

USER SONIC CLEANING SYSTEM

TECHNICAL SPECIFICATIONS OF THE PRODUCT



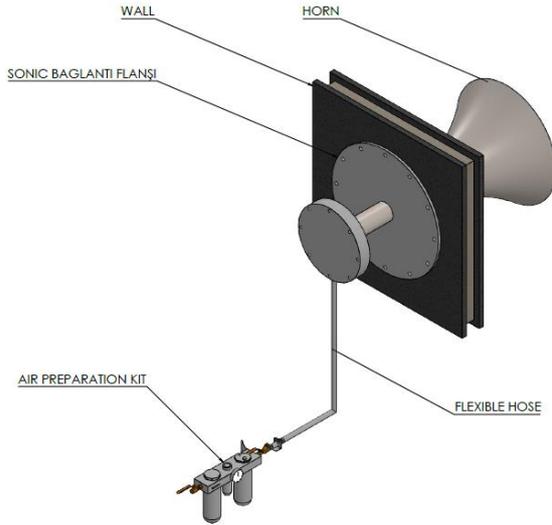
Sound Pressure Level (1m):	150 – 153 dB
Feeding pressure during signal:	0,4 – 0,6 MPa (4 – 6 bar)
Air consumption during signal:	70 – 75 l/s
Air consumption for cooling:	0,25 – 2,5 l/s
Max. Temperature (Horn):	1000 °C (1832 °F)
Diaphragm housing:	500 °C (932 °F)
Solenoid valve:	80 °C (176 °F)
Air connection:	Pipe thread 1"
Air supply piping:	DN25 and max 6m (20ft) for single sound emitter
Voltage for solenoid valve:	230V AC (on request 115V AC, 24V DC)
Weight:	45 kg (99 lbs)
Structure of the material:	Conical part of the BELL Special high heat resistant cast material Wave Generator Specially machined AIS 304 Diaphragm Very high specification titanium
Accessories and equipment:	Solenoid Valve Self - timer (If only device will br used) Automatic timing system Mounting flange Connection apparatus Pressure gauge / Regulator

WHAT IS SONIC CLEANER ?

Its basic principle is to create a sound wave above the force that causes it to connect to each other and to the surface. Thus, particles are separated from the bonds they have formed before they form a hard layer. The formation of heap is prevented.

The acoustic cleaner device works with compressed air. This pressure causes the acoustic cleaner to produce serial, rapid and powerful sound. Pressure waves created by sound affect solid particles and destroyed them.

Acoustic cleaners, known as sonic horns, have a wave generator, a resonant section (amplifier). The wave generator produces audiosonic sound. But another model of ours produces an inaudible base sound "infrasonic" at a lower frequency. Afterwards, the produced base is amplified and tuned with the audio amplifier. The resonating part with horn structure manages the sound in a way that will create the maximum effect. "Audiosonic" generated sound waves are sent to the amplifier section. In this part, the size of which is determined by careful calculations to create different frequencies, the sound is amplified.



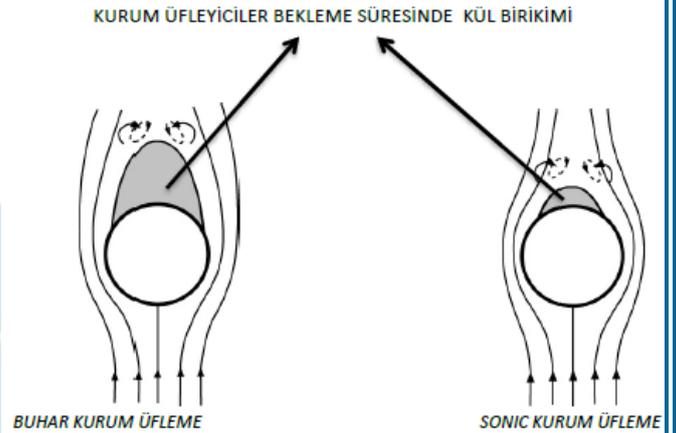
ADVANTAGES OF USER SONIC CLEANING SYSTEM

- Surfaces that continuously provide heat transfer by reducing fuel consumption by approximately 2%.
- The decrease in the frequency of system shutdown and its benefits to the system;
 - Less need for manual cleaning
 - The number of days used to start the boiler is reduced.
 - The reduction of wear in the boiler structure.
 - More efficient heat and power generation.
- Reduced mechanical and corrosive effects due to 20% increase in pipe life.
- Less energy consumption
- Less maintenance cost
- Also, as high pressure steam from the system is not drawn for steam soot blowers, a 5 - 10% more increase in the production power of the plant occurs.

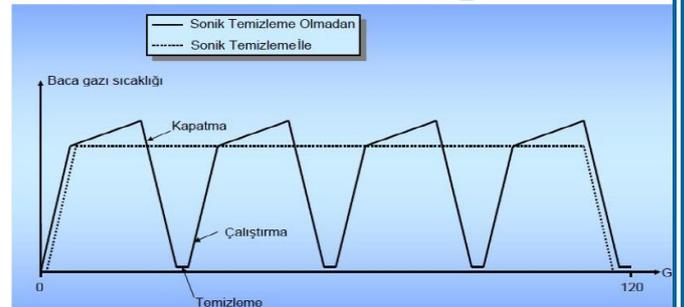
COMPARISON BETWEEN SONIC EFFECT AND STEAM SOOT BLOWERS

Steam soot blowers are generally commissioned during shift changes or at time intervals determined according to special conditions. However, the commissioning phase

usually involves long wait times. The ash accumulated during these waiting times adheres to the surface due to the heat and forms a layer. In addition, it cannot provide the effect it creates in the deeper regions. The effect is not equal at all points. In addition, since dry steam is required during operation, steam soot blowers cause energy loss.



The User Sonic Cleaning system is completely different from a steam soot blower. The system only works with 6 bar compressed air. Therefore, it does not cause steam consumption in the system. The effect of sound in the area of installation is examined in detail with the software program. It is planned to keep the sound pressure at 135 dB even at the farthest point. Thus, the effect of the user sonic system is ensured to be equal and effective at all levels.



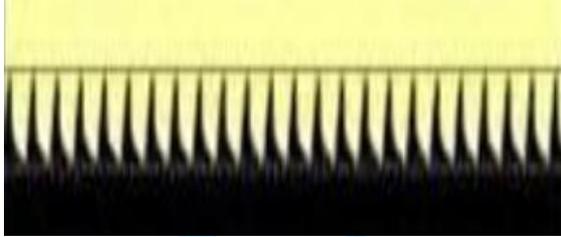
USER SONIC CLEANING SYSTEM CLEANS PERIODICALLY

Our system runs continuously in consecutive short cycles where cycle efficiency is controlled by time setting.

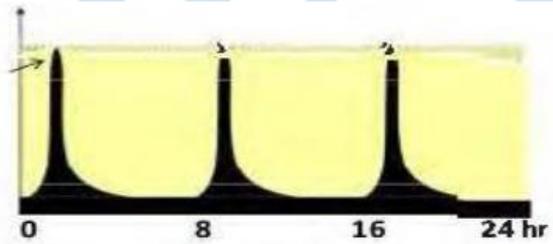
A useful comparison to explain; Imagine cleaning your desk once a year, once a month, or every day !

Of course, daily table cleaning takes much less effort to keep it clean !

Now apply the same principle to your boiler. Clean 90 times a day every 15 minutes instead of 3 times a day !



Cleaning 90 times a day with User Sonic Cleaning system!



Cleaning 3 times a day !

Split accumulation peaks into small parts, easy capture and more efficient dispersal!

User Sonic Cleaning System Installation Regions

- Superheater
- Convection Zone
- Secondary Superheater
- Hopper
- Ekonomizer
- SCR – Selective Catalytic Reactor
- Air – preheater
- Cyclones
- Duct
- Electrostatic Precipitator
- Draft Fan

- Filters
- Silos

User Sonic Cleaning System' in Başarılı olduğu yakıt/toz çeşitlerinden bazıları;

- Oil
- Coal
- Wood
- Peat
- Straw
- Black liquor
- Red liquor
- Waste
- Cement dust
- Sintering dust
- Ore dust
- Vb.



USER ENGINEERING

Turkey Office

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