



Gordon Brush creates a military brush for the Abrams Tank

Our thanks to Gordon Brush for allowing us to reprint the following article.

Goal

To create a military brush for the United States Army that would clean the chamber of the Abrams Tank after the firing of a number of rounds.

Problem

When the gun chamber is corroded with soot, debris and creosote, the military is not able to guide the shell properly, resulting in misdirection or misfire. The gun barrels were being switched out at a cost of hundreds of thousands of dollars apiece as no effective cleaning method was yet developed. Three engineering teams were tasked to formulate a military brush to clean the chamber.

Solution

Gordon Brush created a military brush that takes less than 5 minutes to clean the chamber resulting in the extended lifespan of the gun barrel.

Research & Development

This U.S. Military contract resulted in two years of research and development. Once development reached the final product stage, the military gave Gordon Brush 6 months to produce the first order and it was completed in just 3 months.

Design Process

Gordon Brush spent two years in research and development creating a military brush that would work to clean the gun chamber on the Abrams Tank. Gordon Brush engineers and the United States Army engineers corresponded through numerous phone calls, emails, and CAD drawings during this stage. The Army engineers provided the information on the tank's gun barrel, explaining what they were looking for and how they wanted it to work. The Gordon Brush engineers took the information and with their own expertise in brush design and manufacturing, created a product that would clean the entire chamber at one time.

Testing & Field Use

The U.S. Military tested the various brush prototypes in the Abrams Tank at Fort Knox and various other locations. They provided feedback to the engineers on the usability and cleaning power of the brushes. Cameras were used to inspect the inside of the gun barrels to determine the results of the cleaning. Adjustments were made as needed until the final brush was perfected.

While in use, the brush must be able to withstand extremes in both temperature and environment. Whether it's used in high humidity, freezing temperatures, or desert like conditions, the brush must not crack, lose its bristles, or otherwise fall into disrepair. Numerous prototypes were put to trial to find the right materials for the brush. A bag was also designed to carry the brush while it was stored in the tank. The material of the bag also had to withstand the harsh environmental extremes and could not damage the brush bristles.

Results

Due to the product created by Gordon Brush, the gun chamber on the Abrams Tank had an extended 3 year lifespan. Because of the new military brush, the United States Army has since saved hundreds of millions of dollars in new parts. The Army no longer has to quickly replace an unclean gun chamber because a Gordon Brush product can be used to clear out soot and other environmental debris.

About Gordon Brush:

Gordon Brush is a leading industrial brush manufacturer, creating both standard and customized products for the industrial marketplace worldwide. Over 15,000 brushes exist in the Gordon Brush product line, many of which are customizable to suit individual applications.