

Sponge-Jet Engine and Component Cleaning and De-painting

- Sales/Rental/Refurbishing company for tractors and other heavy industrial equipment
- Evaluating cleaning technologies for Rebuild Center
- Centered around cleaning truck parts

Objective:

Select effective, economical, environmentally-friendly cleaning solution which can:

- Remove dirt and contaminants
- Degrease
- Remove failed coating layers



Cleaning Process Requirements:



- Remove dirt, oil and failed coatings for disassembly and repainting
- Feather residual coating to remove layered look for “like new” final coating
- No generated waste water or sewer disposal
- Reduce initial cleaning of equipment (dirt, oil, etc.)
- Reduce disassembly times
- Reduce need for in-line cabinet washers



Considerations:

Standard (Heated) Pressure Washer:

- Removes exposed dirt and grease
- Does not remove dirt and grease in crevices
- Does not remove layered paint
- 7-9 hours to clean large truck engine
- Requires a sump for drainage and water treatment process before discharge to sewer



Considerations:



Dry Ice Blasting:

- Media vaporizes; no spent media disposal
- Very good removing dirt
- Does not remove multi-layered paint
- Produces very little waste water; waste is old coatings, oil, grease and dirt
- Requires onsite manufacturing of dry ice pellets
- Safety concern; ice burns

Considerations:

Plastic Media Blasting

- Can remove dirt and grease
- Media can get stuck in crevices
- Requires use of water for further cleaning
- Generates a lot of debris/waste



Considerations:



Sponge Media Blasting

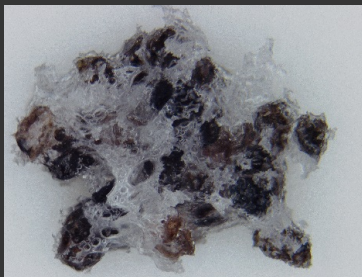
- Removes exposed dirt and grease
- Also removes dirt and grease in crevices
- Removes/feathers layered paint
- 4.5 hours of blasting to clean large truck engine
- Dry process; no water used
- Other users report 6 - 8 media recycles

Selection:

SPONGE-JET SYSTEM WHICH SUPPORTS (2) ROOMS AND (4) BLASTERS SIMULTANEOUSLY

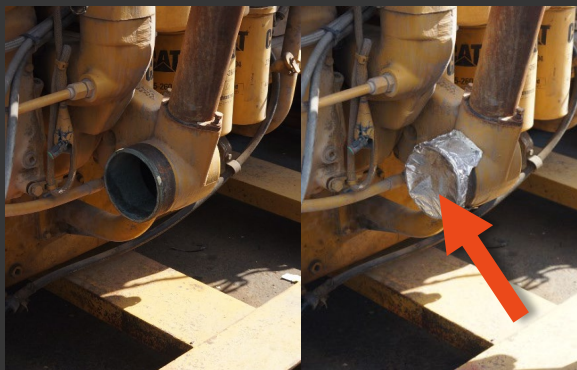
Sponge-Jet Integrated System

- Silver Sponge Media™
- (2) Sponge-Jet Feed Unit™
- (2) 91E Sponge-Jet Recycler™
- (2) Feed Unit Hopper™
- (2) Recycler Hopper™
- (2) Dust Collector
- (2) Vacuum



Sponge-Jet Cleaning Process:

EQUIPMENT PREPARATION



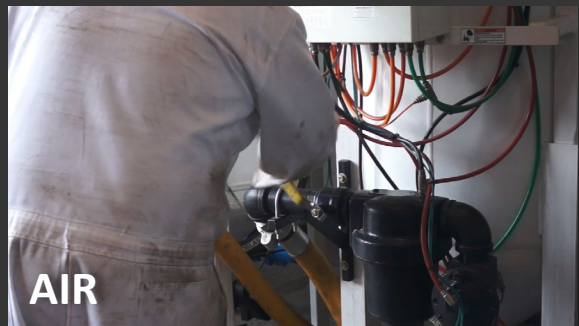
Sponge-Jet Cleaning Process:

LOAD BAY FOR CLEANING



Sponge-Jet Cleaning Process:

SYSTEM CHARGE UP



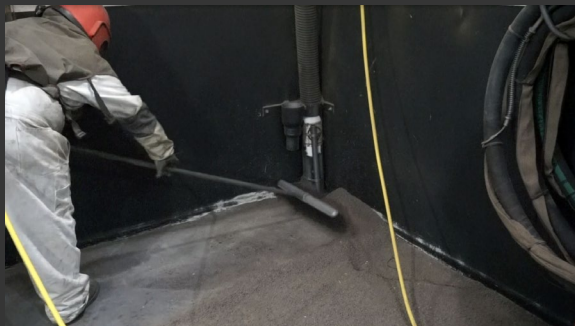
Sponge-Jet Cleaning Process:

SPONGE BLASTING



Sponge-Jet Cleaning Process:

CLEANUP



After blow-down, blasted parts are transported for disassembly, inspection, etc.



Assembled Transmission (in/out):



BEFORE
Blast Cleaning



AFTER
Blast Cleaning



Dark area are shadows

Wheel (in/out):



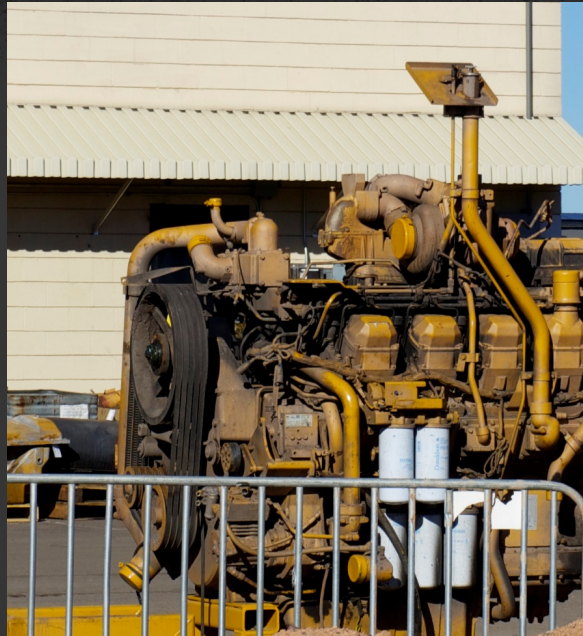
BEFORE
Blast Cleaning



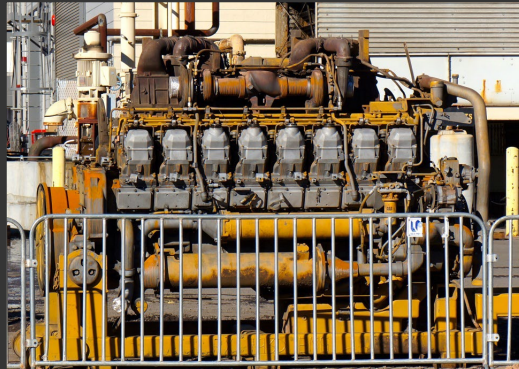
AFTER
Blast Cleaning



Assembled Engine (in/out):



BEFORE Blast Cleaning



AFTER Blast Cleaning



AFTER Painting

Outcome

LONG-TERM USE OF SPONGE-JET INTEGRATED SYSTEM

The organization continues to refine the process and find new applications for Sponge Blasting:

- Reduced need for secondary cleaning of parts (and thus water consumption)
- Refurbished parts look in “like new” condition
- Significantly decreased nut/bolt/screw disassembly of parts because all heads, crevasses and tight spaces are thoroughly cleaned during Sponge Blasting process
- Replaced commonly used oil absorbent sweeping compound by using spent Sponge Media
- Media Consumption averages 21.5kg(45lb)/hour per nozzle

