**GT New Horizons**

# Electric Blast Furnace

The **Electric Blast Furnace** (EBF) is a critical multiblock machine that must be made in late LV in order to progress, as it is the only way to process Aluminium at that tier. It smelts metal dusts into ingots at higher temperatures than can be attained in simpler furnaces, at the cost of significant electricity usage.

Unlike single block machines, the Electric Blast Furnace has multiple valid configurations and if incorrectly built will void its recipe ingredients, wasting resources and power. Its recipe capabilities are determined by both the Coil block used and Energy Hatch(es) it's built with.

## Construction

The EBF is 3x3x4 in size; four blocks tall with a 3x3 footprint. While not affected by rain, any Generators or Battery Buffers connected to it can catch fire and explode if exposed, so it's best covered or placed indoors. Use F9 to check chunk borders and ensure the EBF is contained in a single chunk. Partially loaded multiblocks are prone to deforming or exploding. LV is the minimum tier for hatches and busses, but they can be upgraded later for more capacity or greater effect.

Requires:

- Electric Blast Furnace (controller)
- 16 Cupronickel Coil Block+
- 1+ Input Bus (LV)+
- 1 Output Bus (LV)+
- 1+ Input Hatch (LV)+
- 1 Output Hatch (LV)+, optional
- 1 Maintenance Hatch
- 2+ Energy Hatch (LV)+, or x1+ Energy Hatch (MV)+
- 1 Muffler Hatch (LV)+
- 9-11 Heat Proof Machine Casing (minimum 0)
- 2-4+ Amps of power supply, tier determined by Energy

Electric Blast

### Bottom Layer

- Place the controller in front center of the bottom layer.
- The Input Hatch, Input Bus, Output Bus, Maintenance Hatch, and Energy Hatches can go anywhere on the bottom layer.
- Fill the rest of the 3x3 with Heat Proof Machine Casings.

### Middle Layers

- The second and third layers of the EBF are rings of x8 Cupronickel Coil Blocks, each.
  - The center of both layers should be empty.

### Top Layer

- The muffler goes in the center of the top layer, facing upwards. Wrench to rotate if needed.
  - It *must* have an empty air block above it.
- The Output Hatch, if used, goes in any of the other eight positions.
- Fill the rest of the 3x3 with Heat Proof Machine Casings.

## Making Your EBF Work

In order to run, maintenance problems need to be fixed, power supplied, circuit and ingredients loaded, and then finally the EBF can be started up. Use a Soft Mallet to turn the EBF on if it doesn't power up automatically. If it voids a recipe, the EBF will disable itself to avoid wasting more resources.

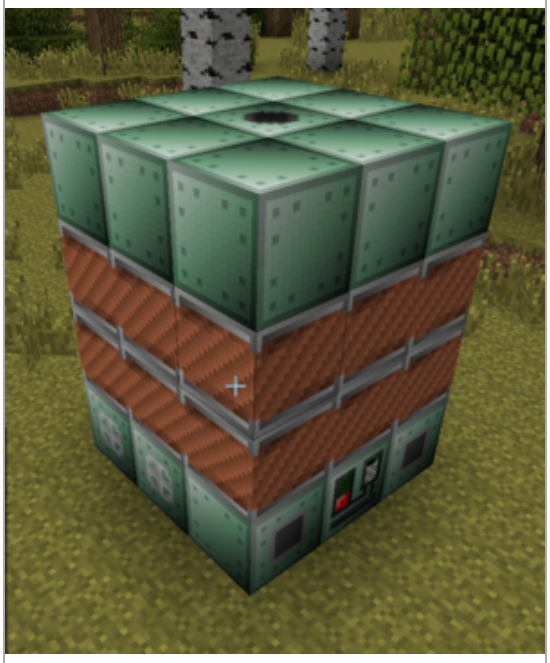
### Maintenance

Like all multiblocks, when first formed the EBF will have a full suite of Maintenance problems, and maintenance problems will periodically (but rarely) pop up after that. These require tools to fix; a Hammer, Wrench, Soft Mallet, Screwdriver, Crowbar (GT, not Railcraft) and Soldering Iron. If you do not have a soldering iron, you can run the EBF with one maintenance problem not fixed, but will need three energy hatches.

### Power

The EBF requires a constant 120 EU/t to make aluminium or steel, not accounting for losses from

**Furnace**



| | |
|---|---|
| **Mod** | Gregtech 5 |
| **Type** | Tile Entity |
| **Tooltip Text** | Controller block for the Electric Blast Furnace |
| **Relevant Quest** | EBF-Time |
| **Tier** | LV |
| **Size** | 3x3x4 (hollow) |
| **Pollution** | Variable |

**Properties:**

| | |
|---|---|
| **Blast resistance** | 10 |
| **Hardness** | 10 |

**Energy:**

| | |
|---|---|
| **Energy usage** | 120 EU/t+ |
| **Voltage in** | As per Energy Hatch |
| **Max amperage** | 2A per Energy Hatch |
| **Fluid capacity** | 16,000 L+ |
| **Item capacity** | x4 stacks+ |

2A, which is 64 EU/t. Thus two LV hatches are required for the basic Electric Blast Furnace, or three and 5A of LV power if it has a maintenance problem. Use as few cables as possible. More than two blocks of cabling will reduce each amp to 29 EU/t- 4 amps of that is only 116 EU/t, and the EBF won't run. 2x Tin Cable is the absolute minimum that should be used; copper cable has even worse energy loss.

Battery Buffers are another option. Each buffer needs at least two batteries to provide 2A, which means a four slot or bigger buffer. Buffers are HIGHLY recommended for use with unbuffered Steam Turbines, due to their inconsistent nature. They are not necessary for Combustion Generators or Gas Turbines, but can be useful. Buffers can also help where the current power infrastructure is insufficient to run the EBF constantly.

### Circuits

Many recipes require a programmed Circuit or Ghost Circuit to be set. When using a programmed circuit item, place it in the Input Bus along with the other recipe ingredients. It is not consumed in the process. Make sure to have the right one for the recipe. To set a ghost circuit, right/left click on the box in the lower right corner of the Input Bus to change the number, or shift-right click to choose a circuit setting directly.

## Upgrading

The Electric Blast Furnace running at 120 EU/t is at its most efficient. Keep in mind that upgrading the voltage will quadruple the power requirement, but shorten processing time by half by base. The coils used for a recipe also affect how much power it consumes.

#### Redstone Alloy Cable

With a functional EBF, Redstone Alloy Cables can be made which are completely lossless. This is a priority upgrade for both any cables connecting the EBF to its power source(s), and makes for a fantastic backbone power distribution line for a LV machine room.

#### MV Generator

A MV generator can be used to power the EBF instead of 4A of LV power and two LV Energy Hatches. If choosing to do so, ensure there is only ONE MV Energy Hatch instead of two, otherwise it will not work. Multiple MV Energy Hatches will cause the EBF to expect overclocking to HV, the same way it did when initially set up with two LV Energy Hatches to achieve MV.

#### Upgrading the Voltage

120 EU/t is insufficient power to smelt many recipes, the most important one being stainless steel. The EBF must be supplied with 4 amps of MV into two MV Energy Hatches to achieve 480EU/t, the required power for stainless steel. Keep in mind that running 120 EU/t recipes (such as aluminium or steel) will consume TWICE as much power at 480 EU/t. It may be desirable to set up a second EBF dedicated to higher power recipes if resources allow.

### Heating Coils

Coils determine what recipes the EBF can do, and how well it does them. Some recipes will require more heat than Cupronickel coils provide. For instance, Energetic Alloy requires 2200K, while Cupronickel Coils only provide 1800K- thus, a EBF cannot smelt Energetic Alloy until its coils are upgraded. An EBF or group of wallsharing EBF's can only have one coil type.

An extra bonus value will be added to your EBF's heat capacity of 100K * (energy tier - 2), where LV is tier 1, MV is tier 2, etc. This will allow some items to be smelted more efficiently at certain tiers, as described below. The basic setup of two LV Energy Hatches @ 2A each is MV level energy, which simply wipes out the - 2 penalty. With an HV Energy Hatch or two MV Hatches, the EBF has a 100K heat bonus. The Portable Scanner can be used to read an EBF's heat capacity and energy tier.

### Gas Recovery

The **Output Hatch** is optional and will collect waste gasses for some recipes ($Co_2$/CO/$SO_2$), mostly ore dusts. The amount collected is based on the tier of the Muffler Hatch and at LV it will get nothing (0%); a MV Muffler recovers 13% of the possible total. The quantities shown in NEI are for the 'best' Output Hatch (UHV).

## Automation

Thankfully, automating an EBF is extremely easy. Input hatches accept fluids from any pipe, or manually in the GUI using cells. Input buses accept items from item pipes or hoppers. Output Hatches will auto-output fluids into pipes, while Output Buses will push into any container, item pipe or hopper. Busses and Hatches only auto push/pull from the face marked with four small arrows around a hole. As of 2.4.0, the EBF will shut down by default if there is no space for the recipe output. This behavior can be changed by adjusting the Void Mode in the controller. Only set items and/or fluids to void if they are not wanted.

### Wallsharing

Multiple Electric Blast Furnaces can be built using less resources by Wallsharing. Like the Bricked Blast Furnace, a wallshared EBF can share one or two sides of blocks with another adjacent EBF. The same type of Coil must be used across all wallshared furnaces, and due to their high Pollution output consideration should be given to the build location. Maintenance Hatches cannot be shared and it's not recommended to share Energy Hatches due to the EBF's high power demands.

# Troubleshooting

### Runs for a while, or for only a second, and then turns off, usually deleting inputs in the process

- Make sure enough EU is being supplied. See the Power section for details.
- Make sure if your using Advanced Mufflers that they have air filters in, tier 2 air filters after IV mufflers.

### Won't start, or flashes a green light but does nothing when turned on

- Hit the EBF with a Soft Mallet to enable it.
- Check the recipe using NEI. Many items/gasses/fluids look similar.
  - Check that the correct processing gas/fluid is in the Input Hatch.
  - And all the items are present in sufficient quantity in the Input Bus.
- Check the proper programmed circuit / ghost circuit is set in the Input Bus.
  - Check the gas (or secondary ingredient) and item combination matches the set circuit.
- Make sure the Muffler Hatch is not blocked by another block.
- Make sure the Muffler Hatch is facing out.
- It could also be caused by the EBF not getting any power at all.
  - Check that cables are connected.
  - Ensure generators/battery buffers are pointed in the correct direction.
  - See if there are any accidental plates/foils applied to GT block faces - remove with Crowbar.

### Structure Incomplete

- Try breaking the controller and replacing it.
- Check that nothing has occupied the interior of the EBF, such as invisible lighting blocks.
- If the EBF has never formed before, check that all the blocks are in the correct place and orientation. Muffler must face out, Controller must face forward.

### Outputs Full

- Output Bus is full and void protection is on.
- There is no Output Hatch that can accept gasses - one is needed on the **top layer** of the EBF for gas.

## Tips

- EBFs can share walls, just like the BBF. They can also share input and output hatches. Energy hatches sometimes have issues if shared, so recommendation is to not share them.
- There can also be more than one input hatch or bus. This way you can dedicate one hatch per input gas.
- **Do not** mix different types of Heating Coils; the EBF will not work.

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