



**Introduction:** The Pressure And Temperature In A Steam Boiler Are Increased By Constantly Supplying Energy So That The Liquid Medium (in Most Cases Water) Becomes Gaseous. Steam Boilers Are Monitored By Safety Devices Which Are Electrically Connected In Series, The So-Called "safety Chain". If One Of The Monitoring Or Control Devices Trips, An Alarm Is Triggered And The Entire System Or The Affected System Component Is Switched Off.

This Trainer Enables A Steam Boiler Simulation To Demonstrate The Operating Principle And Response Behaviour Of A Safety Chain According To Legal Regulations. The Trainer Has A Closed Water Circuit Which Consists Of A Supply Tank, A Pump And A Transparent Steam Boiler Model With Burner. The Boiler Is Equipped With Industrial Components Which Monitor And/Or Regulate The Water Level And The Pressure. The Components Used Have A High Practical Relevance. The Safety Chain For The Burner Is Functional. Burner Operation Is Simulated. In Addition To The Safety Devices, The System Is Equipped With 15 Fault Circuits. This Enables The Simulation Of System Component Faults So That Students Can Learn How To Localise The Faults.

*Note: Specifications are subject to change, Photos shown above are Indicative, Actual Product can Vary.*



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**Specification:**

- Simulation Of The Operation Of A Steam Boiler
- Control Of Water Level And Pressure Of The Boiler And Fault Circuit
- 15 Faults That Trigger The Safety Chain
- Safety Chain According To Legal Regulations Containing: Level Switches, Pressure Switch And Pressure Controller
- Transparent Boiler To Observe The Water Level
- Steam Pressure Simulated Using Compressed Air
- Operation Of Burner Simulated
- Front Panel With Process Schematic, Indicator Lamps And Lab Jacks

**Learning Objectives/Experiments:**

- Model Of An Oil-Fired Steam Boiler With Operating And Safety Components
- Characteristics Of The Monitoring Elements
- Fault Circuits
- Burner With Flame Monitoring
- Pressure Switch And Limiter
- Feed Water And Level Controller
- High And Low Water Limiter

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