



autosplice

Interconnecting the Future

AUTOSPLICE ENGINEERED PRODUCTS

COMPANY PROFILE & CAPABILITIES

OVERVIEW

Product Summary

Global Locations

Markets Served

Product Portfolio

Services Portfolio

Global Manufacturing

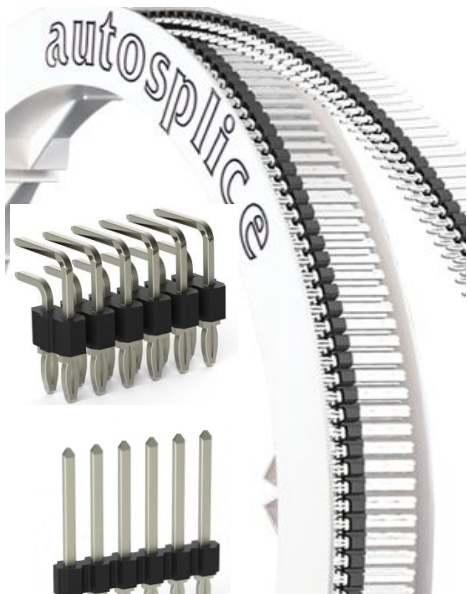
Differentiation



PRODUCT SUMMARY



CUSTOM HEADERS



CONTINUOUS HEADERS



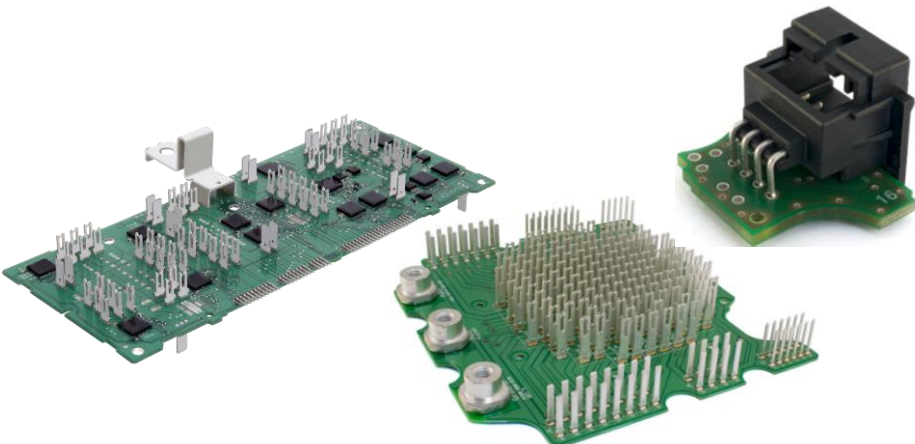
INSERTION MACHINES



SMT PRODUCTS



INTERCONNECT MODULES



PCBA's



PRECISION STAMPINGS



DRAWN WIRE PIN PRODUCTS



SPLICE PRODUCTS



SHAPE MEMORY ALLOY PRODUCTS

GLOBAL LOCATIONS



* Denotes major manufacturing site

MARKETS SERVED

Automotive



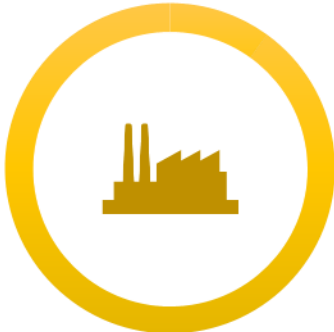
60%

Medical



15%

Industrial



15%

Transportation &
Other



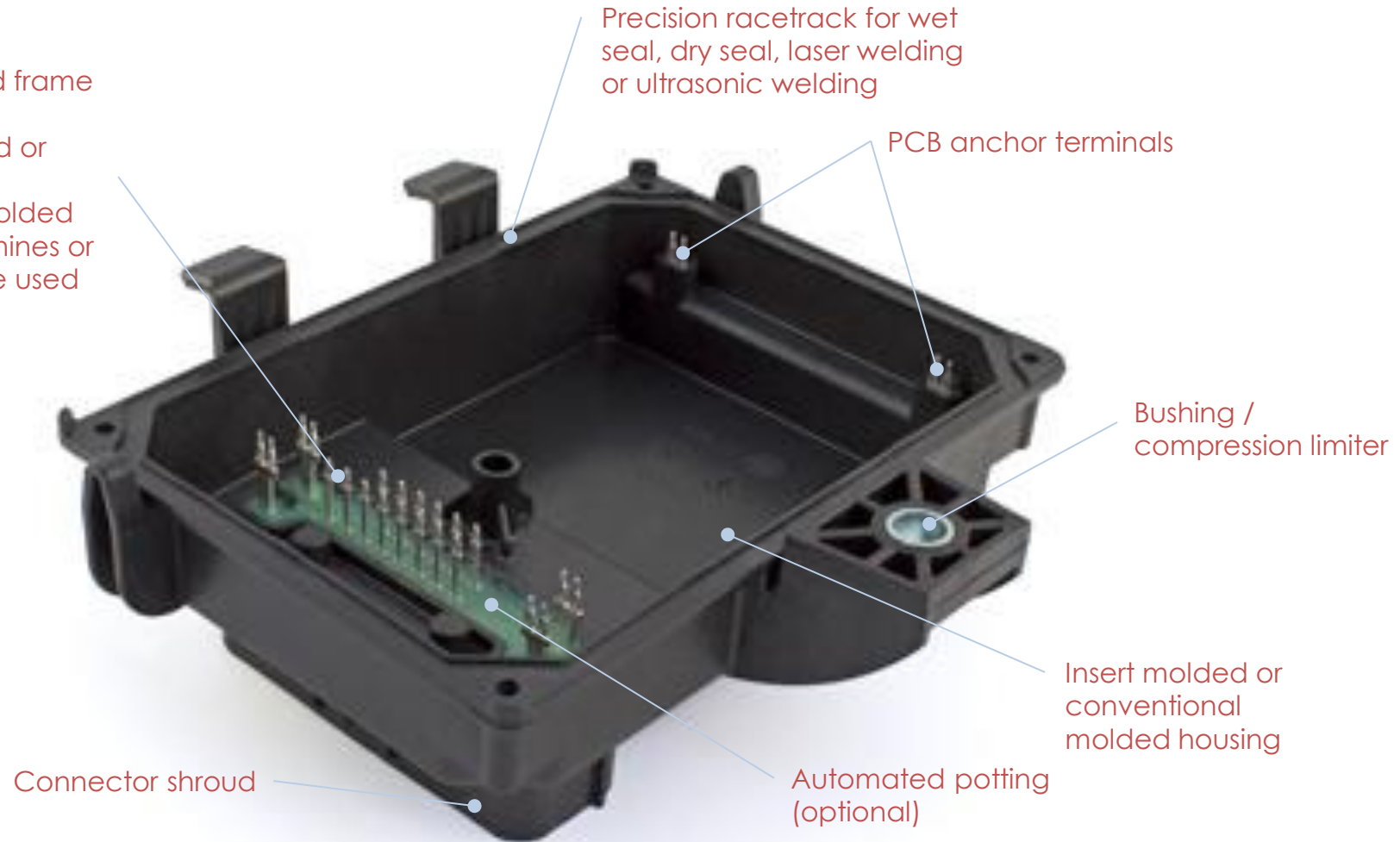
10%



PRODUCT PORTFOLIO

ANATOMY OF AN INTERCONNECT MODULE

- Press-fit, solder tail or lead frame terminals
- Terminals inserted molded or post-mold inserted
- Lead frames are insert molded
- Autosplice insertion machines or custom insertion machine used



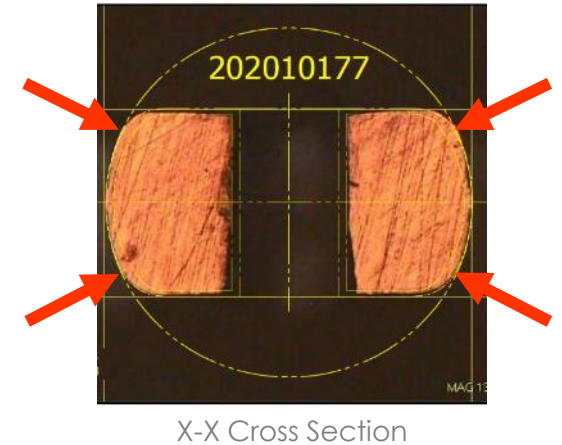
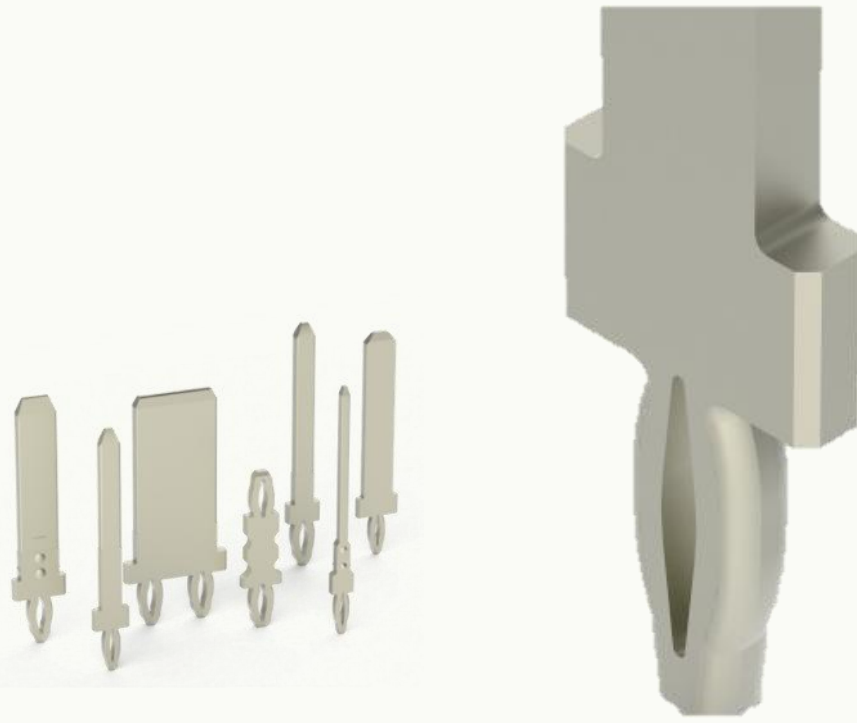
PRESS-FIT TERMINALS

ADVANTAGE

Autosplice press-fit terminals are approved by major automotive Tier 1 suppliers

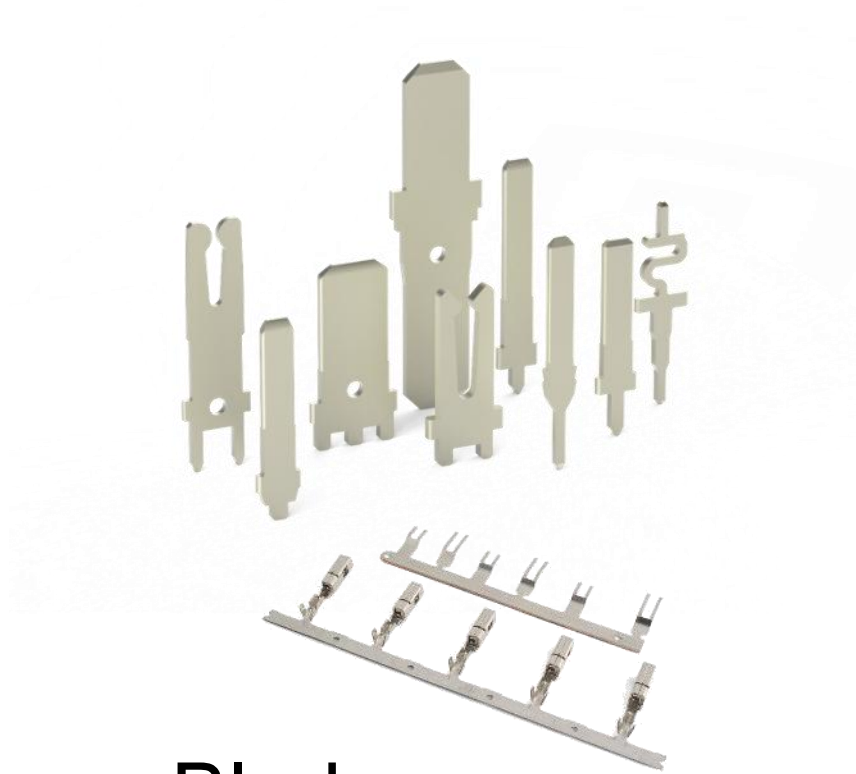
Available in 0.4mm, 0.64mm and 0.81mm thicknesses (1.2mm in-development)

Complies with IEC 60352-05 and/or IPC 9797



- Gas-tight connection is made at coined corners (indicated by red arrows in X-X cross-section)
- Each compliant beam deflects 0.025mm to 0.125mm
- Resulting normal force ➔ 50N to 90N
- High normal force + high retention force ensures reliable connection in automotive environments

SOLDER TAIL TERMINALS & DRAWN WIRE PINS



- Blades
- Fuse forks
- S-bend terminals
- Receptacle

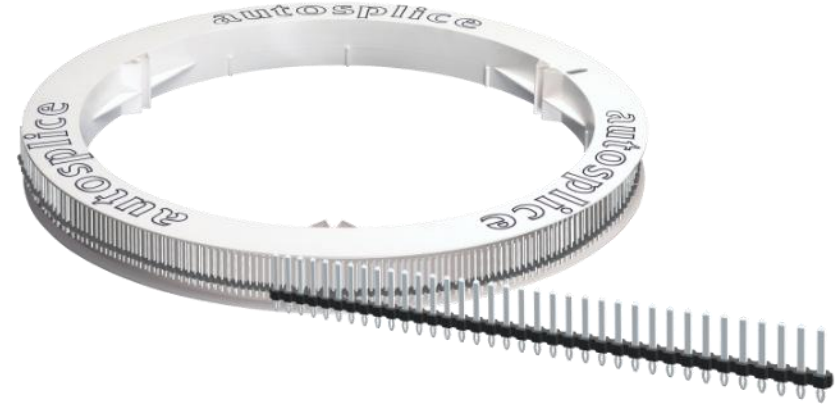
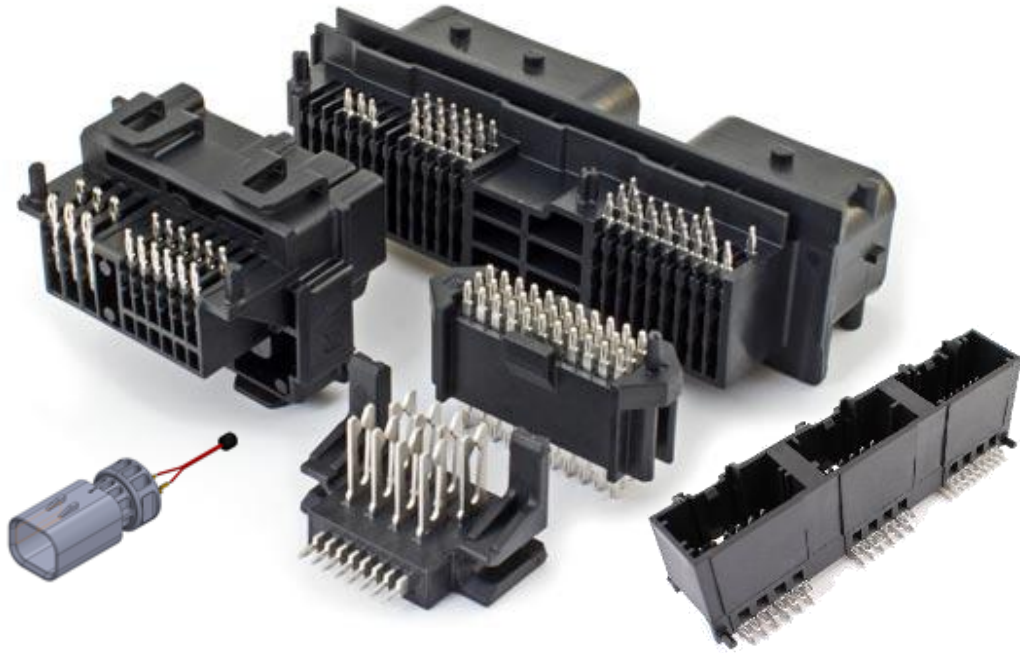


- 0.1mm to 1.2mm round / square / rectangular pins
- Press-fit pins
- Star / knurl pins

LEAD FRAMES



CUSTOM HEADERS



CAPABILITIES

- Press-fit, solder tail or lead frame progressive die precision stamping
- Insert molding – vertical and horizontal
- Conventional injection molding (horizontal)
- Continuous molding



INTERCONNECT MODULES

Infotainment / Instrumentation

Terminals, Auto Header, Custom connectors



Radar Housings

Integrated connector module



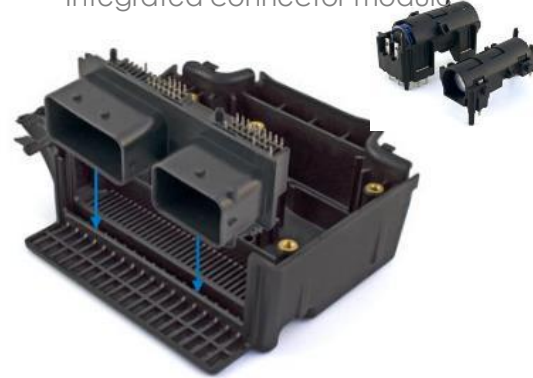
Telematics Housings

Telematics control unit



Airbag Modules

Integrated connector module



Steering Control Unit

Insert Molded Integrated Connector Module

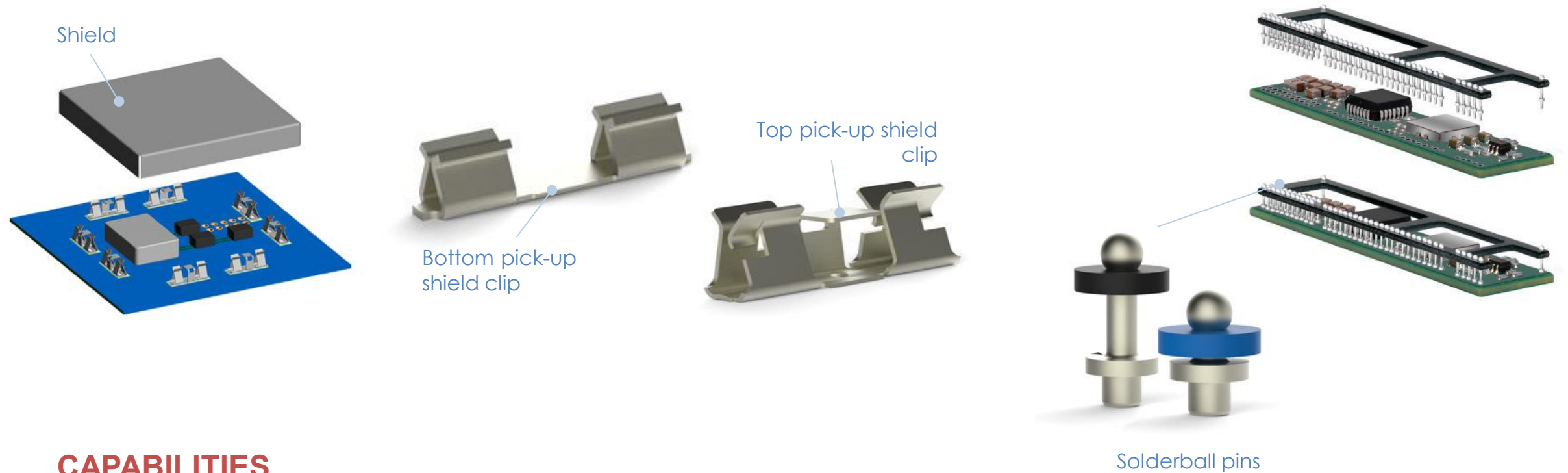


Sensors & Control Modules

Integrated Connector Assemblies, Terminals, Custom Header, Busbars

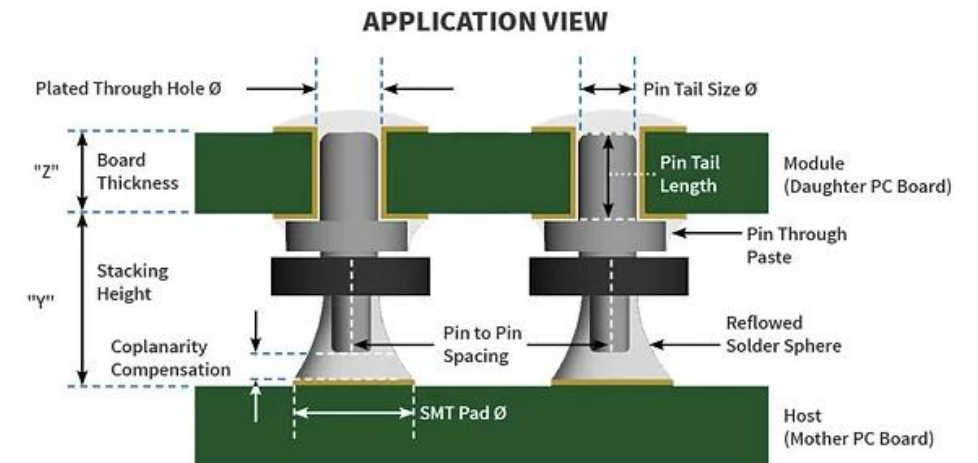


SURFACE MOUNT TECHNOLOGY (SMT) PRODUCTS



CAPABILITIES

- Autosplice shields and shield clips offer premium RFI and EMR noise suppression
- The standard shield clip uses four independent spring contacts to minimize interference on the most sensitive devices
- Solderball pins have been tested with currents up to 40A



INSERTION MACHINES – NORTH AMERICA



MULTISERT

- 0.35 sec/part on 0.2" (5.08 mm) pitch
- 18" x 18" (457 x 457 mm) insertion area
- 2 (max.) insertion heads
- Vision system for PCB error correction



MINISERT

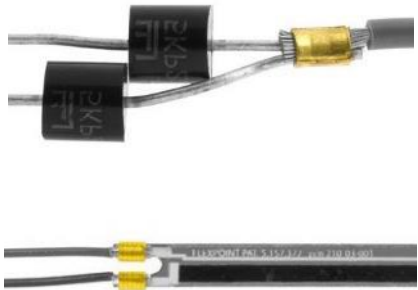
- 0.3 sec/part on 0.2" (5.08 mm) pitch
- 12" X 12" insertion area
- Accuracy +/- 0.001"
- Vision system for PCB error correction
- Single head platform
- Interchangeable modular component heads



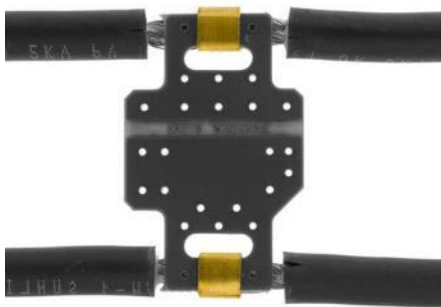
MICROSERT

- 0.3 sec/part
- 12" X 12" insertion area scalable to 14" (355mm) y-axis and 18" (457 mm) x-axis
- Industrial digital 3-axis controller
- Interchangeable modular component heads

SPLICE PRODUCTS



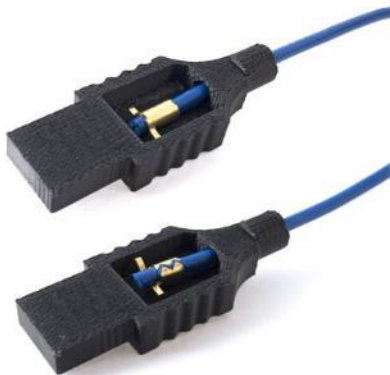
Wire-to-Wire



Direct-to-Board



SAS/2 Splice Machine



Strain Relief



Magnet Wire

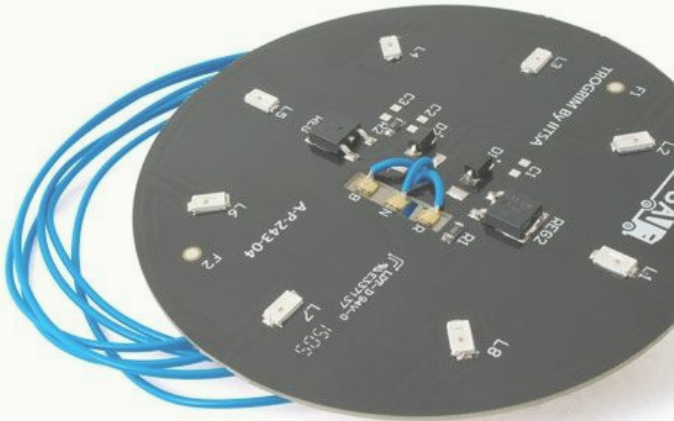


ACS 2000Splice Machine

ADVANTAGE

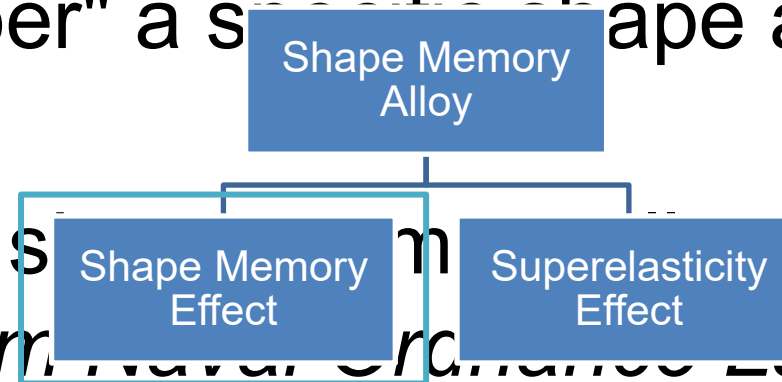
Splice Technology produces gas-tight, repeatable, and waste-free low resistance connections.

Splice Technology feeds, cuts, forms and splices connections quickly, eliminating the need for pre-formed crimps.



SHAPE MEMORY ALLOY (SMA) MATERIALS

- Materials that have a thermal shape memory effect or superelastic effect
- They "remember" a specific shape and can return to that shape
- Most common SMA used is Nitinol (*Nickel Titanium Naval Ordnance Laboratory*)

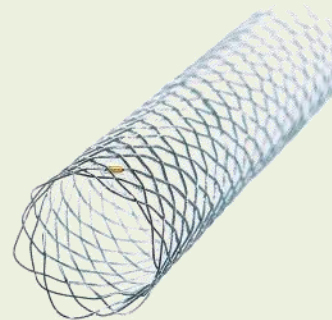


TEMPERATURE-DRIVEN PHASE CHANGE



Shape Memory Effect: SMA Actuator

LOAD-DRIVEN PHASE CHANGE



Superelasticity Effect: SMA Stent & Eyeglass Frame

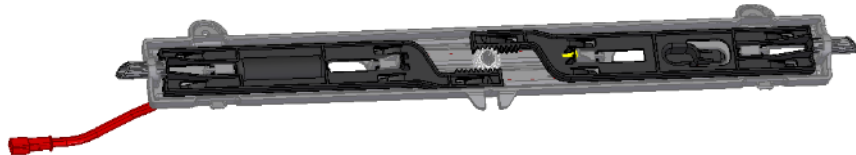
OTHER SMA ACTUATORS



Automotive seat comfort actuator



Medical insulin pump actuator



Automotive glove box opener



Water valve actuator



SERVICES PORTFOLIO

VERTICALLY INTEGRATED SERVICES

Design



- ❖ In-house design of interconnects and connector areas of sensor modules
- ❖ Finite element analysis (FEA) for risk reduction and shorter time to market
- ❖ 50+ patents in connectors and SMA
- ❖ Design for manufacturability & assembly (DFMA) assessments for feasibility
- ❖ Environmental testing to IEC, USCAR, SAE, and other standards
- ❖ Rapid prototyping via tooling and 3D printing

Stamping



- ❖ Die tooling development
- ❖ Precision, tight tolerance thin metal stamping
- ❖ Automotive Tier One - approved press-fit designs
- ❖ 35 Bruderer presses 22T-60T
- ❖ Professional program management

Molding



- ❖ Mold tooling development
- ❖ Precision, tight tolerance insert molding
- ❖ 28 Molding presses (25T-400T)
- ❖ Value engineering for collaborative cost-downs
- ❖ Professional program management

Automated Assembly



- ❖ Custom automation for assembly & molding
- ❖ Autosplice insertion machine platforms & insertion heads
- ❖ Precision automated optical inspection
- ❖ In-line and off-line solutions for automated insertion
- ❖ High speed pins and tabs insertion
- ❖ Power distribution SMT assemblies
- ❖ SMA wire crimp assemblies



Interconnecting the Future

Jorge Chávez
Business Development Manager

Direct: +52 664. 188. 8407
Email: jchavez@autosplice.com
Web: www.autosplice.com