



TL220 Cask Handling Unit (CHU)



TL220 Cask Handling Unit

Description

The TL220 is a “pick and carry” vehicle designed and constructed for use inside the WVDP’s Load-in Facility and the Equipment Decontamination Room. It has lift and carry capability for empty and loaded HLW Vertical Storage Casks. The TL220 is a larger version of the Riggers TL100 and TL150 standard product Tri-lifters and is one of three task-specific transporters for use at the WVDP’s HLW relocation project.



The operator’s control station contains interfaces for all functions of the TL220 and a real-time display of vital equipment information.



Robust hydraulic cylinders (middle photo) and extendable rear counterweights (above) will accommodate heavy lifting.



The TL220, pictured above, is one of three transporters that were specially-designed for lifting and moving HLW storage casks.

The TL220 is one of three transporters for the HLW Relocation Project, and is tasked with performing lifting, movement and placement of empty and loaded casks inside the Main Plant Process Building. Safe movement of the robust concrete and steel vertical casks is an important consideration, which requires the movement of up to 87.5-tons. The TL220 performs indoor movements including lifting and placing empty casks on a rail cart in preparation for loading and removing loaded casks from the rail cart in preparation for welding. It is a specially-designed for moving heavy loads in constrained spaces and conducting critical lifts that place and remove casks on to and from a rail cart.

The TL220 operates inside the Main Plant, along a designated indoor pathway or “runway” from the Load-in Facility to the Equipment Decontamination Room rail area. The runway has been structurally reinforced to distribute the weight of the equipment and cask. For contamination control purposes, the TL220’s travel path is limited to the indoors.



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The TL220's wheel configuration is designed to distribute the weight of HLW storage casks.



A load test of the TL220 in progress.



Rear counterweights offset the front end weight.

TL220 Features

The TL220 is designed for safe, precise operation of the transporter in a constrained area. Its control console and operator interfaces are similar to a conventional forklift, with the operator seated on the unit. Its features include:

- Four-way digital operator's display that notify the operator of:
 - Load weight and boom and counterweight positions
 - Operating pressures
 - Engine statistics
 - Height controls
- Forward and reverse travel capability
- 4.3 liter, V6 liquefied petroleum gas engine
- Two hydrostatic drive mechanisms
- Wide wheels that distribute the load evenly and minimize floor loading
- Cantilevered lifting boom and extendable, removable rear counterweights that work together to provide balanced loading and cask positioning
- Automatic shutoff that prevents operation in the event of a lift overload

TL220 Statistics

Weight

- 64,180 lbs. without counterweights
- 123,118 lbs. with all counterweights

Length

- 28.6 feet with extensions retracted
- 35.6 feet fully extended

Width

- 102.6 inches (8.5 feet)

Travel speed

- 32 feet per minute

The West Valley Demonstration Project (WVDP) is a U.S. Department of Energy-led environmental remediation project located approximately 35 miles south of Buffalo, NY. CH2M HILL Babcock & Wilcox, LLC, (CHBWV) was formed to meet the specific requirements of Phase 1 decommissioning of the WVDP. The limited-liability partnership combines the experience and capabilities of CH2M HILL Constructors Inc. (CH2M HILL), Babcock & Wilcox Technical Services Group, Inc. (B&W), and Environmental Chemical Corporation (ECC).