

Loading Dock Solutions

What You Should Know About Hydraulic Dock Conversion Kits

By Steve Greco



As professionals, we are always thinking of ways to provide the right solution for our clients. Installing a new hydraulic dock is a common solution, but it doesn't always fit into everyone's budget. For those with small budgets, converting a mechanical dock leveler to a hydraulic operation may be the answer. Converting it may show a savings of 30 percent to 50 percent compared to replacing an existing leveler with a new hydraulic dock leveler. The conversion can be easy with proper knowledge of the application, installation and tools.

Ensuring a Successful Job

Before recommending or quoting a hydraulic conversion kit, follow these steps:

- Inspect the dock leveler and ensure that it is structurally sound.
- Assess the dock leveler's age and compare the capacity rating with the application requirements.
- Take digital photos of the leveler to review. Use them when making comments and recommendations to the customer.
- Verify the power-supply phase and voltage to be used with the conversion kit. When quoting the job, detail all of the electrical work that will be performed by a qualified electrician.
- Make sure you inspect the exist-

ing dock leveler's side toe guards. Do they cover the entire operating range of the dock leveler above the stored position? Full-operating range toe guards are required for powered dock levelers due to the dock attendant being positioned at the side of the dock.

- Does the dock leveler have an adequate maintenance stand? An adequate maintenance stand is required for hydraulic conversion.

Is Your Dock Structurally Sound?

If your client's mechanical dock leveler is structurally sound, it is usually more economical to upgrade to a hydraulic operation than replacing the

Reasons to ● Convert a Dock



Aside from budget restrictions, there are many reasons to convert a mechanical dock to a hydraulic dock. Here are several common reasons why you should convert to hydraulic:

- Improved dock safety and operator ergonomics. Hydraulic activation eliminates the bending and pulling actions of a mechanical dock leveler release chain. This helps eliminate the dock attendant "walk-down" action on the deck, which minimizes the opportunity for an accident.
- Unproductive loading bay due to susceptibility of mechanical dock leveler downtime.
- Moving parts cause wear and tear, which can lead to costly repairs.
- To meet loading-dock requirement to service air-ride trailers.
- Hydraulic dock leveler requirements have unrestricted, full-range float without secondary activation for above- and below-dock servicing of truck trailers.
- Reduces operating cost and increases operating efficiency.
- Provides a pleasant and quieter work environment for personnel.

dock leveler itself. The conversion kit enables your client to enjoy the benefits of a hydraulic dock leveler, without the costs of replacing the equipment. The kit will make it easier to use, and it will increase the longevity of the dock by decreasing the wear and tear of moving parts.



Sourcing a Hydraulic Conversion Kit

When sourcing a conversion kit from a reliable supplier, make sure they are the original equipment manufacturer. Also, make sure it is a universal hydraulic conversion kit that will work with almost all pit-style dock levelers. Look for the following features:

- It provides complete hydraulic operation of the dock leveler deck and lip. The kit should include a deck cylinder and a lip cylinder. It should not be a mechanical lip deployment.
- There is a NEMA-4-rated push-button control station with external reset button convenience.
- Hydraulic free-fall protection should be one of the safety features.
- There is a self-contained hydraulic power pack or optional remote wall-mount power pack.
- It should come with standard single-phase or optional three-phase power supply.
- The kit should include hoses, mounting hardware, easy-to-follow installation instructions and standard manufacturer's warranty.



There are more options, but they may not be available with all conversion kits. Some of the options to consider are an overhead door interlock-to-dock leveler, automatic ramp-return to stored position, and a full-operating range toe guard kit.

Preparation

Inspect the kit and lay out all the components and instructions. If you are not qualified, confirm an electrician to wire and install the push-button control station. This will ensure all regulations and codes are being followed. Before beginning the hydraulic conversion, read and make sure you understand the installation instructions. Aside from the instructions, make sure you are following OSHA regulations and electrical codes. This includes locking out and tagging out power sources before working on any electrical devices or controls. Also, do not work under or around the dock leveler without placing adequate barriers. This will prevent vehicle and pedestrian traffic from entering the work area.

Begin Required Work

Secure the dock leveler in a fully raised position with a maintenance strut and lifting equipment that is capable of holding 3,500 pounds. The hydraulic conversion kit requires

the removal of the mechanical dock leveler's moving components (springs, hold-down system, cams, etc.). Since each conversion kit is different, it is recommended that you follow the manufacturer's instructions for removal and disposal of the components. Remember, the mechanical components are usually under tension, and proper procedures need to be followed to safely remove these parts.

Typical Field Tools


Having all the appropriate components is important for the installation, but the parts are useless if you are not equipped with the proper tools. Here are some typical field tools needed for an installation:

- Welder
- Torch
- Grinder
- Steel drill
- Hammer drill
- Hammer
- Wrenches
- Wire brush

Prior to installing the hydraulic components, clean the work area and inspect the deck assembly and lip hinge for suitable attachment points. Follow the manufacturer's instructions for properly attaching the hydraulic components. The components should be tack-welded and checked for proper alignment. Complete the weld when you are satisfied with the alignment. After completing the installation of the hydraulic conversion components, follow the manufacturer's instructions for attaching the hydraulic hoses. Fill the oil reservoir and bleed the hydraulic system.

When you are finished, follow the operating procedures and test the equipment. Inspect the performance of the dock leveler, paying close attention to the routing of the hoses and wires. Make sure the fastener is in place and locked. Check to see if the oil is at the correct level in the reservoir. To complete the conversion, lubricate the entire dock leveler and clean up the work area, including the pit.

When all the installation work and testing is complete, mount the operational warning signs and operating instructions on the dock leveler. Before you provide the client with the owner's manual, demonstrate how the equipment works for all operating and maintenance personnel.

You don't have to replace a dock leveler to have hydraulic capabilities. You can upgrade it with a universal hydraulic conversion kit. It will make the dock safer, more efficient and quieter. Your customer and his budget will thank you. 



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