

Quality...Flexibility...Speed...Price... Unbeatable Combination

- ◆ **Designed for AGM Battery production**
- ◆ **Creates consistent compressed cells**
- ◆ **One battery per cycle**
- ◆ **Uses value-priced, long-lasting, lead-saving molds**

The **dynaMAC/C.O.S. AGM with Centering and Compression** is an in-line cast-on-strap machine designed specifically to handle automotive and commercial size AGM batteries. The operator loads the elements into the group holder and the lugs are aligned automatically. The AGM tooling then compresses the groups using MAC's ACME screw group clamps with servo drives to the specific compression needed, creating a consistent compression of the glass mat to the pasted plates. While compressed, the group holder is turned over. The machine then takes over brushing, fluxing and casting operations while the operator unloads the previously cast elements and loads new elements for the next cycle. There are two carriages with automatic advance/retraction.

The user friendly operator control panel includes a Visual Information Center (VIC). The VIC on-screen display conveniently summarizes actual readings and compares this data to the desired parameters. Operators can adjust the various settings of the machine from this location.

The built-in auto lug aligner includes an element vibrating table. The lug aligner lines up the lugs of each cell element. This equipment eases lug entry into the mold cavities and permits the use of smaller size straps which saves lead costs.

To properly prepare the lugs for better strap adhesion - brushing, fluxing, and tinning are automatic operations. Lug surfaces and edges are brushed not once, but twice. The brush is specially selected for its fine wire bristles which remove extra paste without reducing the lug's thickness or creating deep grooves that could retain wet flux. After fluxing, the lugs are dipped into a molten tin bath to prepare for the mold. They can be refluxed after tinning if desired.

To dry the flux, heated air is forced across the lugs. After casting, the cast elements then return to the starting position to

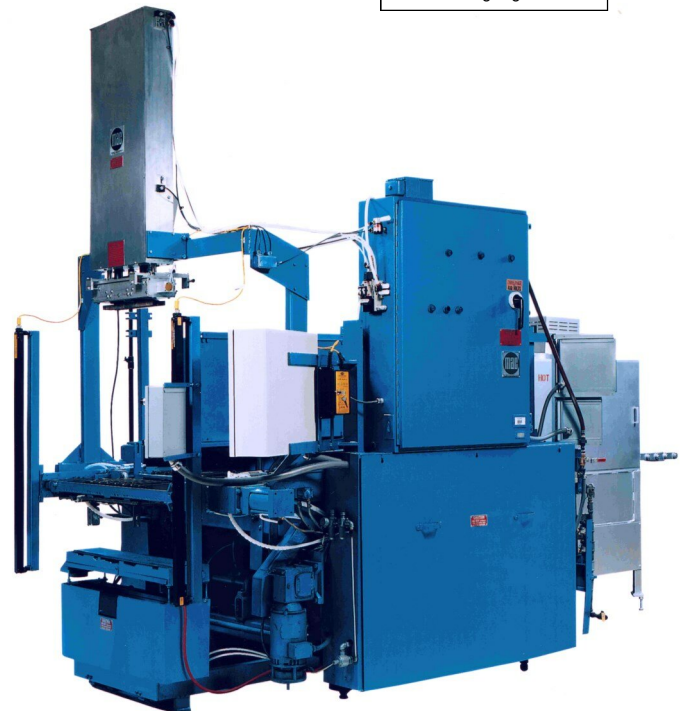
be manually unloaded and for a new set of groups to be loaded.

Each dynaMAC/C.O.S. AGM with Centering and Compression comes with an electric or gas 1361 kg (3,000 lb) capacity lead pot. These lead pots supply molten lead to the molds through electrically heated lead lines and variable speed lead pumps for excellent casting quality.

MAC molds are long-lasting and value priced. Each trouble-free mold is a hardened block with precision-machined strap cavities. Cavity mold inserts are designed to save lead. For greater production flexibility single automotive size molds are interchangeable with the MAC/C.O.S. machine.

The AGM process is limited to the medium size mold (1 battery maximum). All molds are designed to customer specifications. Mold water cooling is controlled at the Visual Information Center. This increases bond quality because you have closer control over cooling rates. Mold pours are quick and accurate. A unique gravity lead leveling system from the lead pot to the mold ensures equal lead flow to each strap cavity. Quick release water line connectors are standard items. Battery type changeovers are extremely fast.

Automatic lug aligner shown

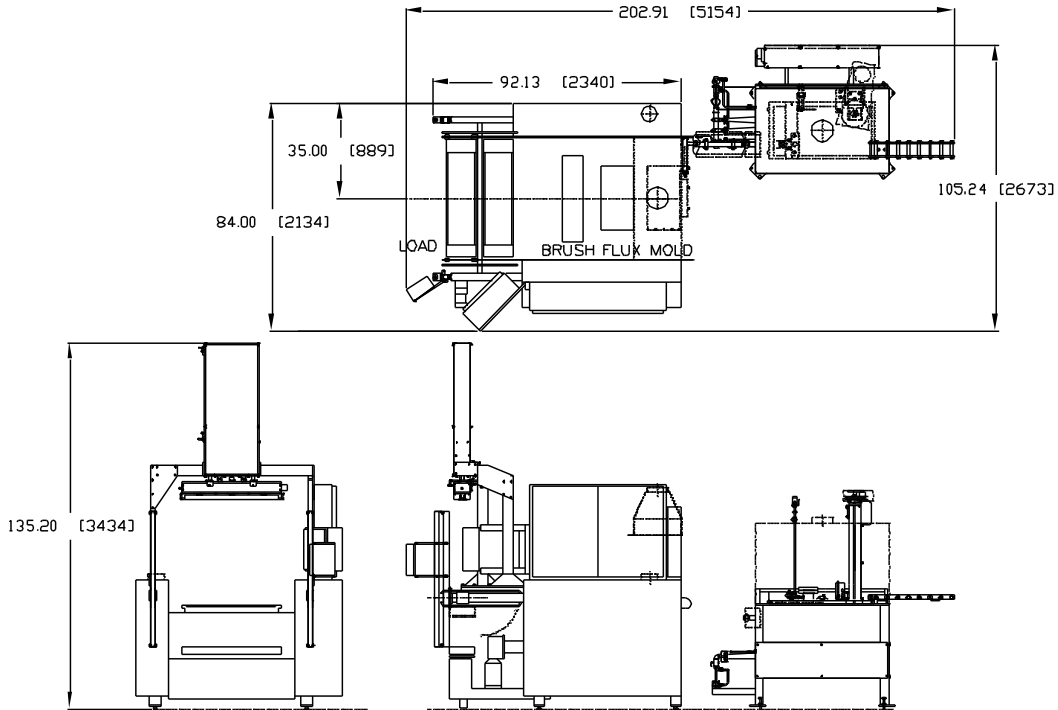


dynaMAC also available for non-AGM batteries

dynaMAC/C.O.S.

AGM with Centering and Compression

TECHNICAL SPECIFICATIONS



Required User Data:

Specify electrical requirements. Provide drawings of element, element casing, post and straps for use in designing molds.

Production Cycle Rate: Operator and battery design dependent

Operation Personnel Require: One

Cell Element Size Capability:

	MM	Inches
Height	294	11.6 maximum
	90	3.5 minimum
Width	175	7 maximum
	90	3.5 minimum
Stack Thickness	114	4.50 maximum
	13	0.50 minimum
Terminal post height:	99	3.9 maximum

(using screw group clamp handling 6-cell elements)

dynaMAC/C.O.S. Machine Requirements:

Standard Electrical: 240/380/480V/3-phase/50-60Hz (other electrics available).

Control Voltage: 24 volt D.C.

Information Center: PLC interfaced with a color display.

Tolerance: +20% of nominal voltage.

Hydraulics: None

Ventilation: Customer supplied as required by law. A minimum of 2700 CFM is typically used.

Where protection hoods are used, vent openings are provided.

Water: (Treated, chilled water recommended). Clean water for mold cooling. Five gallons per minute at 40 psi (minimum) at the mold inlet.

Compressed Air: 75 SCFM @ 80 psig minimum.

Ambient Operating Temperature: 0°– 45°C (32–113°F).

Lug Brush:

203 mm (8-inch) diameter wire brush driven by 3 HP motor.

Flux Tray: 2.8 liter capacity (0.75 gallon)

Lead Pot:

	Gas Heated	Electric Heated
Lead Capacity:	1361 kg (3,000 lbs)	1361 kg (3,000 lbs)
Heating Capacity:	57.4 kw/hr (196,000 BTU/Hr)	30 KW

Electrical Requirements

Gas Heated	Electric Heated
240/380/480V	240/380/480V
50-60 Hz	50-60 Hz
29 kVA	59 kVA

Heat Range: (gas and elec.) 38° to 538°C (100° to 1000°F)

Insulation: 102 mm (4 inches) of masonry fill insulation

Tin Pot: Capacity of 200 cu. Inches (3280 cc), 3 X 3000 W., 240V cartridge heaters

Natural Gas Requirements: 5.7 cu. meter/hr. @ 11 mm Hg (200 cu. ft./hr @ 6 in. W.C.)

Propane Requirements: 2.3 cu. meter/hr. @ 11 mm Hg (80 cu. ft./hr @ 6 in. W.C.).

Safety Features:

Metal protection guards. Load operator safety light beam (beam interference stops machine). [For automatic lug aligner] Electrical interlocks.

Installation Foundation:

Standard 4-inch (102 mm) thick reinforced concrete floor pad required. Holes for lag bolting of equipment to the floor are provided.

Approximate Shipment Specifications:

Box 1 -	Length:	2,845 mm, (112 inches)
	Width:	2,311 mm, (91 inches)
	Height:	2,413 mm, (95 inches)
	Weight:	2,565 kg, (5,654 pounds)
Box 2 -	Length:	2,489 mm, (98 inches)
	Width:	2,007 mm, (79 inches)
	Height:	2,235 mm, (88 inches)
	Weight:	2,248 kg, (4,955 pounds)

Helping to make the best batteries...yours.

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For a preview of our equipment visit: www.mac-eng.com

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