

# Goodway Buying Guide

## Boiler Cleaners

### BOILER CLEANING 101

HVAC equipment including boilers should never be neglected and must be on a preventative maintenance plan that includes tuning, regular cleaning, and descaling. All boilers have two “sides” that need to be cleaned. One side is the “fireside” that contains the combustion of gas, oil, or other fuel. The second side, the “waterside”, is filled with water that absorbs the heat of combustion before being pumped through the pipes to provide heat or process steam to the building.



### CHEMICAL OR MECHANICAL CLEANING

Mineral deposits or “scaling” can form on the boiler’s waterside inhibiting water flow and heat transfer. Scale is removed through either mechanical or chemical cleaning methods. Mechanical cleaning removes scale with the use of tools like scrapers, brushes, or sand blasters. Chemical scale removal uses acids or other liquid descaler to dissolve the minerals through a chemical reaction between the scale and the liquid. The method used for cleaning, mechanical or chemical, differs depending on the thickness and type of deposits being removed.

The severity of fire tube corrosion and fouling is related to the fuel being burned. Natural gas, propane, and petroleum fuels like gasoline or No. 2 diesel fuel produce a light fouling removed by brushes without the need for heavy scrapers. Boilers burning wood, medical or municipal waste, and heavy petroleum fuels like No. 6 fuel oil often suffer from thick fouling that can only be removed by powerful cleaning system with strong brushes and scraping tools.

Soot and corrosion from combustion can foul the fireside of boilers causing tube wall temperature to get so hot that the tube itself weakens and can rupture. Fireside fouling can be mechanically removed with rods and brushes, compressed air, bead blasting, or more with more advanced technology like motor-driven rotary brush cleaners.



# GOODWAY®

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## BRUSH BASICS

Goodway Technologies offers boiler cleaning systems that can be matched with a selection of brushes and scraping tools to best match the job. It's best to discuss your deposits specifically with a Goodway sales rep to best match the brushes you will need. Goodway's high-quality brushes and scrapers include:

**Nylon brushes** are best for light deposits. **Steel spring brushes** and **brass brushes** provide extra toughness for removing soot deposits in fire tubes boilers. When you need just a little more soot-cleaning power than a brush can provide, the **FTS tube scraper tool** will get the job done. For the largest, heavily fouled fire tubes, nothing comes close to the cleaning strength of **Goodway's rigid arm flare cone** that removes the most caked on fouling from tubes up to 6 1/2" in diameter.

Choosing the correct boiler cleaning system is informed by the type of boiler you have, the severity and type of fouling to be removed, and system features like portability and power.

## BOILER TUBE CLEANERS

### AWT-100

Cleaning water tube boilers is challenging because cleaners must climb into the mud drum to access the tubes. There is usually very little room inside the mud drum for the technician to work much less to bring in heavy and bulky cleaning equipment. To make cleaning water tubes easier, Goodway Technologies developed the **AWT-100 Cleaning System**. Weighing just 29 pounds dry and only 10 3/8" x 6" x 19" in size, technicians can easily bring the tube cleaner in the mud drum to perform the tube cleaning. The AWT-100's air powered motor gives this tiny cleaner a powerful punch to scrape away even the toughest scale and debris in water tube boilers or heat exchangers.



GTC-151



Steel Spring Brush



S4-BRUSH-200



FTS Tube Scraper Tool



AWT-100

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## BOILER TUBE CLEANERS

### AWT-100X

No cleaning system beats the AWT-100X's versatility for cleaning water tube and fire tube boilers or heat exchangers. The unit can be used in wet or dry conditions and the incredible air-powered 4HP motor has the strength to clean any kind of fouling from tubes or pipes ¼" and above. For dry applications, the **GTC-DPA Dry Pickup Attachment** and a simultaneous vacuum are used to remove loosened deposits all in one system. Everything you need for tube cleaning is within easy reach inside the integral tool storage box. Because the AWT-100X is wheel-mounted for maximum portability, when the cleaning is complete just roll it to the next location.

### RAM-4X

Neglected boilers, especially those that burn wood, medical waste, or No. 6 fuel oil need a powerful machine to scrape soot and fouling out of the tubes. The 1HP **RAM-4X** uses a Quick Connect rotary shaft fitted with different sized wire brushes or scrapers to remove years of buildup. When connected with the **GTC-540** industrial vacuum, loosened soot and debris are sucked out of the tube into the vacuum eliminating the incredible mess that usually comes with cleaning soot-filled fire tubes.

### SAM-3

Goodway's original SAM firetube boiler punching machine has stood the test of time and continues to be the workhorse of the tube cleaning industry. Now in its third generation the **SAM-3** is a compact, easy to use straight punch machine best for natural gas and light petroleum fuels.

A trigger-controlled tape with a cleaning tool mounted on the end can extend up to 26 feet through the length of even the longest boiler tubes. The operator pulls the trigger back to return the cleaning tool and moves on to the next tube. Brushes and scrapers can be switched giving users maximum flexibility to clean a wide range of boiler sizes. When you connect a **GTC-540 Soot-Vac Vacuum** to the SAM-3, loosened deposits are simultaneously drawn out of the tube as the tube is cleaned.



AWT-100X



GTC-DPA Dry Pickup Attachment



GTC-540-20SS



RAM-4X



SAM-3

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## BOILER TUBE CLEANERS

### SAM-JR

Designed for maximum portability, the **SAM-JR** is a light, easy to carry, straight punch firetube boiler cleaner used by service companies to clean multiple boilers a day. At only 20 pounds, almost half the weight of the SAM-3, but still packing a 0.6HP motor, the machine is ideal for punching smaller natural gas boilers with medium to light fouling. Its "dial in" tube length indicator lets you set the tube length and clean the tubes without fear of overextending the tape. When connected to the new **SootVac®-JR** industrial vacuum cleaner, the loose soot and debris are pulled out of the tube as the brush scrapes the tube walls so there is no mess during the cleaning.

The waterside of a boiler is also at risk of fouling because minerals in the water collect on the internal surfaces during operation. All of **Goodway's descaling systems** are simple to use and require very little work on the part of maintenance staff. The technician simply fills the machine's hopper with the descaling chemical, connects the hoses to the boiler or heat exchanger, and turns on the cleaning unit. Mineral solids dissolve as the descaling chemical passes across the hardened scale.

## SCALE REMOVAL SYSTEMS

### GDS-100

This unit combines size, pumping power, and portability in one mobile Clean In Place (CIP) system. The **GDS-100** has a heavy-duty industrial design with a 50 gallon vented tank for big descaling projects. The 1HP pump motor provides 51 feet of head and the 25 foot hoses move 96 gallons per minute of descaler through even the dirtiest and most restricted boilers and heat exchangers. Once the system is running, technicians need only to monitor the cleaning and occasionally check pH levels to detect when scale removal has finished.



SAM-JR



SootVac®-JR



GDS-100

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## SCALE REMOVAL SYSTEMS

### GDS-15-PH

For maintenance staff who truly need a “set it and forget it” descaling system, there is no better machine than the **GDS-15-PH**. Similar to the **GDS-100**, but with fully autonomous operation. Once the GDS-15-PH is connected to the boiler or heat exchanger, the machine automatically mixes descaling chemicals and water and begins the circulation process. There is no need to check the pH of the return water mixture; the onboard computer monitors pH levels and turns the pump off when the pH reaches neutral. The wastewater can be safely poured down the drain after descaling.

### GDS-C40

For service companies that need a portable descaling system for small commercial and residential boilers, water heaters, and condensing heaters the **GDS-C40** is the unit of choice. At only 37 pounds dry, the GDS-C40 is light and easy to move from location to location. The most exciting feature in the GDS-C40 is the innovative Flow Reversal Valve. During the descaling process, lime scale dissolves and creates foam and gas, which acts as a barrier to further scale reduction. Using the Flow Reversal Valve allows for the foam and gas to discharge into the tank, eliminating the barrier effect and considerably speeding up the descaling process.

## CHEMICAL DESCALER

### ScaleBreak® Liquid Descaler

The chemicals in your descaling system are important not only to remove all the scale from your boilers and heat exchangers, but the chemicals should be safe to use, easy to dispose of, and comply with environmental regulations. **ScaleBreak Liquid Descaler** is fortified with powerful low-foaming, wetting, and penetrating agents and superior corrosion inhibitors to cut through years of caked on scale and mineral deposits. Each gallon of ScaleBreak dissolves two pounds of scale from your heating equipment. Knowing descaling is not a one size fits all process, the ScaleBreak family has a variety of formulas including one for stainless steel.

Your boiler must be cleaned and maintained at the end of each heating season to remain reliable and energy efficient. Goodway's complete line of boiler cleaning and descaling products adds life to your boiler and keeps it working effectively for years. For more information on selecting the best boiler cleaner for the job, speak with a Goodway sales person right away.



GDS-15-PH



GDS-C40



ScaleBreak®

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