

## Thermal Barrier Machinery: mechanical surface conditioning

The Azon Lancer™ creates a warranted mechanical lock that improves the adhesive properties between the polyurethane polymer and the surface finish of the thermal barrier pocket as used in an aluminum window, door, curtain wall and window wall profile.



Technology  
Chemicals  
Machinery



Engineering and product development  
concept from the **AZO/Tec®** team

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**Approved Lancer™ Applicators** adhere to strict quality control procedures and testing to qualify for the Azon 10-year warranty against failure of the thermal barrier polymer due to dry shrinkage and fracturing.

## Lancer™

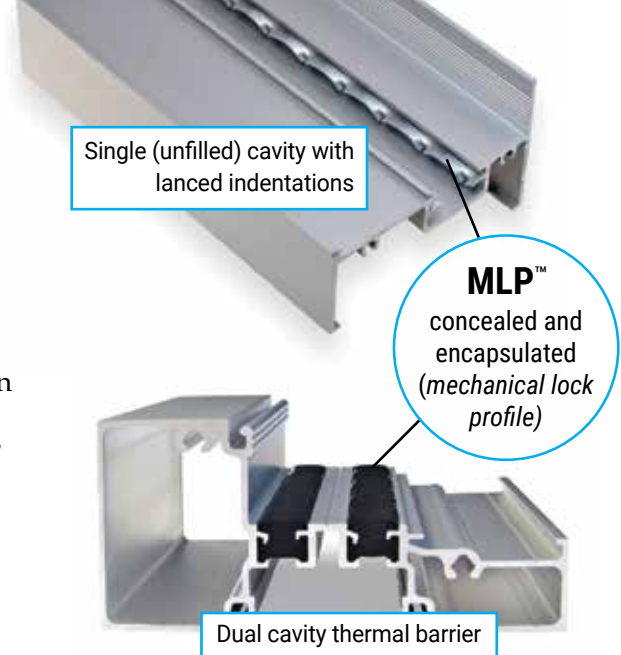
The Azon Lancer™ is a mechanical device that works inline with pour and debridge processing machinery to prepare and condition the thermal barrier pocket in a single or dual cavity aluminum extrusion prior to the polyurethane polymer filling step. The Lancer provides a unique method of punching the profile material to produce inward curving lanced indentations along the lugs in the pour cavity in such a way as to produce a structural mechanical lock. The MLP™ (mechanical lock profile) is a structural cavity design that allows for increased thermal barrier cavity size for improving the energy efficiency of aluminum fenestration. The Lancer™ also enhances the shear strength of the resulting polymer and aluminum composite.

### Features

- Dual semi-independent lancing and support wheels. Dual cavity thermal barrier extrusions can be lanced at different spacings, with no tooling changes.
- Complex shape extrusions can be supported with one or two support wheels at programmed locations. The 13-inch diameter lancing wheels, along with the support wheels, can clear or support a wider array of cavity sizes. Existing lancing wheels from other Lancer models can also be used.
- The lancing wheels share a common shaft but are independently adjustable along the shaft. The same adjustable features are on the support wheels' shaft. The shafts can move up and down independently. All up, down or side movements are powered and activated by recipe recall. Additionally, all movements have manual adjustment functionality if needed. When the Lancer™ is not being used, both the lancing wheels and support wheels can be automatically parked outside of the new 400 mm wide by 250 mm high work envelope so extrusions can pass through.
- The Lancer™ includes a new modular electrical system to increase compatibility with other Azon pour and debridge processing machinery.

The Lancer™ works in tandem with the Azon Fillameter™ to drive extrusions at the same rate of speed. Lancer™ can also be used as stand-alone equipment using an optional controls package\*.

Absolute positioning sensors provide direct measurements with accuracy. Magnetostrictive sensor technology senses the position of each lancing wheel or support wheel directly. Additional homing action—either manually or by switch—is never required. Sliding motions between extrusions from wheel rotations, screw backlash or bearing play are not factors in the measurement.



### Processing capability

- All-electric drive motors and adjustments provide improved speed, control and flexibility. The Lancer has a throughput capacity of 9.1-54.9 meters per minute (30-180 feet per min). Extrusion feed is available in both left or right operation.

### Construction

The Lancer is constructed from one piece of 5 cm (2 in.) thick, 4140 pre-hardened steel, and fully machined slideways provide ridged and accurate movements.

- Pre-hardened 7.6 cm (3 in.) 4140 shafts support lancing and support wheels.
- Wide, self lubricating, and maintenance free hub bushings are made from space age tribological materials.
- Oversized 3 hp direct mount gearmotor provides long life and low maintenance.
- Composite keys are designed to shear before damaging core components.
- Fully guarded with electrically locking door latches. The frame is equipped with lifting tubes to facilitate easy transport with a forklift.

### Machine specifications

Dimensions: Width 132.08 cm, depth 172.72 cm, height 182.88 cm (width 52 in., length 68 in., height 72 in.).

Electrical: 480 volt, 3 phase, X amps, FLA (full-load amperage). Other voltages available via transformer.

(\*optional disconnect for stand alone application when not being used inline with the Fillameter)

All electrical components are mounted inside NEMA 12 enclosures.

