

Machine Solutions



Marker Band Swaging

Device Concept Thru Volume Manufacturing

Machine Solutions Inc. (MSI) is the leading process and testing equipment supplier to device manufacturers worldwide. The proprietary MSI segmental compression mechanism provides an even, repeatable radial compression that has been proven for stent crimping, stent loading, catheter balloon folding, and marker band swaging applications. We offer the most advanced, automated and integrated solutions to the medical device manufacturing industry.

STENT CRIMPING



HH100/200

Hand Held Stent Crimping Tool

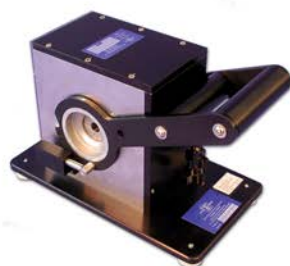
- Grip force activated
- Polycarbonate or stainless steel construction
- Ertalyte TX or stainless steel crimp segments
- Positive close stop, set screw feature



SC700/800

Pneumatic Stent Crimping with Heat

- Heated crimp head
- Activation force measurement
- Crimp head dwell timer
- Same range as SC500/600



SC100/150

SC200/250

Bench Top Manual Stent Crimping

- Manual or pneumatic operation
- PTCA or PTA lengths
- Maximum diameter 6mm or 12mm
- Maximum length 60mm or 120mm



SC775S/875S

Automated Stent Crimping

- PLC control with touchscreen HMI
- Servo motor activation
- Crimp-to-force and crimp-to-diameter capability
- Film Crimp Head option protects coatings and polymer scaffolds



SC500/600

Pneumatic Stent Crimping

- Activation force measurement
- Crimp head dwell timer
- Maximum diameter 5.0mm or 12mm
- Maximum length 50mm or 120mm



SC1775S/1875S

Automated Stent Crimping with Network Capability

- PLC control with industrial PC HMI
- Stores up to 999 recipes, 20 stages per recipe
- Optional dual axis laser micrometer and leak detection
- Networking capabilities

STENT LOADING



SC990

R&D Stent Loading

- Pneumatic crimp head activation
- Micrometer controlled open/close diameter
- Custom catheter handling tray



SC995

Neuro Stent Loading

- Pneumatic crimp head activation
- Accommodates thin wall strut geometries
- Custom roller system supports small diameter quills

SE1900S

Automated Stent Loading with CrimpPulse™ Technology

- Repeatable loading of 150mm+ stents
- Self-aligning catheter clamps
- Crimp head chilling configuration capable of -40°C



BALLOON PLEATING & FOLDING



FFS200

R&D/Low Volume Balloon Pleating and Folding

- Pneumatic pleat/fold head activation
- Balloon lengths up to 50mm
- Balloon pressure & vacuum
- Optional v-block handling system



FFS700S/800S

Balloon Pleating and Folding with PLC Control

- PLC control of timing sequence
- Pneumatic pleat/fold head activation
- Encoder for diameter readout
- V-block handling system



FFS775S/875S

Automated Balloon Pleating and Folding

- PLC control with touch screen HMI
- Servo pleat/fold head activation
- Automated product handling system
- Stores up to 100 recipes



FFS WS1175/1275

Balloon Pleating and Folding Workstation

- 3-head and 4-head configurations
- PC control with touch screen HMI
- Servo pleat/fold head activation
- Automated product handling system



FFS675S

Lean Manufacturing Balloon Pleating and Folding

- Single head machine configuration
- Dual product pressure/vacuum connections
- PLC control with PC touch screen HMI
- Automated product handling with balloon support



FFS760S

Dual In-line Balloon Pleating and Folding

- Dual in-line pleat and fold heads
- Vision system automated positioning
- PLC control with PC touch screen HMI
- Press-Sure™ catheter sealing devices



FFS975S

Drug Eluting Balloon Pleating and Folding

- Integrated film protects drug coatings
- PLC control with PC touch screen HMI
- All process parameters recipe driven
- Automated force calibrations

MARKER BAND SWAGING



PSW500

Pre-Swage Manual Tool

- Pre-swage wide range of materials and sizes
- Spring loaded open position
- Custom positioning features available



SW155

High Force Rotary Swager

- Manual positioning of marker bands
- Handling system
- Clean room ready



SW255S

Automated High Force Rotary Swaging with PLC Control

- PLC process control
- Automated handling system
- Manual positioning of marker bands



SW655S

Automated High Force Rotary Swaging with Band Positioning

- Positioning accuracy $\pm 0.30\text{mm}$
- Product length up to 180cm
- Stores up to 999 profiles



SW100S

Flexure Swaging with PLC Control

- PLC process control
- Stores up to 60 profiles
- Manual positioning of marker bands



SW575S

Batch Automated Swaging with Band Positioning | PTCA Product

- Batch processing, up to 50 pieces
- Positioning accuracy $\pm 0.15\text{mm}$
- PLC control, touch screen interface
- Stores up to 60 profiles



SW675S

Batch Automated Swaging with Band Positioning | PTA Product

- Positioning accuracy $\pm 0.30\text{mm}$ up to 250mm spacing
- Batch processing, up to 50 pieces
- PLC control, touch screen interface



SWIS1100S

Automated Marker Band Inspection System

- Automated inspection of diameter/position
- Automated batch processing
- Inspection data written to a csv file

TUBE PROCESSING



LB1000

Catheter Laser Bonder

- 30 watt CO₂ laser
- Closed-loop temperature control
- Closed-loop power control
- Drop in product loading



TB725

Custom Thermal Bonder

- Semi-automated thermal bonding and laminating
- Automated product handling
- Customizable heat zones
- Heating capabilities to 750°



MS700S

Mandrel Straightener

- Auto pick and place product handling
- Process multiple mandrel diameters without tooling changes
- Works with bare and coated stainless steel mandrels
- Recycle bent or bowed mandrels



VS1000

Catheter Laminating

- 4 station design
- Programmable, accurate speed settings
- 6 programmable heat zones
- PC control and touch screen HMI

DEVICE PERFORMANCE TESTING



IDTE2000™

Interventional Device Testing

- Track force
- Push efficiency
- Torqueability
- PC control and data capture



RX750/850

Submersible Radial Expansion Force Testing

- Radial reactive force
- Radial stiffness
- Temperature chamber option
- PC control and data capture



RX550/650

Radial Expansion Force Testing

- Radial reactive force
- Radial stiffness
- Temperature chamber option
- PC control and data capture



SR1000

Stent Securement Testing

- Guide-type securement test
- Proximal or distal displacement
- Video assist and capture of test
- PC control and data capture

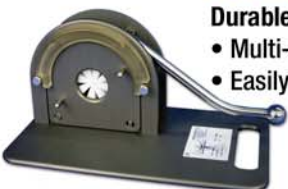
Contract Testing Services

- Catheters
- Guidewires
- Stents
- Filters
- Grafts
- Heart Valves

HV200

Durable Crimping Tool

- Multi-use design
- Easily disassembled and reassembled for cleaning



HV500

Disposable Crimping Tool

- Low cost, disposable, single procedure tool
- Designed and configured for specific device



HEART VALVE CRIMPING TOOLS

HV950

Durable Crimping Tool with Quill

- Stainless steel push quill
- Screw advancement of quill

