

Attachment F

Intervention #2: Vacuum Lifting (VL) System

The second intervention is the vacuum lifting assist (VL) (Vaculex Inc., Model: TPH) specifically designed for a variety of manual material handling tasks including manual baggage handling. It can handle bags in different shapes, sizes, and soft and hard fabrics. Once the bag is picked up by the vacuum power provided by the Vaculex[®] system, the operator can use the controller of the system to rotate the bag in a 360° direction to fit where needed. A controller is attached to one end of the vacuum hose that provides suction to pick up a bag. The other end of the hose is connected to an electric pump mounted in a silencing box measuring 21× 32 × 20 inches (0.53 X 0.81 X 0.5 M) size. If the pump is turned on, a constant air flow is provided while no bag is attached to the controller. Once the controller is in contact with the large surface of a bag, the vacuum power will automatically pick up the bag without using any control button and the bag will stay at approximately the operator's eye level; however, the height of the bag can be controlled by operating the Vaculex[®] handle. Once the bag is attached to the system, the operator can move the bag with the controller along the overhead railing to the coverage areas, typically onto an ETD table or a conveyor belt. When the bag is moved to the destination, the operator disengages the bag from the controller by depressing a thumb trigger located above the handle. The VL system used in the study can handle up to a 100 lb. bag. The VL is proposed to be used in the baggage handling position #1 (see attachment E). It will be mounted onto a belt loader for the power source and the anchor point for using the device in an appropriate range.

