



Pueblo Chemical Agent-Destruction Pilot Plant

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Munitions Handling Lift Assist

The Pueblo Chemical Agent-Destruction Pilot Plant has been built to destroy 2,611 tons of mustard agent stored in projectiles and mortar rounds at the U.S. Army Pueblo Chemical Depot. Specialized technologies are paramount to the pilot plant's operation. Some of the technologies will feature "off the shelf" equipment adapted to the unique needs of the systems they serve. Such is the case with the device known as the Munitions Handling Lift Assist or more simply, Lift Assist.

Commonly known as Industrial Manipulators, these air-powered, manually operated machines enable the safe, ergonomic and efficient handling of material of nearly any size, weight, or shape. At PCAPP, Lift Assists will play an important role in both the Enhanced Reconfiguration and Agent Processing Buildings, the plant's two main processing buildings. Operated by trained munitions handlers, the machines will allow for the frequent movements of individual munitions (some weighing up to 95 pounds each) without physical contact or lift-related strain. Lift Assists are used in the Munitions Unpacking and [Projectile/Mortar Disassembly System](#) in the Enhanced Reconfiguration Building, and as part of the [Munitions Washout System](#) in the Agent Processing Building.



Munitions Handling Lift Assist devices will be used in both the Enhanced Reconfiguration and Agent Processing Buildings to safely transfer munitions between process equipment pallets.

Each Lift Assist has the capacity to handle loads up to 120 pounds at rates greater than 55 munitions per hour. The devices stand 12 feet high with arms able to reach out 10 feet. Lift Assists are able to pick up munitions from floor height to as high as four feet.

Design specifications for the PCAPP Lift Assists required specialized gripping mechanisms, or end effectors, and enhanced safety features. These end effectors ensure that sufficient force is retained to prevent accidental release during munitions transfers and in the event that air pressure is lost.

Workers who will operate and maintain Lift Assists will gain hands-on experience using them with inert munitions during extensive training prior to chemical agent destruction operations.

It is recognized that a limited number of munitions will not be able to be easily processed through the main destruction plant. These problematic munitions include those that have leaked in the past and are overpacked, as well as "rejects" whose condition does not allow for automated processing. These munitions will be safely processed in [PCAPP's Explosive Destruction System](#).