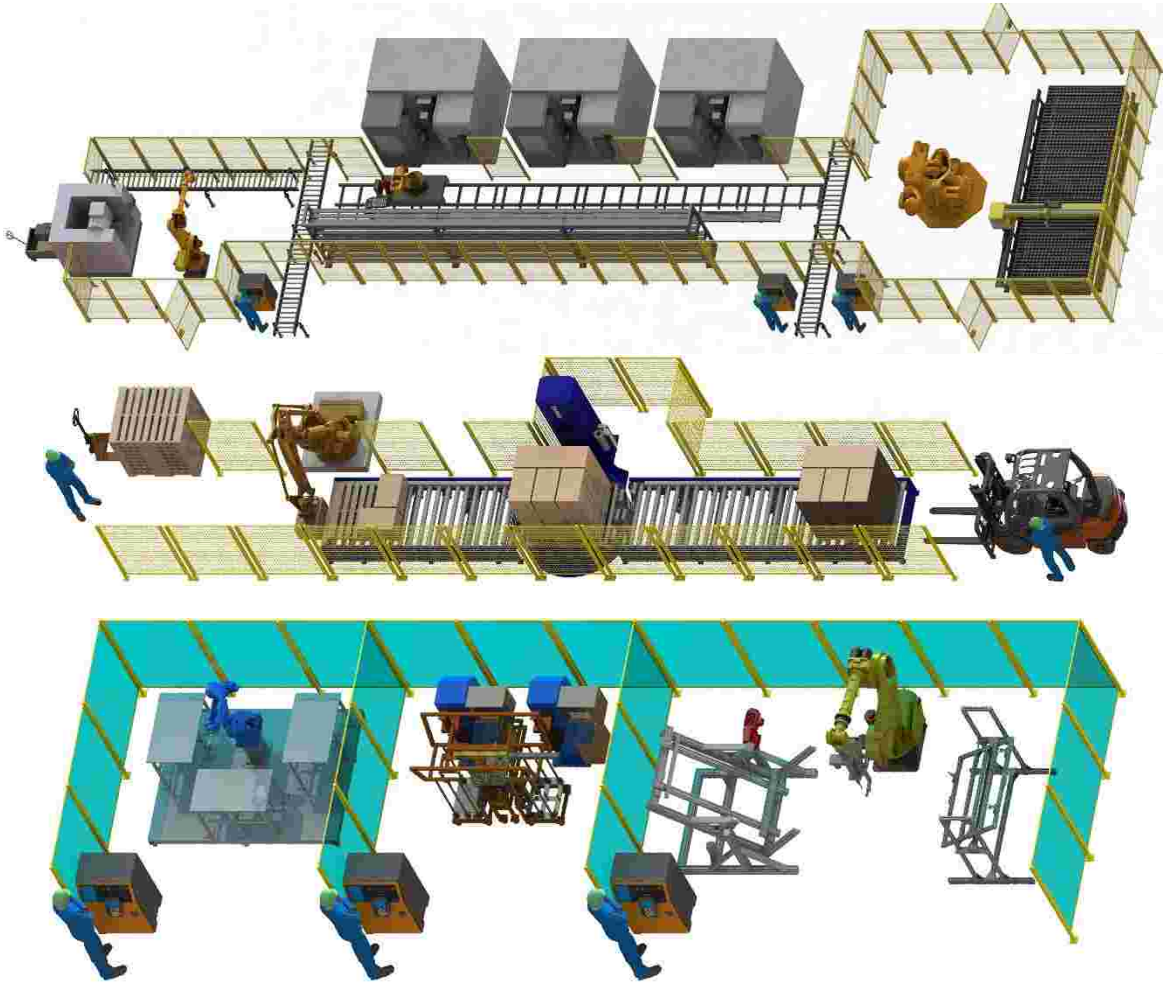
AUTOMATION: FULFILLMENT E-COMMERCE HIGH-VOLUME SORTERS



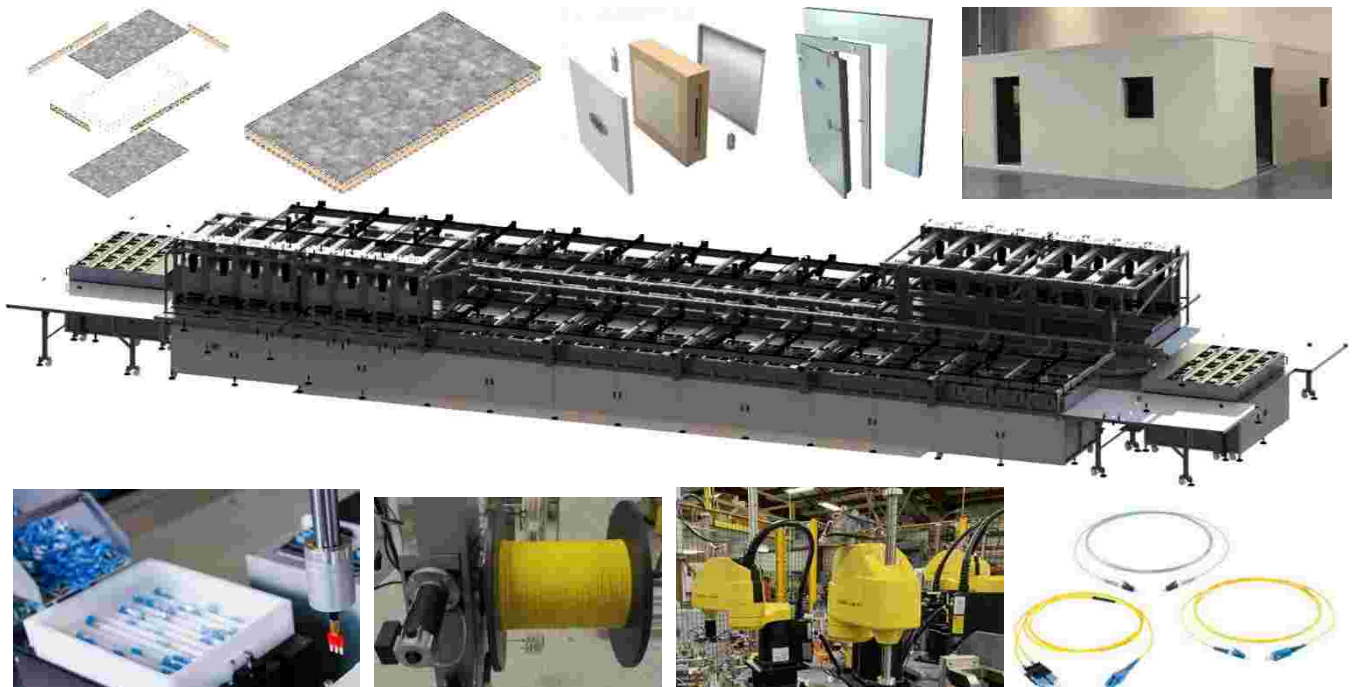
AUTOMATION: CONVEYOR TECHNOLOGIES, FIRST ARTICLE TO LAST MILE



AUTOMATION: FACTORY ROBOTIC MANUFACTURING CELLS



AUTOMATION: PRODUCT MANUFACTURING & LIGHTS-OUT



AUTOMATION: PLANT TECHNOLOGIES: OSB, SHEETROCK, BATTERY DRY ELECTRODE, WALL PANEL

