

### General application instructions for SOOTBREAKER boiler cleaning powder

SOOTBREAKER is a free-flowing powder, designed to clean the fire-side of boilers and air heaters whilst in use.

SOOTBREAKER is available in two standard packs:

1. Cartons of 50 x 350 gm SOOTBREAKER tubes for smaller boilers, or those where access is difficult. They are usually introduced to the combustion chamber through an inspection hole, view hole, or entry port.

SOOTBREAKER tubes are thrown, complete and unopened, into the combustion zone through the fire door, entry port, or other convenient access point.

2. Bulk drums containing 25 kg SOOTBREAKER for users with large individual plant or multiple smaller units.

Electrical and air operated powder blowers are available for injection from bulk drums.

The method of introduction of SOOTBREAKER varies with the type of boiler and access to the combustion chamber, and this will decide the type of pack chosen.

#### Treatment procedure:

The most important requirement is that the combustion zone temperature is at least 350°C, or that the heat transfer surface is at least 350°C. SOOTBREAKER is introduced into the combustion chamber while the boiler or heater is in operation, once the boiler is up to working temperature. A rule of thumb guide is to ensure that the boiler has been functioning continuously for a minimum of one hour before

application of SOOTBREAKER..

#### Application instructions for specific heating plant and fuels

##### Air heaters

Fire the heater for at least 15 minutes to ensure heat transfer surfaces are up to temperature. Slide SOOTBREAKER tubes into the combustion chamber through the flame inspection port, or through the sight glass aperture. If this is carried out whilst the heater is actually firing, *do not stand directly in line with the inspection port*. If in doubt, turn off burner, apply SOOTBREAKER tubes through the port, close door / flap, and re-fire heater immediately.

##### Sectional boilers

Some older sectional boilers have access directly into the combustion chamber, and SOOTBREAKER may be applied through the access door into the combustion chamber whilst the boiler is firing. Tubes should be thrown two thirds of the way along the chamber. It is not necessary to open the pack, as packaging is completely combustible. If the only access to the combustion chamber is via an inspection port, then the sight glass should be swung out of the way, or unscrewed, and SOOTBREAKER tubes slid into the boiler through the inspection port. Ensure that the pack travels far enough into the boiler to be in the flame zone.

##### "Package" boilers / fire tube boilers

###### 1. Oil-fired boilers:

Bring the boiler up to temperature, and switch burner off in order to access the interior of the boiler. Rotary cup burners may be swung back, allowing SOOTBREAKER

tubes to be thrown into the boiler, approximately two thirds of the way along the combustion chamber. With other boiler/burner combinations, the whole front door, with burner, may be swung open in order to gain access to the combustion chamber. It is important that SOOTBREAKER is applied quickly, and the boiler re-fired immediately, to ensure heat transfer surfaces remain up to temperature. If the only access to the combustion chamber is a flame inspection port, then SOOTBREAKER tubes should be used.

###### 2. Coal-fired boilers:

On coal-fired boilers, the SOOTBREAKER should be applied directly onto the fire bed, utilising any suitable access point. Bulk drums (in conjunction with a suitable blower) can be used.

An alternative, in all boiler applications, is to apply SOOTBREAKER by electric or air powered blower, direct from bulk drums, into the boiler. The boiler must be up to temperature before application.

#### **IMPORTANT: When using a blower to introduce SOOTBREAKER into a boiler:-**

1. Do not place the injector tube too far into the boiler. It may become red hot, and ignite the powder in the tube.
2. Remove the suction tube from the SOOTBREAKER bulk drum 15 seconds before removing the injector tube from the boiler aperture. This ensures that there is no residual powder within the blower/ injector tube. Wait for the fan of an electric blower

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to stop rotating before removing the injector tube from the boiler aperture.

**IT IS IMPORTANT TO ENSURE CONSTANT FIRING OF THE BOILER FOR A MINIMUM OF ONE HOUR AFTER APPLICATION OF THE SOOTBREAKER POWDER.**

**The effects of using SOOTBREAKER**  
Upon re-firing the boiler after application of SOOTBREAKER, a white vapour will be emitted from the stack for 2 to 5 minutes. The vapour is harmless and indicates

that the SOOTBREAKER is working correctly. After the application of SOOTBREAKER, cleaning of the boiler will be much easier, and hard scale deposits will have been broken down. It is recommended that the boiler is then brushed or vacuumed through in order to remove loose scale.

SOOTBREAKER should be used regularly, on a fortnightly basis, for the best effect. This will maintain heat transfer surfaces in a clean condition, ensuring that fuel consumption is kept to a minimum.

**FINALLY:** Remember that SOOTBREAKER is flammable, and also contains oxidising agents. It will not combust below 240°C, but always keep the product away from heat and flames, and always keep the lid on any product not actually in use.

**Sootbreaker dosage rates:**

Boilers operate under many variable conditions, and therefore the optimum dosage rates can best be determined by actual experience. However, the following table gives a good guide to quantities required.

Boiler rating / output		kg. of SOOTBREAKER required for regular 14 day dosage				
kg. steam per hour	K.cal	Heavy fuel oil	Medium fuel oil	Light fuel oil	Gas oil	Solid fuel
Up to:	Up to:					
225	125,000	-	-	-	0.3	0.3
450	250,000	-	-	-	0.5	0.5
700	375,000	1.5	1.0	1.0	0.75	1.0
1,400	750,000	3.0	2.0	1.5	1.0	2.0
2,750	1,500,000	3.5	3.0	2.5	1.5	3.0
3,650	2,000,000	5.0	4.5	4.0	2.0	4.5
5,500	3,000,000	6.0	5.0	4.5	-	5.0
7,000	4,000,000	6.5	6.0	5.5	-	6.0

**Notes:-**

1. The above dosage rates are for regular fortnightly treatment. An initial purge dosage of up to four times the above quantity may be indicated for boilers which already have a deposit build-up.
2. As a guide to the variation of treatment with boiler output, allow 100gm SOOTBREAKER per tonne of fuel burnt.
3. After the second treatment, any large accumulations of loosened deposits should be vacuumed out of the boiler, to allow further treatments of SOOTBREAKER access to any remaining hard scale.

**All information and instructions for the use of SOOTBREAKER are given in good faith: conditions of actual usage are beyond the control of the Company and therefore no warranty is given or implied and all normal precautions must be taken in use. In the event of any doubt, the written recommendations of the Company should be obtained.**