

SO_2 SO_3 HCl Hg
reduce emissions



solutions for
Air Pollution Control

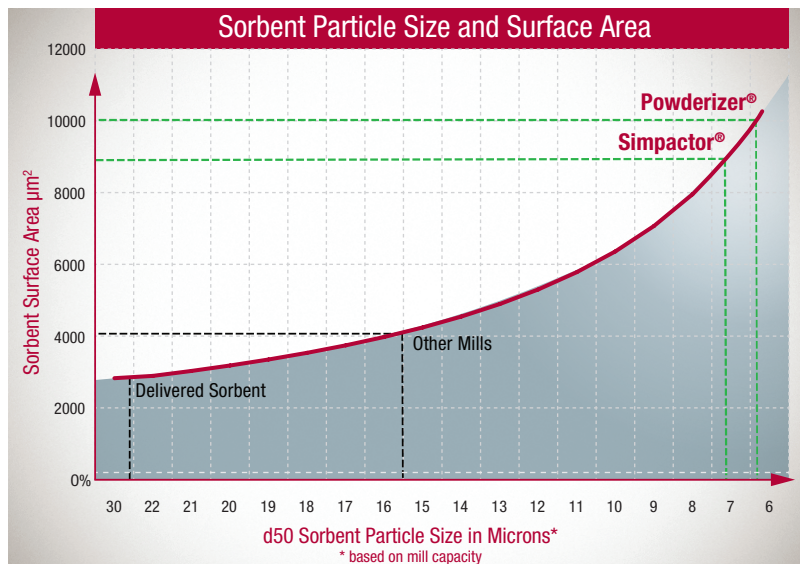
www.sturtevantinc.com

Reduce Emissions with Sturtevant

Many boilers and coal fired power plants are injecting dry sorbents into flue gases to control SO_2 , SO_3 , Hg and HCl emissions. Flue Gas Treatment (FGT) uses a Dry Sorbent Injection system (DSI) with fine Trona (Sodium Sesquicarbonate), Sodium Bicarbonate, Hydrated Lime or Limestone as a sorbent.

Why Particle Size Matters

Reducing particle size increases sorbent surface area and reduces the amount of sorbent required. Dry sorbents are typically delivered to power plants unmilled. Testing has proven that the reactivity of sorbents can increase exponentially when sorbent particle sizes are reduced. The best way to increase surface area is to mechanically reduce the particle size by milling the sorbent.



150% More Surface Area

Advantages:

- Use up to 50% less sorbent
- Increase pollution removal

Why Sturtevant® FGT Series

The Simpactor® and Powderizer® FGT Series effectively reduce sorbent particle size improving the emissions of coal fired power plants, industrial boilers, municipal furnaces and bio-mass plants.

The FGT Series Mills, decrease operating and disposal costs through decreased sorbent usage and provide utilities with an efficient and economical method for emissions control.

Sturtevant FGT Series Mills are specifically designed for the rigors of dry sorbent processing and provide companies with the most reliable and efficient technology to meet their demands.

- Finest cuts, widest PSD range
- Lowest power use
- Highest throughput
- Cooling technology
- Lowest wear rate available
- Advanced cleaning system
- Performs in adverse climates
- Industry's best customer support

DETERMINED
BY
CUSTOMER

The Sturtevant Advantage

Sturtevant offers a global network of sales and service representatives serving customers and installations worldwide. The company delivers the industry's best service, experience and reliability ensuring customer satisfaction and the competitive advantage they demand.

Service

- All operations are under one roof which results in fast, reliable problem solving
- A fully equipped test facility to help customers determine the best way to achieve fine particle sizes and understand grinding characteristics
- A skilled field service team is available for start-up of new equipment and field inspection of existing installations

Experience

- Sturtevant has been perfecting particle size for over 130 years with thousands of installations all over the world
- Sturtevant employees average over 20 years of service
- Customer driven innovation, including more variety and accessories than any other mill manufacturer

Reliability

- Sturtevant is a family run business currently in its fifth generation of family management
- Made in the USA with domestic manufacturing
- Over 60% of our sales are repeat customers



Trona mill system installed at a coal fired power plant.

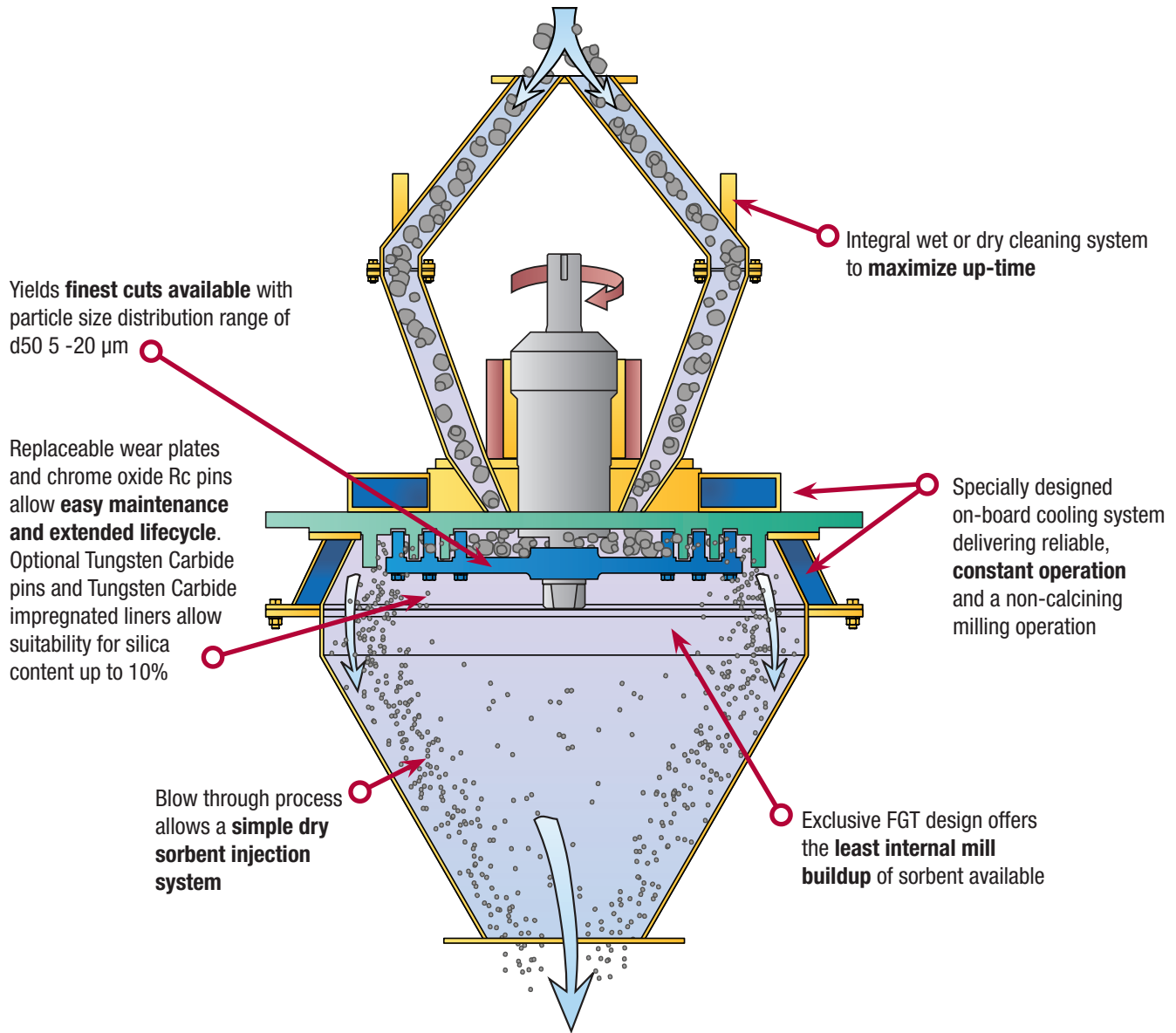


Sturtevant
has more FGT
mills installed
worldwide
than all other
companies
combined.



Benefits:

- Cold start-up and operation in **the most extreme climates**
- Industry's lowest HP use **saving energy and money**



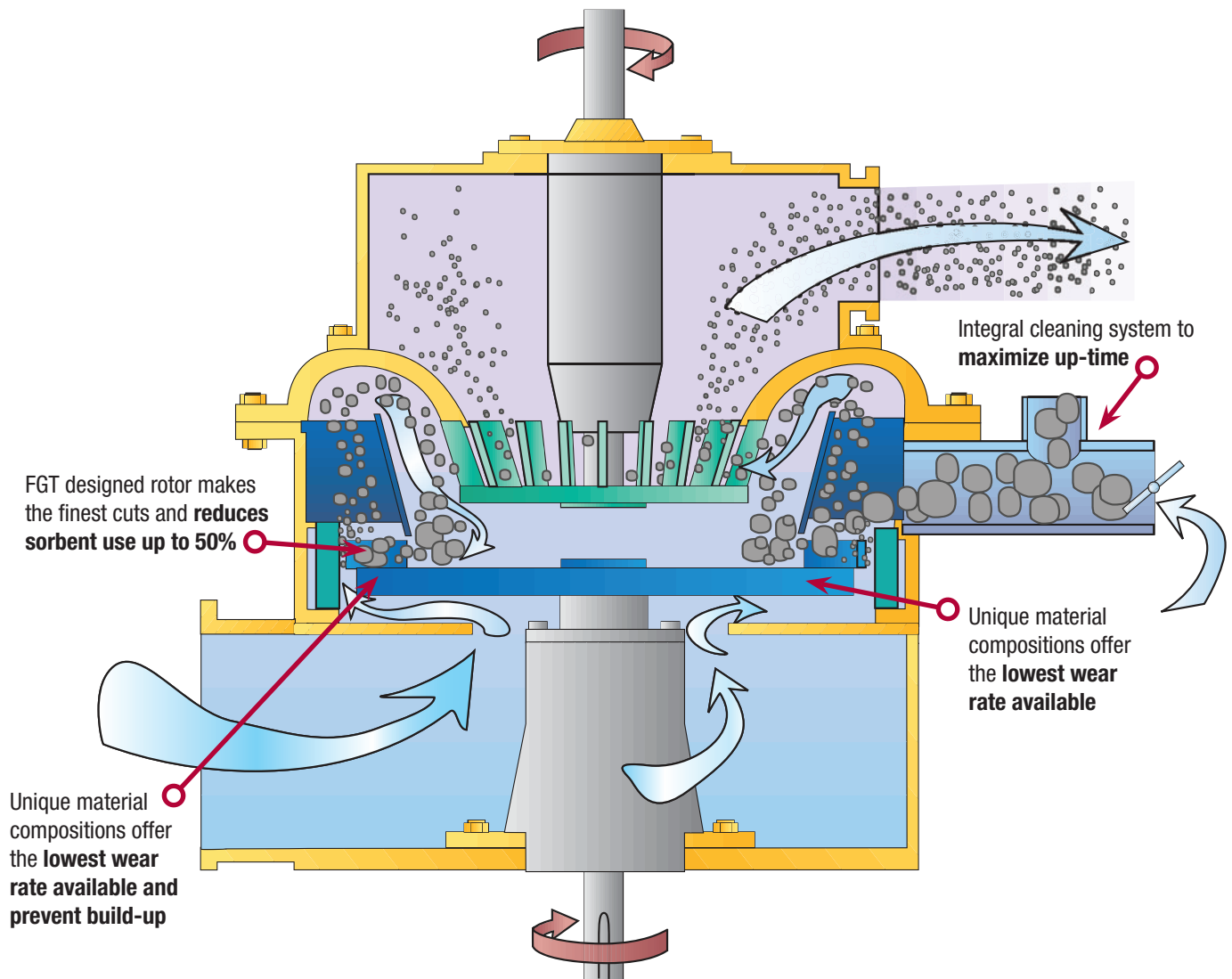
SIMPACTOR®

Model	Motor Power Range (HP)	Trona Capacity at d50= 5 - 10μm (TPH)	Trona Capacity at d50= 10 - 20μm (TPH)	SBC Capacity at d50= 6 - 18μm (TPH)	SBC Capacity at d50= 10 - 28μm (TPH)
3C-18.5-FGT	30 - 40	0.1 - 1.5	1.5 - 2	0.1 - 1	0.1 - 2
6C-30-FGT	75 - 125	2 - 3	3 - 8	2 - 4	3 - 8
9C-40-FGT	200 - 300	6 - 9	9 - 16	5 - 8	8 - 15

Flue Gas Treatment—Powderizer® FGT

- **Finest cuts to reduce sorbent use up to 50%**
- **Specifically designed for Sodium Bicarbonate milling**

Benefits:



Fine Cut for Best Mitigation:

$d_{50} = 5\mu\text{m}$, $d_{90} = 11\text{-}15\mu\text{m}$

Coarse Cut for Reduced Agglomeration: $d_{50} = 7\mu\text{m}$, $d_{90} = 20\mu\text{m}$

POWDERIZER®

Model	Motor Power Range (HP)	CFM	SBC Fine Cut Capacity (TPH)	SBC Coarse Cut Capacity (TPH)
NSP-2-FGT	30	1,200	1	1.5
NSP-2.5-FGT	60 - 100	3,750	3	5
NSP-3-FGT	125 - 150	6,250	4.5	8
NSP-4-FGT	200 - 300	12,000	10	18

Company History

Sturtevant was founded in the state of Maine in 1883 by Thomas L. Sturtevant, who recognized the need to limit human exposure to harmful fumes and acids common to the fertilizer industry. He designed the Mechanical Den and Excavator, a machine which revolutionized the batch processing of super-phosphate.

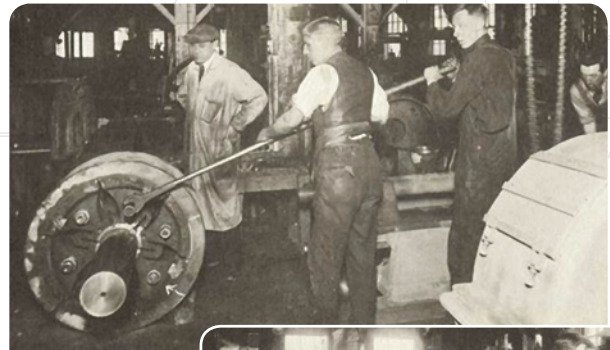
During the late 1800's Laurance H. Sturtevant, a son of the founder, and Thomas J. Sturtevant, T.L.'s nephew, joined the Company. T.J. Sturtevant, an M.I.T. graduate, was an engineer and inventor whose genius, coupled with the design, and application talents of the other Sturtevents, provided the company with its initial thrust.

In the early 1900's, designs were made for crushing, grinding, blending, mixing and related material handling equipment. Venturing into the automotive field in 1904, T.J. designed the first automatic transmission. Other diversifications included a Bale Pulper for the paper industry and stainless steel control valves for industrial purposes.

In 1920, the company took over the Newaygo Screen Company. In redesigning those products, Sturtevant added to its line a vibrating type of screen for the fertilizer industry. During the 1930's, the Sturtevant Air Separator represented a cutting edge technology, developing the predominant method of making cement. In the 1940's, the firm participated in the WWII effort by servicing Navy yards and the chemical industry. The post war era created massive demand for cement in the construction industry, to which Sturtevant responded. In the 1950's, Sturtevant introduced an ultra-fine grinder, the Micronizer®, and developed pulverizers that introduced a new concept of fine grinding by impact.

For decades the Company continued to innovate and advance technology while remaining a family institution. The tradition of family management has continued from its inception to the present and is currently in its fifth generation.

To this day, Sturtevant continues to lead the way in unique applications-based systems to meet the demands of a developing market. The company delivers **Service, Experience and Reliability** that ensure customer satisfaction and the competitive advantage that its customers demand.



The early years of engineering and innovation.



The Sturtevant's designed the first automatic transmission automobile in 1904. US Patent #766551 was the first of several patents on their gearshift mechanism.



Put Sturtevant to the Test

Don't just take our word for it, let us prove how you can decrease your sorbent usage and save money. Customers regularly send in their sorbent and visit Sturtevant to witness milling tests in our laboratory and testing facility.

Sturtevant's fully equipped laboratory and test facility in Hanover, MA can test mill sorbent and analyze the powder size distribution and surface area. Customers will benefit from hands-on experience, equipment operator training and technical presentations. Contact us to arrange a test date and experience our service and reliability.



Laser diffraction analysis

Sturtevant's test facility



Field Services

- Sturtevant's service department is available to assist with the installation and start-up of new equipment.
- Highly qualified engineers can provide a comprehensive field inspection to evaluate your machine's condition and recommend adjustments to keep your machines running in peak performance.
- Sturtevant's service engineers will review and assist with the optimization of your process and maintenance procedures and provide operator training.





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