

# Fossil Cleaning and Preparation

## Application Overview

Paleontologists use various methods to remove earth that surrounds a fossil, known as the matrix. Methods for removing matrix include chemical treatment, abrasive blasting, hand power tools, acid, or soap and water. The most common types of matrix are sand, mudstone, and sediment. Fercrete (solidified rock) and ironstone are harder matrixes that also occur.

Micro-abrasive blasting is ideal for these applications. The technology of blasting consists of mixing a regulated amount of uniform sized abrasive powder and clean, dry air to create a thorough, yet gentle abrasive flow that can clean off the matrix without damaging the underlying fossil.

Vertebrate and larger fossils require more time and energy to clean. This is where the MicroBlaster® unit's flexibility becomes its greatest asset. The technician has the ability to increase air pressure and use a more aggressive media such as aluminum oxide to handle jobs that are more time consuming due to the size of some mammal bones.

When processing a larger specimen, such as the head of Sue the T.rex at the Field Museum, the DirectFlo™ DF1400 model would be the blaster to use.



When cleaning invertebrate fossils, the MicroBlaster® model MB1000 works well because it can be directed with high accuracy and not damage fragile specimens.

Additionally, the capability to adjust the air pressure, abrasive flow, and type of abrasive gives it flexibility that is a clear advantage in removing matrix over other methods. Generally, low air pressure (40psi) and a soft media such as sodium bicarbonate or glass bead are suitable for these applications. Dolomite or pumice can also be used.

Many times the fossil and the matrix surrounding the fossil become similar in hardness over time. Rather than risk breaking the fossil while trying to remove fercrete matrix with a pick or a hammer, first a grinder would be used, then a blaster.

The DirectFlo™ model has enhanced power, larger nozzles and greater powder capacity, allowing preparatory work to continue without interruption for longer periods of time.

For rapid changeover of media while working on a single sample, the MicroBlaster® Dual Tank model MB1002 can be used. Media type can be changed instantly while in process without fear of abrasive cross contamination during the application.



Whether the lab is in your garage, or in one of the world's largest museums, Comco has the micro-abrasive blasting equipment to do the right job for you.

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Fossil App Notes – rev. 1/2005  
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