

Thermal Barrier Machinery: mechanical surface conditioning



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Azo-Brader™

Function

The Azon Azo-Brader™ is a *patented mechanical device that improves the adhesion of the polyurethane polymer to the surface of the thermal barrier pocket, as used in an aluminum window, door or curtain wall profile. It enhances the shear strength in the composite. The Azo-Brader accomplishes this by abrading portions of the thermal barrier pocket to produce a mechanical lock.

Extrusion drive

Extrusions are driven through the Azo-Brader by four motors. Hold-up wheels are located on the inlet and outlet sides of the machine to provide alignment of the extrusion. Two sets of hold-down wheels are provided to hold the extrusion in the proper position for abrading the thermal barrier pocket surface. Hold-up and hold-down wheels move vertically and laterally to accommodate any shape extrusion.

Operations

The Azo-Brader drive wheels are adjustable, with a 350 mm x 250 mm (13.75-inch high x 9.75-inch wide) capacity. The carrier will accommodate most thermal barrier extrusion shapes.

Processing capability

The work opening is adjustable with manual hand crank slides on the front of the machine. The drive wheels may be elevated 51 mm (2 in) for versatility. Extrusion feed rates from 9.1-36.5 m/min (30-120 ft/min) are infinitely variable.

Construction

The Azo-Brader is constructed from heavy gauge steel plate and tubing, welded to form a rigid, heavy-duty framework. The frame is equipped with lifting tubes to facilitate easy transport with a forklift.

Electrical requirements

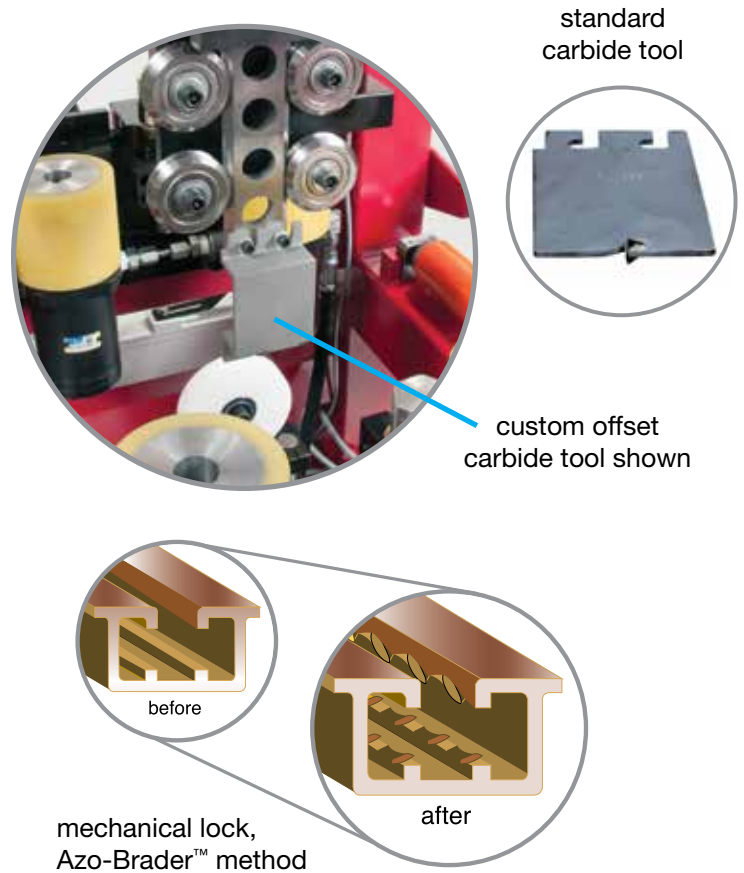
208/230/380/460/600 VAC, 40/20 amp, 3-phase, 50/60 Hz service. All electrical components are mounted inside NEMA 12 enclosures.

Application and tooling

The Azo-Brader utilizes a carbide insert that reciprocates vertically creating hooks that displace aluminum along the lugs in the thermal barrier pocket. The action is generated by an adjustable, eccentric cam drive head.

The carbide tool can be designed to fit most new or existing profiles, including those without direct access due to the cavity design. Roller and ball bearings support the high-speed moving members of the machine. The carbide tooling is designed for fast and easy changeover.

The AZO/Tec® technical services department can assist with design and analysis of dies intended for use in a mechanical lock framing system azotec@azonusa.com



Approved Azo-Brader Applicator for the Azon pour and debridge structural thermal barrier manufacturing method

Participants in the Azon mechanical lock approved applicator programs are chemical customers who adhere to strict Azon E-Quality Audit™ procedures and testing to qualify for the Azon 10-year performance warranty against failure of the thermal barrier polymer due to dry shrinkage and fracturing.

*U.S. Patent 5-577 951