



SBS Cleaning Device for Uptake



SBS Cleaning Device for Uptake:

In many composite or oil-fired boilers the convection part consists of water tube uptake. These boilers are designed to have a high flue gas velocity through the tube nest in order to keep the tubes clean and efficiency high.

If soot deposits are accumulated on the tube surface, this will result in less convection heat is transferred to the water/steam and decreasing the efficiency of the boiler. Normally this is shown as higher flue gas temperature and increasing pressure loss over the boiler.

Flame failure can occur because of back pressure from furnace room depending on the amount of flow which can pass inside the tubes.

It is impossible to give an exact interval for when the tube nest should be cleaned as this depends on various factors such as oil quality, burner adjustments and operation load of the boiler.

A visual inspection frequently inside the boiler is a good and most reliable method to check if cleaning of tube nest is necessary.

It is always easier to maintain than to clean when the tubes are already blocked. Other methods to check if cleaning is needed:

Flue gas temperature has increased compared to normal flue gas temperature of the boiler. Total pressure loss of boiler has increased compared to normal pressure loss for a clean boiler. The Hydro cleaning unit from SBS allows for all tubes to be cleaned simultaneously, and keep the furnace room dry during cleaning.

Hydro cleaning procedure:

Hydro cleaning of the tube nest is an effective method for removal coating and soot deposits. The effective cleaning result is by combining the soaking of tube nest with compressed air in the washing water.

Depending of the amount/degree of soot or deposits it may be necessary to add chemicals to the washing water.

The Hydro cleaning unit from SBS is easy to operate.

Clean lower side of uptake / furnace tube plate.

Set the cleaning device in bottom of the tube nest and tighten firmly the support beam between furnace bottom refractory and cleaning device.

Fill up the tube nest to top of water tubes with water through the water inlet valve in collector unit or manually from top of boiler.

Open for a steady flow of compressed air through the collector unit to the tube nest through the cleaning device.

1. Shut down the boiler and wait for the boiler to cool down.
2. Remove inspection hatch in uptake box.
3. Remove the burner unit for access to the furnace room.
4. Clean the inside bottom tube nest and furnace top plate for soot and scales by grinding machine.
5. Install the cleaning device at the bottom of the tube nest by tightening the support beam included in our supply for the gasket to expand and create a water tight sealant on the furnace top plate.
6. Connect the cleaning device to the collector unit through 1" hoses.

Important: Hoses must always be long enough so the manifold will be operated from outside boiler due to safety reason.

7. Fill the tube nest with washing water through the water inlet valve on the collector unit or from uptake top.

When tube nest is filled with water to top of water tubes, close the water inlet valve. (Washing water may have to be replenished as necessary during the cleaning).

8. Depending on the amount of soot deposit and hardness it may be necessary to add 10-15% soda or chemical alike into the water.
9. Open for a steady flow of compressed air (1-2 bar) through the air inlet valve on the collector unit.
10. Depending on the amount of soot deposit and hardness the tube nest has to soak often for a period of min 8-10 hours.
11. After completed cleaning procedure water from tube nest is to be drained through the 1" hose to the drain outlet valve on the collector unit to a tank or bucket.

The collector unit can be dismantled and the tube nest drained direct to a tank or bucket if necessary.

12. When it has been ensured that the washing water has been completely drained refill the tube nest with fresh water and flush the tube nest again.
13. It must be ensured that any washing water and loosened deposits are removed from the furnace floor before taking the boiler back in operation.
14. Reinstall inspection hatch on uptake box.
15. Swing burner back into position.

Important: If furnace refractory has been soaked in water, the furnace must be heated slowly up in order to evaporate the absorbed water from the refractory.

16. The boiler is now ready for normal operation.

Standard size:

Tube Nest size approx. 550 x 1100 mm or larger.

Air flow min. 1-2 bar

1 set consist:

1pc. Distributor / collector unit with air regulator.

1 Pcs support beam, adjustable.

2 pc. 1" 3 m spiral hoses.

1 pc. Cleaning device for tube nest. (can be supplied foldable for access through burner throat)

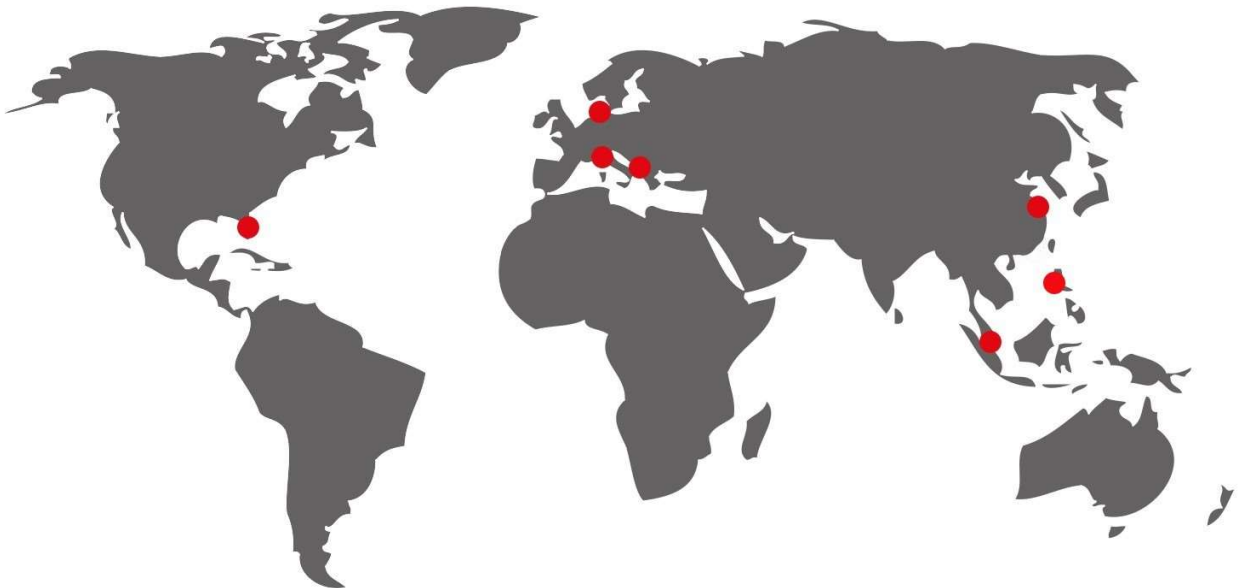
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