



VALMET IBMACT & Utility MATS

Boiler Tune-ups

Boiler Tune-Ups required by the EPA

- A boiler tune-up refers to many aspects of improving boiler operations. From an emissions perspective, the term boiler tune-up specifically refers to the activity to meet the requirements in the Boiler Area and Major Source Rules (40 CFR Part 63 Subpart JJJJJJ and Subpart DDDDD).
- The tune-up activity is the act of reestablishing the air-fuel mixture for the operating range of the boiler. Oxygen and unburned fuel (carbon monoxide is generally the indicative measurement) are balanced to provide safe and efficient combustion. Carbon monoxide (CO) concentrations are also measured to ensure proper burner operation.
- A primary goal of a boiler tune-up is to improve boiler efficiency with respect to combustion operations.
- The primary tool required to complete a boiler combustion tune-up is a flue gas analyzer. The required measurements for an appropriate flue gas analysis are flue gas oxygen content, combustibles content, and any components that are managed as a part of environmental compliance (NO_x for example). These measurements are typically obtained with a portable combustion analyzer.



What does it mean?

- **Tune-up:**

- Action to restore a boiler to its efficient state, given its age and other parameters
- Existing boilers subject to a tune-up requirement have 3 years to demonstrate compliance
- Compliance Date:
 - Area Source Units = March 21, 2014
 - Major Source Units = January 16, 2016 (existing sources; January 31, 2013 or upon startup of new sources)
- Tune-ups must be conducted while burning the type of fuel that provided the majority of the heat input to the boiler over the 12 months prior to the tune-up
- For Area Source units: per work practice and management practice tune-up standards in 40 CFR § 63.11223(b)
- For Major Source units: per procedures outlined in § 63.7540(a)(10)
- Reports regarding the initial tune-up must be submitted per § 63.7550 and § 63.7540(a)(10)(vi).

- **Application and Timing:**

- Boiler heat input capacity and/or the use of an oxygen trim system will determine the tune-up periodicity
 - Annually
 - Biennially
 - Every 5 years

Q & A

- **Question.**

- **With regards to a major source boiler tune-up, how do I demonstrate compliance:**

- **Answer.**

- **§63.7540 (a)(10), (11), (12)**

(10) If your boiler or process heater has a heat input capacity of 10 million Btu per hour or greater, you must conduct an annual tune-up of the boiler or process heater to demonstrate continuous compliance as specified in paragraphs (a)(10)(i) through (vi) of this section. This frequency does not apply to limited-use boilers and process heaters, as defined in §63.7575, or units with continuous oxygen trim systems that maintain an optimum air to fuel ratio.

(11) If your boiler or process heater has a heat input capacity of less than 10 million Btu per hour (except as specified in paragraph (a)(12) of this section), you must conduct a biennial tune-up of the boiler or process heater as specified in paragraphs (a)(10)(i) through (vi) of this section to demonstrate continuous compliance.

(12) If your boiler or process heater has a continuous oxygen trim system that maintains an optimum air to fuel ratio, or a heat input capacity of less than or equal to 5 million Btu per hour and the unit is in the units designed to burn gas 1; units designed to burn gas 2 (other); or units designed to burn light liquid subcategories, or meets the definition of limited-use boiler or process heater in §63.7575, you must conduct a tune-up of the boiler or process heater every 5 years as specified in paragraphs (a)(10)(i) through (vi) of this section to demonstrate continuous compliance. You may delay the burner inspection specified in paragraph (a)(10)(i) of this section until the next scheduled or unscheduled unit shutdown, but you must inspect each burner at least once every 72 months.

Tune-up Procedure

- **Requires:**

- Inspection of burner (if applicable) and replacement of needed components
- Inspection of flame pattern; adjustment of burner to optimize
- Inspection of system controlling air-to-fuel ratio; calibrate it to function properly
- Optimize CO to the NO_x requirement to which the unit is subject to
- Measure the CO in ppmv and O₂ % vol; before and after adjustments are made
 - Can use a portable CO analyzer; volumes can be wet or dry, but must be consistent before/after
- Maintain annual report on-site. Report to contain:
 - CO ppmv and O₂% vol measured at high fire or typical operating level (before and after adjustments)
 - Description of any corrective actions taken
 - Type and amount of fuel used over 12-month period prior to tune-up
 - Reporting and record retention

Valmet Field Services

IB MACT & Utility MATS Boiler Tuning

- Valmet provides a variety of services for boiler operators to maintain safe, compliant, and efficient boiler operations.
 - Environmental Compliance
 - Area and Major Source IBMACT and Utility MATS Boiler Tune-Ups
 - Emissions Troubleshooting
 - Efficiency Improvements
 - Combustion Fuel to Air Tuning
 - Burner Optimization
 - Reduced Fuel Costs
 - Limestone Injection Optimization



- Call or email today for your IBMACT Tuning quote
- [Email](#)
- Phone: 877-311-0101, 888-574-0055 (24 hr)

Field Service Engineers



- Valmet provides a team of qualified, experienced, and knowledgeable service engineers to conduct flue gas sampling, analysis and combustion tuning.
- Our ability to measure gas concentrations at the point of combustion enables our engineers to accurately tune the boiler for the most efficient and environmentally compliant operation.

Lifetime Support



