

# INFRASTAKE®

## Infrared Staking

The InfraStake® process has become a best-practice standard for staking. With over 11,000 modules sold, the success of this efficient, low-impact technology has been realized in a variety of applications ranging from highly sensitive PCB assemblies and delicate medical devices to large automotive interior trim components and LED lighting.

- Eliminates additional labor costs and expensive consumables such as: rivets, snaps, screws, fasteners, glues and adhesives
- Uniform heating and low-stress forming
- Noninvasive to vulnerable sub-assemblies or adjacent part features
- No A-surface part-marking
- Safe process, no heat guards are required
- Integrated clamp at each stake point
- Quick cycle times



InfraStake is a method of joining components together using infrared (IR) light. This innovative staking process is applied to a molded thermoplastic boss to mechanically retain a mating component. The boss is heated with focused IR energy and then precisely formed with an integrated tool called a punch. The result is a strong, tight, and aesthetic joint.

Advanced Staking  
Technology



Improving plastic products



CEMAS Elettra  
is the sole distributor of  
EXTOL's InfraStake technology in  
Europe and South America

# INFRASTAKE®

## Infrared Staking

### TECHNICAL SPECS, FEATURES, & BENEFITS

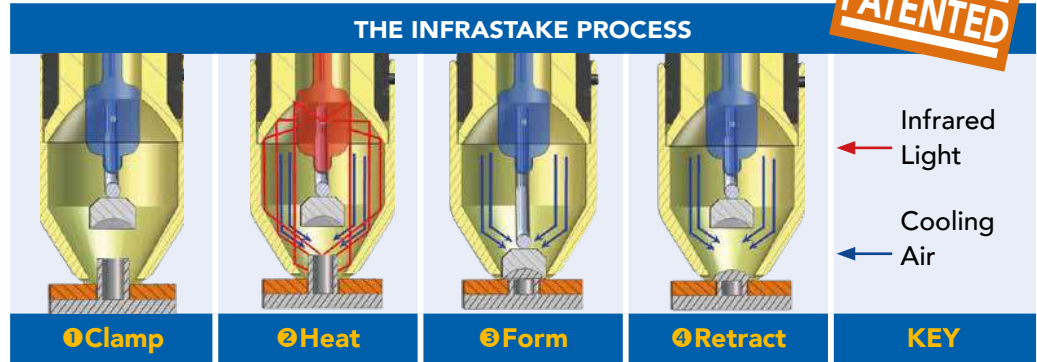
IS125

ISM20



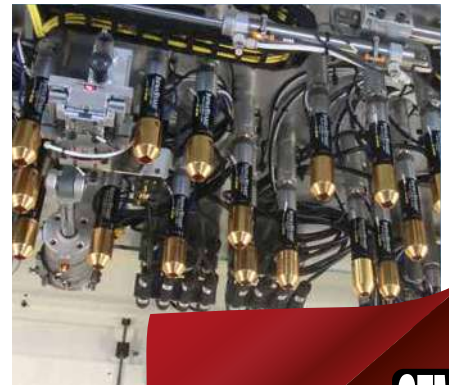
SPECS	IS125 Module	ISM20 Module
Dimensions	Length: 6.4" (161.5 mm), Overall Diameter: 1.25" (32 mm)	Length: 6.4" (161.5 mm), Overall Diameter: 0.8" (20 mm)
Weight	0.7 lbs (0.32 kg)	0.4 lbs (0.2 kg)
Halogen lamp	100 W	35 W

**PATENTED**



STANDARD FEATURES	BENEFITS
Technical-grade halogen lamp	Delivers "instant-on" infrared energy which reduces cycle time; no preheat cycle required
Reflector & Concentrator direct infrared energy	Provides precise, focused, uniform heating
Integrated, pneumatic punch cylinder & non-heated punch detail	Compact design, no sticking or stringing of plastic; punch volume optimized to boss detail
Integrated part clamping	Ensures a tight assembly at each stake point
Low operating temperature, no heat guards required	Extremely safe operation with minimal risk of burning
Low power & air consumption	Efficient process, reduces operation costs
Ambient conditions do not effect infrared energy	Flexibility to operate in all plant conditions without compromising staking quality
Module construction: aluminum body, anodized	Rugged & durable
Power requirement: 120V AC or 240V AC	
Air requirement: 80 psi operation with 72 SCFH cooling air flow recommended per module	

*Specifications subject to change without notice.*



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# INFRASTAKE<sup>®</sup> IS125, ISM20, & IS170

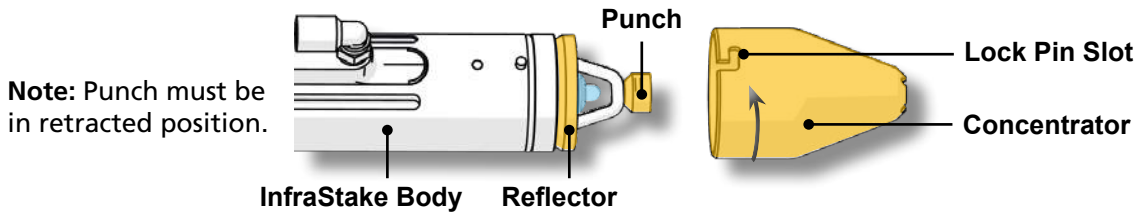
## Basic & Extensive Module Maintenance

### How Often Do the Reflective Surfaces Need to be Cleaned?

The frequency of cleaning the reflective surfaces (the concentrator and reflector) is determined by a combination of factors including the **type of material** you are staking and the **duty cycle** of the equipment. A good starting point for a Preventive Maintenance schedule for a single-shift, five-day operation would be to inspect the reflectors and concentrators **every 3 weeks**. The interval can be adjusted as necessary.

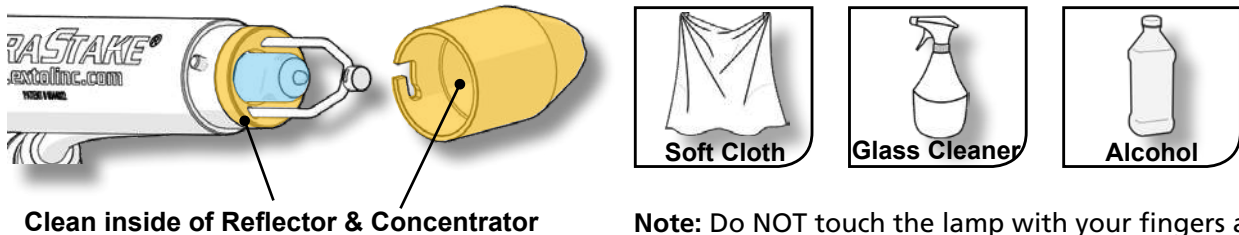
### DISASSEMBLE the Module:

- 1 Rotate the concentrator to release it from the lock pin and slowly pull it off the InfraStake body.



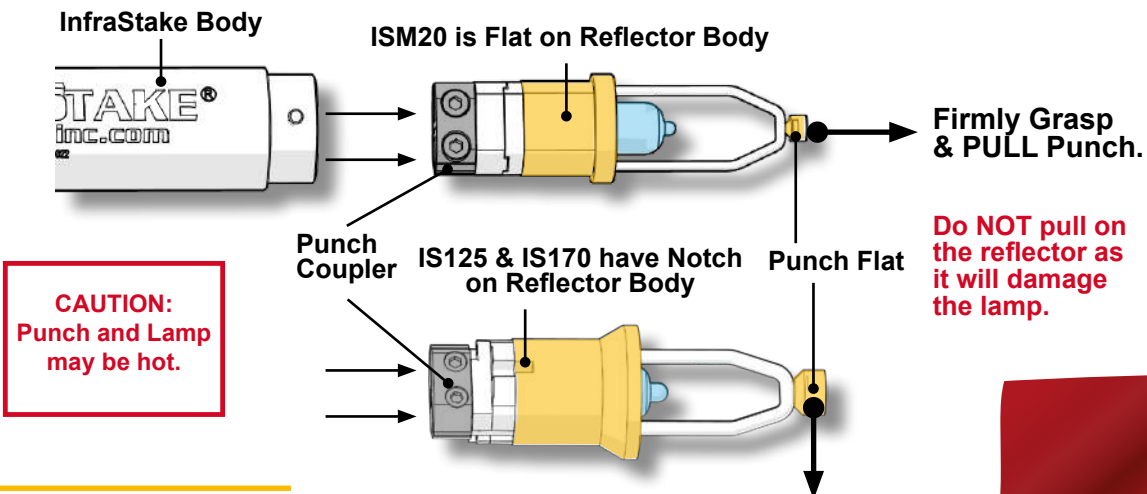
### BASIC Cleaning of Reflective Surfaces:

- 2 Use a soft, non-abrasive cloth and either glass cleaner or alcohol. (Do NOT use shop rags or abrasive cleaner like Scotch-Brite.) Clean the inside reflective surfaces of both the concentrator and the reflector. For an extensive cleaning, follow the steps below.



### EXTENSIVE Cleaning of Reflective Surfaces:

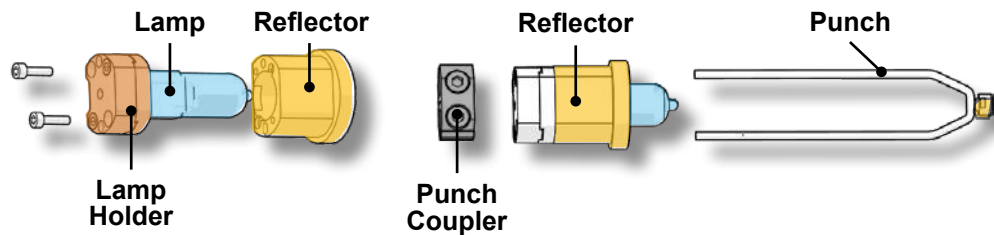
- 2 Continue with module disassembly. Firmly grasp the punch and pull until it releases from the magnet.
- 3 Remove the lamp assembly, reflector, and punch assembly from the InfraStake body.



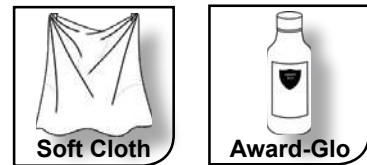
## EXTENSIVE Cleaning of Reflective Surfaces (cont.):

- 4 Remove the punch from the punch coupler by loosening the two socket-head screws with a 3/32" hex wrench for IS125 and IS170 modules, and a 2mm hex wrench for ISM20 modules.
- 5 Hold the reflector, then pull the punch out of the reflector.
- 6 Remove the lamp assembly from the reflector.
  - a. **IS125 Module:** Remove the two Phillips screws from the lamp holder with a #1 Phillips screwdriver.
  - b. **ISM20 Module:** Remove the two socket-head screws from the lamp holder with a 2mm hex wrench.
  - c. **IS170 Module:** Remove the two socket-head screws from the lamp holder with a 3/32" hex wrench.

Prevent lamp contact with your fingers. Oil from your skin may reduce lamp life.



- 7 Thoroughly clean the reflector and concentrator with a soft, clean cloth and non-abrasive polish (i.e. Award Glo) or any non-abrasive cleaner (i.e. trophy or silver polish). Extol offers a cleaning kit that contains Award-Glo polish & a polishing cloth: **Part No. 1102706**.



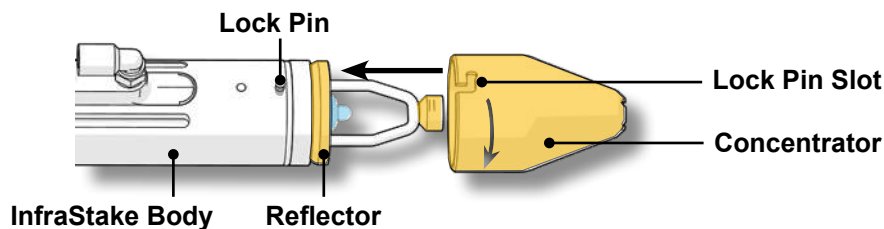
Cleaning Kit: 1102706

## Reassemble the Module

- 1 Reattach the lamp assembly to the reflector with the two screws provided.

Please refer to images above, on step 6.
- 2 Insert the punch into the reflector assembly using hex wrench to fasten it to the punch coupler.

**Note:** The punch legs should be completely seated into the punch coupler. For IS125 and IS170 modules, the punch flat (if present) should be oriented so it is on the same side as the notch in the reflector. For ISM20 modules, the punch flat should be on the same side as the flat on the reflector.
- 3 Insert the complete lamp and reflector assembly into the module. Make certain the magnet reattaches to the punch coupler.
- 4 Install the concentrator onto the InfraStake module by pushing it on and rotating it over the lock pin to secure the concentrator in place.



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