

# Ream-A-Matic® Firetube Boiler Cleaner

## RAM-4X

The RAM-4X Firetube Boiler Cleaning System incorporates the same operating principles as the RAM-4. The unit is equipped with a full 1 HP or 2 HP drive motor, depending on the model. When used in conjunction with a heavy-duty flexible shaft, this machine has the **turbine action** needed to clean boiler tubes 1" (25.4mm) I.D. and up.



**Ideal for Removing Heavy Scale**



**Three-Year Limited Warranty**

## Specifications

**Flexible Shaft Speed:** 1,725 rpm (can be decreased to 862.5 rpm by changing pulley ratio – request 2:1 ratio drive for greater torque)

### Motor Power:

**RAM-4X:** 1 HP

**RAM-4X2A:** 2 HP

### Input Power:

**RAM-4X:** 13 amps, 115 V, 60 Hz AC

(Optional: 13 amps, 115 V, 50 Hz;

6.5 amps, 230 V, 60 Hz; or

6.5 amps, 230 V, 50 Hz)

**RAM-4X2A:** 11.5 amps, 230 V, 60 Hz AC

(Optional: 11.5 amps, 230 V, 50 Hz)

**Dimensions:** 37" high x 20" wide x 17" deep

### Weight:

**RAM-4X:** 59 lbs net dry

**RAM-4X2A:** 75 lbs net dry

### Spring Filled Brushes



The SFB Series Spring Filled Brushes are used for removing heavy scale deposits. The spring bristles dig into the scale breaking it free from the tube wall.

**SFB-200** Spring Filled Brushes for tubes 1 $\frac{3}{8}$ ", 1 $\frac{1}{2}$ ", 2", 2 $\frac{1}{2}$ ", or 3" (35mm, 41mm, 51mm, 64mm or 76mm) O.D.

**SFB-300** Spring Filled Brushes for tubes 2" or 3" (51mm or 76mm) I.D.

## Complete Ream-A-Matic® Boiler Cleaning Systems (with Vacuums)



**RAM-4X-20-KIT** Ream-A-Matic Firetube Boiler Cleaner, 1 HP, 115 V, 60 Hz, including mobile dolly, tool storage box, foot switch, dry pickup attachment, 2" x 12' hose, 18" straight bayonet nozzle (specify diameter), 25' (7.6m) GTC-721G Flexible Shaft, spring filled brush, GTC-540 Vacuum including inside filter assembly, 20 gallon stainless steel soot recovery assembly, polyethylene tank liner, disposable polyethylene collection bag and dolly

**RAM-4X2A-20-KIT** Same as RAM-4X-20-KIT except 2 HP, 230 V



**RAM-4X-15-KIT** Ream-A-Matic Firetube Boiler Cleaner, 1 HP, 115 V, 60 Hz, including mobile dolly, tool storage box, foot switch, dry pickup attachment, 2" x 12' hose, 18" straight bayonet nozzle (specify diameter), 25' (7.6m) GTC-721G Flexible Shaft, spring filled brush, GTC-540 Vacuum including inside filter assembly, and 15 gallon stainless steel tank with handle and casters

**RAM-4X2A-15-KIT** Same as RAM-4X-15-KIT except 2 HP, 230 V



**RAM-4X-30-KIT** Ream-A-Matic Firetube Boiler Cleaner, 1 HP, 115 V, 60 Hz, including mobile dolly, tool storage box, foot switch, dry pickup attachment, 2" x 12' hose, 18" straight bayonet nozzle (specify diameter), 25' (7.6m) GTC-721G Flexible Shaft, spring filled brush, GTC-540 Vacuum including inside filter assembly, 18"-20" diameter drum adapter ring, 30 gallon (114 liter) bonderized steel drum, dolly with handle and tool storage box

**RAM-4X2A-30-KIT** Same as RAM-4X-30-KIT except 2 HP, 230 V



**RAM-4X-55-KIT** Same as RAM-4X-30-KIT except with 22"-24" diameter drum adapter ring and 55 gallon bonderized steel drum

**RAM-4X2A-55-KIT** Same as RAM-4X-55-KIT except 2 HP, 230 V

Note: Complete Ream-A-Matic Systems also available in 50 Hz. Call for specifications and prices.

Note: See pages 22-23 for high temperature and longer shafts, and pages 24-27 and 31-34 for additional accessories.

Note: See Tube Sizes Chart on page 39 for nozzle and brush sizes.

Note: See page 38 for GTC-540 Vacuum specifications.

# Soot-A-Matic® Firetube Boiler Cleaner

## SAM-3

A cornerstone of Goodway, the Soot-A-Matic was first introduced over 35 years ago. Now in its **third generation** as the SAM-3, it is the world's most popular system for cleaning firetube boilers. The unit is compact, portable and easy to use. One operator can thoroughly clean a boiler in a fraction of the time required by other cleaning methods – all by flipping a switch. Interchangeable bayonet nozzles and cleaning tools are available to fit tubes 1 3/8"-4" (35-102mm) O.D.



**Three-Year  
Limited Warranty**

Hose to  
Vacuum ↓



### How It Works

The SAM-3 uses a cleaning tool mounted to the tip of a 26' spring steel tape. A switch controls the tape feed. The operator inserts the nozzle into the boiler tube and pushes the switch forward. The cleaning tool travels the full distance of the tube at more than 3' per second, loosening soot and scale. The operator pulls the switch back for cleaning tool return and moves to the next tube. A GTC-540 Soot-Vac® vacuum, connected to the tube through the SAM-3, simultaneously removes loosened deposits.

### Features – Benefits

- Simple to operate – Minimal training required**
- Spring steel tape – Long life**
- Interchangeable cleaning tools – Versatile**
- Carrying handle and stand – Easy transport**
- Simultaneous vacuum – Removes deposits**
- Trigger switch and brush travel indicator – Better brush control**

### Specifications

- Motor Power:** 1/2 HP
- Input Power:** 7 amps, 115 V, 50/60 Hz AC  
(Optional: 3.5 amps, 230 V, 50/60 Hz)
- Tape Length:** 26'
- Vacuum Hose:** 2" diameter x 12' long
- Dimensions:** 21 1/2" long (without nozzle)
- Weight:** 38 lbs
- Optional Carrying Case:** 24" high x 28" wide x 9" deep

**Note:** All motors on Soot-A-Matic Punching Machines will operate on 50 Hz or 60 Hz – universal motors.

### Saves Money

No matter what type of fuel is used, soot will quickly accumulate in boiler firetubes. As much as 1/8" of soot can build up in only two weeks. This buildup reduces boiler efficiency and wastes dollars.

Soot has five times the insulating value of asbestos. The heat transfer loss in a dirty boiler rises tremendously as the layer of soot builds up. Boiler efficiency can be monitored through stack temperature readings. For every 40°F rise in stack temperature, fuel consumption increases by 1%. An increase in stack temperature is an indication of dirty tubes and a signal to clean the boiler tubes with a SAM-3.

### How Deposits In Tubes Affect Heat Transfer

Soot in Boiler Tubes	Heat Loss	Increased Fuel Consumption
1/32"	12%	2 1/2%
1/16"	24%	4 1/2%
1/8"	47%	8 1/2%



**Ideal for Removing Soot and Light Scale**

**For Sales Call: +1-203-359-4708  
Fax: +1-203-359-9601**

# Soot-A-Matic® Firetube Boiler Cleaner

# BOILER MAINTENANCE

## GTC-540-20SS

The GTC-540-20SS is uniquely engineered for the collection of soot. Its **high CFM** rating allows for the speedy recovery of light powdery materials without the typical filter clogging. In addition, the soot is neatly collected into a convenient 20 gallon disposable polyethylene bag. This package provides a clean solution to a dirty problem.

## Specifications

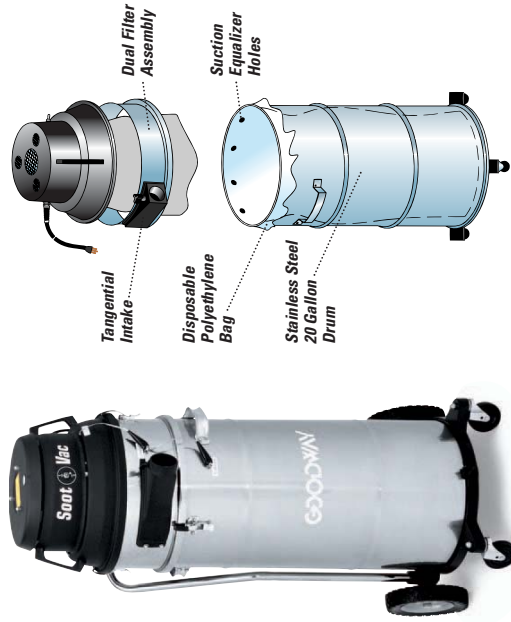
**Motor Power:** 2 1/4 HP  
**Input Power:** 14 amps, 115 V, 50/60 Hz AC  
**Optional:** 7.5 amps, 230 V, 50/60 Hz  
**Power Supply Cord:** 37', 14-3  
**Static Water Lift:** 50"  
**Air Displacement:** 270 CFM  
**Weight of Vacuum Head:** 23 lbs

## Stack Efficiency Tester

The SET-200 Stack Efficiency Tester measures O<sub>2</sub> and CO content, and stack temperature, then calculates O<sub>2</sub>, excess air and combustion efficiency. It features automatic calibration to assure accuracy and gives a real time display of measurements and calculations to see the effects of boiler adjustments as they are made. An optional printer allows you to keep a hard copy record of test results.



Note: See page 50 for specifications and prices.



**GTC-540-20SS** Heavy-Duty Soot/Powder Recovery Vacuum including filters, tangential intake port, 20 gallon stainless steel soot/powder recovery assembly, polyethylene tank liner, disposable polyethylene collection bag and dolly

**GTC-540-15SS** Heavy-Duty Soot/Powder Recovery Vacuum including filters, and 15 gallon stainless steel tank with handle and casters

**GTC-540-30\*** Heavy-Duty Soot/Powder Recovery Vacuum including filters and 18" 20" diameter drum adapter ring

**GTC-540-55\*** Heavy-Duty Soot/Powder Recovery Vacuum including filters and 22"-24" diameter drum adapter ring  
 \*Note: Fits any standard drum - 30 or 55 gallon depending on model.

## Drum Liner and Bags:

**PDL-30** High Density Polyethylene Liner for 20 or 30 gallon drum

**POLY-20-25** Disposable Polyethylene Bag (package of 25) for 20 gallon drum

**POLY-30-25** Disposable Polyethylene Bag (package of 25) for 30 gallon drum

## Complete Soot-A-Matic Boiler Cleaning Systems (with Vacuums)

**SAM-3-20-KIT** Soot-A-Matic Boiler Tube Punching Machine, 1/2 HP, 115 V, including a 2" x 12" hose, 18" straight bayonet nozzle (specify diameter), brush, GTC-540 Vacuum including inside filter assembly, 20 gallon stainless steel soot recovery assembly, polyethylene tank liner, disposable polyethylene collection bag and dolly

**SAM-3-15-KIT** Soot-A-Matic Boiler Tube Punching Machine, 1/2 HP, 115 V, including a 2" x 12" hose, 18" straight bayonet nozzle (specify diameter), brush, GTC-540 Vacuum including inside filter assembly, and 15 gallon stainless steel tank with handle and casters

**SAM-3-30-KIT** Soot-A-Matic Boiler Tube Punching Machine, 1/2 HP, 115 V, including a 2" x 12" hose, 18" straight bayonet nozzle (specify diameter), brush, GTC-540 Vacuum including inside filter assembly, 18" 20" diameter drum adapter ring, 30 gallon bonded steel drum, dolly with handle and tool storage box

**SAM-3-55-KIT** Same as SAM-3-30-KIT except with 22"-24" diameter drum adapter ring and 55 gallon bonded steel drum

## Optional:

**SC-682** Carrying Case for SAM-3 Boiler Tube Punching Machine and accessories

Note: See Tube Sizes Chart on page 59 for nozzle and brush sizes.



## Steel Brushes and Scraper Tools

### Steel Brushes

Steel brushes are recommended for removing soot and light scale deposits. **GTC-151** Steel Brushes for tubes 1 3/8", 1 1/2", 2", 2 1/2", 3", 3 1/2", or 4" (35mm, 41mm, 51mm, 64mm, 76mm, 89mm or 102mm) O.D.

### FTS Scraper Tools

FTS Scraper Tools are medium action, spring loaded tools. They are used for removing light scale deposits in boiler firetubes when steel brushes do not remove all deposits. Ferrule extension required.

**FTS-200** Scraper Tool for tubes 2" (51mm) O.D.

**FTS-250** Scraper Tool for tubes 2 1/2" (64mm) O.D.

**FTS-300** Scraper Tool for tubes 3" (76mm) O.D.

### JTS Scraper Tools

JTS Scraper Tools consist of 48 scraping edges. These edges contact every portion of the tube wall with an aggressive scraping action. These tools should be allowed to pass completely through the tube before reversing direction. Ferrule extension required.

**JTS-200** Scraper Tool for tubes 2" (51mm) O.D.

**JTS-250** Scraper Tool for tubes 2 1/2" (64mm) O.D.

**JTS-300** Scraper Tool for tubes 3" (76mm) O.D.

**JTS-350** Scraper Tool for tubes 3 1/2" (89mm) O.D.

**JTS-400** Scraper Tool for tubes 4" (102mm) O.D.

### Ferrule Extensions

Scraper tools require ferrule extensions. Select the ferrule extension to match the bayonet nozzle in use.

**FE-375** Ferrule Extension for scraper tools when using BFN-152 or BFN-152A Short Bayonet Nozzles

**FE-2100** Ferrule Extension for scraper tools when using BFN-152S or BFN-152SA Straight Bayonet Nozzles

Note: Scraper tools cannot be used with BFN-152X or BFN-152XA Offset Bayonet Nozzles.

## Standard Bayonet Nozzles

**BFN-152** Short Bayonet Nozzle 3 1/2" long for tubes 1 3/8", 1 1/2", 2", 2 1/2", 3" or 3 1/2" (35mm, 41mm, 51mm, 64mm, 76mm or 89mm) O.D.

**BFN-152S** Straight Bayonet Nozzle 18" long for tubes 1 3/8", 1 1/2", 2", 2 1/2", 3" or 3 1/2" (35mm, 41mm, 51mm, 64mm, 76mm or 89mm) O.D.

**BFN-152SA** Straight Bayonet Nozzle 18" long with ferrule extension for tubes 4" (102mm) O.D.

**BFN-152X** Offset Bayonet Nozzle 18" long for tubes 1 3/8", 1 1/2", 2", 2 1/2", 3" or 3 1/2" (35mm, 41mm, 51mm, 64mm, 76mm or 89mm) O.D.

**BFN-152XA** Offset Bayonet Nozzle 18" long with ferrule extension for tubes 4" (102mm) O.D.

Note: Contact factory if longer Straight or Offset Bayonet Nozzles are needed for your application.

Note: When ordering bayonet nozzles or brushes, specify part number and size according to the table (order by tube O.D.). Bayonet nozzle and brush diameters will fit tube I.D.

## Carrying Case

**SC-682** Carrying Case for SAM-3 Boiler Tube Punching Machine and accessories

## Vacuum Accessories

**VAC-0490D** Steel Crevice Tool with quick connect

**GTC-167** Cleanup Tool with quick connect

**GTC-167R** Replacement Bristle for GTC-167 Cleanup Tool

**GTC-168** Flat Surface Paw Scraper Tool with quick connect

**GTC-170** Replacement Hose 2" x 12' for Soot-A-Matic

**GTC-170SOD** Hose 2" x 12' with sleeve, quick connect and washer

**PDL-30** High Density Polyethylene Liner for 20 or 30 gallon drum

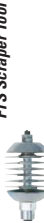
**POLY-20-25** Disposable Polyethylene Bag (package of 25) for 20 gallon drum

**POLY-30-25** Disposable Polyethylene Bag (package of 25) for 30 gallon drum

Tube Sizes	
Standard	Approximate Boiler I.D. Size
1 3/8" (35mm)	1 1/2" (38mm)
1 1/2" (41mm)	1 3/4" (38mm)
2" (51mm)	1 1/2" (44-48mm)
2 1/2" (64mm)	2 1/2" (57-60mm)
3" (76mm)	2 1/2" (70-72mm)
3 1/2" (89mm)	3" (83mm)
4" (102mm)	3 3/4" (95mm)



GTC-151



FTS Scraper Tool



JTS Scraper Tool



BFN-152

BFN-152S

BFN-152X

SC-682

Carrying Case



VAC-0490D

POLY-30-25

PDL-30

GTC-167

GTC-168

GTC-170

GTC-170SOD

For Sales Call: +1-203-359-4708  
 Fax: +1-203-359-9601

[www.goodway.com](http://www.goodway.com)