INNOVATIVE RF SEALERS AND CATHETER TIPPING SYSTEMS

ONEX RF specializes in RF sealing, catheter forming, and automation systems. These advanced systems produce superior yields, reduce waste, and maximize profitability.
THE ONEX RF PHILOSOPHY

“Excellence is an art won by training and habituation. We do not act rightly because we have virtue or excellence, but we rather have those because we have acted rightly. We are what we repeatedly do. Excellence, then, is not an act but a habit.”

- ARISTOTLE
ONEX RF Systems & Devices

The ONEX RF Difference

Small RF Sealer
RF-Shuttle-S1

Medium RF Sealer
RF-Shuttle-M1

Dual Shuttle RF Sealer
RF-Shuttle-M2

Large RF Sealer
RF-Shuttle-L1

Rotary RF Sealer & Print Station
RFSP-Roto-M4

Automated RF Sealing Line
RF-Galaxy-X2

Hybrid RF Generators
HF-Amplifier

Rotary Heat Seal & Die Cut System
HSDC-Roto-M4

Catheter Tip Forming System
TF-803-2 / 4

General Automation
Modular Solutions

RF Training Seminars

RF SEALERS  RF GENERATORS  HEAT SEALERS  RF TIP FORMING SYSTEMS  FILM FEED CUT STATION  RF TRAINING

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THE PHILOSOPHY
ONEX RF SYSTEMS AND DEVICES FOR THE MEDICAL SECTOR

Medical devices manufactured by ONEX RF design systems are widely used in the healthcare industry.

We recognize our role as an extension to your manufacturing team, providing expertise and products that are known for superior performance.

ONEX RF provides strategic and technical support, enabling our clients to operate with precision, reliability and at peak efficiency.
ONEX RF systems use Closed-Loop Process Control that monitor and correct the RF energy distribution to maintain optimal process consistency.

The histogram is a revolutionary optimization tool that empowers users to optimize system performance without relying on "Tribal Knowledge" or "Trial and Error".

OVERCOME THE GREATEST CHALLENGES IN THE INDUSTRY WITH ONEX RF

ONEX RF systems include innovative concepts that allow operators to achieve OEE ratings above industry standards and the highest levels of repeatability in the industry.

THE ONEX RF DIFFERENCE

- Solid Design Principles
- Superior Process Control
RF-Shuttle-S1
Small, Single Shuttle RF Sealer
Equipment Features

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>RF Seal Station</td>
<td></td>
</tr>
<tr>
<td>Seal Area</td>
<td>10” x 20”</td>
</tr>
<tr>
<td>RF Energy</td>
<td>1- 4kW / 27.12 MHz</td>
</tr>
<tr>
<td>Electrical</td>
<td>230VAC / 1Ph / 50 - 60 Hz</td>
</tr>
<tr>
<td>Safety</td>
<td>ISO 13849 -1 / OSHA Class IV</td>
</tr>
<tr>
<td>RF Safety</td>
<td>OSHA and VDE 0848</td>
</tr>
<tr>
<td>Required Air Pressure</td>
<td>80 PSI</td>
</tr>
<tr>
<td>Air Volume @10 c/m</td>
<td>14SCFM</td>
</tr>
<tr>
<td>Pressing Force</td>
<td>1,000Lbs</td>
</tr>
<tr>
<td>Shipping Weight</td>
<td>1,600Lbs</td>
</tr>
<tr>
<td>Surface Finish</td>
<td>RAL-7035</td>
</tr>
<tr>
<td>Certification</td>
<td>UL or CE (Per Request)</td>
</tr>
</tbody>
</table>

Can your RF Welder work without Arcs like ONEX RF Sealers?

ONEX RF Sealer will seal your product with foreign material between the film layers without any arc or die damage.

Its a fact!
Perfect for sealing ports and flanges on pressure cuffs, solution bags, pouches, safety vests and orthopedic products.

- Designed for use in the Lab or R&D environment to help monitor and record process performance while sealing new bags or materials.

- Comes with an option to easily convert for heat sealing non-polar films.
The innovative generator technology, combined with a fast arc detect circuit, completely eliminates arcing and related downtime.

**ONEX RF sealers never require sealing die replacement due to arcs.**

Reduce Operating Costs  Increase Productivity
The innovative generator technology, combined with a fast arc detect circuit, completely eliminates arcing and related downtime. ONEX RF sealers never require sealing die replacement due to arcs.

- **Energy efficient Closed-Loop Process Control**
- **ONEX RF** machines sustain the highest safety standards and have 50% less RF interference than the industry norm.
Sealers are ideally suited for the medical device industry because of their exceptional reliability, quality, and process repeatability.

Higher Yield Dual Shuttle RF Sealers

No Channel Leaks: the unique design combination of a floating nest and a toggle mechanism prevents die misalignment, effectively eliminating waste due to port leaks.

**RF-Shuttle-M2**
*Medium, Dual Shuttle RF Sealer*

**Equipment Features**

<table>
<thead>
<tr>
<th><strong>RF Seal Station</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Seal Area</strong></td>
<td>20&quot; x 30&quot;</td>
</tr>
<tr>
<td><strong>RF Energy</strong></td>
<td>4 - 15kW / 27.12 MHz</td>
</tr>
<tr>
<td><strong>Electrical</strong></td>
<td>220-480VAC / 3Ph / 50 - 60Hz</td>
</tr>
<tr>
<td><strong>Safety</strong></td>
<td>ISO 13849 / Class IV</td>
</tr>
<tr>
<td><strong>RF Safety</strong></td>
<td>OSHA and VDE 0848</td>
</tr>
<tr>
<td><strong>Air Pressure</strong></td>
<td>80 PSI</td>
</tr>
<tr>
<td><strong>Air Use @10 c/m</strong></td>
<td>30 SCFM</td>
</tr>
<tr>
<td><strong>Pressing Force</strong></td>
<td>2,000Lbs</td>
</tr>
<tr>
<td><strong>Shipping Weight</strong></td>
<td>4,500Lbs</td>
</tr>
<tr>
<td><strong>Surface Finish</strong></td>
<td>RAL-7035</td>
</tr>
<tr>
<td><strong>Certification</strong></td>
<td>UL or CE (Per Request)</td>
</tr>
</tbody>
</table>
ONEX RF Sealers are ideally suited for the medical device industry because of their exceptional reliability, quality, and process repeatability.

- Occupies 50-70% less floor space than rotary RF sealers.
- Ideal for large or uniquely shaped product sealing that require greater precision.
- Once optimized, the process settings can be easily saved and reloaded for future runs to consistently produce high quality bags.
- The easy setup with the ability to recall parameters from previously optimized runs make ONEX RF systems ideal for short production runs.
Efficiency By Design

Complete CHANGE OVERS in less than half the usual time. Input parameters through the touch screen HMI, or load the recipe to complete the setup.
This equipment is ideal for pressure cuffs, pouches, safety vests, orthopedic products.

- Vertically Integrated RF Sealing Process: through the use of a PC-based process control and Hybrid RF generator technology.

- **ONEX RF** provides fully functional solutions and process development for customers new to the product sealing using RF technology.
RFSP - Rotary - M4

RF Sealer With Print Station

Equipment Features

**RF Seal Station**
- Available Dial Sizes: 60", 72", 96"
- Available Nest options: 4, 4-6, 4-8
- Standards Seal Area: 15" x 20" / 20" x 30"
- RF Energy: 4 – 15KW / 27.12 MHz
- Electrical: 230VAC / 3Ph / 50 - 60Hz
- Safety: ISO 13849 / Class IV
- RF Safety: OSHA and VDE 0848
- Required Air Pressure: 80 PSI
- Air Use @10 c/m: 60 SCFM
- Press force Bore: 2,000Lbs
- Shipping Weight: 5000Lbs
- Surface Finish: RAL-7035

**Optional Stations**
- Ribbon Printing: 12" x 18"
- Die Cutting: 10-20T Press Station
- Certification: UL or CE (Per Request)

Systems require a *fraction of the RF energy* and human effort to deliver an industry leading level of consistency and repeatability.

The highly repeatable and consistent process enables the operators to optimize the sealing parameters and validate the machine in as much as 50% **less time**.
The **ONEX** Rotary RF sealer is ideal for producing medical solution bags with greater precision and repeatability.

- Operators can quickly set process parameters on the sealer HMI and start the sealing cycle without any variation in the process.
- The **ONEX** press construction is much more robust than any C-Frame press.
- **ONEX RF** sealers do not sag during the sealing operation and maintain parallelism at all times, producing leak-free bags.
- Perfect for sealing thin film products where proper construction practices are most critical.
**RF - Galaxy - X2**

*Modular Automated RF Sealing Line*

**System Facts**

- Various models of the Galaxy line produce up to 3600 articles/hr.
- Fully Automated - No operators required for film or component handling
- Modular Design - Customized to satisfy unique process requirements
- System OEE - 90-95%
- Made in USA - Built to exceed the highest requirements of the US and European medical device manufacturing industry.

<table>
<thead>
<tr>
<th>Station Type</th>
<th>Station Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>RF-Galaxy Line</td>
<td>Tubing Cut and Mandrel Indexing Station</td>
</tr>
<tr>
<td>Film Feed Station</td>
<td>Port RF Seal Station</td>
</tr>
<tr>
<td>Print Station</td>
<td>Perimeter RF Seal Station</td>
</tr>
<tr>
<td>Hole Punch Station</td>
<td>Bag Separation Station</td>
</tr>
<tr>
<td>Component Feed and Load Station</td>
<td>Final Packing Station</td>
</tr>
</tbody>
</table>
**RF Sealing Automation**

- The RF-Galaxy line is completely modular. The design of the entire line can be completed in just 3-4 weeks.

- ONEX RF Sealers set a new standard for repeatable bag manufacturing due to our advanced Closed-Loop Process Control.

- Perfect for manufacturing Blood, IV, Urinary, and Enteral Feeding Bags.
The ONEX Hybrid RF generators provide numerous advantages over vacuum tube and solid state generator technologies.
ONEX RF-Hybrid Amplifiers

Amplifier Facts

<table>
<thead>
<tr>
<th><strong>Standard Power Options</strong></th>
<th>2KW - 4KW - 6KW - 10KW - 15KW - 20KW</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Standard Frequency</strong></td>
<td>27.12MHz</td>
</tr>
<tr>
<td><strong>Other Frequency Options</strong></td>
<td>13.56MHz 40MHz</td>
</tr>
<tr>
<td><strong>Vacuum Tube Amplifier</strong></td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Output Connector</strong></td>
<td>N  HN 7/16  LC  1 5/8</td>
</tr>
<tr>
<td><strong>Power Options</strong></td>
<td>3Phase 220VAC 480VAC</td>
</tr>
<tr>
<td><strong>RF Safety</strong></td>
<td>OSHA and VDE0848</td>
</tr>
<tr>
<td><strong>Input output power ratio</strong></td>
<td>65-75%</td>
</tr>
<tr>
<td><strong>VSWR</strong></td>
<td>10-20% factory set</td>
</tr>
<tr>
<td><strong>Duty Cycle</strong></td>
<td>100% at full power</td>
</tr>
</tbody>
</table>

**ONEX RF** Fuzzy Tuner is designed to fast tune the RF Sealer and provide efficient seal process

**ONEX RF** Arc-Safe electronics eliminate the possibility of die damage during RF sealing process

Hybrid RF Amplifier

**ONEX RF** sealers powered by the hybrid amplifiers solve arcing, process control and durability issues.

- Powered by a durable Hybrid Generator Technology, **ONEX RF** sets a new standard for reliability in RF sealing industry. Power spikes and high reflected power are no longer a threat to the Solid State generator components.
  
  *Rated at 100% duty cycle*

- The **ONEX RF** hybrid amplifiers combine the advantages of durable vacuum tube power amplifiers and the process control capabilities of Solid State technology.
  
  *Just select and repeat the process consistently*

- The new **ONEX** fast arc detect circuit can detect the slightest arc and shut down the RF output in milliseconds.
  
  *Save sealing dies, eliminate down time*
**HSDC - Rotary - M4**

*Rotary Heat Seal & Die Cutting System*

**Equipment Features**

- Heat Seal Station
  - Rotary Dial Diameter: 60” 72” 96”
  - Available Nest options: 4 - 4-6 - 4-8
  - Seal Area: 15” x 20”
  - Heat Seal Temperature: 250 - 450° F
  - Electrical: 220VAC / 30 Amp / 3Ph / 50 - 60Hz
  - Safety: ISO 13849 / Class IV
  - Required Air Pressure: 80 PSI
  - Air Use @10 c/m: 28 SCFM
  - Shipping Weight: 4,600Lbs
  - Surface: RAL-7035
- Optional Die Cut Station
  - Die Cut Station: 10-20T Air over Hydraulic Press
- Certification: UL or CE Available Per Request

Heat sealable multilayer polyolefin materials are the perfect fit for **ONEX RF** heat sealing systems. **ONEX** system is actually designed to heat seal the bag, then precisely die cut around the perimeter in the next station. The system comes with superior process control and precise cutting capabilities.
ONEX RF reliably achieves perfect seals on ultra-thin multilayer ostomy bags with precise heat control on various layers.

The integrated Die Cutting process after the Heat Seal station is the ideal solution to produce, exact-cut, heat sealed articles with no additional material handling and labor requirements.

New materials for Biotech industry are the perfect fit for ONEX RF Heat Seal Die Cutting machines. ONEX RF can provide both RF and Heat Sealing on the same system.
**TF - 803 - 2/4**

*Catheter Tip Forming System*

**Equipment Features**

<table>
<thead>
<tr>
<th>Catheter Tipping</th>
<th>Die Cavities</th>
<th>2</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electrical</td>
<td>230VAC / 1Ph / 20 Amp / 50 - 60Hz</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compressed Air Pressure</td>
<td>80PSI</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Generator Power</td>
<td>2.8KW</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating Frequency</td>
<td>50-250KHz / 400KHz</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shipping Weight</td>
<td>200Lbs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surface Finish</td>
<td>Stainless Steel / Nickel Plate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Safety</td>
<td>ISO 13849-1 / OSHA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Certification</td>
<td>UL or CE (Per Request)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**THE DESIGN OF ONEX RF SYSTEMS MAKE IT POSSIBLE TO ACHIEVE GREATER CONSISTENCY**

- **Repeatability. Efficiency.**

**PRODUCTION POTENTIAL**

*ONEX* catheter tipping systems offer precise die positioning & coil adjustment. They employ multiple Vortex Tubes to reduce forming cycle times in excess of 30%. Operators can increase production and achieve a far greater product yield.
ONEX RF Advantages
- Greater repeatability and consistency
- Precise heat zone adjustment
- Faster and easier changeovers
- Easy set up and validation
- High production, first pass yields
- No hot spots or pinch points

Benefits
- Automated catheter tipping machines
- RF “smooth finish” hole punching
The Film Feed Cut Station is designed to prepare materials for shuttle and rotary RF sealers. The material is presented on a spool. The taffeta layer is fed through the hole-punch and final cut stations. The final cut taffeta is dropped onto a conveyor for future processing.

**Film Feed Cut Station**

*Custom Model*

**Equipment Features**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Taffeta Feed and Cut System</strong></td>
<td></td>
</tr>
<tr>
<td>Film Layers</td>
<td>1 or 2 ply</td>
</tr>
<tr>
<td>Film Feed</td>
<td>Servo Motor</td>
</tr>
<tr>
<td>Film Centering</td>
<td>FIFE</td>
</tr>
<tr>
<td>Hole-Punch Station</td>
<td>Customizable</td>
</tr>
<tr>
<td>Film Cut</td>
<td>Guillotine</td>
</tr>
<tr>
<td>Electrical</td>
<td>230VAC / 1Ph / 20 Amp / 50 - 60Hz</td>
</tr>
<tr>
<td>Compressed Air Pressure</td>
<td>80PSI</td>
</tr>
<tr>
<td>Shipping Weight</td>
<td>1200Lbs</td>
</tr>
<tr>
<td>Surface Finish</td>
<td>RAL7035</td>
</tr>
<tr>
<td>Safety</td>
<td>ISO 13849-1 / OSHA</td>
</tr>
<tr>
<td>Certification</td>
<td>UL or CE (Per Request)</td>
</tr>
</tbody>
</table>
**General Automation**

Custom Modular Automation

*ONEX Automation, the parent company of ONEX RF has been manufacturing high speed automated assembly machines, robotic and inspection systems for the medical device industry since 1992.*

The automation projects have been in the following areas:

- High speed assembly machines
- Tubing print, feed and cut stations
- Liquid dispensing systems
- Robotic assembly systems
- Vision inspection systems
OPTIMIZE YOUR OPERATION

ONEX RF Advanced RF Training Seminars
We offer training seminars at your location or at ONEX RF headquarters.
Learn about Radio Frequency and the behavior of plastics.
The training will help you better understand RF Sealing practices and help you optimize your sealing process.
Learn about new technologies that can eliminate the reliance on “tribal knowledge” or trial and error. Learn how to use the RF sealing process histogram and use the energy formulas to accurately monitor and detect the rejects.

Call 1(626)358-6639 or visit us online www.onexrf.com to request three day training seminar.

SEMINAR TOPICS:
- RF Sealing Technology and Operating Principles
- RF Safety Requirements and Implementation
- RF Power Distribution and Die Design Principles
- RF Tip Forming Systems and Applications
ONEX RF TRAINING SEMINARS

Small RF Sealer
RF-Shuttle-S1

Medium RF Sealer
RF-Shuttle-M1

Dual Shuttle RF Sealer
RF-Shuttle-M2

Large RF Sealer
RF-Shuttle-L1

Rotary RF Sealer & Print Station
RFSP-Roto-M4

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RF-Galaxy-X2

Hybrid RF Generators
HF-Amplifier

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TF-803-2 / 4

General Automation
Modular Solutions

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EXPECTED ONLY EXCELLENCE

**ONEX RF**: Advanced RF Sealers and Catheter Forming Systems Produce Superior Yields, Reduce Waste & Maximize Profitability.

**1 (626) 358-6639**

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www.onexrf.com

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