



Hydraulics Virtual Training Application

THE NEXT STEP IN FLUID POWER MANUFACTURING TRAINING

PERMCO USA

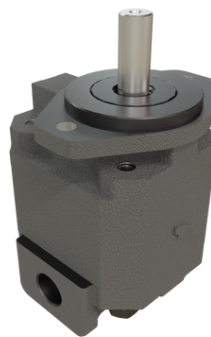
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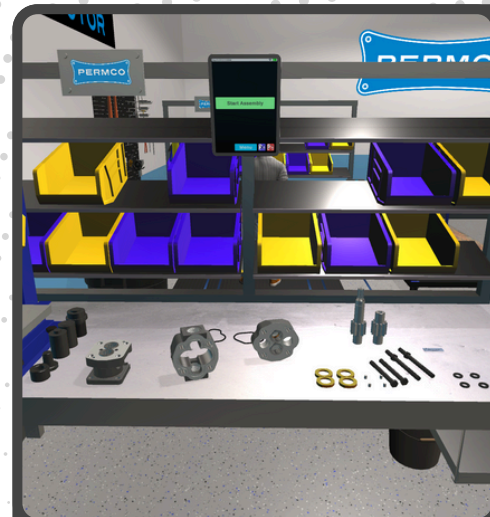
P5151



TV2



M124



ASSEMBLY &
SUBASSEMBLY

EXPLODED
PARTS VIEW

VOICE GUIDED
TRAINING

ERROR TRACKING

PUMPS, MOTORS
& VALVES

BUSHING & BEARING
SERIES

VR CONTROLLER
TRAINING INCLUDED

PACKAGED WITH PC
HARDWARE BUNDLE

The Virtual Training Process

This application requires a computer. The PC provided will ensure that the program can run smoothly when linked to the VR headset.

When you initially boot up the tower you will see a set of applications on the desktop. The first, **VTC Controller Training**, acts as a primer to ease the user into the virtual reality experience. Once you feel confident with the controls you can boot up **Permco Training** and begin building!



Modes of Training

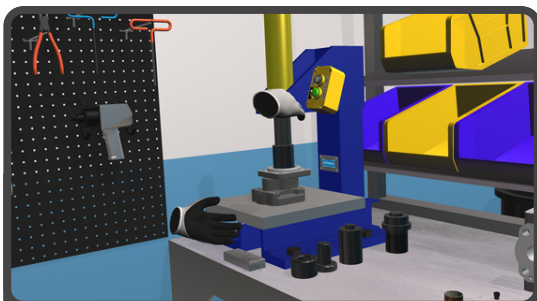
Permco VR Training offers a number of ways to engage with and learn about hydraulic assembly. **Subassembly Mode** allows you to piece together the fundamental components of hydraulic pumps and motors. This guided process gives the user insight into each part and its function. After the seals have been set and the bushings are clocked the user can move on to assembling the unit.

Assembly Mode consists of taking the components you have previously prepared and locking them together to create a finished model. Again this enhances the user's insight, but also empowers them to completely build a hydraulic unit, risk free and without the need of an in-person mentor.

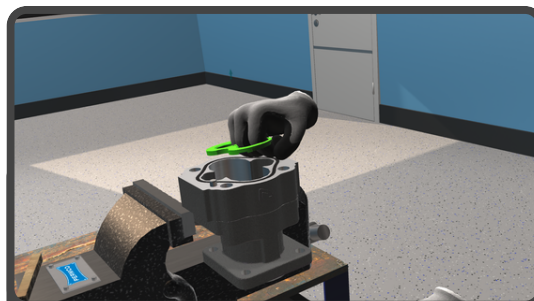
Both of these methods are AI voice assisted meaning the user can repeat instructions and even entire lessons quickly and easily.

The last mode, **Exploded View Mode**, allows the user to peek inside the active workings of a fluid power unit. In this area participants can interact with the full selection of virtual Permco products, however these models function as if actively in operation. All of the parts that comprise these units are labeled with a tooltip which shows the part number as well as the common name.

Permco Units Available



Subassembly



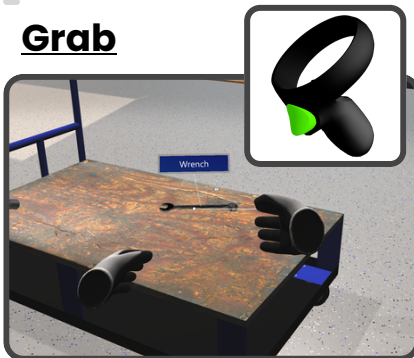
Assembly

- M124
- P257
- P5151
- M5100
- TV2
- AZ5514

Methods of Interaction

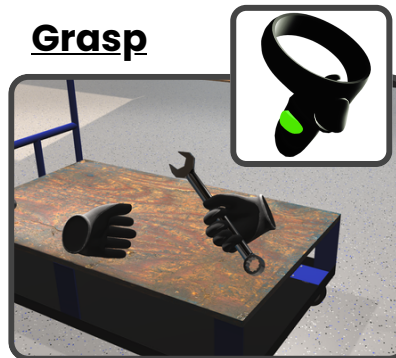
In Permco training there are two methods of interacting with objects and one technique used to move around the scene. These controls feel identical between Controller Training and Permco Training making the crossover into pump building feel seamless and easy. Misplaced parts and misused tools can be catalogued with the Error Tracking tool giving the trainer insight into the user's progress and performance. Errors are shown after each building process.

Grab



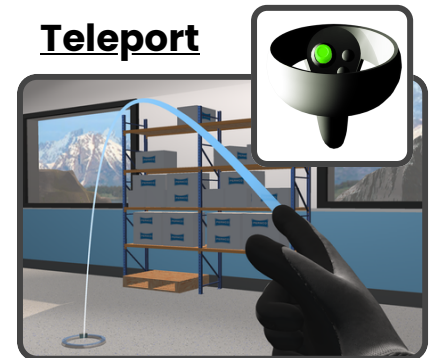
Here we see the user grab a wrench from a distance using the trigger button.

Grasp



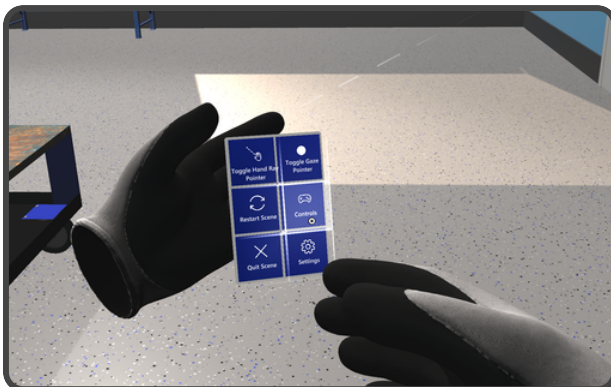
Now we see the user grasp an object within their hand by using the grip button.

Teleport



By pressing, holding and then releasing the joystick the user can select a location to teleport, as shown here.

Hand Menu



The Hand Menu is available at any time and contains the control scheme as well as settings to adjust player height, interaction visuals and more.

Mentor Tablet



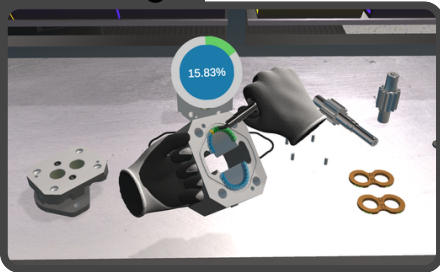
The mentor tablet can guide the user through all of the units available in Permco Training. These instructions can be repeated or muted.

Tool Interactions

There are some methods of interaction that are more complex. These are not covered explicitly in Controller Training but, given the tools learned in that program, users should quickly feel confident enough to learn them. Some require the user to twist their controller, others may require them to shake, slide, etc. These behaviors will help build the muscle memory needed to perform these tasks in reality.

Tool Behaviors

Deburring



Debur your gear housings using the deburring tool. Hit all the nodes twice to ensure all burrs have been removed.

With the ball peen or weighted hammers in hand you can set dowel pins, thrust plates and connect castings together.

Hammering



Impacting



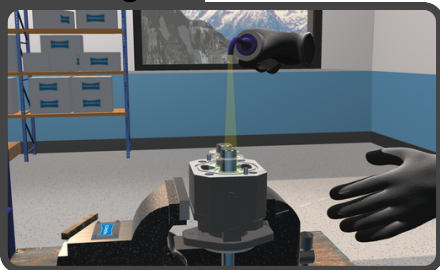
Using the impact gun you can quickly screw in your bolts. Just make sure that you have the right socket for the job!

Don't forget to grease your parts! Run the tip of the grease gun into the boxes to ensure that everything runs smoothly.

Greasing



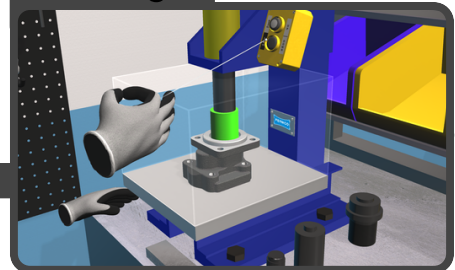
Oiling



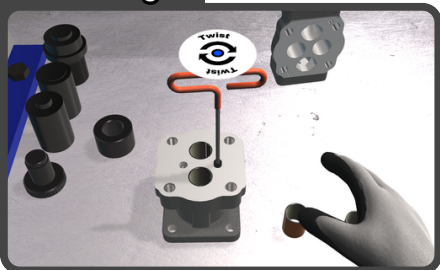
Make sure your hydraulic unit is primed and ready to run by giving it a small amount of oil. Be sure not to overfill the cavity.

With a variety of press tools available you can set your bearings or bushings into place using the press controller.

Pressing



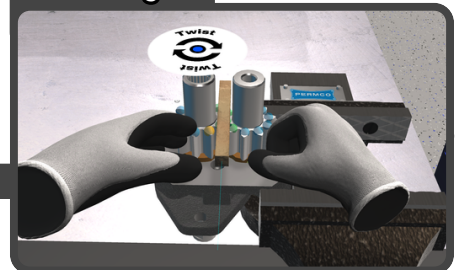
Screwing



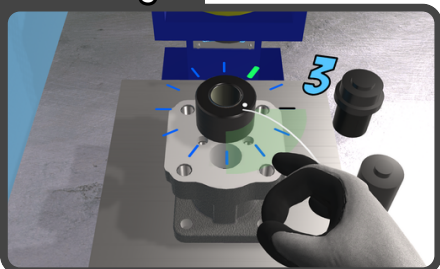
Plugs, bolts and some larger parts may need to be screwed into place. Use a tool or, in some cases, your hand to secure them.

To remove the burrs from gears you must use the stoning tool. Much like deburring each node must be hit to complete this step.

Stoning



Clocking



To minimize damage to the unit bushings will have to be clocked to a particular rotation. To do this twist the tool before pressing.

Ensure that every bolt holding the unit together is properly torqued. Using the same socket as the earlier set your bolts into place.

Torquing



Package Breakdown



Hardware Bundle

- Training Tower
- Meta Quest 2 Headset
 - two controllers
 - Meta Quest link cable

Software Included

- Controller Training
- Permco Training
 - 6 Permco units
 - Subassembly
 - Assembly
 - Exploded Parts View

* Applications packaged digitally

** Mouse, keyboard and monitor sold separately

FAQ

What are the advantages of VR training over traditional?

- Eliminate the risk associated with training
- Reduce onboarding time and optimize workflow
- Engage the user and increase retention by leveraging gamified mechanics
- Quickly iterate on skill development without the need for a mentor on site

Is technical support available if I encounter issues?

Yes, our team is constantly monitoring our training PCs.

For service inquiries contact our support team at support@thevirtualtrainingcompany.com

What Permco units can I build?

You can expect to find the M124, P257, P5151, M5100, TV2 and AZ5514.

However, Permco Training remains in active development which allows us to incorporate more Permco products and assembly mechanics as time goes on.

How many users can be in Permco Training at once?

Currently only one participant can enter the application per tower.

Are there assessments or tests in this program?

No, Permco Training is designed to be experiential training. Errors and individual performance can be viewed after finishing the module.

Important Information

- This VR application is designed for training purposes and does not replace professional certification or hands-on experience in hydraulic assembly
- Always follow real-world safety protocols and manufacturer guidelines when working with hydraulic components to prevent injury or equipment damage
- Users may experience discomfort during VR use; consult a physician before use if you have a history of health conditions such as seizures or motion sickness.