

Thermal Barrier Machinery: metering, mixing, and dispensing



Fillameter HMI™

Azon

643 W. Crosstown Parkway
Kalamazoo, MI 49008-1910
USA
Tel: 269 385 5942
Fax: 269 373 9295

Azon UK Ltd.

Unit J, St. David's Industrial Estate
Pengam, Blackwood
NP12 3SW
UK
Tel: + 44 (0) 1443 878010

Azon Korea Inc.

E1-Space
19 Samseong 122 St.
Gangnam, Seoul 135-090
Korea
Tel: + 82 (0) 2 544 5906
Fax: + 82 (0) 2 544 5908

Azon Polyurethane (Shanghai) Co., Ltd.

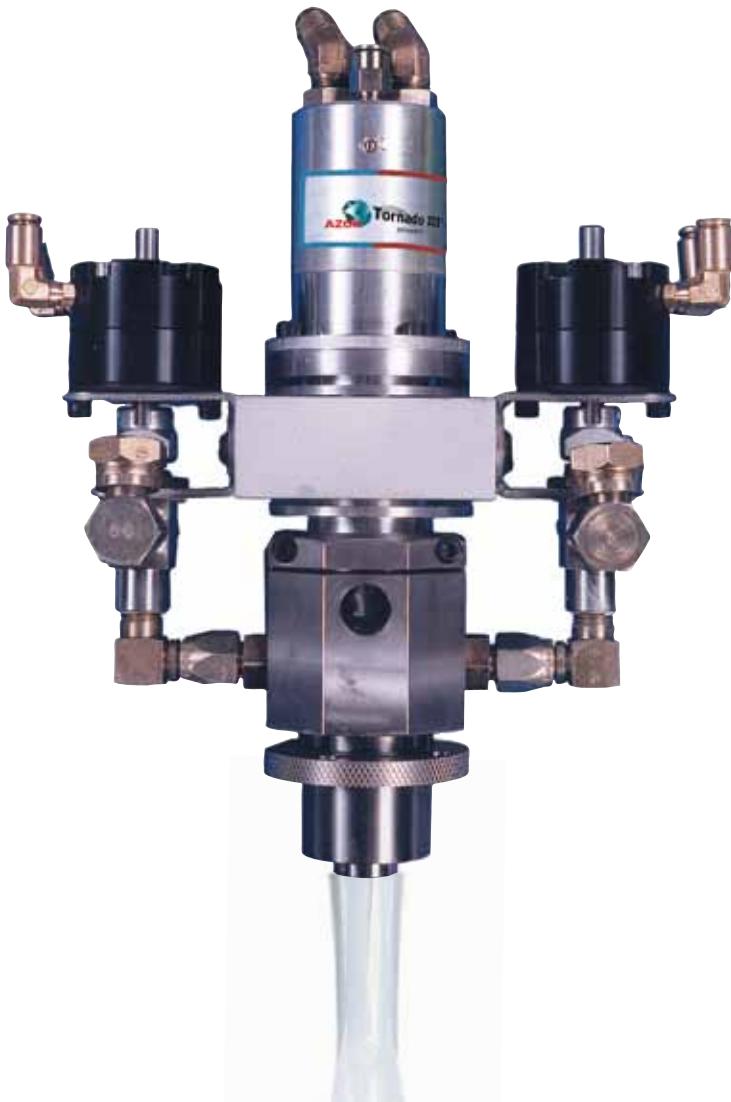
Room 2804-2807, 28th Floor
Hua Yuan World Square
1958 North Zhongshan Road
Shanghai 200063
PR China
Tel: + 86 (0) 21 6212 2213
Fax: + 86 (0) 21 6211 0004

Metering, mixing and dispensing

Versatile thermal barrier chemical systems

Azon's SU (structural urethane) chemicals are formulated to meet the requirements of commercial and residential markets. These formulations, known as thermal barriers are the structural base for the aluminum composite, while providing insulation for the most demanding climates and conditions.

The SU formulations—though basic in design depending upon which components are selected and how they are combined—result in thermal barrier end-products with different properties. Specific processing parameters are available with each series of chemicals. This flexible approach insures that the most optimal thermal barrier system is used for the particular application. (Contact Azon for more information about specific formulations)



Tornado III™ Mixer

The Azon mixer is a dynamic low pressure two component mixing head.

The robust design is powered by a fixed displacement hydraulic motor. Besides being small in physical size the motor is capable of high speeds, with the torque required for high production throughputs. Ten to twenty pounds-per-minute throughputs is typical. Modified versions are available with throughputs up to 50 pounds-per-minute. Normal mixer speeds would be 3000 to 5000 rpm.

Once the base components meet in the mix head, mixing is accomplished with a pin style impellor. Opposing stationary pins in the mixing chamber further assist in producing a superior mix. The unique construction of the mixing chamber requires minimal flush or purging of reactive components. The external valving lends itself very well to automated pour and flush applications.

The mixer outlet port is a common 1-inch NPT female thread to accommodate a large variety of both metallic and plastic nozzles. Larger NPT outlet sizes are available upon request.

The main components of the mixer are made of stainless steel for long life and reliability. Precision tungsten carbide mechanical seals and Kalrez o-rings are used for minimal maintenance a wide range of compatibility with various flushing agents and polymer base components.

Function

Communication Hardware

FILLAMETER HMI™

Advanced operator interface

The Fillameter HMI™ (Human Machine Interface) is equipped with a color graphical touchscreen operator terminal. Engineered for the plant-floor environment, this system's on-board industrial computer with menu-driven operator interface monitors machine operations.

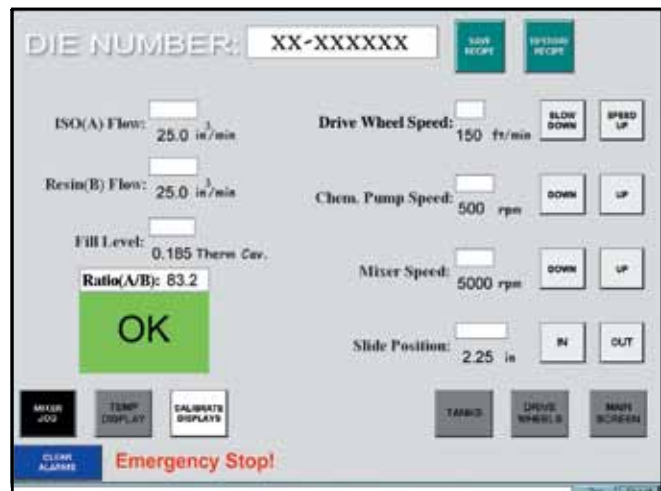
The Fillameter HMI features recipe recall by die extrusion numbers, which automatically sets the drive wheel speed and chemical flow rate based on a previously saved set of parameters. Settings are maintained using closed-loop control.

Optimized processing and function

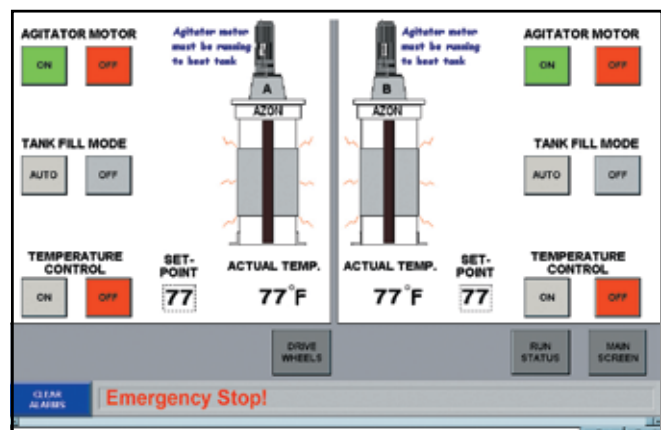
- All operations, monitoring, setups and adjustments are made through the 15-inch operator terminal using touchscreen technology
- Temperature set points are entered and monitored via the touchscreen
- Chemical ratio is monitored with a numeric display and visual indicator
- Clearly labeled start and stop buttons for the hydraulic power unit, agitator motors, heaters, level controls, and exhaust blower operations
- Drive wheel on, off and speed settings actuated from the touchscreen
- Chemical flow rate and mixer rpm is set from the touchscreen
- Increased productivity through faster set-up for multiple die configurations
- Networking capabilities include Ethernet and an expansion slot for optional connectivity
- Movable arm for the touchscreen
- Safety features include component redundancy used in critical circuits and alarming displayed at the bottom of all screens



All motors start and stop from the main screen including the hydraulic power unit, fume extractor and chemical agitators.



Machine status displayed real-time to allow the operator to monitor and make instant adjustments to system controls using image bitmap or alphanumeric touchscreen buttons.



Automatic filling mode keeps tanks filled to capacity. Temperature controls are utilized to keep chemicals at optimal temperatures in cooler environments.

Core Features

Fillameter	Fillameter HMI	
yes	yes	Tornado III Mixer
yes	yes	Fixed pulley ratio
no	yes	Onboard industrial computer
yes	yes	30 gal (113.6 L) reservoirs or tank
no	yes	Recipe recall
yes	yes	Heater blankets
yes	yes	Level sensors in tanks
yes	yes	Flow meters iso and resin
no	yes	Programmable functions
yes	yes	Auto-flush
yes	yes	Fume extractor
yes	yes	Hold-up and hold-downs
yes	yes	4 in (101.6 mm) diameter drive wheels
yes	yes	Extrusion feed rate 30-180 ft/min (9.1-54.8 m/min)
9.5 in (241.3 mm)	9.5 in	Maximum extrusion width with 40 ft (12.2 m) run-out
10.5 in (266.7 mm)	10.5 in	Maximum extrusion width without 40 ft run-out
yes	yes	5 gal (19 L) solvent tank



Fillameter™

Electrical requirements

208/230/380/460/600 VAC, 80/40 Amp, 3 Phase, 50/60 Hz service. All electrical components are mounted inside NEMA 12 enclosures.

Air requirements

Clean dry air is required for pneumatically operated components. Minimum requirements are 80 psi, 20 scfm (5.5 bars, 566 L/min).