

# Mag25 Furnace



## Operation and Assembly Instructions

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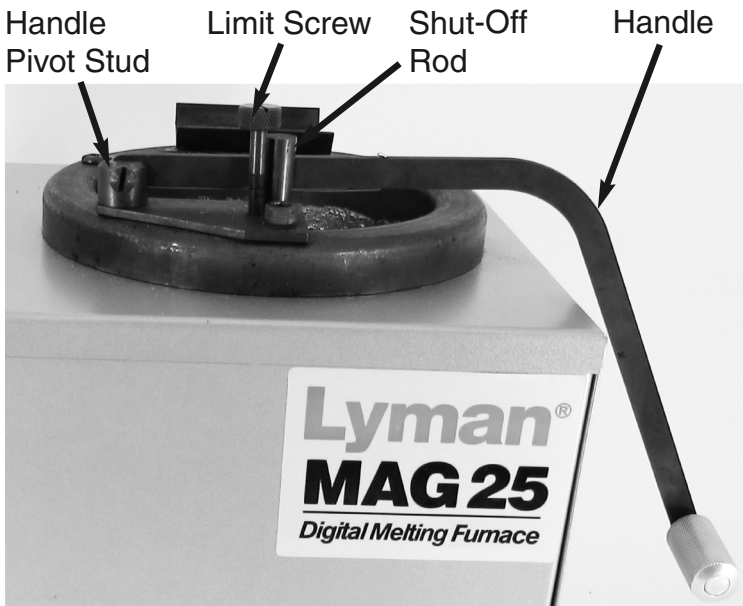
**Warning:** Melting lead and casting lead objects will expose you and others in the area to lead, which is known to cause birth defects, other reproductive harm and cancer.

**Reducing Exposure:** Lead contamination in the air, in dust, and on your skin is invisible.

Keep children and pregnant women away during use and until cleanup is complete.

Risk can be reduced – but not eliminated- with strong ventilation; washing hands immediately after use of these products, before eating or smoking; and careful cleaning of surfaces and floors with disposable wipes, after lead dust has had a chance to settle. Use a lead specific cleaner with EDTA, or a high-phosphate detergent (like most detergents sold for electric dish-washers) and bag wipes for disposal.

Figure 1



## **Assembly**

The main body of the furnace is fully assembled and factory tested. To facilitate packaging, the shut-off rod and operating handle have not been installed and you must do so prior to using the furnace.

To attach the handle: slide the shut-off rod through the hole in the alignment plate and down into the valve in the bottom of the pot. Next remove the screw from the handle pivot stud. Then slide the handle with its tension spring through the slot in the shut-off rod. Slide it in until the end of the shut-off rod slips into the slot in the handle pivot stud and the hole in the shut-off rod aligns with the hole in the pivot stud. Tighten the supplied screw through the handle and into the opposite side of stud. See Figure 1. Thread the supplied shut-off rod limit screw (with its lock nut) into the threaded hole in the alignment plate. Your furnace is now ready to be used.

## **Handling Lead**

Lead, a substance known to cause birth defects, reproductive harm and other severe physical injury, must be handled with extreme care. Handle lead bullets or lead shot only in well ventilated areas and ALWAYS wash hands after handling lead and before eating or smoking. Discharging firearms in poorly ventilated areas, cleaning firearms, or handling ammunition, also may result in exposure to lead. Have adequate ventilation at all times.

## **Safety Precautions**

- 1) No casting should be done without basic safety garb. This would include long pants and long sleeves, sturdy gloves, eye protection and closed top shoes.
- 2) Keep all flammable items away from casting area. Do not operate unit on flammable materials such as paper, wood or carpeting.
- 3) Casting should be done in a well-ventilated area. Avoid breathing fumes and dust from furnace.
- 4) Never allow moisture near molten lead. When moisture is introduced to molten lead, a terrific steam explosion occurs and molten metal is sprayed not only over the immediate area but also over the bullet caster. This moisture could be introduced by a wet ladle or dipper, overhead pipes, or additional lead being added to the pot.
- 5) Keep children away from casting and reloading areas.

- 6) Never pick up or tip the furnace when it is hot.
- 7) Do not cast when distracted.
- 8) Do not smoke or eat while handling lead.
- 9) Do not run the furnace without lead. (Except for initial warm-up period.)
- 10) Only plug the furnace into a circuit that can handle an additional 7 amp draw.
- 11) Wash hands after handling lead.
- 12) Use caution when adding bullet metal to the furnace containing molten metal to avoid splashing.

## **How to Use the Warming Shelf**

The warming shelf is located on the rear rim of the pot and allows you to pre-heat your mould blocks while the furnace is bringing your bullet metal up to casting temperature. Single and double cavity moulds are best stood on end with the handles straight up. Four cavity blocks are best positioned horizontally on the warming shelf. The use of the warming shelf will help reduce the time needed for a mould to being producing good wrinkle free bullets.

## **Mould Guide – Alignment and Use**

The Mag 25 mould guide is designed to accept moulds made by Lyman, RCBS, Saeco and Lee. There are two steps on the mould guide rails which will fit these various moulds. Note: It is recommended that the mould guide be adjusted when the furnace is cool and not in use.

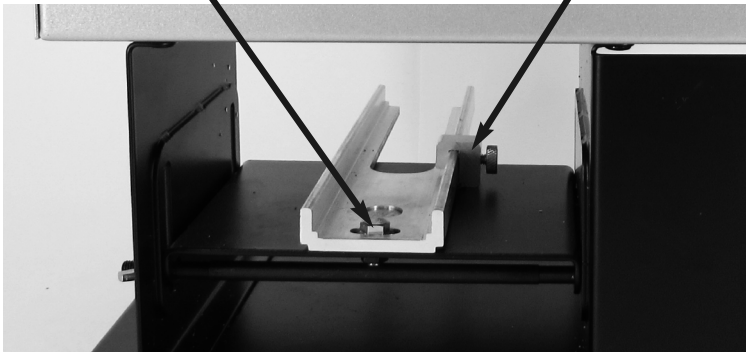
To adjust the mould guide, loosen the two wing nuts on the right hand side of the furnace. Place your mould on the guide rails and position it below the drain spout. Slide the mould guide up or down as needed to leave about  $\frac{1}{4}$ " space between the spout and the top of the mould. Tighten the wing nuts to lock it in place. Next, the side to side position of the guide can be adjusted if needed. See Fig. 2.

Loosen the bolt at the back of the mould guide with the supplied wrench and move the mould guide side to side so that the drain spout aligns with the mould sprue plate hole.

Figure 2

Bolt used to adjust side to side position

Mould Stop



To stop the mould in the correct position under the drain spout, the mould guide is also equipped with an adjustable mould stop. Loosen the thumb screw on the side of the mould stop, and position it so that it will stop the mould when the last sprue hole in the mould is centered under the drain spout. When it is in the correct position, lock it in place with the thumb screw.

When using the mould guide with a multiple cavity mould, the mould is set onto the guide rails and slid forward until it touches the mould stop. The cavity closest to the operator is filled first. The remaining cavities require visual alignment with the drain spout and are filled (each in order) as the mould is slowly drawn towards the operator. When all cavities are filled, allow the mould to rest on the guide for several seconds until the sprue solidifies.

## Operating Your Furnace

Plug in your furnace to turn it on. (Unplugging it will turn it off.) Up to 25 pounds of cold bullet metal can be added to the pot. Note: before using your new furnace for the first time, we suggest you turn it on when empty and set the furnace for the desired temperature. Then allow it to run for 10 to 15 minutes in a well-ventilated area (better yet, outdoors) to burn off protective oil. The unit usually smokes a bit at first which could be a problem inside your house.

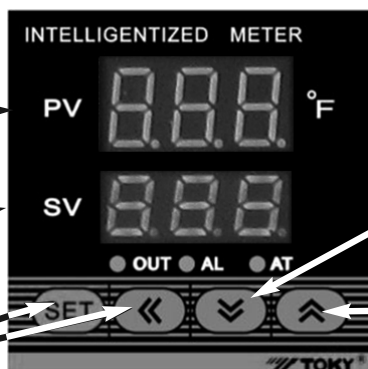
The Mag 25 furnace is equipped with a multi-function digital temperature controller. The controller has two temperature displays. The lower display marked "SV" (set value) is the temperature that the furnace is programmed to run at.

Figure 3

Process Value:  
Actual temperature  
of lead

Set Value:  
Temperature  
that the furnace  
is set for.

These buttons  
are not used



Down Reduces  
Temperature

Up Increases  
Temperature

The upper display marked “PV” (process value) is the actual temperature of the metal (+ or – approximately 10 degrees F. Please note that this temperature tolerance is for a typical volume of lead. If filled right to the top or drained close to empty, the temperature tolerance can be a little greater.)

The furnace is factory set for a maximum temperature of 850 degrees F. While the controller is capable of multiple functions, the caster will only need to be concerned with basic temperature changes and other functions are locked. To change the temperature setting, tap the Up or Down button. (See Figure 3 for identification of keys.) The set temperature in the “SV” display will flash. Move the temperature up or down with the appropriate button. The temperature will change in 10 degree increments. Once the desired temperature is selected, wait a few seconds and the display will stop flashing, showing that the temperature has been changed.

From this point on the furnace will automatically cycle on and off to maintain the set temperature. When heating or attempting to keep the temperature within its tolerance range, the “OUT” (output) light will be on. It will blink as the actual temperature reaches the set temperature. If the light is off, the furnace is not heating. If the actual temperature raises approximately 20° above the the set temperature, the heater will cycle off automatically, dropping the temperature back down to the set level. When the controller is not attempting to adjust the temperature, no indicator lights will be on.

**If the unit temperature reaches or exceeds 950°, the PV reading will show “Err” and the AL light will come on. If this happens, unplug the unit and contact Lyman Customer Service.**

You may see some movement up or down in the actual temperature reading as the heat is cycled on and off. You may need to experiment with different temperature settings to find what works best with a particular mould.

When adding additional lead to the pot, you will see the temperature drop on the “PV” display, as the new cold lead will lower the temperature of the existing lead. The furnace will automatically heat until the molten lead is back up to the set temperature.

## Bottom Pour System

The bottom pour spout valve system of the furnace has been designed to provide efficient trouble-free casting. The system consists of the drain spout, shutoff rod and limit screw. The shutoff rod limit screw is used to control how high the shutoff rod can be lifted, which in turn, controls the flow rate of the lead. Determine the best flow rate of lead from the spout for the particular mould you are using and adjust the limit screw to stop the shutoff rod at this point. **CAUTION! Limit screw will be hot during adjustment!**

Dripping from the valve can occur at times if dirt or grit suspended in the molten lead gets caught in the shut-off valve. Fully opening the valve will usually clear such debris. When this does not work, drain the furnace and allow it to cool. Then remove and clean the shutoff rod. If the drain spout is seriously clogged, heat the furnace to the melting temperature. Hold an unbent paperclip with pliers and feed the wire up through the drain spout to dislodge any obstruction. Be careful to wear heat resistant gloves and eye protection whenever working with molten lead.

## Parts List

1) Power Cord, 115 Volt .....	Item # 2800400
2) Power Cord, 230 Volt (Euro) .....	Item # 2800401
3) Power Cord, 230 Volt (Australian) .....	Item # 2800402
4) Shut-off Rod .....	Item # 2800403
5) Shut-off Rod Limit Screw .....	Item # 2800404
6) Limit Screw Lock Nut .....	Item # 2800405
7) Handle Assembly .....	Item # 2800406
8) Housing Screws .....	Item # 2800407
9) Mould Guide Assembly .....	Item # 2800408
10) Mould Guide Wing Nuts .....	Item # 2800409
11) Mould Guide Support Screw .....	Item # 2800410
12) Mould Stop Assembly .....	Item # 2800411
13) Mould Stop Thumb Screw .....	Item # 2800412

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