

# MOOSE®

from Pentek

## Fully Automated, Dustless Concrete Floor Decontamination

Pentek's remotely operated **MOOSE®** is designed to scarify large concrete floors and slabs in environments which require stringent control of airborne contamination and debris while providing exceptional production rates. Applications include the safe and efficient collection of radioactive materials, PCB's, chemical residues, heavy metals, and other hazardous material from manufacturing and utility facilities, military bases, and environmental restoration sites.

The **MOOSE®** scabblers utilize a highly effective, single-step floor scarification process with integral vacuum control; essentially 100% of the airborne particulate and over 99.5% of heavier solids are captured at the cutting tool surface. This high level of performance prevents cross-contamination and eliminates the need for local containment and respiratory protection during operations, thus earning the **MOOSE®** a reputation for cleanliness and contamination control at facilities throughout the world...even in radiologically contaminated nuclear power plant environments!

The **MOOSE®** physically removes protective coatings, laitance, and concrete substrate to the depth of clean, uncontaminated concrete in increments of 1/16 to 3/16-inch (1.6 to 5mm). Even tough epoxy and urethane coatings can also be stripped in 18 inch (450mm) passes. The scarification technique leaves floors clean, with a uniformly keyed surface texture, ready to receive new protective coatings and overlayers.

Three integral sub-systems comprise the **MOOSE®** scabblers: the scabbling head assembly, the on-board HEPA vacuum system, and the six-wheeled chassis. The scabbling head houses seven independent reciprocating tungsten carbide-tipped bits. The bits pulverize the surface by delivering 1,200 hammer impacts per minute through pistons driven by compressed air.

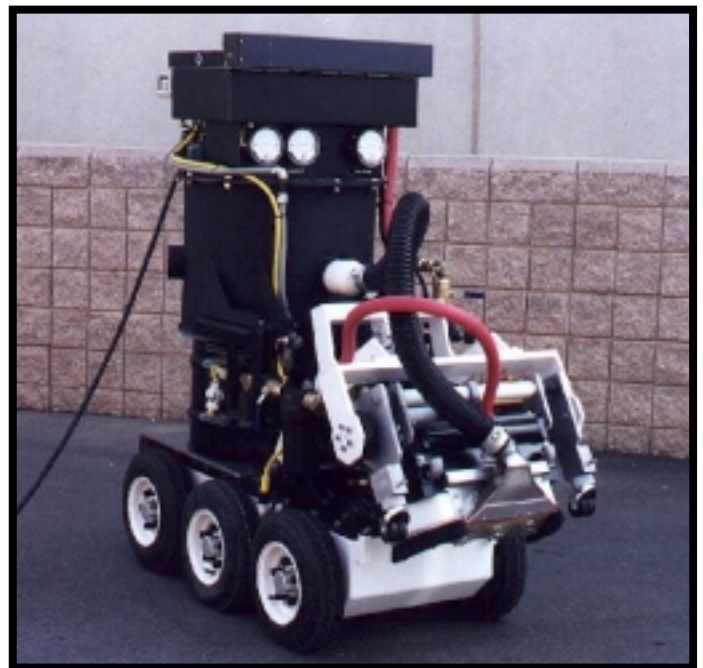


*MOOSE® integrates an on-board vacuum which is closely coupled to the concrete scabbling head. The result: a compact, efficient design with automated controls to eliminate operator exposure to hazardous materials.*

The mechanical process is completely dry and produces the minimum amount of waste. Manufactured with high quality materials and strict attention to detail, the **MOOSE®** is reliable and easily decontaminated. Dust and debris are captured by the high performance, two-stage positive filtration HEPA vacuum system that deposits the waste directly into an on-board 23-gallon (87 litre) waste drum. First stage efficiency is 99.5% at 1 micron; second stage HEPA efficiency is 99.97% at 0.3 microns. First stage filters are continuously and automatically cleaned by reverse-flow pulses of high pressure air, resulting in extended filter life of up to one year. The system also features an automatic full-drum alarm and a patented dustless drum exchange feature that completely eliminates operator exposure to hazardous materials.

The six-wheeled chassis is powered by dual DC motors. Independent skid steering allows the **MOOSE®** to pirouette 360 degrees about its geometric center. The scabbling head and chassis assemblies are designed to isolate the vibrations generated by the scabbling head, allowing the operator to maintain positive control over the direction and the depth of cut during aggressive scabbling operations.

The **MOOSE®** is capable of scabbling to within 6 inches (150mm) of walls and other obstructions, and can easily fit through a standard doorway. Tool ports provide direct interface to Pentek's smaller, manually operated scarifiers: the **SQUIRREL-III®** floor scabblers and the **CORNER-CUTTER®** needle gun. These smaller tools are designed to scabble tight areas which cannot be easily accessed by the **MOOSE®**.



*Since their introduction in 1985, MOOSE® have decontaminated millions of square feet of concrete floors at manufacturing plants, process plants and nuclear facilities throughout the world. Seven tungsten-carbide cutting bits remove coated and uncoated concrete surfaces.*

# The MOOSE<sup>®</sup> from Pentek

*Safely Removes PCB's, Radioactivity, Lead-based Paints, and other Hazardous Materials from Large Concrete Floors and Slabs*

## Specifications

- ◆ Production Rates: 250 to 450 square feet per hour (25 to 40m<sup>2</sup>/hr) at 1/16-inch (1.6mm) surface removal
- ◆ Cutting Width: 18 inch (450mm)
- ◆ Dimensions: 68 inch x 31 inch x 70 inch (1.7m x 0.8m x 1.8m)
- ◆ Weight: 1650 lbs. (736kg)
- ◆ Air Consumption: 280 scfm @ 90 psig (475m<sup>3</sup>/hr @ 7 bar)
- ◆ Electrical Requirements: 110 volt AC, 15 amp (240 volt AC, 7 amp), single phase power
- ◆ Scabbling Bits: Seven (7) scabbling bits; each is 2 ¼-inch (57mm) diameter; 9-point tungsten carbide-tipped
- ◆ Filtration System: Two (2) primary roughing filter cartridges @ 8 inch (200mm) diameter; One (1) secondary HEPA filter @ 12 inch x 24 inch (300mm x 600mm)
- ◆ Special Waste Drum: 23 gallons (87 litres); two of these special drums overpack directly into one standard 55-gallon (200 litre) waste drum
- ◆ Drive/Traction: Dual 90 volt DC drive motors; Six (6) wheel, all-wheel drive allows the **MOOSE<sup>®</sup>** to pirouette a full 360° about its center axle, resulting in a tight, 30 inch (762mm) turning radius
- ◆ Operation: Electrical remote control console with tethered power supply  
Optional remote video and contr



Close-up of concrete surface scabbled by MOOSE<sup>®</sup>.

## **MOOSE<sup>®</sup> Applications**

- ◆ Power plants
- ◆ Superfund Sites
- ◆ DOE/DOD facilities
- ◆ Manufacturing plants
- ◆ Petrochemical plants
- ◆ Food processing plants
- ◆ Clean rooms & research labs



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