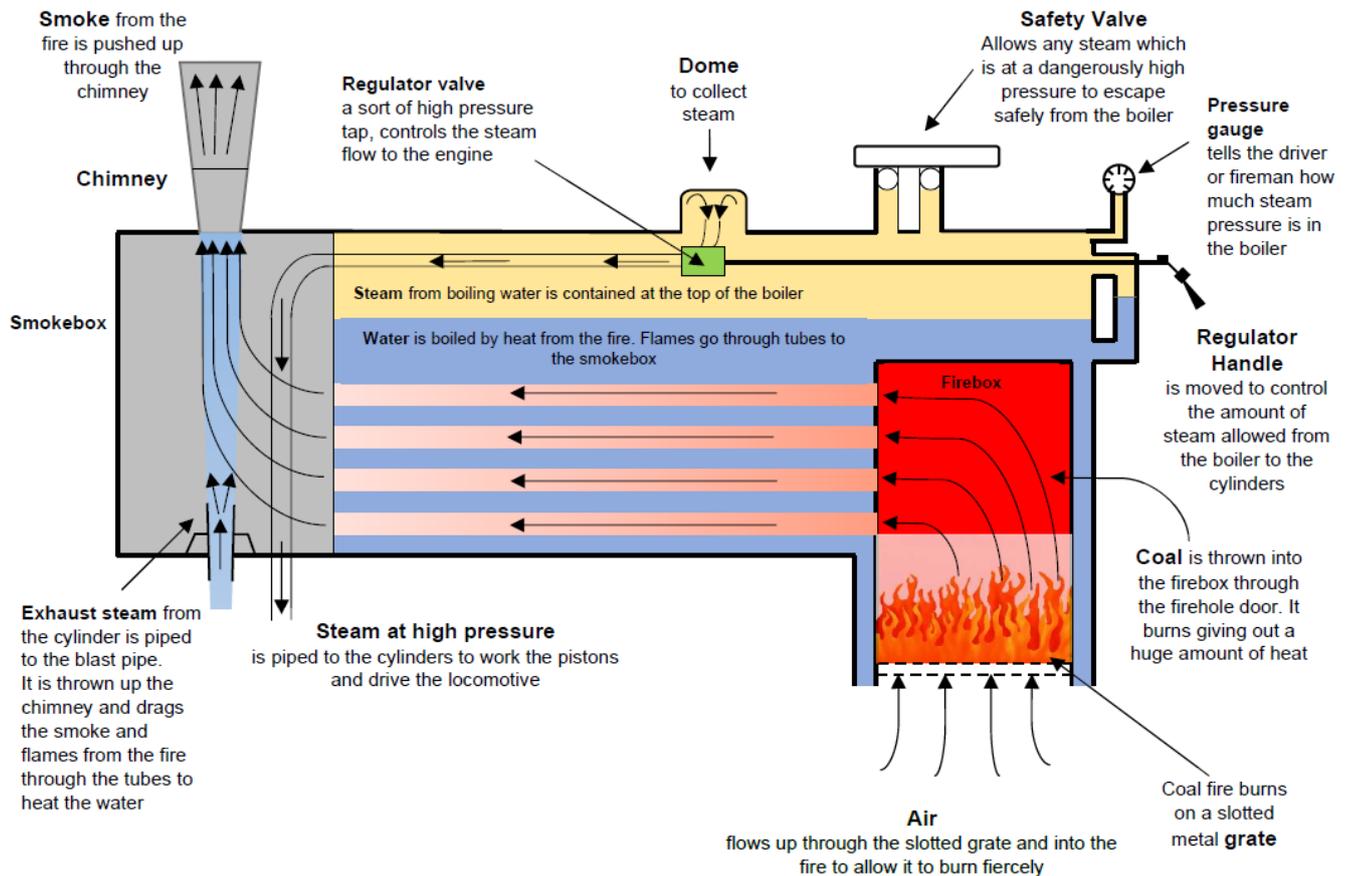


# How a steam engine works



## The Boiler, Steam and Pressure Gauge

The coal fire heats the water so it boils and makes steam. The steam would like to take up a lot more space than the water but it is squashed into the boiler and cannot escape. This means its pressure has to rise: The boiler has to be very strong to hold it in.

The driver and fireman of a locomotive need to know how much steam pressure is inside the boiler. If there is not enough pressure the engine will not pull the train or if there is too much pressure the safety valves will lift and waste steam and the coal used to make it.

**Use the diagram to find out the answer to these questions**

1. What tells the driver how much pressure he has in the boiler?

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2. What is used to control the amount of steam allowed from the boiler to the cylinders?

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3. What flows up through a slotted gate and into the fire to allow it to burn fiercely?

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4. What is the Dome's function?

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5. What happens if there is not enough pressure inside the boiler?

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6. What happens if there is too much pressure inside the boiler?

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## Answers

1. **What tells the driver how much pressure he has in the boiler?**

The Pressure Gauge.

2. **What is used to control the amount of steam allowed from the boiler to the cylinders?**

The Regulator Handle.

3. **What flows up through a slotted gate and into the fire to allow it to burn fiercely?**

Air.

4. **What is the Dome's function?**

Collect steam.

5. **What happens if there is not enough pressure inside the boiler?**

The engine will not pull the train.

6. **What happens if there is too much pressure inside the boiler?**

The safety valves will lift and waste steam and the coal used to make it.