

Mr Volcano® Magma PREP/ASSEMBLY INSTRUCTIONS



CRITICAL: When running the forge with just one burner: Always remove the second burner from the forge. Failure to do so **will** result in the heat entering the unused burner and damaging the ball valve and hose components.



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1 Apply Rigidizer

Personal Protection Equipment must be worn to handle Rigidizer, Ceramic blanket and Refractory. (See Warning Page). Included with your forge is 16oz of Rigidizer, when mixed with water, it should come out to 32 oz of rigidizer, this is more than enough to cover all sides of the blanket. You will need two spray bottles: One for water, and one for the rigidizer solution.

1. Uncurl the ceramic fiber blanket and place it flat on a clean surface.
2. Shake Rigidizer vigorously for 45 seconds before using.
3. Spray water lightly on all sides of the blanket. This is done to prepare the blanket for the process of applying the rigidizer.
4. Spray the Rigidizer on all sides of the blanket. Make sure the entire blanket is red.
5. Install the blanket into the forge while the blanket is still wet, make sure the burner in the forge is able to slide through the round hole in the blanket. Rigidizer dries slowly (about 24 hours), so speed is not critical here.

There are two methods of drying the Rigidizer: Air drying or firing up the forge.

- A) **Air drying** - Air drying is recommended. This could take 24-48 hours. A cooling fan will speed up the process.
- B) **Fired up drying** - Fire up the forge on low pressure (See Operating Instructions) for 30-60 seconds. Then let it cool down. Do this several times to allow the process to remove water from the blanket. This will generate some steam in this step. Sputtering of the burners during this step is normal, this is why we recommend air drying instead.

Do not proceed until the blanket is dry and rigid. Trapped water, when heated, will cause a burst through the refractory layer. The red color in the rigidizer is not an indicator of the blanket being dry. It could retain the color after being dried out.

2 Apply Refractory

Included with your forge is 4 pounds of Satanite® Refractory Mortar for initial coating and 1 pound for future maintenance. To achieve the desired thickness, you will need to apply two coats of Refractory. The idea is to apply two thin layers. Thick layers will result in cracking of the refractory in the future. Make sure to use a scale to measure the Satanite and water – do not guess. Mix for 5 minutes. Look for a sour cream type consistency. NOTE: Refractory curing must be done in **at least a 50 F** environment. The warmer the better.

The steps:

1. **Apply 1st Coat:** Satanite Refractory: 2.125 pounds (2 pound 2 oz.). Water: 9.47 fl oz (9.92 oz in weight). (See “Applying” below)
2. **Allow 1st Coat to dry:** Let the first coat air dry for 24 hours. If after 24 hours some areas are still wet, you can dry it with a heat gun, hair dryer, or let it air dry for another day. Apply the second coat and allow 24 hours for the coat to harden before curing.
3. **Apply 2nd Coat:** Satanite Refractory: 1.875 pounds (1 pound 14 oz). Water: 8.32 fl oz (8.8 oz in weight).
4. **Allow 2nd Coat to dry:** Air dry the same way as the first coat.
5. **Cure the layers:** See curing below.

Applying:

1. With a spray bottle, spray water to wet the surface of the rigid ceramic fiber blanket. Any dry spots in the blanket will absorb the water from the refractory mixture too fast and cause cracks. Too much water will prolong the drying step.
2. Apply the mixture using a brush to cover all exposed surfaces of the blanket.

Cure the refractory coatings.

After waiting 24 hours after the 2nd layer of refractory has been applied, you are now ready to cure the refractory to make it a one solid piece. The idea is to remove water that is still left in the refractory coating after the drying. It is very important to do this slowly, by heating it up in the given time increments and letting it cool down. As soon as you see steam forming then turn it off. Don't rush this process.

- A) Start with firing up the forge burners on low and keep it on for 45 seconds. (See Operating Instructions)
- B) Turn off the forge and allow it to cool down for 5 minutes.
- C) Repeat Step A and B – and each time changing step “A” by adding 5 seconds to each interval. (45 seconds, then 50 seconds, 55, 60, etc.) The goal is to get to a point where you don't see any steam forming. Do not rush the air curing or the heat curing process as the refractory can crack, exposing the hazardous ceramic fibers.

Applying Refractory info:

- Take care not to get refractory in the entry tube.
- While the refractory is still wet, clean the outside shell of the forge.
- During the curing process: Most water escapes through the cold face not the hot face. The seams of the forge serve as weep holes to the cold face of the forge to promote steam to exhaust during the curing heat up process.

③ Assemble the forge

1. Lower the burner down the forge entry tube. The burner should sit about 3/4" higher than the bottom of the entry tube. Tighten the thumb screw on the forge entry tube to secure the burner in place.
2. Make sure the ball valve is closed shut. Connect the hose fitting to the ball valve and propane source.
3. Insert the fire brick. (This is only after curing the Rigidizer and Refractory)

OPERATING INSTRUCTIONS

STARTING THE FORGE

- 1** Make sure the ball valve is in the ON position and nothing is obstructing the burner's air intake holes. Make sure the regulator is turned all the way to the left (counterclockwise).
- 2** Light a long match or a flammable material (i.e., bbq fire starter, cardboard, paper) and set it inside the forge under the burner tube opening
- 3** Open the propane tank slowly to fully on. Then open up the regulator by turning it clockwise. The burner should fire up. Adjust the regulator to achieve the desired flame. You're looking for a blue flame.

CRITICAL – MUST READ:

- ❖ If the burner does not light up and you do not see a flame then immediately turn off the gas and wait a few minutes for the gas to dissipate before attempting to light again.
- ❖ **Watch for blockages in the entry tube** – Even small amount of refractory or ceramic blanket will throw off the flame and run too rich or too lean. A blockage can also cause the base of the burner on the outside to glow red hot, if you see this, turn the forge off, wait until it cools down, and clean the entry tube of ANY blockages.
- ❖ **If you're going to be running the forge with just one burner:** Always remove the second burner from the forge. Failure to do so **will** result in the heat entering the unused burner and damaging the ball valve and hose components.

TIPS / SAFETY MEASURES

- Use this forge with propane fuel only. Do Not forge galvanized steel - it creates toxic fumes that can cause death.
- Visually inspect the hose and fittings. Test the fittings and connections in the propane hose for leaks, with soapy water under pressure - with the ball valve in the off position.
- Every time you use the forge, inspect the blanket for cracks or holes and repair them before proceeding. Some cracking is normal, excessive cracking needs to be fixed. The extra refractory that is provided can be used for this purpose.
- Never light the flame from the air intake part of the burner, always light from inside of the forge.
- Keep your eyes, hands, and any flammable material far away from the flame to not inflict any damage or injury.
- Make sure the propane hose is away from the opening of the forge to not be damaged by the flame.
- Keep an eye out for a potential tipping hazard, especially when the forge is running. Take care not to bump into it or have anything pulling down on the hose.

TROUBLESHOOTING

My flame is sputtering

- ❖ Allow for the forge to heat up. When the forge isn't heated up it's normal for it to sputter.
- ❖ Check for crosswind, if you are working outside, cold air or wind could cause the flame to sputter. Use a firebrick to block one end of the forge.
- ❖ Check the burner nozzle, burner tube and entry tube for blockage, look for refractory or ceramic blanket being the source of the blockage. The burner should be able to slide in easily through the entry tube, if there is a blockage the burner won't be able to slide in all the way through the entry tube. Clean the nozzle of the burner (where the propane comes out of) with a welding wire to make sure there is no blockage there either.
- ❖ Make sure the tank is full and not low on pressure, a tank that is low and nearing empty will cause sputtering.
- ❖ Make sure the burner is recessed 3/4" inch into the inlet tube of the forge. The burner should not be protruding through the inlet tube or even flush with the inlet tube.
- ❖ If there is no firebrick inside the forge, put one inside to create a smaller area for combustion.
- ❖ Make sure the regulator is not in "safe mode". To reset the regulator: With the tank regulator fully open, turn the red knob on the regulator on the hose assembly all the way to off (counterclockwise). Wait a few seconds then slowly turn the regulator in the clockwise direction turning the propane flow back on.
- ❖ Lower the chokes to allow more air intake.

My regulator or tank keeps freezing resulting in low pressure.

- ❖ While this is a normal after operating the forge for an extended period of time, some things could be done to mitigate this. Start by turning the valve and unhooking the regulator and hose. Wait for 10 minutes and then attach it all again. When firing the forge up again, make sure you do so by slowly opening the hose regulator. This can also occur when liquid propane enters the regulator caused by the tank being overfilled or is not standing upright. Most often, this happens when the propane is leaving the tank faster than it is designed for, a simple solution is simply getting a larger tank. A 100lb tank is the tank of choice for enthusiasts. Some users have also reported putting their propane tank in water to keep it from freezing.