

**How Fast Do You Need It?**



**Are you aware of Storm's Capabilities to Provide Expedited Outage Repairs and Replacement Parts?**

Storm Technologies, Inc. is known for our comprehensive combustion improvement testing programs, training courses, engineering and consulting services. Not only can we provide these services, but we would like to tell you about the additional resource that you have in Storm Technologies' fabrication shop for engineered solutions. We are able to provide our products in an immediate time frame (most projects can start the SAME DAY, depending on material, complexity, etc.). This includes in-kind replacement, duct work, some dampers and many other engineered solutions for improved performance, unit reliability and heat rate.



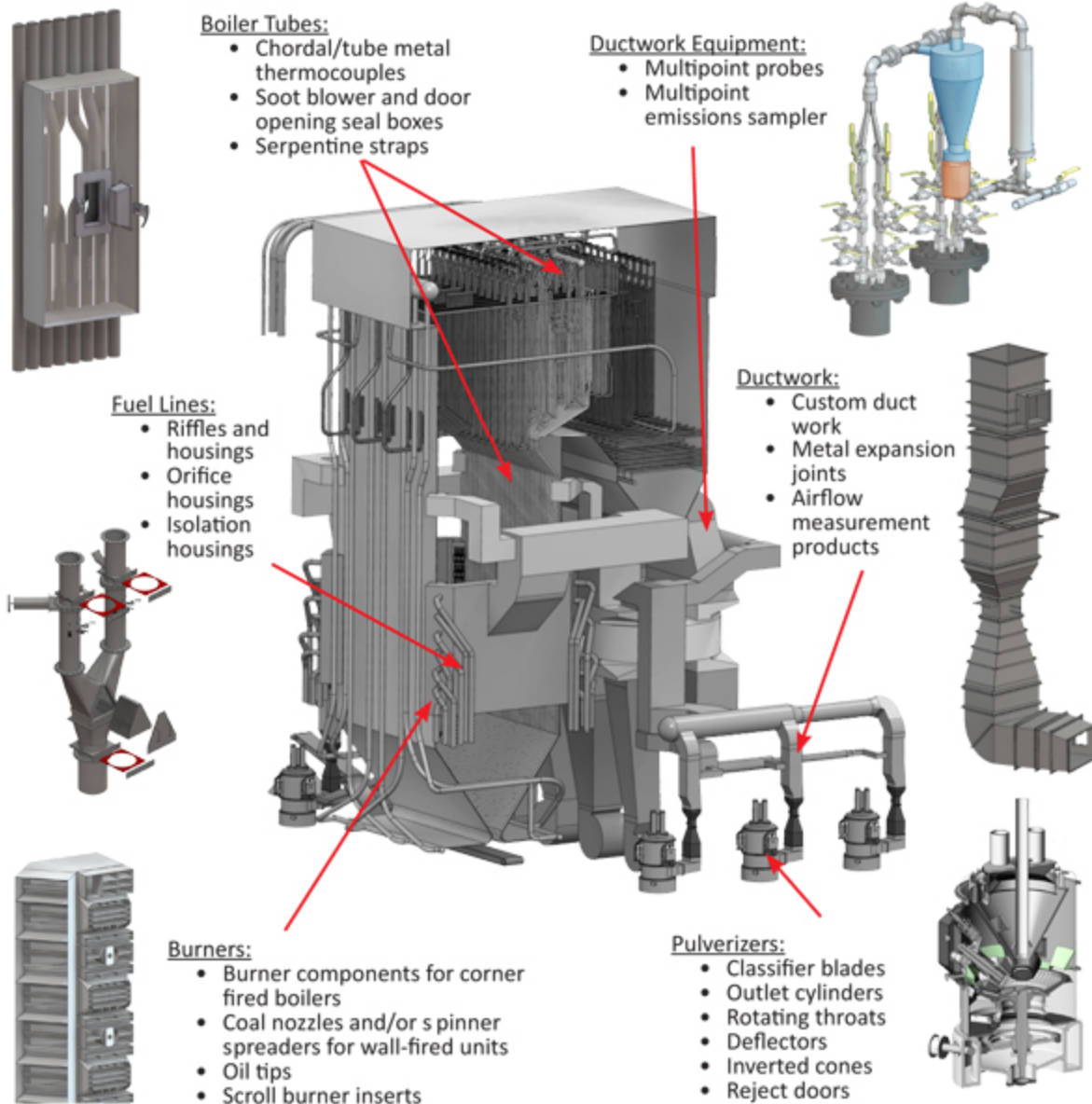
Expedited Requests: Danny Storm  
Cell: (704) 438-1956



**What STORM can provide:**

- Replacement Parts
  - Worn raffles (replaced with more durable raffles and improved material)
  - Damaged burners (coal nozzles, spinners, buckets, etc.)
  - Superheater alignment bars (stainless straps, etc.)
- Scroll burner inserts for scroll inlets (see review below)
- Duct work and some smaller metal expansion joints and dampers
- We can provide a technician to come to your plant and review components
- Parts can be picked up, repaired and delivered as needed to meet plant schedule

## Fall outages are upon us and we would appreciate the opportunity to help.



### Does your boiler have burner scroll inlets with any of the following?

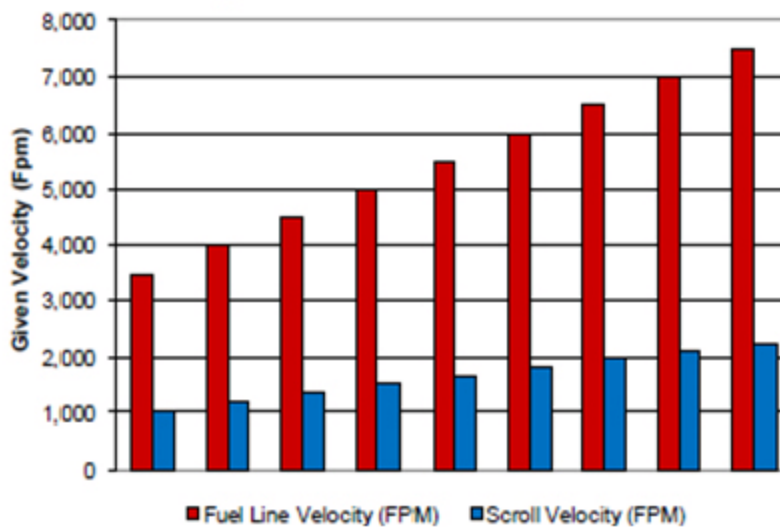
- Burner "coking" or plugging
- Fuel line and coal nozzle wear
- High air/fuel ratio
- Boiler NO<sub>x</sub>/CO/LOI/slag issues
- High de-superheating spray flows or SH/RH temperatures

### Here is one solution in conjunction with performance testing/tuning

We were requested to provide a solution to address fuel line velocities while operating with a reasonable air fuel ratio on "scroll" inlet type burners. These burners are prone to have coal lay out in the inlet causing plugging and/or possibly burner fires. The situation was reviewed and the customer provided the necessary information and components so that we could provide an expedited solution. We were able to identify their problem through testing efforts and were able to provide an engineered solution to meet the plant outage schedule. Below is an overview of the problem and why Storm scroll burner inserts are beneficial.

The problem with scroll burners is that they generally have low velocities at the inlet, but high velocities at the outlet and the fuel lines. Because of this, it creates a larger area at the rear of the burner which results in the lowest velocities within the scroll inlet of the burners and the following graph shows this.

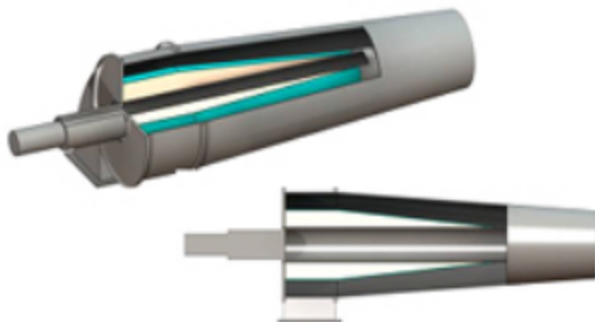
### Typical Fuel Line Vs. Scroll Velocities



Inserts are designed to set the velocities within the burners to maintain coal in suspension throughout the fuel conveying system (fuel lines to furnace). The stainless steel insert shown in teal is welded to the existing inner pipe and back plate. The void between the new insert and inner pipe is filled with a high density/erosion resistant refractory so there are no "dead air" spaces.

Due to the highly abrasive area in which the inserts are to be installed, the high density/erosion resistant material will be in place when the stainless steel erodes.

If you send the burner inner pipes along with igniter back plates and outer section to our shop, we will return them as a finished assembly ready to be reinstalled.



#### Summary of benefits - Scroll inserts:

- Allow for the proper air-fuel ratio to be maintained and controlled
- Maintain burner line and adequate scroll velocities
- Minimize coking of the nozzle at the scroll inlet
- Prevent coal layout in the scroll inlet.
- Reduce velocities and wear on the fuel lines
- Improve mixing with the burners and secondary air for improved combustion and emission control

Just as with this "engineered solution," STORM can help meet your needs and then provide testing and tuning services to get RESULTS.

### Why you should choose STORM:

- Value
- Timeliness
- Expedited freight (pickup and delivery) arranged
- Highest Quality with Quickest Turn-Around
- Reasonable Fair Costs
- We value our name and reputation, WE STAND BEHIND OUR WORK!

Here at Storm Technologies, a local company supporting **USA MANUFACTURING**, we have the ability to expedite any need that you may have and pride ourselves on our quick turn-around times and fast response.

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