SEM®

Classified and High Security Data Destruction

A Guide to
Disintegrators

An Overview of the World's Most Efficient Paper Destruction Devices,
from the World's Most Respected End-Of-Life Information Security Brand

Original oil painting depicting North Korean attack by Richard DeRosset commissioned by SEM. North Korean ship and aircraft numbering is exact for the attacking forces.
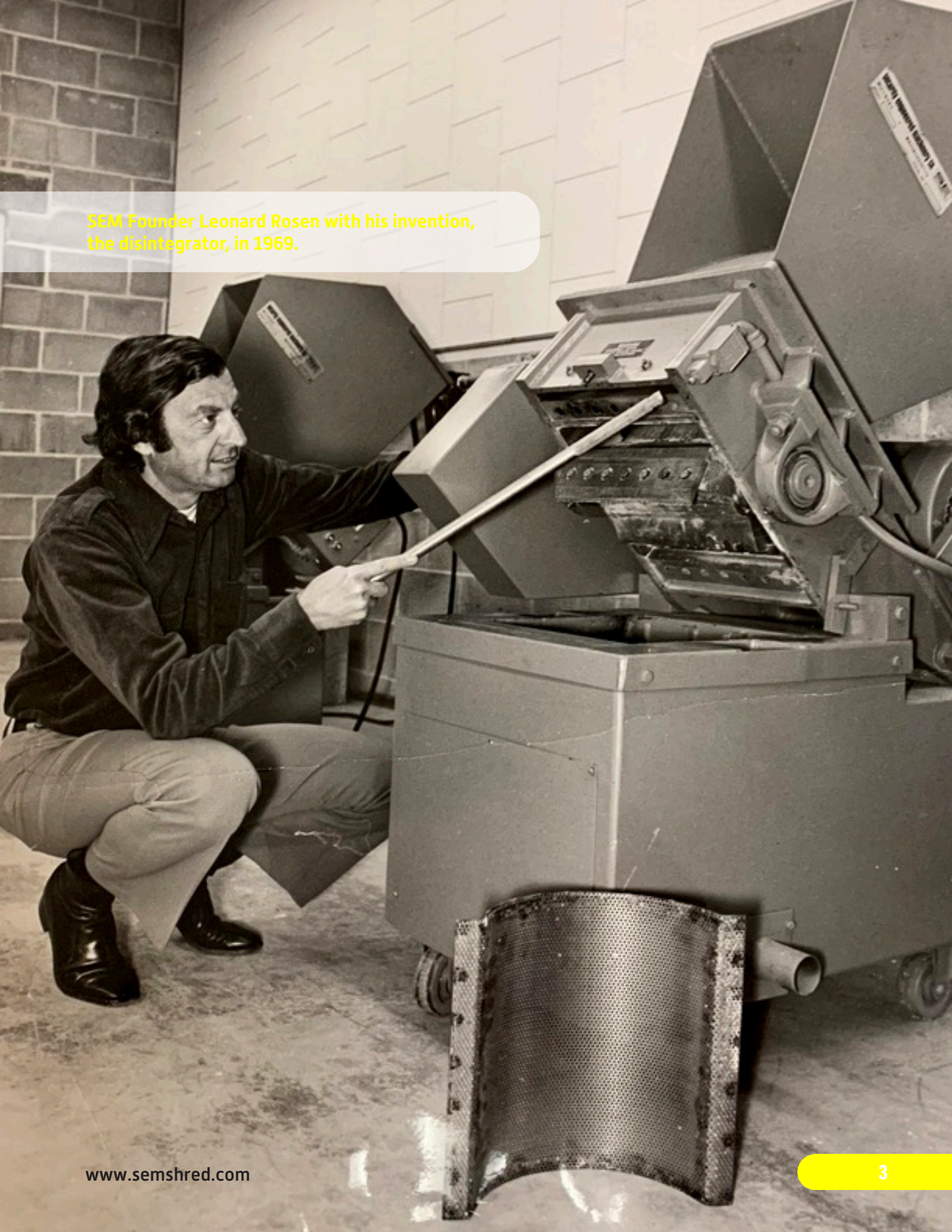
The SEM Story

We invented the disintegrator — and in turn modern information destruction

On January 23, 1968, the USS Pueblo, a Navy intelligence vessel, was engaged in a routine surveillance of the North Korean coast when it was intercepted by North Korean patrol boats. According to U.S. reports, the Pueblo was in international waters almost 16 miles from shore, but the North Koreans turned their guns on the lightly armed vessel and demanded its surrender. The Americans attempted to escape, and the North Koreans opened fire, wounding the commander and two others. With capture inevitable, the Americans stalled for time, destroying the classified information aboard while taking further fire. Unfortunately, the volume of material on board was so great that it was impossible to destroy it all prior to capture. An NSA report quotes Lieutenant Steve Harris, the officer in charge of Pueblo's Naval Security Group Command detachment: "Only a small percentage of the total classified material aboard the ship was destroyed."

Korean War Veteran Leonard Rosen was struck with the idea that there must be a better way to destroy classified information, and he began working to develop a faster, more efficient and secure method. Within weeks he had developed the concept for the world's first paper disintegrator — and SEM was born.

Disintegrator 101

WHAT IS A DISINTEGRATOR?

SEM disintegrators are rotary knife mills at their most basic level. Each SEM disintegrator includes five stationary and two rotating bed knives constructed of solid steel that continuously cut the fed material until it is small enough to pass through a screen. These screens vary in size depending on application, ranging from 1" for basic destruction of unclassified info with no personally identifiable information (PII), down to 3/32" which is the NSA standard for classified, controlled unclassified information (CUI), and PII.

Unlike other disintegrators on the market, SEM disintegrators feature a solid steel rotor with no hollowed out spaces or parts. Solid steel rotors provide superior cutting strength, energy efficiency, and device longevity.

The holes in the screen determine the final particle size. Material passing through the screen will be smaller than the hole diameter. Therefore, a screen hole size of 3/32" yields a particle smaller than 3/32", never larger.

ACCEPTABLE MATERIALS

All SEM disintegrators are **NSA listed for destruction of classified and CUI paper, CDs, and key tape**. However, they are capable of destroying so much more for unclassified and commercial applicatons:

- Cardboard
- DVDs and Blu-ray Discs
- Film and Microfiche
- Thumb Drives and Small e-Media
- Solid State Boards
- ID and Credit Cards

Paper disintegrated to NSA mandated particle using a 3/32" screen for classified and CUI data

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A Material is fed into the feed opening

B Material is cut in the cutting chamber until it is small enough to fit through a screen

C Material drops into the transition once it is smaller than the screen openings

D Air system pulls shredded material from the transition through the waste evacuation system

E Material is deposited into waste bags; dust filtration system ensures a safe, clean working environment

Where to Start

We've Made it Simple: Small, Medium, Large

We have three standard configurations that suit most needs:
- 1012 for lower volumes
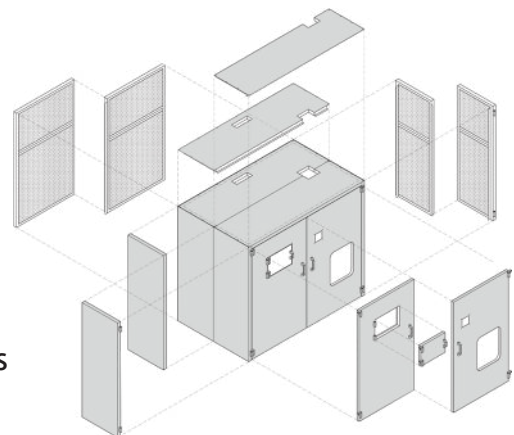- 23/5 for medium volumes
- 3000 for high volumes

What Do Disintegrator Systems Include?

WASTE COLLECTION SYSTEM

SEM waste collection systems go hand in hand with our disintegrators to ensure a smooth and seamless collection of waste after the material has been disintegrated. These systems are made of solid steel and designed with operator ease of use in mind. State-of-the-art filtration mitigates small particles and debris during the destruction process for ultimate environmental and operator protection.

SOUND REDUCTION SYSTEM

The SEM MX-Series provides custom-made modular sound reduction systems for disintegrator solutions that are certified tested STC-rated. Sound reduction systems provide ultimate operator and environmental health and safety by mitigating sound and debris from the destruction process. The modular design also allows ease of access for any future movement, repair, or addition to a destruction system or solution.

MAXIMUM VALUE authentic SEM parts and construction ensure the best disintegrator solution on the market today

SOLID STEEL all blades, enclosures, and parts are constructed of solid steel for increased longevity

USER FRIENDLY premium dust and sound mitigation for operator health, safety, and comfort

Air waste evacuation systems are standard on all SEM disintegrator systems, providing ultimate operator health and safety as well as more convenient, efficient operation

SEM Disintegrators

All Include the Following:

- **NSA listed for paper, CDs, key tape**
- Customized MX sound reduction system to reduce sound and dust during operation
- Dual bag waste evacuation and collection system
- High efficiency filter kit for operator health and safety
- Integrated operator control panel includes visual load meter and timed shutdown
- Solid steel rotor and seven-blade cutting system
- Available turn-key installation

SMALL: 1012/5

- NSA rated at 500 lbs/hr for high security
- Up to 1,100 lbs/hr for unclassified information
- Ideal for smaller rooms and lower volume applications

MEDIUM: 23/5

- NSA rated at 900 lbs/hr for high security
- Up to 1,800 lbs/hr for unclassified information
- Optional conveyor system for ultimate ease of use
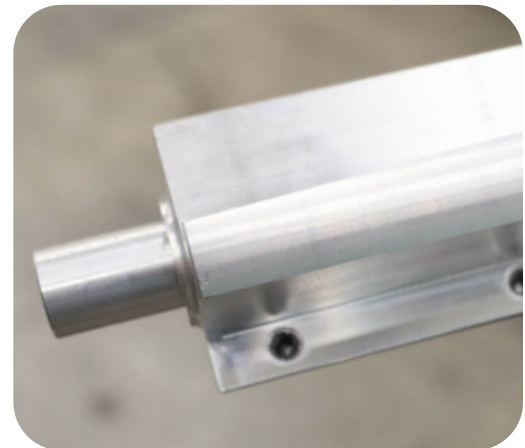- Medium volume solution

LARGE: 3000

- NSA rated at 1,200 lbs/hr for high security
- Up to 2,400 lbs/hr for unclassified information
- Conveyor system for ultimate ease of use
- Pre-shredder increases throughput and performance
- Accepts banker boxes and burn bags
- Ideal for very high volume applications

Please note that our small, medium, and large solutions are complete, standardized systems that are not customizable. For customizable solutions, check out our Custom Systems on page 12.

Operator Control Panel

Solid Steel Rotors and Cutting Systems

MX Sound Reduction System

1012/5

Introductory System

SEM Model 1012/5 features:
- NSA rated at 500 lbs/hr for high security
- Up to 1,100 lbs/hr for unclassified information
- 15 HP motor
- 10" x 16" feed opening
- Ideal for smaller rooms and lower volume applications
- Dimensions HxWxD: 8'7" x 10'2" x 5'4"
- Minimum Room Size: 9' x 11' x 10'

23/5

Expandable Mid-Range System

SEM Model 23/5 features:
- NSA rated at 900 lbs/hr for high security
- Up to 1,800 lbs/hr for unclassified information
- 30 HP motor
- 12" x 24" feed opening
- Optional conveyor system for ultimate ease of use
- Medium volume solution for most applications
- integrated safety load relay to prevent jams
- Dimensions HxWxD (no conveyor): 9'3" x 11'4" x 5'4"
- Minimum Room Size: 10' x 12' x 9'
- Dimensions (with conveyor): 9'3" x 11'4" x 11'11"
- Minimum Room Size: 10' x 12' x 16'

Shown with optional conveyor and briquettor

Shown with optional briquettor

3000

Highest Volume Solution

SEM Model 3000 features:
- NSA rated at 1,200 lbs/hr for high security
- Up to 2,400 lbs/hr for unclassified information
- 30 HP motor
- 12" x 24" feed opening
- Conveyor system for ultimate ease of use
- Dual stage system includes pre-shredder for increased throughput and performance
- Accepts banker boxes, burn bags, bulk material
- Ideal for very high volume applications
- Dimensions HxWxD (with conveyor): 11'3" x 10'4" x 14'1"
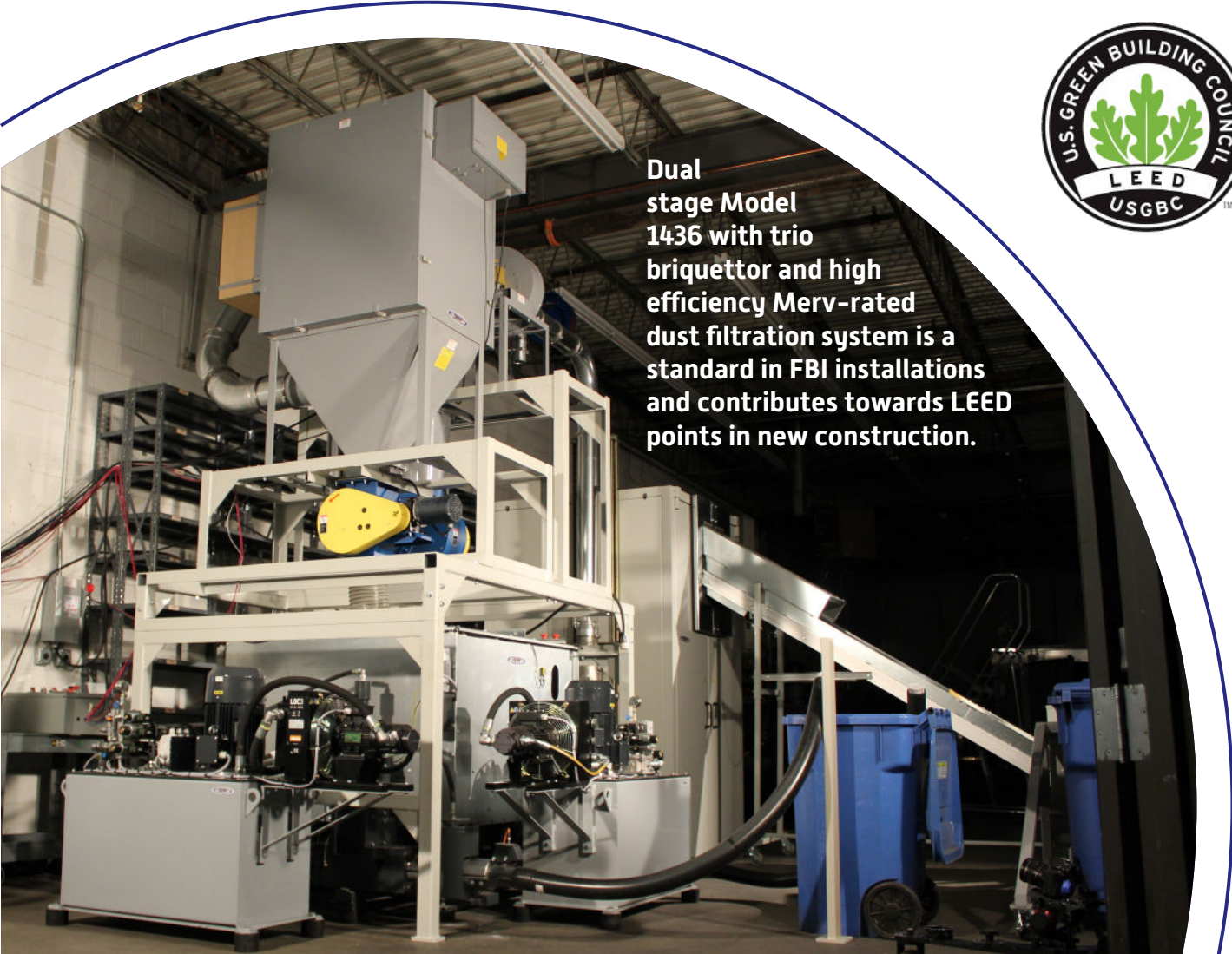- Minimum Room Size: 14' x 20' x 24'

Integrated pre-shredder ▼

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Custom Systems

Very High Volume with Customizable Options

If our standard solutions don't have exactly what you need, we still have you covered. Our customizable options include extra heavy duty, high volume disintegrators that can easily destroy bound manuals and printouts from 4" to 6" thick, which are very popular with large military bases and data processing centers. Solutions are available ranging from 40-150 HP while providing destruction rates up to 1,800 lbs/hr at NSA 3/32" recommended shredded particle sizes or in excess of 3,000 lbs/hr or greater at larger sizes.

These systems are fully customizable with added features such as conveyors, metal detectors to protect and prolong blade life, VFDs to enhance user experience while reducing energy consumption, and touch screen interfaces for ultimate operator ease of use, to name a few. SEM custom engineers solutions per location with a variety of options specific to each installation. **Regardless of the required application, we've got you covered.**

Dual stage Model 1436 with trio briquettor and high efficiency Merv-rated dust filtration system is a standard in FBI installations and contributes towards LEED points in new construction.

Options & Upgrades

Briquettor

While shredding sensitive documents eliminates security concerns, it doesn't solve disposal issues — which is where briquettor systems come in. From small systems to room-size, fully automated processes, SEM briquettors reduce large volumes of loose waste into small, recyclable briquettes.

Briquettes are about the size of a double stacked hockey puck and are fully recyclable.

SEM briquettors are available in single, duo, trio, and quad configurations.

Conveyor with Metal Detector

When feeding bulk material, the appropriate conveyor can make all the difference. SEM's conveyor with sound shield, sound tunnel, and magnetic sensor with HMI features the following:

Sound deadening tunnel with audio shield that works in conjunction with the STC-rated MX sound enclosure to minimize noise during the destruction process.

Metal detector with interface that provides the operator the ability to eliminate metal from the waste stream, increasing the life of the knives by reducing the stress of metal cutting in the disintegrator.

Programmable conveyor speed mitigates overfeeding, ensuring smooth and efficient operation each and every time.

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Center Flow Magnet

When customizing a disintegrator system, a center flow magnet is one of the most sought after additions. Unique to SEM systems, this self-cleaning and encapsulated center flow magnet in caddy provides increased efficiency and operator ease of use when removing magnetic debris from the disintegrated particle waste stream. System includes center flow magnet, caddy with multiple locking points to hold magnets in place, debris drawer pan, and support table.

Digital MCP

Disintegrator system digital master control panel with a programmable touch screen logic controller provides system efficiency and operator ease of use. As a green system benefit, the digital master control panel also includes VFD which adjusts electrical current as needed, providing increased efficiency and lower operating costs; green solution provides LEED points.
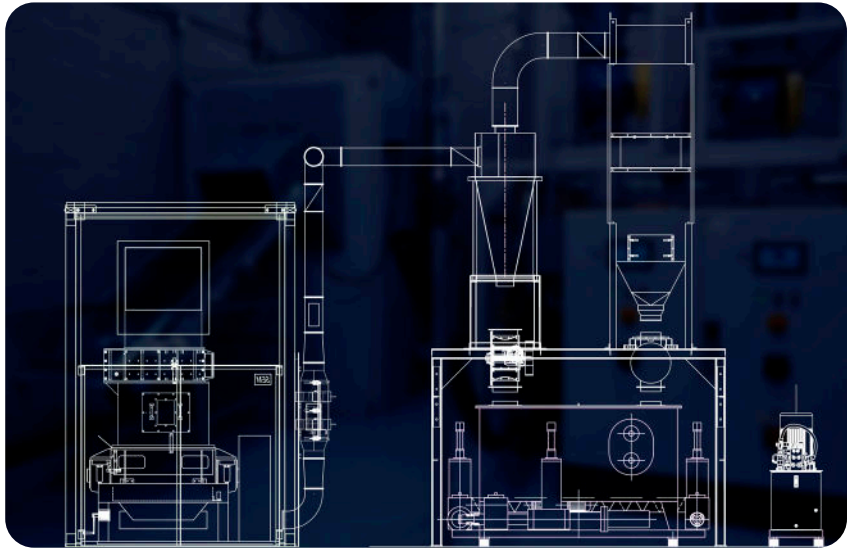
Puck Hopper with Dust Cover

The briquettor puck hopper provides a convenient solution to collecting paper briquettes upon discharge, and the hopper kit mitigates dust generated by the briquettes as they discharge into the waste bin. System includes a hopper connected to the briquettor discharge tube that directs briquettes to a waste bin with a custom-fitted cover.

SEM Support

Engineering

Our experienced engineering staff are on call and ready to assist, using the latest CAD technology to create custom systems optimized to client destruction needs, security levels, and space requirements. Whether designing a commercial, off-the-shelf solution for government or military use or a custom, proprietary system for a Fortune 500 company, our dedicated team has the creativity, experience, and aptitude to deliver solutions that consistently exceed expectations.

Service

Our clients benefit not only from our decades of valuable expertise, but also from our commitment to responsiveness and accountability. By providing exceptional customer service and working as a trusted partner with our clients, we are able to forge robust, long-term relationships that are built on a foundation of knowledge, respect, and integrity.

**Genuine
SEM parts
like our solid steel
knives are proven to last
longer than competitors.**

Manufacturing

Unlike most suppliers of information destruction equipment, SEM is a manufacturer, not just a reseller. Our manufacturing center is equipped with state-of-the-art factory automation equipment and staffed by industry leaders, allowing us to maintain the strictest quality control standards in the industry as well as the flexibility to modify equipment to best suit specific application needs. Our in-house manufacturing capabilities also allow us to react more quickly to customer demands than suppliers who rely on outside contract manufacturers.

Software Integration Expertise

SEM is an expert in software design and integration. From our LCD touchscreen control panels to on-board diagnostics and destruction verification reporting, we incorporate software-based technology as a means to upgrade machine performance and improve the overall operator experience.

Who We Are

In business for over 55 years, SEM's sole product line is high security information destruction equipment and our targeted area of expertise is information end-of-life security.

Established in 1967, SEM is proud to be a US manufacturer that provides comprehensive end-of-life solutions for the protection of sensitive information in government and commercial markets. SEM data destruction devices are the premier high security choice available on the market today.

Whether paper, hard disk or solid state drives, tape, microchips, or any other type of media-bearing device, SEM has a solution that can sanitize classified and top secret information as well as controlled unclassified information (CUI), personally identifiable information (PII), personal health information (PHI), or any other type of sensitive data. SEM also produces customized equipment for size reduction solutions and for destroying off-spec or returned product for the medical device, gaming, security printing, and food industries as well as bank note/currency destruction for the US Federal Reserve and Central Banks throughout the world.

DoD centralized destruction facility has complete redundancy including two disintegrators with a trio briquetting system. The original system was installed in the late 1970s. The far disintegrator was installed in 2003 with added briquettor to replace the existing original system, upgrading the operation to a green destruction facility — and it is still running strong. The near disintegrator was installed in 2018 and features upgrades such as a metal detector and programmable conveyor system. SEM has been a trusted partner with this facility for over 45 years.

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