

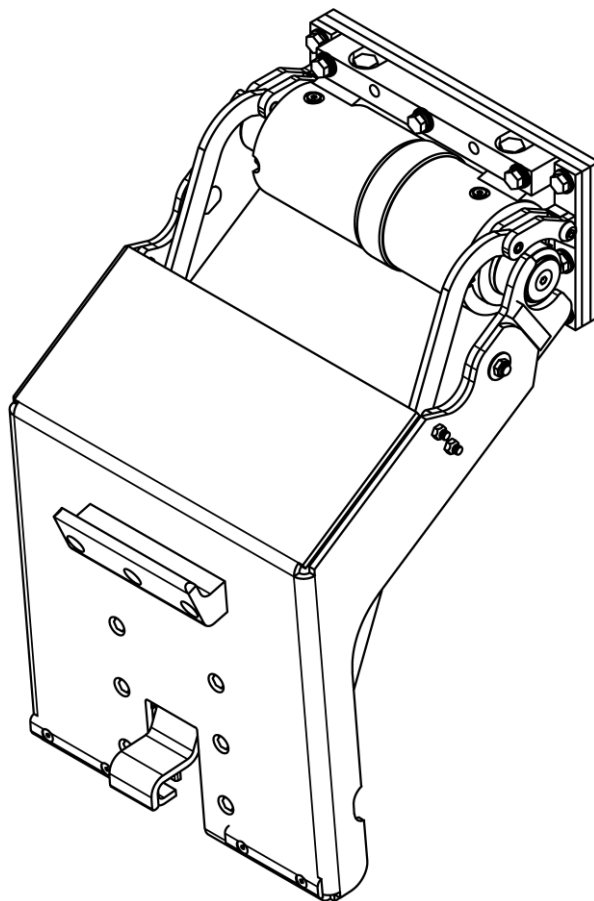


Installation & Operational Manual

Model D6073CB

Hydraulic Cart Lifter

Protected by US Patents 6,921,239 & 7,273,340



Perkins Manufacturing Company
Creators of the TuckAway® Cart Lifter
www.perkinsmfg.com

800-882-5292

Revised:12/2/21

Page 1 of 37

D6073CB Lifter Specifications

Cart Compatibility	ANSI Type B, US-Style two-bar carts having a bar to bar dimension of 14 ¾ - 15 ¼".
Typical Mounting Application	Rearloader
Tipper-Bar Compatible?	No.
Flow Rate Requirement	3.5 gpm
Cycle Time	6-8 seconds (up and down)
Recommended Pressure Setting*	1,650 psi at the pressure relief valve
Maximum System Pressure	3,000 psi
Weight Capacity**	400 lbs
Dump Angle	45 degrees from the horizon
Mounting Height (ground level to top of mounting plate)	46 7/8 - 48 25/32"
Unit Weight (not counting packaging)	208 lbs
Hydraulic Package	Tap-In kits are sold separately
Warranty	3-years ***

Perkins regularly makes product improvements. Specifications are subject to change without notice.

* Actual pressure required to lift a load can vary.

** Do not lift more than the recommended amount printed on the cart by the cart manufacturer or damage or injury may result.

*** See Warranty page enclosed in this manual for full details of coverage



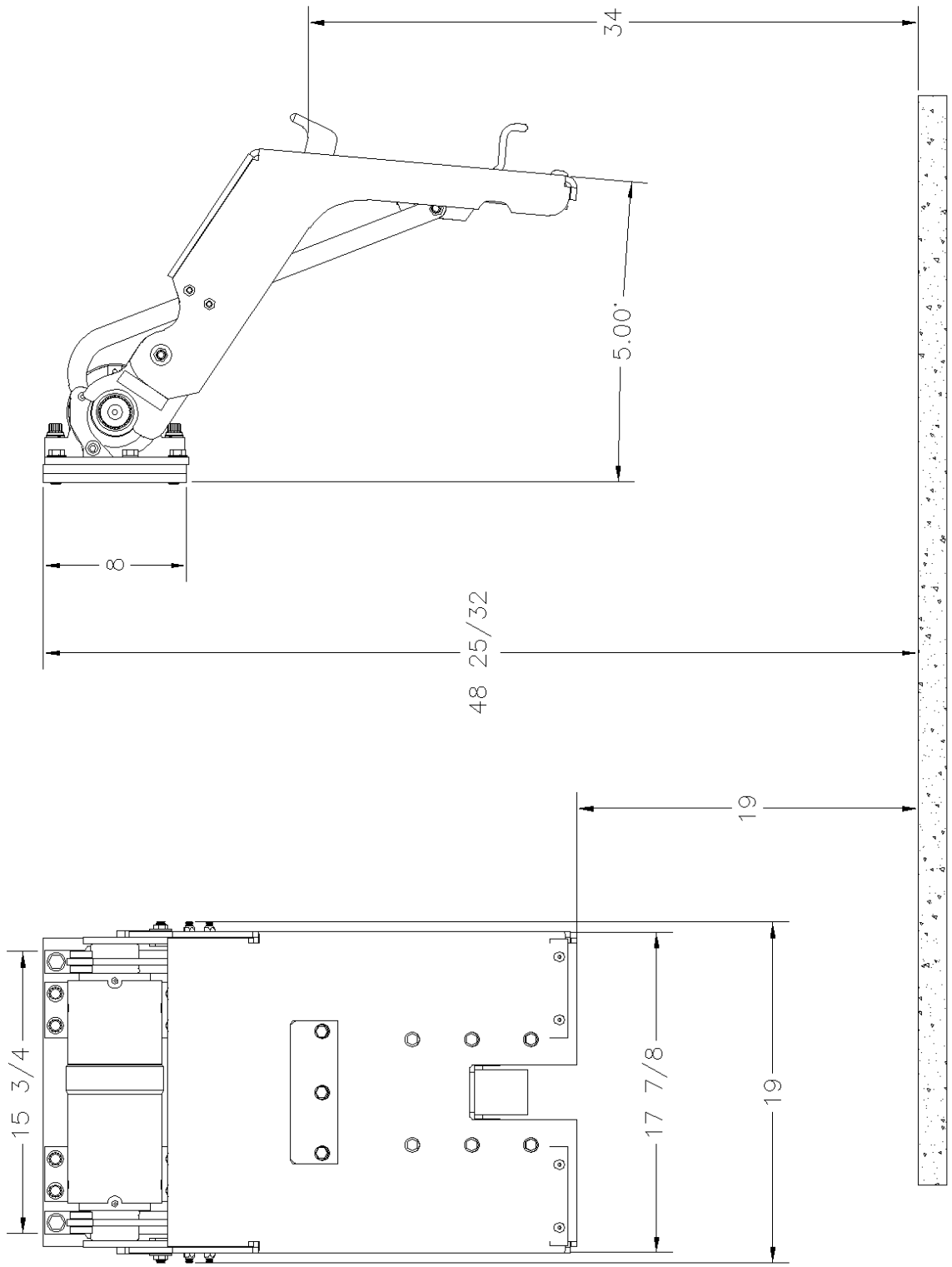
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Revised:12/2/21

Page 2 of 37

Overall Dimensions

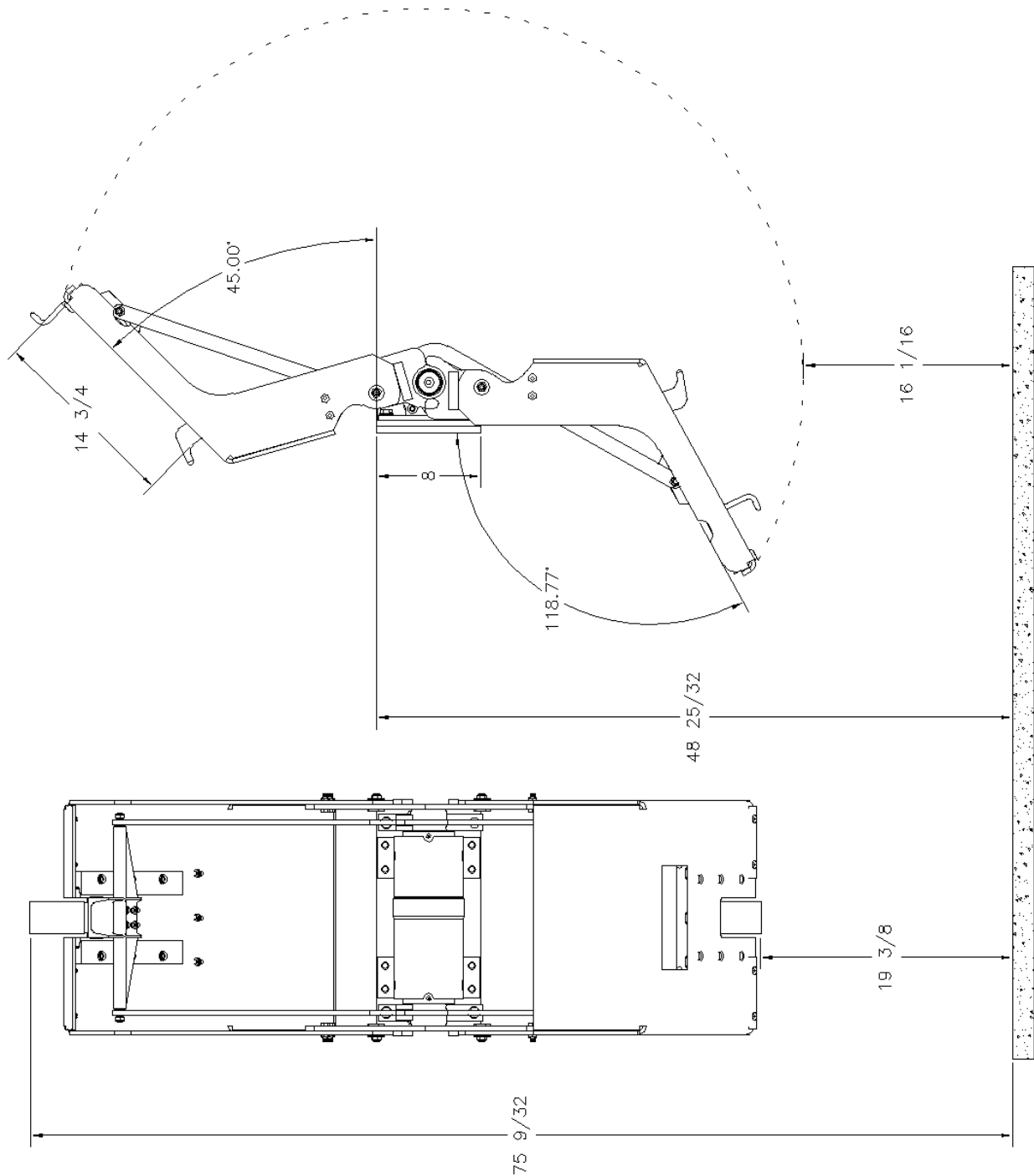


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 Page 3 of 37



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Revised: 12/2/21

Page 4 of 37

Glossary of Terms

Cart Types



ANSI Type B carts (US-Style two-bar carts) with a dimension of 14 $\frac{3}{4}$ - 15 $\frac{1}{4}$ " bar to bar spacing.



ANSI Type C Carts (European-type) Using an upper lip for lifting. Height to ground varies with size of cart.



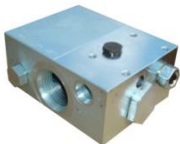
ANSI Type D Carts (Diamond-Type)



ANSI Type G Carts (Automated Collection) Having a rounded body ideal for gripper arms to clasp around.

Note: Some ANSI Type B carts are also Type G compatible, but some carts, particularly older designs, are not. This affects gripper-arm type of lifters that rely on grasping the cart around it's body. If using a gripper arm type of lifter, check your carts and see if they have rounded corners (look for approximately 6" radius). If so, they are likely ANSI Type G compatible.

Key Hydraulic Components



Inverter Valve



Push Button Controller



PO Check Valve



50/50 Splitter



Double Diverter Valve



Adjustable Flow Control



Helical Rotary Actuator



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Revised:12/2/21

Page 5 of 37

Valves are sold separately or as part of a tap-in kit. The valves are shown for reference / identification purposes only. Your specific installation may require other equipment not shown.

Installation Safety

Please read this manual prior to installing, repairing or using this cart lifter.

- ✧ Installation of this equipment requires welding, painting, grinding, torching and working with high- pressure hydraulic systems. The appropriate safety equipment should be used at all times.
- ✧ Always follow OSHA specified lock-out procedures while working with a truck.
- ✧ Cart lifters weigh, on average, between 185 to 300 lbs. Do not lift the lifter onto the mounting plate by hand. Always use proper lifting equipment.
- ✧ Always use a chain or strap to secure the lifter in the upright position during the installation process. Unsecured lifters may fall suddenly causing injury.
- ✧ The truck to which the lifter is to be installed should be empty of waste. Torching and welding can ignite the contents of the truck and cause a fire.
- ✧ Do not weld on the truck unless a ground is in place and the battery is disconnected.
- ✧ Do not open/loosen any hydraulic lines unless the system is off and depressurized.
- ✧ Always double-check hydraulic fittings and hoses for tightness prior to reactivating the pump.
- ✧ Always relocate lights that need to be moved due to the position of the cart lifter to a clear and unobstructed area clearly visible to drivers.
- ✧ All painting of the truck/lifter after installation is complete should be done with proper ventilation and per local regulations. Do not paint over caution and warning labels.
- ✧ If there are any questions about the proper installation or use of the cart lifter not covered in the manual, it is recommended to call Perkins at 800-882-5292.



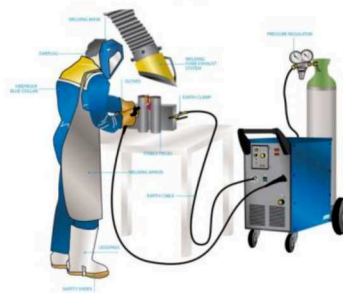
Please be aware of the risks of working with welding equipment and consumables. Always use safety protection equipment. The sparks may ignite fire, always clean the area from flammable material or flammable chemicals, do not weld close to gas lines or on top of electrical cords or installations. Disconnect battery cables from the battery and make sure the vehicle is perfectly grounded prior to attempt to do any weld. Always weld in a ventilated area.



WHEN WELDING, WEAR APPROPRIATE EYE AND SKIN PROTECTION. WELDING LIGHT CAN BLIND. WELDING LIGHT CAN SUNBURN THE SKIN. LONG TERM EXPOSURE TO WELDING LIGHT CAN CAUSE CANCERS. ALWAYS WEAR PPE WHEN WELDING. PROPER PPE SHOULD ALSO BE WORN BY ANYONE IN THE THE WORK ZONE WHO MIGHT ALSO BE EXPOSED.



Correct and safe electric welding station



HYDRAULIC SYSTEMS CAN LEAK OUT HIGH PRESSURE WHICH CAN CAUSE SERIOUS INJURY, GANGRENE OR DEATH. DO NOT CHECK FOR LEAKS WITH YOUR BARE HANDS AND AVOID CONTACT WITH LEAKING OIL STREAMS.

HYDRAULIC OIL CAN ENTER THE BLOODSTREAM. SEEK MEDICAL ATTENTION IMMEDIATELY IF YOUR SKIN IS PUNCTURED BY HYDRAULIC OIL.

HYDRAULIC SYSTEMS CAN BECOME HOT (GENERALLY UP TO 170-180 DEG. F.) TO AVOID BURNS, DO NOT TOUCH VALVES, ACTUATORS, CYLINDERS, AND OTHER HOT COMPONENTS, EVEN AFTER THE SYSTEM IS SHUT OFF IT WILL REMAIN HOT AND TAKE TIME TO COOL DOWN.

ALWAYS TURN OFF A SYSTEM BEFORE SERVICING IT. DEPRESSURIZE THE CIRCUIT BY ACTIVATING THE CONTROLS WITH THE SYSTEM OFF TO RELIEVE ANY BUILT UP PRESSURE.

NEVER WORK UNDER A RAISED LOAD. RAISED EQUIPMENT CAN SUDDENLY FALL WHEN A VALVE OR LINE IS OPENED (LIKE A MOUSETRAP). IF THE EQUIPMENT MUST BE SERVICED IN THE RAISED POSITION, SECURE THE EQUIPMENT WITH CHAIN OR STRAP TO HOLD IT UP SAFETY.



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Page 11

Installation Tips

Do not mount the lifter to a refuse body which is not already mounted to a chassis. Chassis heights can vary and this will affect the final installed height of the cart lifter.

Tack weld only until all positions and clearances are verified to work well for your application.

Always work on a smooth level surface with an empty truck.

Residential-Only Installation

A residential-only installation is when the cart lifter will be mounted to the truck and the truck will not be used for collecting commercial containers (such as 1 thru 10 yard containers). A residential-only installation is very straightforward and simple and very little customization required. Therefore, a residential-only installation may take only 4-6 hours.

Mark Your Centerlines

Begin by selecting whether the installation will be centered on the truck, or offset, or a double installation. Draw a centerline on the truck's loading sill.

A centered installation will place the lifter directly centered on the centerline of the truck.

An offset installation will place the lifter 17 ½" from the center of the truck, (usually to the curb side) as shown in the picture at right.

A double installation will place a lifter 17 ½" to the left and 17 ½" to the right of the truck's centerline.



A typical offset installation.



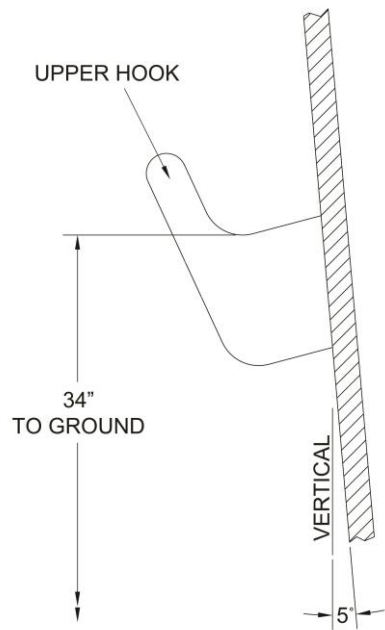
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Revised:12/2/21

Page 7 of 37

Determine the Mounting Height



Upper hook mounting height

The mounting height is critical to the proper function of any cart lifter. The ideal location for the upper hook is 34" off the ground, when the lifter is positioned so that the faceplate is 5 degrees tilted back from vertical as shown in the diagram at left.

It is important that the packer body be mounted to a chassis, and the truck is empty and parked on a smooth and level surface when this mounting height is determined.

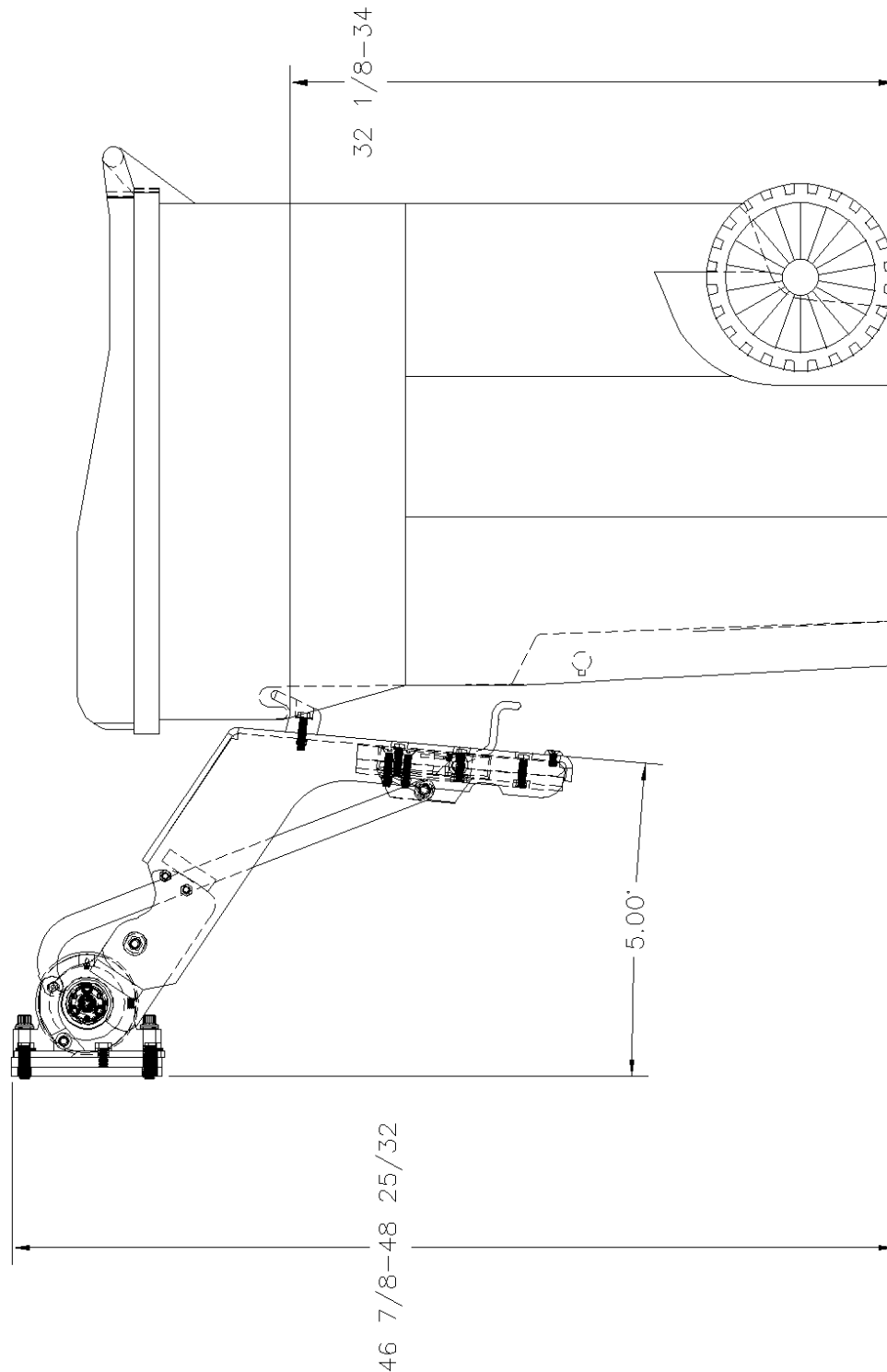
A cart lifter which has been positioned too low may kick carts away before successfully engaging them.

A cart lifter which is mounted too high will make it difficult for the operator to latch the cart at all, causing the operator to have to lift the cart onto the latch.

A good mounting height will make latching carts effortless with no lifting or holding the cart in place.



Positioning the Mounting Plate



** The mounting plate may be positioned as low as $46 \frac{7}{8}$ " and as high $48 \frac{25}{32}$, as needed but make sure lifter does not contact tailgate or sill in tucked position. The mounting plate itself should be vertical and level.*



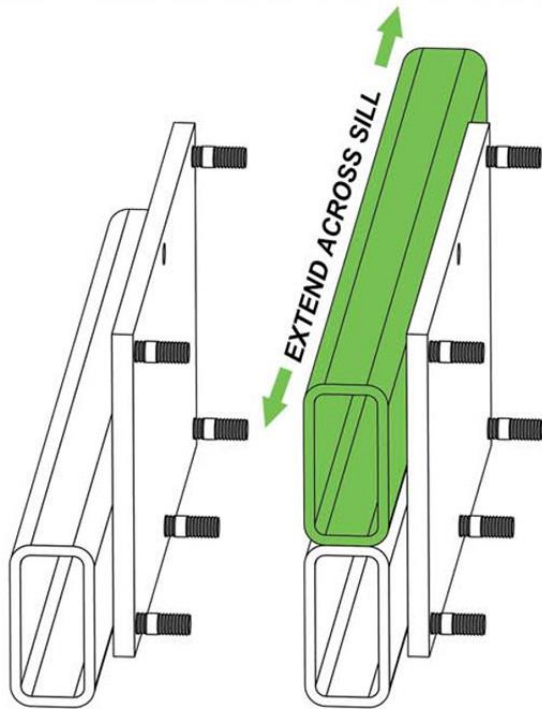
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Revised:12/2/21

Page 9 of 37

Support Mounting Plate



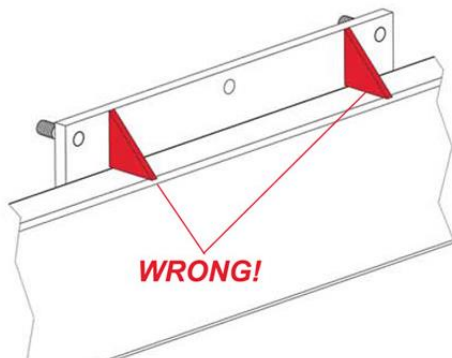
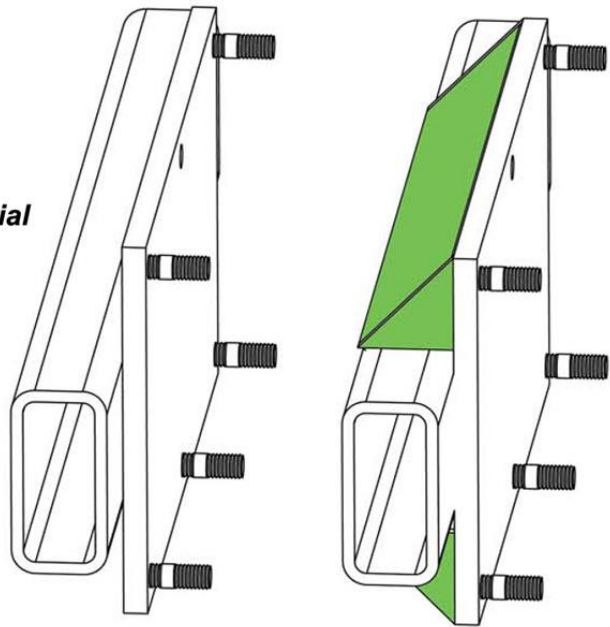
The Rear Mounting Plate of all lifters must be completely supported around all edges of the plate.

Unsupported plates will lead to premature lifter failure.

In the example at left, the mounting plate is well above the original height of the sill. A steel tube of appropriate size is cut and placed on top of the sill, extending it up and meeting with the top edge of the mounting plate. This additional piece would extend across the entire length of the hopper sill. Weld fully, leaving no portion of the mounting plate hanging above or below the original sill without support

In the example at right, the mounting plate is shown to be slightly above (or slightly below) the sill edge. In this case, add a strip of material and endcaps to the exposed mounting plate rear and weld fully.

Installations will vary from truck to truck. Custom cut pieces will likely be required to properly support the mounting plate.



The drawing at left is an example of inadequate support. The gussets will not help add rigidity to the mounting plate and the mounting plate will deform over time, leading to premature lifter failure. Never leave any portion of the mounting plate hanging without proper backing material.



Residential-Only Installation Example



A typical example of a center mount positioned residential-only installation. Note that the load sill has been extended to match the top of the mounting plate with a piece of structural tubing running the length of the load sill. The mounting plate is fully supported.

After the cart lifter and supports are tack welded in place, move the cart lifter by hand up and down carefully, making sure there are no interferences. Double check the hook height to the ground. If everything appears satisfactory, the lifter's mounting plate and supports may be welded fully.

The mechanical portion of the installation is complete.



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Revised:12/2/21

Page 11 of 37

Hydraulic Oil

The most important component of any hydraulic system is the oil. Perkins cart lifters use standard seal materials and should therefore be compatible to most grades of hydraulic oils, operating in typical weather conditions for most of North America. However, the condition of the oil is an important consideration that should not be overlooked.

Hydraulic oil may be dirty, contaminated, lost its viscosity, burned up, or have too high a concentration of absorbed water and/or air. While these things are unlikely to cause an immediate performance issue with your cart lifter, these issues can lead to premature wear and tear in the longer term.

Perkins would like to take this opportunity to remind you to check the quality of your hydraulic oil periodically and make sure it meets your standards. Oil that is maintained in good condition will help your equipment last longer.

Non-Perkins Controls

Some customers with new trucks may choose to use hydraulic controls provided by the OEM. As long as the GPM and pressure settings used match the specifications required, then the lifter should operate fine. Perkins cart lifters do not require special Perkins valves to operate.

In other cases, a Perkins cart lifter may be replacing a competitive lifter for which controls are already installed. Again, Perkins cart lifters should work just fine with competitive equipment, as long as the GPM and pressure settings are adjusted within the specified ranges.

Lifter Speed

The cycle time of the lifter is very important for safe operation. Perkins suggests a complete cycle time of 6-8 seconds (3-4 seconds up and 3-4 seconds down). Faster cycle times may be dangerous. Running a lifter too fast can damage the cart, or make a cart break loose off the lifter and fall, resulting in damage and/or injury.

The speed of the cart lifter is determined by the rate of oil (gpm) going to the unit. Typical lifters with a 27k actuator will require approximately 3.5 gpm in order to meet this speed. A gauge is recommended but not needed to determine proper lifter speed. Counting the cycle time using a stop watch is adequate to determine proper flow rate. Running a lifter too fast will void the warranty.

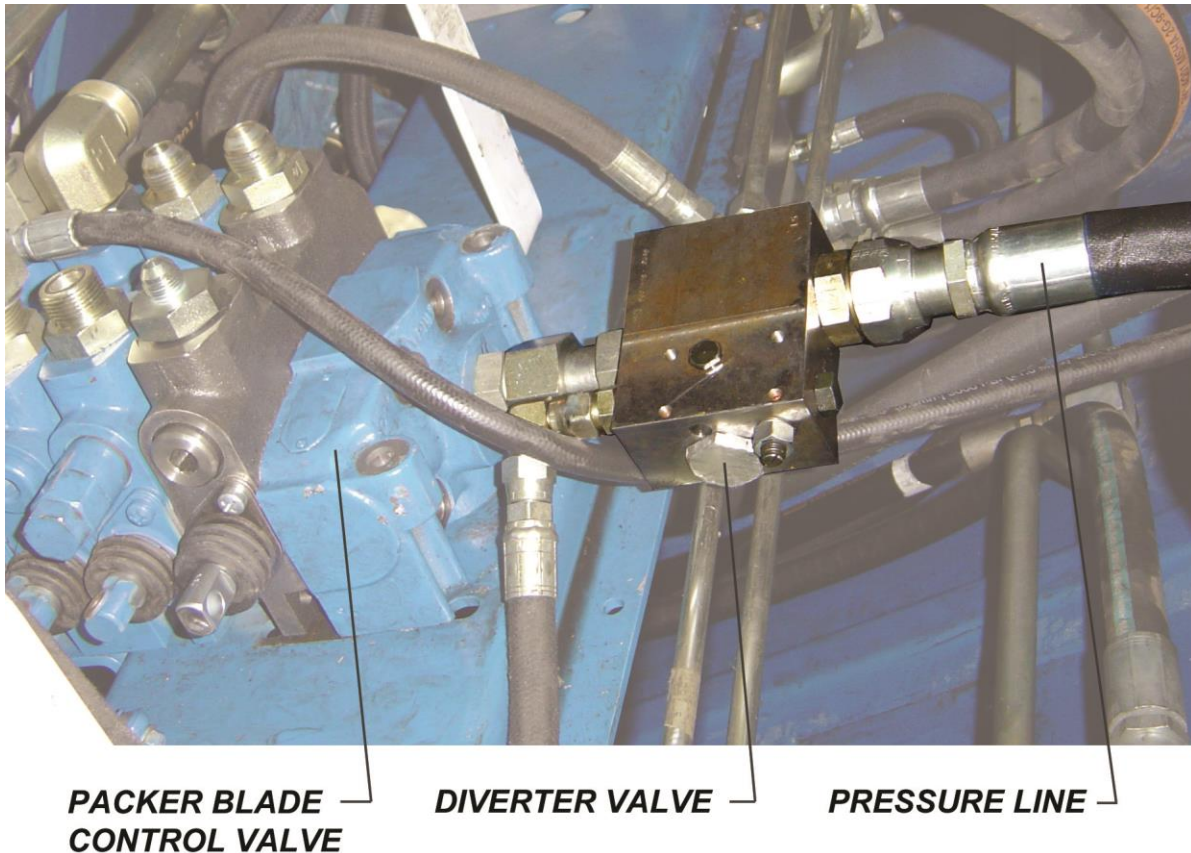
Weight Capacity

The maximum amount of weight that can be lifted is limited by the pressure relief valve. The settings must be determined with a pressure gauge. The D6073CB requires 1650 psi to lift a 350 lb load. Place a pressure gauge at the lifter and run the actuator until it stops, continue activating the switch and note the pressure on the gauge. Adjust the relief valve according to the manufacturer's instructions.



Perkins Hydraulic Installation *(Sold Separately)*

Locate and Connect the Diverter Valve



The diverter valve is designed to accept full system flow, continuously divert a portion of that flow to the lifter(s) and pass the remaining flow on to the packer control valve. The amount of flow that is diverted is adjustable, so the same valve that feeds one lifter can also be adjusted to feed two lifters.

Adding the Perkins diverter valve to your system will slow down your packer cycle by several seconds, whether you are actively using the lifters or not. However, this is usually an acceptable tradeoff, since the Perkins diverter valve doesn't generate much backpressure or heat, and it allows you to use the packer and the lifters simultaneously.

With the system off and depressurized, find the pressure line that feeds the packer valve and disconnect it. Connect this pressure line to the "IN" port of the Perkins diverter valve. Connect the "OUT" port of the diverter valve back to the packer control valve where the pressure line originally was.

The fittings to do this will vary from truck to truck. The Perkins Tap-in Kit generally gives you the required fittings, but due to the wide variety of trucks, changes made by the OEM, as well as the possibility of other aftermarket parts, especially on used trucks, the fittings you need to make these connections may not be included in your kit and will have to be purchased separately.



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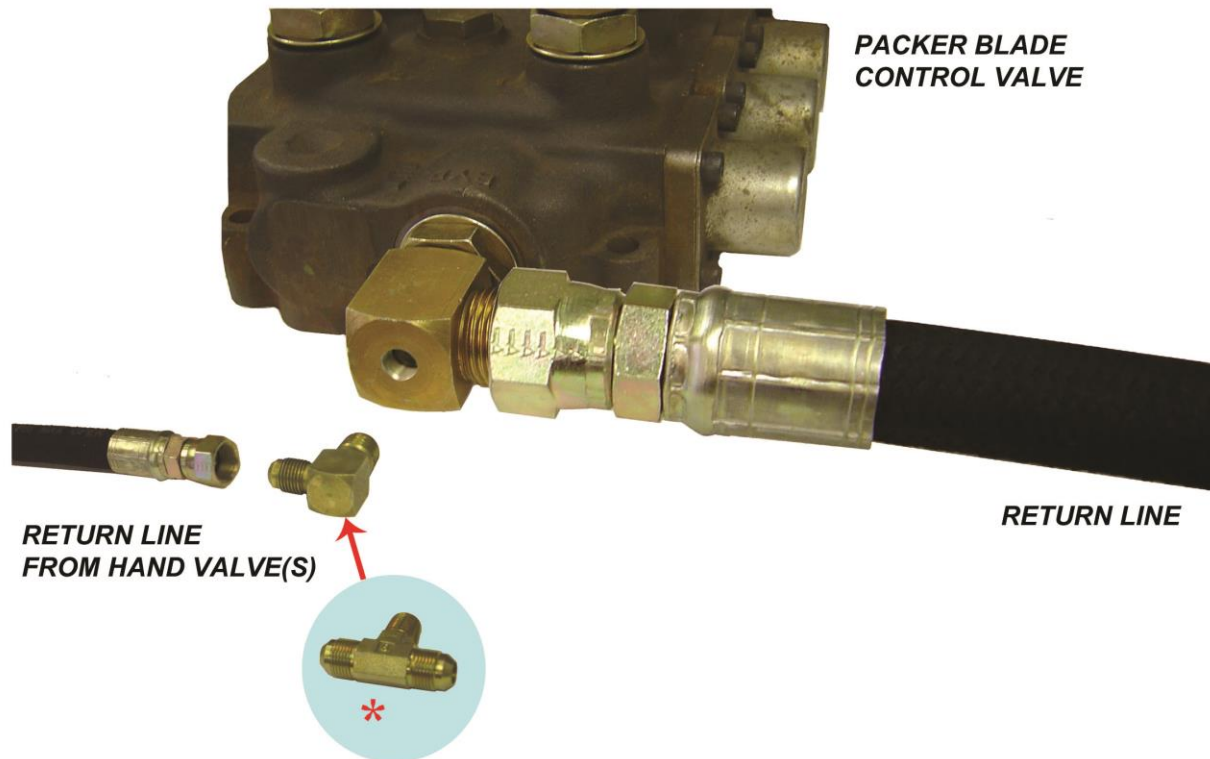
Page **13** of **37**

Tapping into the Tank Line

There are two ways to run the oil back to tank. Perkins does not suggest allowing the return oil to get pushed back into the packer control valve, because this generates back pressure and heat.

Recommended Method: Locate the return line coming off the packer control valve and find a suitable large fitting as shown in the photo below. Remove this fitting and drill and tap into it to fit an adapter (or tee for a double installation) to allow the oil to flow back into the return line.

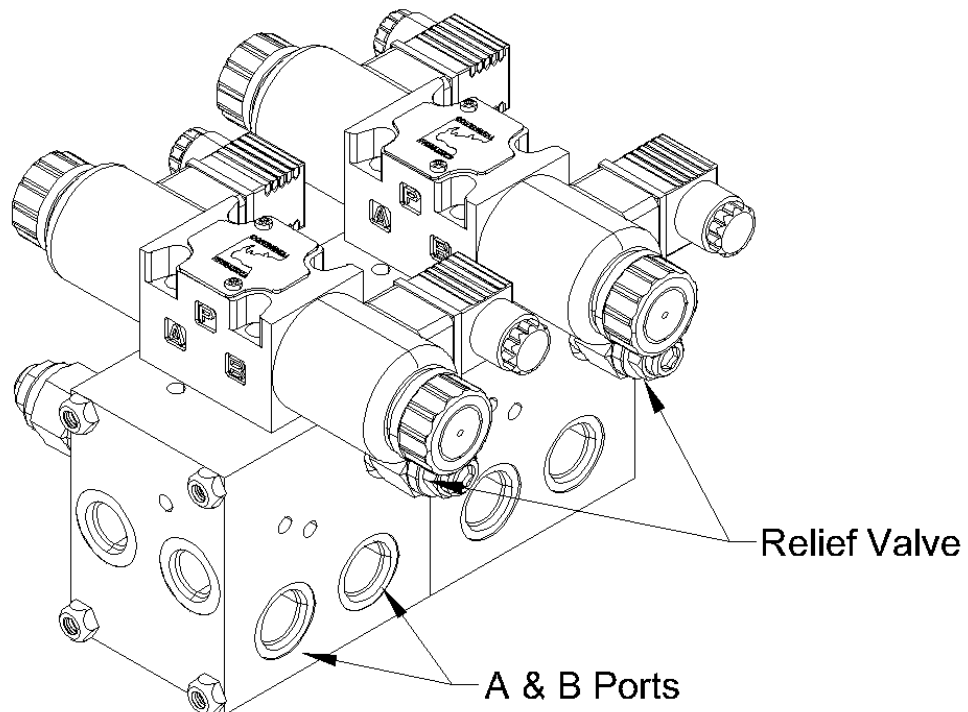
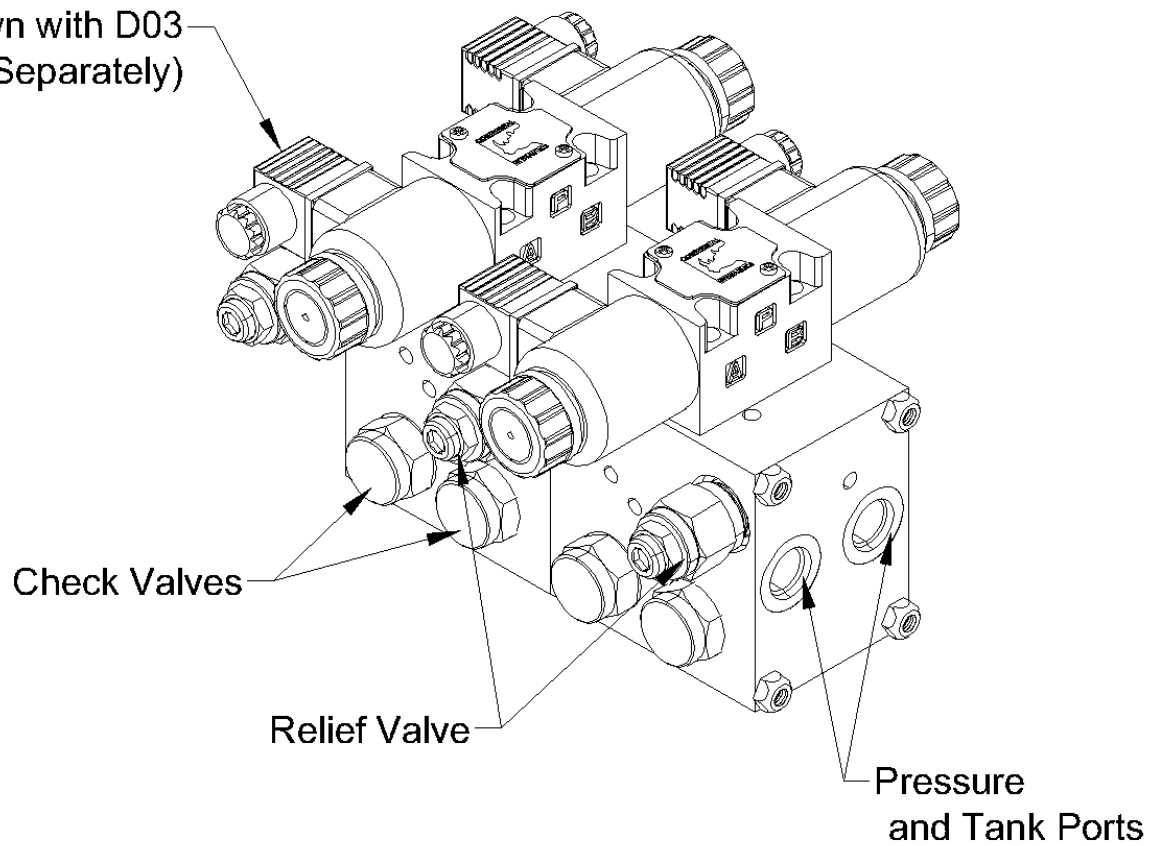
Be sure to clean the fitting of metal shavings before returning it to the system.



Alternative Method: On some trucks, it is not possible to tap into a return line fitting. In some instances, everything is hard-piped and there are no fittings to tap into. If this is the case, the return lines may be feed into the "T" port of the Perkins Diverter Valve. This tends to create some backpressure in the system, but otherwise does work.

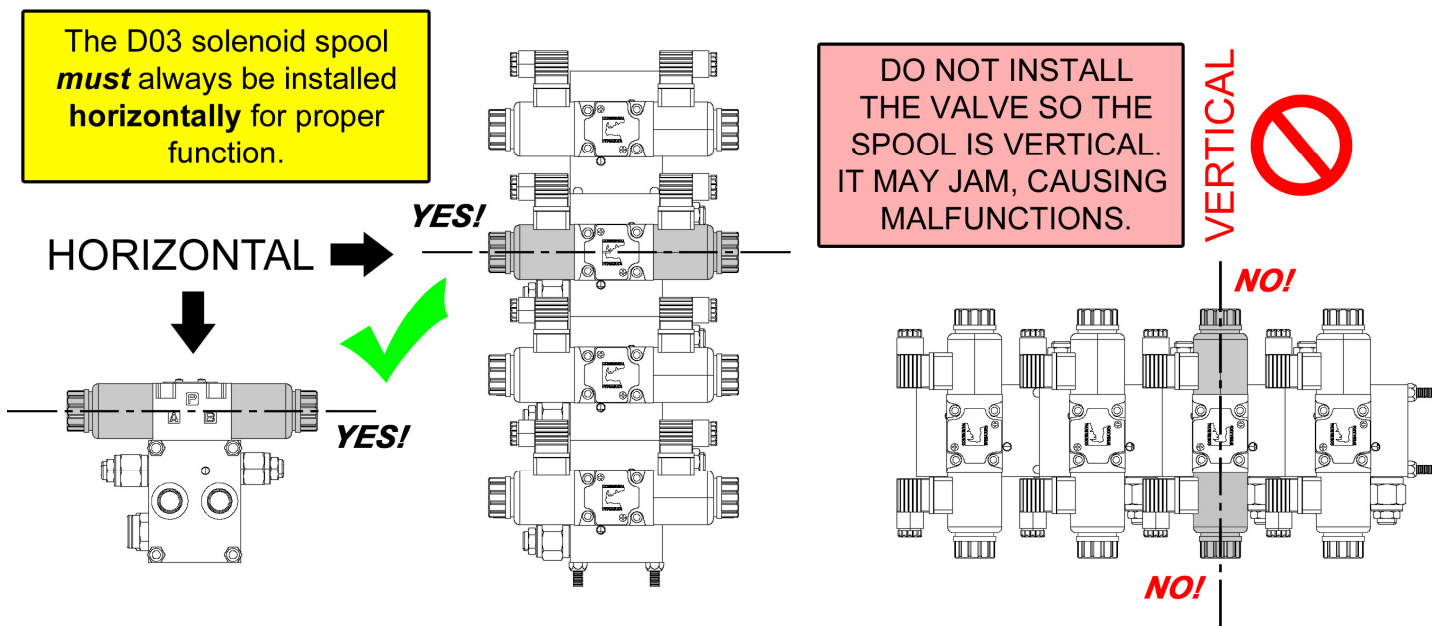


Shown with D03
(Sold Separately)



NOTICE ON THE POSITION OF THE D03 DIRECTIONAL CONTROL VALVE STACK

The control valve stack must be installed in a way that the d03 spool is horizontal at all times. Inside the valve is a spool with springs. The springs self-center the spool when the power is disengaged. When positioned horizontally, the spool self-centers normally. When incorrectly positioned vertically, the springs must work harder to return the spool to center, which may lead to jamming and malfunctions.



Please orientate the valve properly during your installation process so malfunctions do not occur.

If the spool does become jammed, it can be freed by manually sticking a screwdriver into the slot at the end of the spool and giving a small push to un-stick the spool.



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Revised: 08/10/23
Addendum

Adjustment of Primary Control Valve

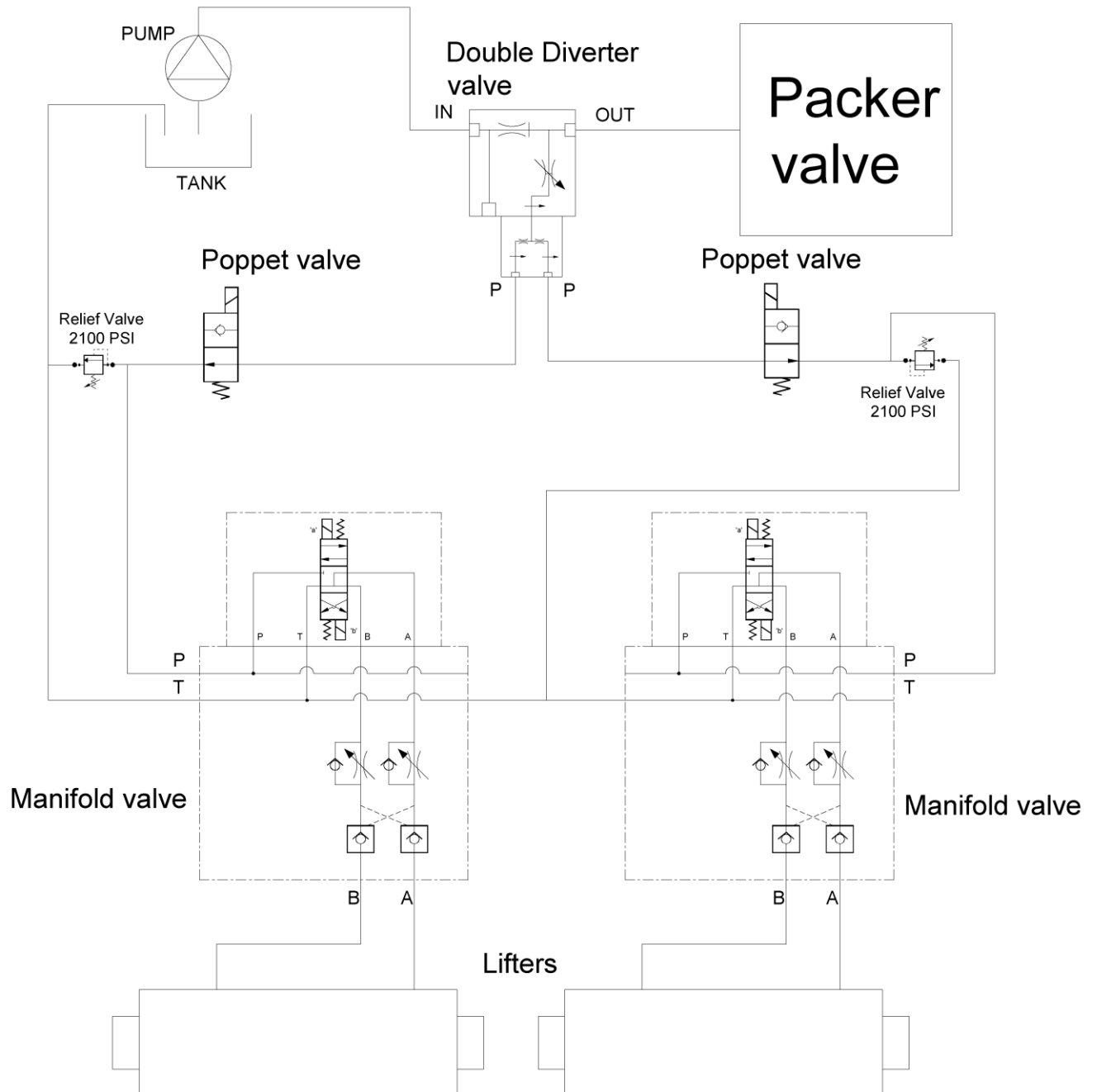
Main Relief: This adjustment controls the maximum pressure that the rest of the PC2020 circuit will have available. The setting is 1,650 psi. This is found by adding a gauge in the circuit and running one of the operations until it stops. While continuing to hold the function active, the pressure will rise until the relief opens. Turning the relief in clockwise will increase the available pressure. Stop when the pressure reads 2,000 psi and secure the adjustment by turning the locking nut.

Check Valves: Not adjustable. However, if it is suspected that they are stuck / not working, shut the system off, depressurize the circuit and remove the cartridge. Check it for damage, debris, or wear. Cleaning the cartridge and freeing the debris inside may be enough to allow the check to return to normal function. If not, replace the cartridge.

Speed Adjustment: Please note that the maximum speed of the unit is determined by oil flow rates generated by the specific trucks hydraulic system. If help is needed in adjusting the max speed, please consult with truck manufacturer. There is no speed adjustment for Perkins that will increase speed beyond what is provided.



Perkins Lifter Hydraulics Schematic



Operating the Lifter

Operating Instructions

The recommended cycle is 3-4 seconds to travel up and 3-4 seconds to travel down. This cycle time is based on the safe and smooth movement that the plastic cart can be swung about at without risking damage to the cart or injury to the operator. Therefore, operating the lifter faster than this time will void the warranty.

It is recommended that the lifter be visually inspected on a daily basis to ensure that there is nothing obviously in need of repair. Broken or missing parts/hardware should be attended to immediately to avoid risk of further damage to the lifter, damage to the cart, or injury to the operator. Operating a cart lifter that is not properly maintained is hazardous.

Step 1: Bring the lifter out of the storage position and into the pick-up position by pulling up on the “up” switch of push button control, D72951, until the faceplate is just shy of vertical, to facilitate easy cart engagement.

Step 2: Roll a loaded cart to the lifter and position the upper bar of the cart on the upper saddle of the lifter or in a position where the lifter will engage the bar once it starts its motion. (It is not necessary to lift the cart onto the upper saddle)

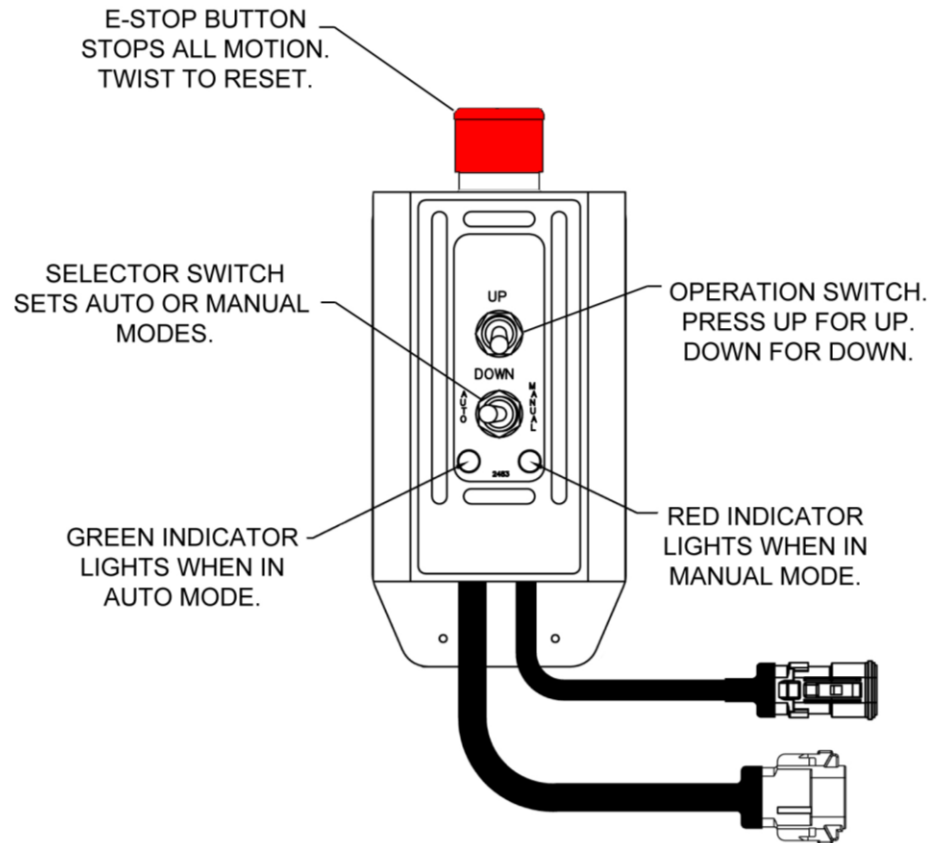
Step 3: Look and make sure no one is in the area of the lifter or cart, then operate the push button control, D72951, by pulling up on the “up” switch. The lifter will rotate and engage the cart and raise it to 45 degrees above the horizon.

Safety Note: The push button control, D72951, operates like a deadman switch or can be run automatically. In manual operation releasing the switch at any time will stop motion of the lifter. Normal operation may be resumed by operating the switch again.

Step 4: Lower the cart by reversing the switch on the control (pushing down), until the cart is safely returned to the ground and the lifter has disengaged the cart.

Step 6: Remove the empty cart and repeat the process as needed.





D72951 – Push Button assembly

Manual Mode Operation:

(typically to be used when servicing the tipper)

- Selector switch is on “manual”, red indicator is lit.
- Press and hold operation switch either up or down to operate tipper.
- Releasing the switch at any time stops all movement.

Automatic Mode Operation:

- Selector switch is on “auto”, green indicator is lit.
- Press and release operation switch up, tipper will move from stowed position to pre-programmed pickup position.
- Press and release operation switch up again, tipper will travel up to dump position, dwell for a moment, and automatically return to the pick-up position.
- To stow away the lifter, press and release operation switch “down” and the tipper will move to the tucked position under the load sill.



Safe Operating Tips

Always follow your company's safety policy during the use of this lifter, including use of proper clothing/ personal protective gear, reflective clothing, etc. Remember, you are operating the lifter on a public road/alley among moving traffic. Always be aware of your surroundings and watch for cars and pedestrians.

Do not lift anything with the lifter other than ANSI approved carts which are in good condition. Non-approved carts may not lock properly, causing them to fall from the lifter, which can cause damage or injury and will void the warranty.

Do not use the lifter for any purpose other than lifting a cart. Lifters are not meant as steps, they are not to be used to help lift a commercial container, or used to crush/breakdown an item. Doing so can cause serious damage or injury and will void the warranty.

Speeding up the lifter beyond the recommended cycle time of 6-8 seconds and/or adjusting the relief valve to pick up weights heavier than 350 lbs can lead to damage or injury and will void the warranty.

Do not operate the lifter unless the area around it is clear of personnel. This means do not touch the lifter while it is in operation and do not stand or sit under/near the lifter while it is moving. Lifters have pinch points which can cause serious injury. Stay clear at all times.

TuckAway lifters can hang very low to the ground at certain points of their lift cycle. It is the operator's responsibility to move the lifter to a safe position while going down the road, such as putting the lifter all the way up or fully into the storage position. Lifters left hanging low risk bottoming out on the street, which will cause serious lifter damage. Damage caused by bottoming out is not covered by warranty.

Lifters of all kinds can be struck by utility poles, walls, other vehicles, backed into earthen hills, etc. It is the operator's responsibility to position the cart lifter in a safe position prior to coming close to any other foreign object. If the lifter is damaged by collision, the damage will not be covered by warranty.

If the lifter is installed in such a way that the lifter or cart can make contact with the packer blade, then it is critical to pay attention and make sure the lifter is not operated when the packer blade is down or coming down.

If the truck is equipped to dump commercial containers, the lifter must be stored all the way down prior to engaging the commercial container or the cart lifter may be crushed by the container. This damage is not covered by warranty.



Other Adjustments

Make sure all hardware is firmly tightened. If any hardware loosens they may be affixed with Blue Loc-tite type 242 thread locker.

Perkins uses anti-sieze lubrication on the shafts of the actuator when applying the driver bearing hubs. This typically does not wash away and helps in reducing corrosion. This makes removing the driver bearing hubs off the splines easier in the future. When rebuilding a lifter, reapply a fresh coating of anti-sieze on the splines.

There is a wide variety of carts, some of which do not meet ANSI standards. Customers may experience engagement issues with some particular brands of carts and in circumstances like these, spacers can be added behind the upper saddle or behind the lower stop to extend them out from the faceplate. This helps certain brands/sizes of carts to lock to the lifter better. If you experience any difficulties with the cart type you have, please call Perkins at 800-882-5292 to discuss the problem and Perkins will advise the best solution to meet your needs.



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Revised: 12/2/21
Page **21** of **37**

Servicing the PerkinsHKS Rotary Actuator

PerkinsHKS27k Actuator: D73060HKS

Common Parts: Seal Kit: D73060HKS-1 Bearing Ring (x1) #D73060hks-3

DO NOT ORDER SPARE PARTS FOR ANY ACTUATOR WITHOUT CALLING PERKINS WITH A POSITIVE ID VIA SERIAL #, LCOATED ON THE ACTUATOR BODY.

Actuator Shaft : D73060hks-2

The manual for the actuator is provided separately and free of charge. It contains detailed instructions for rebuilding, based on a complete tear-down. Also, within the manual is a complete parts listing. To receive a copy of the actuator manual, simply call Perkins at 800-882-5292.

Flushing the Actuator

Because the oil displacement of the actuator is nearly equal to the displacement of the hoses, the oil inside the actuator does not fully displace to the system and get filtered with each use. Only a percentage of the oil displaces. Because of this, it is possible to have build-up of particles over time which can lead to premature wear, especially in dirty oil conditions. Perkins recommends flushing the oil in the actuator to the system to allow for complete filtration once every 6 months. This will help ensure the actuator has a very long lifespan.

To flush the oil, turn off / depressurize the system and connect a hose from one bleed port to the other. Tighten the fittings restart the pump. Run the hand valve back and forth several times, holding the handle down for about a minute each time. This ensures any particles have completely exited the actuator.

**BYPASS HOSE
USING THE #4
BLEED PORTS**



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Revised:8/10/23

Page 22

Lifter operation is erratic, lifter does not move smoothly

When the lifter does not move smoothly, there is typically air in the system. This is usually an issue after the initial installation or a recent repair where the hydraulic lines may have been opened. Bleed air out of the system by loosening a fitting very slightly and running the lifter to create flow. Excess air should bleed out of the opening in the fitting. Retighten when complete done.

In rare instances, the flow may be too low. This would also be noticeable if the lifter was also very slow. Try adjusting the diverter valve to increase the flow.

Another possibility is the adjustable flow control, D63575 not functioning properly. Check the arrow printed on the valve body. The valve should be installed so the arrow points away from the actuator. Adjust, clean, or replace the adjustable flow control valve as needed.

Cart lifter will not pick up the weight

The cart may be overweight. If the cart is obviously very heavy and hard to move, try removing a few items from the top to lighten the load.

The relief pressure setting may be set too low. Check and adjust the pressure using a pressure gage. Note the pressure being delivered and adjust accordingly.

If adjusting the main relief does not bring the pressure up to where it should be, then the truck's relief pressure setting may be set too low. Try adjusting the truck's relief valve (see manufacturer's instructions on how to do this for your vehicle)

If all pressures are set properly and the push button assembly, D72951, works, then the actuator may have internal leakage. Test for internal leakage by running the lifter all the way up and dead-head the lifter up. Note the pressure gage and see that the pressure stays constant as the switch is held depressed. If the pressure falls, you may have internal leakage and the actuator should be repaired/rebuilt with new seals.



Lifter operates slowly

Check the flow adjustment on the diverter valve. Use a flow meter to make sure each lifter receives approximately 3.5 gpm. Adjust diverter as needed following instructions in the manual.

Engine idle may be too low to provide adequate flow. Following the manufacturer's instructions, adjust the engine idle. Remember increasing engine idle will increase fuel consumption.

The truck's pump may be faulty, unable to deliver the desired flow. Contact your truck manufacturer.

In rare instances, debris within the oil may be clogging the diverter valve. Check and clean the valve as needed.

Lifter operates too fast

Check diverter valve adjustment screw. Adjust in to lower the flow delivered to the lifters.

Engine idle speed may be too high. Adjust per the manufacturer instructions.

Diverter valve is leaking oil

Worn or Damaged seals within the diverter will cause external leaking.

Unable to achieve over 1400 psi

The truck pressure is too low. If adjustments do not help, the pump may be bad or underpowered. Contact your truck manufacturer.

Lifter breaks the lower bars of carts

First, make sure there is no damage to the lifter. Replace damaged components as needed.

Check adjustment of plunger assembly and threaded rod assembly. Check function of plunger. Adjust as needed.

On new installations, check the mounting height. It is common for brand new lifters to break lower bars if the lifter is installed too low. Remove the lifter and remount at the correct height.



Lifter breaks upper bar of carts

The upper bar of the cart is typically broken when the cart is lifted while it is excessively loaded, or while the lifter is operated too quickly. Adjust the speed of the lifter to bring the cycle time to 6-8 seconds. Make sure the pressure is set no higher than 1950 psi.

Make sure the lifter is not damaged. Bent or broken lifter parts can contribute to cart damage.

Lifter drops carts

A common problem is the lower latch is not adjusted correctly or the latch is damaged or unable to move freely. Check, clean and grease the parts as necessary to achieve free motion of the latch and appropriate latch timing.

Make sure the upper hook is not damaged and make sure the lower stop is in place. Some customers have been known to remove the lower stop, but this leads to dropping carts and latch damage.

Carts which are damaged or have missing lower bars will obviously not latch properly and should be repaired or replaced.

Some carts do not meet ANSI standards. Measure the problem cart and see that the bar to bar spacing is within 14 ½ - 15 ¼.

Lifter slams down to the ground or comes down too quickly

On the way down, the lifter can get ahead of the oil and free fall. Check that the adjustable flow control is mounted to the left side of the actuator, with the arrow pointed away from the actuator, and that the valve is adjusted properly. Try ¼ turn adjustments until the lifter returns to ground level smoothly.

Lifter drifts out of position when not in use

Make sure the PO Check valve is installed. If it is and the lifter still drifts, remove the PO check and remove and clean the cartridge. If the valve is damaged, replace it.

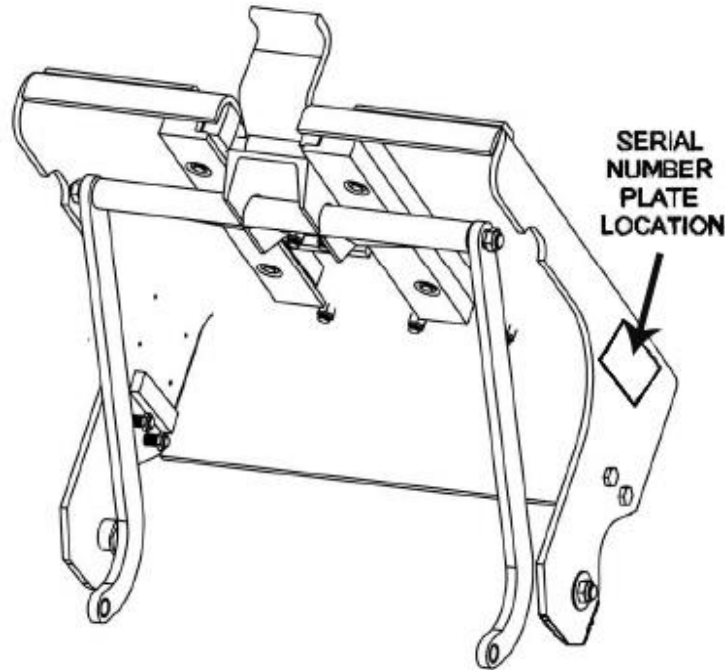
If the problem persists, then the actuator may be leaking internally. Check for internal leakage by running the lifter up and holding the switch while reading a pressure gage. If the pressure falls, then the actuator is leaking internally and should be rebuilt with a new seal kit.

Lifter is in good condition, latch is adjusted, but lifter still breaks carts

In this case, the lifter is most likely being operated too fast, or the carts are overweight. Excessively hard shaking of the carts by the operators can also lead to cart damage. Train your operators to operate the lifters properly.



Making a Warranty Claim



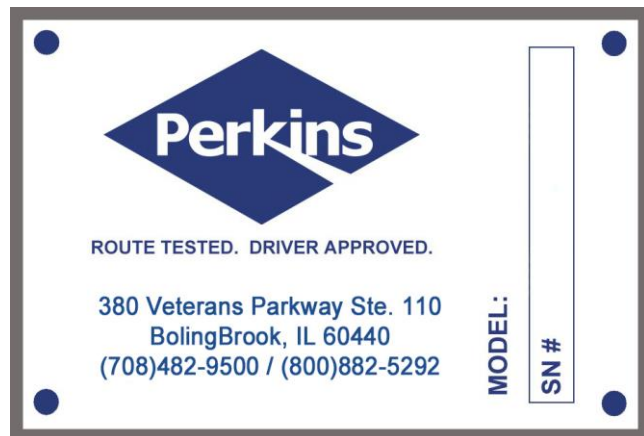
For complete warranty coverage details, please see the warranty page at the end of this manual.

If you suspect that failure of the lifter to operate is due to a defect, please take a moment to locate the serial number of your lifter.

Warranty cannot be honored on lifters or individual pieces unless a serial number is provided. Since the tag is frequently lost, damaged, or painted over, it is a good idea to note the serial number in this manual at the time of installation.

At right is an example of the serial number plate. It will be stamped with a model number and serial number.

Once you have the number, please call Perkins Manufacturing at 800-882-5292 for additional instructions.

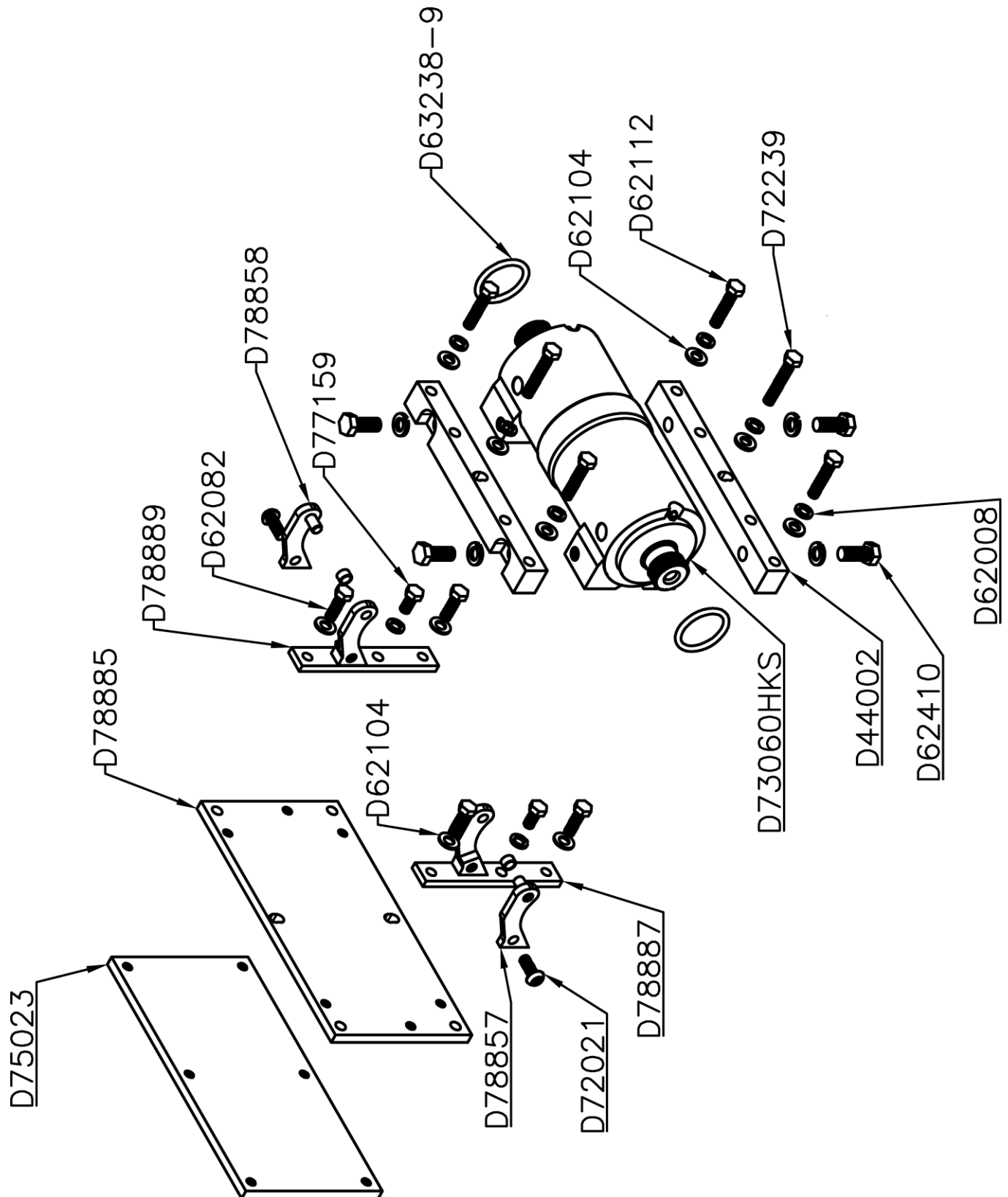


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800-882-5292

Revised: 12/2/21
Page 25 of 37

Exploded View – D6073CB

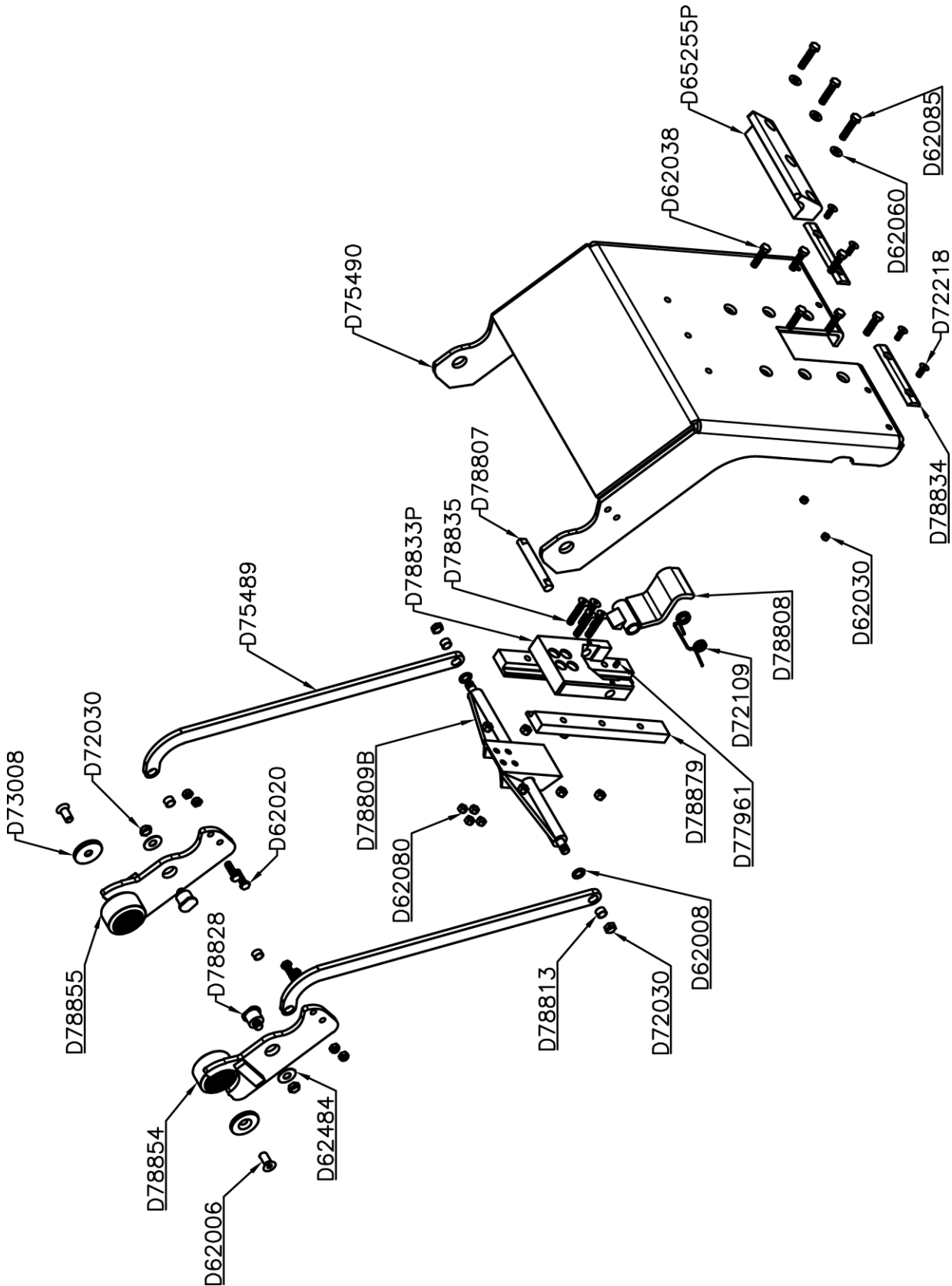


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800-882-5292

Revised: 12/2/21
 Page 26 of 37

Exploded View Continued



Parts List-D6073CB

Item	Description	Qty
D72009	DRIVE SCREW #6-3/8 PLATED	4
D65255P	PLASTIC UPPER HOOK REV B	1
D63663	ELBOW 45 #6MO - #8MT	1
D63596	ADAPTER #6MO-#6MO	1
D63581	ELBOW SW 45 #6MT-#6FT	1
D63575	VALVE FLOW CONTROL ADJUSTABLE - 6 GPM MAX. #6 SAE PORTS *FREE FLOW ONE DIRECTION / ADJUSTABLE RESTRICTION IN OTHER DIRECTION.* RESTRICTS IN DIRECTION OF ARROW.	1
D63562	CAP #8 JIC	2
D63491	Serial Number Plate	1
D63431	REDUCER #6FT-#8MT	1
D63238-9	EXTERNAL HUB SEAL O-RING	2
D63074	ADAPTER #6MT - #6MO	1
D72030	LOCKNUT THIN 1/2-13, X 5/16" HIGH, ZINC PLATED	4
D62085	BOLT HHCS 3/8-16 x 1 3/4 GR8, Zinc Plated	3
D62080	LOCKNUT 3/8-16 GR 8 ZINC PLATED	17
D62060	SAE FLATWASHER 3/8 ID x 13/16 OD X 1/8TH zinc plated	3
D62038	BOLT HHCS 3/8-16 X 1 1/2 GR8, ZINC PLATED	6
D62030	LOCKNUT 5/16-18 GRADE 8 ZINC PLATED	4
D62020	BOLT HHCS 3/8-16 X 1 1/4 GR8 (zinc plated)	4
D62008	SAE FLATWASHER 1/2 X 1.06 OD ZINC PLATED	8
D62006	BOLT FHCS 1/2-13 X 1 1/4 GR8; Zinc Plated	2
D62484	USS FLATWASHER 1/2 x 1.37 OD ZINC PLATED	2
D78887	LH LATCH LUG WELD REV A	1
D78879	THICK GUIDE PLATE	2
D78858	R.H. Lug Cap Weldment	1
D78857	L.H. Lug Cap Weldment	1
D78855	RH DRIVER ARM EXTENDED WELDMEN	1
D78854	LH DRIVER ARM EXTENDED WELDMENT	1
D78834	BUMPER BLACK PLASTIC REV A	2
D78828	THREADED PIN-BREAKAWAY PIVOT REV H	2
D72021	BOLT BHCS 1/2-13 X 1 1/4 (ZINC PLATED, GR 8)	2
D78889	RH LATCH LUG WELD REV A	1
D77159	BOLT HHCS 1/2-13 X 1, GR 8 (ZINC PLATED)	2
D73008	Actuator Flange 515583 rev E	2
D72239	BOLT HHCS 1/2-13 X 2 3/4 GR8 (zinc plate)	2



Parts List D6073CB Cont.

Item	Description	Qty
D72218	BOLT FHCS 5/16-18 X 1, GR8, ZINC PLATED	4
D72113	LABEL - PERKINS LOGO, diamond cut, 4" long x 2 1/2" high, solid color (not a gradient)	1
D62082	BOLT HHCS 1/2-13 X 1 1/2- GR8 (zinc plate)	4
D62104	NORD-LOCK LOCKWASHER 1/2" x.17" THK	14
D38040	NORD-LOCK LOCKWASHER 5/8"	8
D72631	Label - "Made in the USA"	1
D72589	LABEL - "CAUTION" FOR D6220-TYPE MODELS	1
D72590	LABEL - "CAUTION" FOR D6220-TYPE MODELS - SPANISH	1
D72163	LABEL - GREASE POINT, REV B	1
D72498	LABEL - WARNING HYDRAULICS rev A	1
D75490	FACE PLATE WELDMENT REV A	1
D75489	ARM-LATCH CONTROL	2
D78835	BOLT FHCS 3/8-16 X 2 GR8 (ZINC PLATED)	4
D77961	SET SCREW 1/4-20 x 3/8 (CONE POINT)	2
D78807	PIN-LOWER LATCH PIVOT (REV C)	1
D78808	LOWER LATCH WELDMENT (REV B)	1
D78809B	LATCH CONTROL WELDMENT (REV C) 1251405	1
D78833P	Lower Slide Nylon 6 MD + Oil	1
D72109	SPRING-LOWER LATCH (Rev A)	1
D78885	MTG PLATE REV A	1
D44002	ACTUATOR BAR REV D	2
D73060HKS	27K Split Body Actuator HKS	1
D75023	REAR MTG PLATE	1
D62112	BOLT HHCS 1/2-13 x 2 1/4 Gr8, Zinc Plated	4



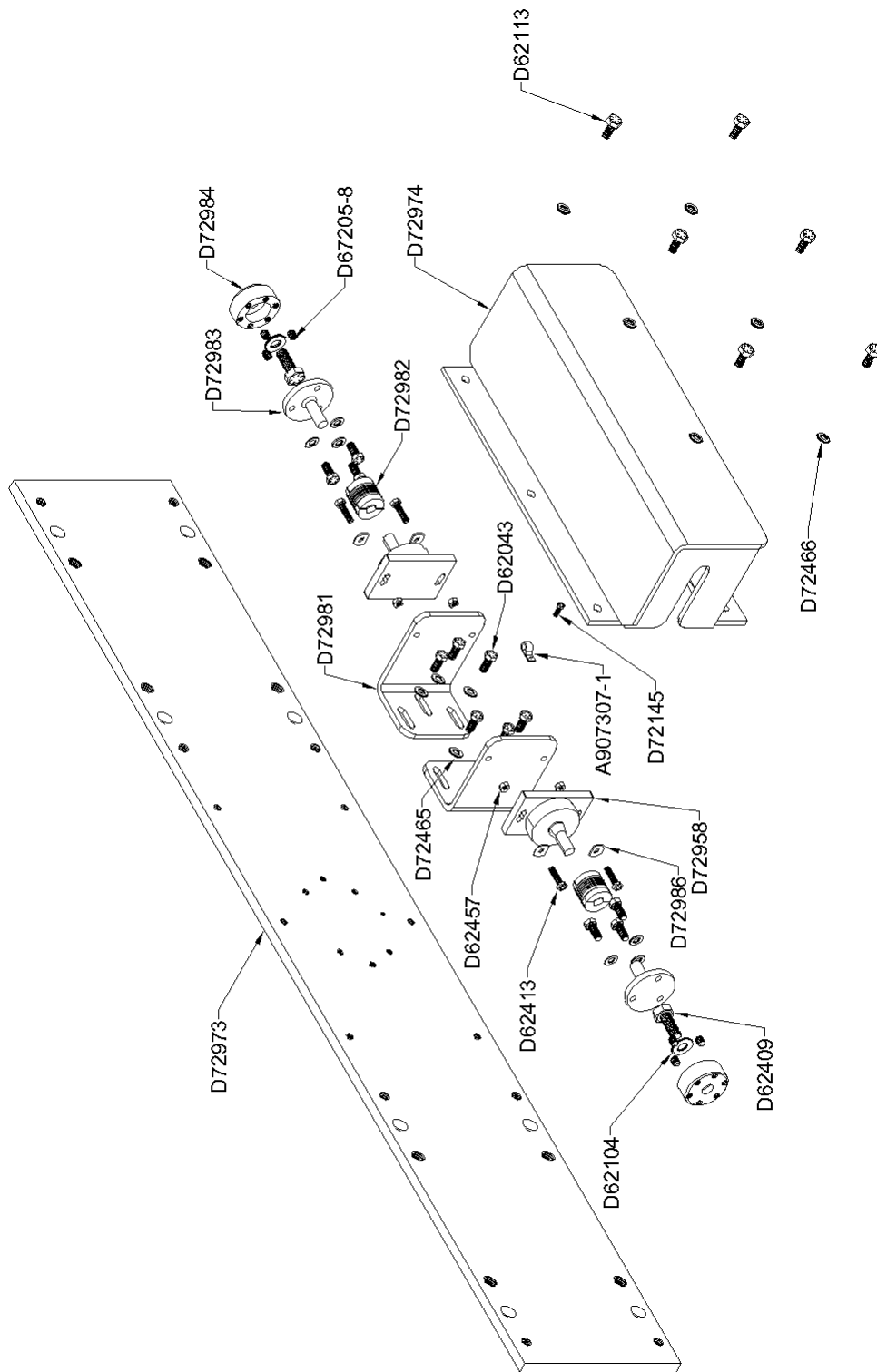
Parts List D72955(Sold Separately)

Item	Description	Qty
A90270B	Solenoid valve A,B to Tank D03, open center, 12V	2
A90809	Pilot Operated Valve N.O. 12v	2
D72779	Manifold Control Valve for PTO operation D03 Compatible (not included) rev A (Built in adjustable flow control & PO check)	2
D63014	HOSE CLAMP SET #8 (DUAL HOSE)	10
D62063	Cable Tie, 11", Nylon, Black	75
D63535	#8 Hydraulic Hose Assy x 175" long MATCHMATE GLOBAL/EATON/AEROEQUIP #GH681-8 Standard #8 Female Swivel JIC straight ends	4
D63534	HOSE #8F-#8F X 54in LG	2
D72954	HOSE #8 W #8 ENDS X 240" LONG	4
D63044	ADAPTER #16MO-#16MT	1
D63073	All Female sw #20 TUBE ASSY 3"	1
D63429	ADAPTER #12MT-#16MO	2
D63489	TUBE ASSY HEIL STR	1
D63490	TUBE ASSY 90 DEG HEIL	1
D63606	ADAPTER #16MO - #16FT	1
D63784	ADAPTER #16MO - #20MT	2
D72952	Harness, Autocycle COC, x 36" Long Receiver to D03 Solenoid	1
D63411S	Double Diverter Valve Steel B	1
D47095-1	Internal Hydraulic Seal	2
D47095-2	5/16-18 Threaded Rod, 12' BAR	4
D62030	LOCKNUT 5/16-18 GRADE 8 ZINC PLATED	4
D72951	Push Button Controller Assembly	2
D72956	Controller Receiver Assembly	1
D72985	LIFTER SENSOR ASSEMBLY	1
D72987	REAR PLATE	1
D72988	TAIL GATE	1
D72989	CONTROL SWITCH MOUNT	1
D72993	Hydraulic Valve Mount	1
D72953L	Harness, Autocycle COC, x 200" Long Push Button to Receiver, DRIVER SIDE/STREET SIDE	1
D72953R	Harness, Autocycle COC, x 200" Long Push Button to Receiver, PASS SIDE/CURB SIDE	1
D72813	Adj. Relief Valve, Stand Alone, 20 gpm max, 100-4000 psi max., #8 SAE ports, C10-2 cavity, pilot operated	1



Exploded View – D72985

(SOLD SEPARATE AS PART OF D72955 CONTROL PACKAGE)



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800-882-5292

Revised: 12/2/21
Page 31 of 37

Parts List – D72985

(SOLD SEPARATE AS PART OF D72955 CONTROL PACKAGE)

Item	Description	Qty
D72973	REAR MOUNTING PLATE REV A	1
D72974	COVER WELDMENT	1
D72958	Positional Sensor Assembly	2
D72981	SENSOR MOUNT	2
D72982	FLEXIBLE SHAFT COUPLING	2
D72983	COUPLER CONNECTOR	2
D72984	HUB CONNECTOR	2
A90307-1	Snug-Fit Vibration-Damping Loop Clamps - 3/8" id	1
D72145	BOLT SHCS #10-24 X 1/2 LONG ZINC PLATED	1
D62043	BOLT HHCS 3/8-16 X 3/4 GR8, ZINC PLATED	6
D72465	NORD-LOCK LOCKWASHER 3/8	6
D62113	BOLT HHCS 5/16-18 X 3/4 GR8, Zinc Plated	12
D72466	NORD-LOCK LOCKWASHER 5/16	12
D62409	BOLT HHCS 1/2-13 X 1 1/4, Zinc Plated	2
D62104	NORD-LOCK LOCKWASHER 1/2"	2
D62413	BOLT HHCS 1/4-20 X 1 GR8 Zinc Plated	4
D62457	LOCKNUT 1/4-20 GR8 ZINC PLATED	4
D72986	CLIPPED WASHER 3/4 OD X 1/4 ID X 5/8 CLIPPED WIDTH	4
D67205-8	SET SCREW 5/16-18 X 3/8	6

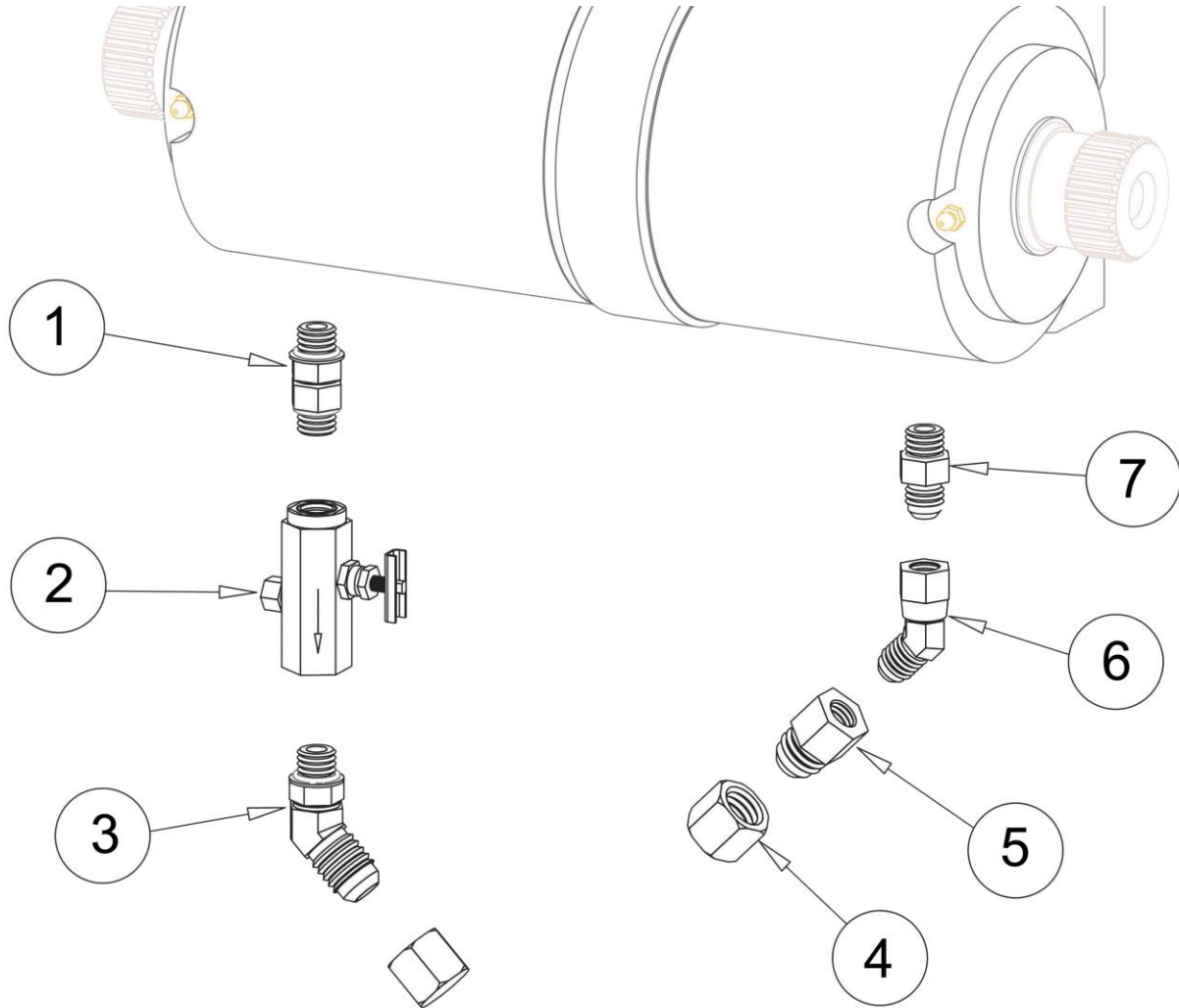


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800-882-5292

Revised: 12/2/21
 Page 32 of 37

Exploded Parts View – Hydraulic Fittings



1	D63596	Connector #6mo - #6mo	1
2	D63575	One-Way Adjustable Flow Control Valve	1
3	D63663	45 deg. Elbow - #6mo - #8mt	1
4	D63562	Cap - #8ft * For shipping purposes. Remove to	2
5	D63431	Reducer - #6ft - #8mt	1
6	D63581	45 deg. Elbow - #6ft - #6mt	1
7	D63074	Adapter #6mo - #6mt	1

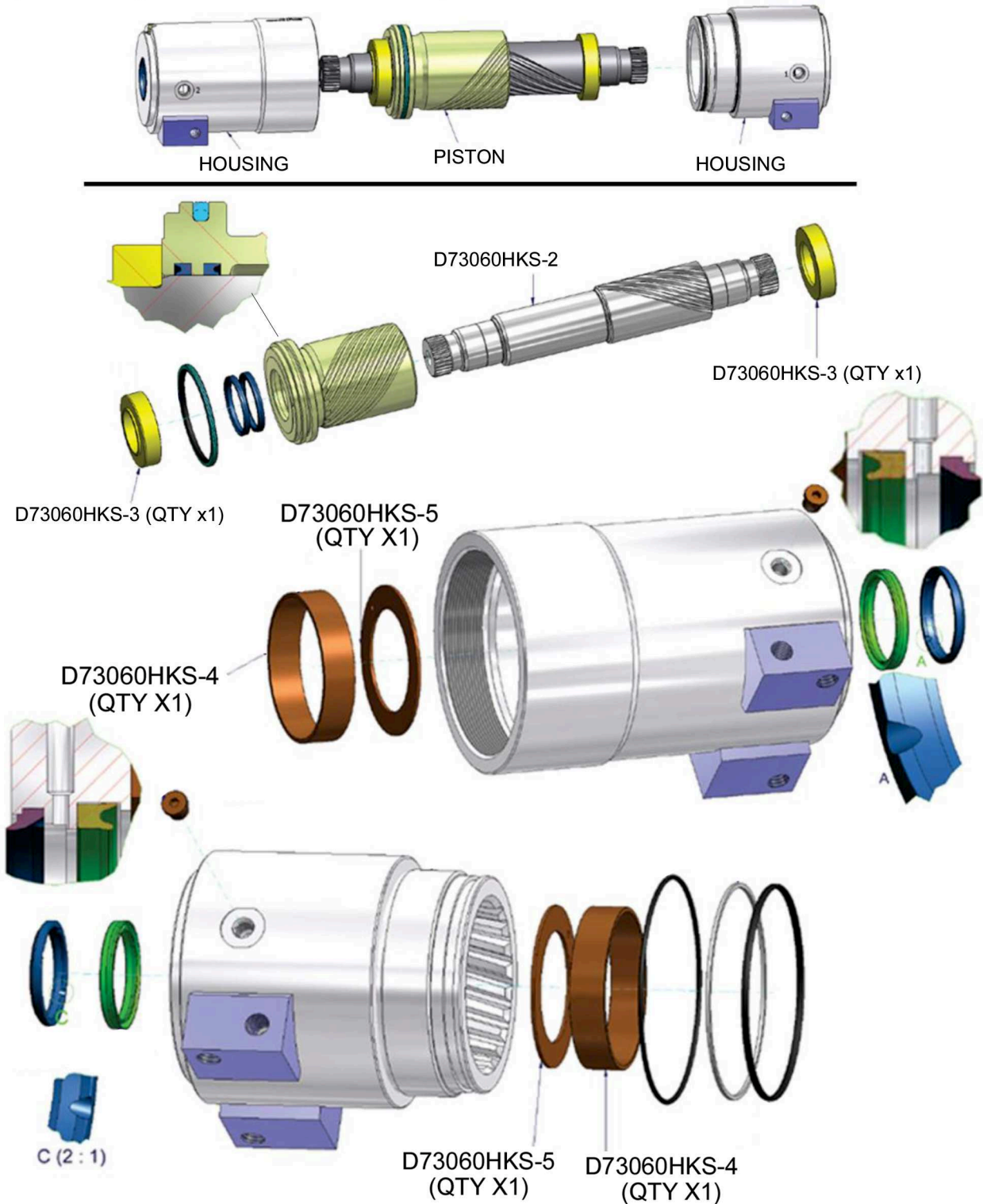


27k HKS (Current) Actuator Parts Guide

The housing and piston pieces are not replaceable due to the need to mate them at the factory.

Seals are only sold in kit form. One kit contains all the seals for one actuator.

Bearings and Bushings and Washers are sold individually.



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www.perkinsmfg.com

800-882-5292

Revised: 8/10/2023
Page 38 of 44

Protective Safety Labeling

Perkins provides each finished cart lifter with ANSI-specified caution labels. They are clearly placed directly on the machine for easy viewing by the operators.

Should the cart lifter ever be re-painted, or if the labels are damaged beyond recognition, it is advised to replace the labels immediately to help keep your crew safe.

OHSA always requires these labels to be in clear sight on the machine.

Responsibility to maintain proper caution and warning labels is the responsibility of the end-user.



You should make sure that all pressure is bled/released from the hydraulic or pneumatic system; for some systems it may be possible to work on a part of the system by using line-breaking or blanking procedures. Never loosen or tighten a hydraulic connection when the system is under pressure. The connection could fail catastrophically and cause an injection injury and/or damage to property. Inspect hoses regularly for wear then replace hoses before leaks can develop. Hydraulics systems should look clean and dry. You can typically see leaks where the machine is collecting dirt and debris that is sticking to the oil. Look for wet-looking areas that are collecting dirt. Check for abraded/scuffed hoses, loose or damaged fittings, or worn-out seals, or other physical damage that may have led to creating the leak.





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Creators of the TuckAway® Cart Lifter
www.perkinsmfg.com


800-882-5292

Revised: 12/2/21

Page 35 of 37

 	⚠ CAUTION
	<p>Pinch point hazard. Keep hands clear. Worker can be injured by moving parts.</p> <p>Skin injection hazard. Protect your hands & body from high pressure fluids. Relieve pressure before servicing. Do not check for leaks with your bare hands.</p>
<p>Compatible with ANSI Z245.60 type containers only.</p>	
<p>Cycle time must be 3-4 seconds up / 3-4 seconds down. Faster operation can cause damage and injury.</p>	

Perkins Manufacturing, Company 708 482 9500 Label # D72589

 	⚠ ATENCIÓN
	<p>Punta Peligrosa. Mantenga las manos alejadas. El trabajador puede lesionarse moviendo partes.</p> <p>Riesgo de inyección cutánea. Proteja las manos y el cuerpo de líquidos en alta presión. Purgue la presión antes de realizar cualquier servicio. No busque fugas usando sus manos.</p>
<p>Compatible con ANSI Z245.60 solo contenedores de tipo.</p>	
<p>El tiempo del ciclo debe ser 3-4 segundos arriba / 3-4 segundos abajo. Una operación más rápida puede causar daños y lesiones.</p>	

Perkins Manufacturing, Company 708 482 9500 Label # D72590

Dress appropriately for work with pants and sleeves that are not too long or too loose. Shirts should be fitted or tucked in. Avoid wearing loose and dangling jewelry. Tie back long hair and tuck braids and ponytails behind you or into your clothing. Wear the appropriate, well-fitting gloves for your job.

Look for possible pinch points before you start a task. Take the time to plan out your actions and decide on the necessary steps to work safely. Read and follow warning signs posted on equipment.

Machinery can pose a hazard with moving parts, conveyors, rollers, and rotating shafts. NEVER reach into a moving machine. Turn equipment off and use lockout/tagout procedures before adjusting, clearing a jam, repairing, or servicing a machine.





NOTICE

Grease all zerks on a weekly basis to maintain warranty.

Re-grease after power washing.

Visit www.perkinsmfg.com for important updates.

Please read the manual prior to operating or adjusting this machine for important information.

Perkins Manufacturing. Company 708 482 9500

Label # D72163

Maintaining the lifter is vital to ensure proper operation of the equipment and for warranty to be valid. Inspection of the lifter is also important to make sure there are no loose parts, and that the lifter is properly greased. Not inspecting or maintaining the machine regularly can pose a hazard of parts coming loose, parts not moving properly or wear items to become too worn to not move properly. If any issues occur, please contact service immediately.



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www.perkinsmfg.com

800-882-5292

Revised: 12/2/21
Page 37 of 37

Safety Labeling and Training Requirements

Perkins provides safety labeling on all outgoing product per ANSI regulations, seen below.

19-01 Warning, Label and Safety Instructions.

Include standard safety instructions as one of the first items in a manual. This helps emphasize safe use of the product and can help the user understand the hazards, the consequences of the hazards and how to avoid the hazards. Priority placement also increases the likelihood that the information will be read. Any symbols or pictograms physically on the product should be included in the appropriate section of the manual to reinforce the association between the nature and severity of the hazard and the correct behavior.

The American National Standards Institute (ANSI) standard Z535.6, *Product Safety Information in Product Manuals, Instructions, and Other Collateral Materials*, should also be applied.

To help ensure the product user sees and understands warnings and safety instructions, you should make them conspicuous. It is critical that you make proper use of the signal words "*danger*", "*warning*", "*caution*" and "*notice*" and their corresponding signal colors *red*, *orange*, *yellow*, and *blue*.

Choosing the appropriate signal words and colors are based on an estimate of the likelihood of exposure to the hazardous situation and what could happen as a result of exposure to the hazard. The American National Standards Institute (ANSI) standard Z535.4, *Product Safety Signs and Labels*, defines the hazard signal words as follows:

DANGER: Indicates an imminently hazardous situation which, if not avoided, "will" result in death or serious injury. This signal word is to be limited to the most extreme situations.

WARNING: Indicates a potentially hazardous situation which, if not avoided, "could" result in death or serious injury.

CAUTION: Indicates a potentially hazardous situation, which, if not avoided, "may" result in minor or moderate injury. It may also be used to alert against unsafe practices.

NOTICE: Indicates information considered important, but not hazard related (e.g., messages relating to property damage).

It is the responsibility of owner of this product to maintain the safety labels, keep them clear & visible to all users, and replace the safety labels when they become worn or missing.

All users must read and understand this manual and the safety precautions before using this product.



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Revised: 08/08/23
Addendum

Manufacturing Company

Perkins Warranty Procedure

This procedure for claiming warranty must be followed or warranty will not be approved, credit will not be issued, and replacement parts will not be shipped. This document is not a replacement for the warranty policy. Please refer to the last page of your manual, which describes the warranty policy in detail.

If you believe your Perkins lifter has suffered from a failure that could be covered by warranty, immediately lock out any equipment that has failed per OSHA guidelines.

Take photographs of the lifter, including overall views of the unit and some close-ups, as necessary to properly record the failure in a way our engineering staff can examine. While taking photos of the lifter, record the serial number of the lifter.

Call Perkins at (800) 882-5292 and ask to speak to the service department. Requests for warranty can also be emailed to svaldez@perkinsmfg.com. Attach any photos to the email, as necessary. The service department will use the photos to determine if the return of parts for inspection is necessary or not. If the return of parts is required, the service department will issue you an RGA number.

Your replacement parts will be shipped at the time of your warranty request, but they will require a purchase order number/payment in order to ship. (Credit will be issued later, after warranty status is determined.) Your replacement parts will feature RGA numbers on the documentation referencing your warranty request. Replacements are sent UPS ground. For faster shipping, the customer will be charged.

Clearly mark the box of any returns with the provided RGA number in a prominent place. This helps our shippers identify your items. When your returned parts arrive, our service and engineering teams will inspect your shipment and determine if the failure is a defect covered by the warranty or not. If the item(s) are covered by warranty, credit will be issued. If the item(s) were not covered by warranty, a report will be generated that fully describes the reasoning behind the decision.

Common Warranty Mistakes:

Please do not ship lifters/parts to Perkins without first obtaining an RGA number. Parts received without prior authorization or without RGA markings will be discarded and credit will not be issued.

Orders that are placed without discussing warranty status will be treated as a typical order and will be billed accordingly. Credit will not be issued for warranty requests after the order is placed.

No warranty is allowed on lifters/parts not having a serial number.



Manufacturing Company

Perkins Return Policy:

If, within 30 days of receipt of the item(s), a customer would like to return an unused item(s), the customer may contact Perkins for a return authorization (RGA#). The item must be shipped within 2 weeks of the return authorization. The customer will pay the return freight and a 15% restocking fee on the return(s). The item must be in new / unused condition, and any damage or clean up required to restore the product to resalable condition will be charged to the customer.

Packages received without an RGA# on the packaging identifying who the product is from may be discarded or refused and credit may not be issued. Always make sure the RGA# is displayed on the box and on any included paperwork.

If Perkins shipped the wrong item(s), the incorrect item(s) may be returned within 30 days of receipt of the item by contacting Perkins for a return authorization (RGA#). The item(s) must be shipped within 2 weeks of the return authorization. Perkins will pay the return freight and waive the restocking fee.

If the return results in a net debit, the customer will be invoiced. If the return results in a net credit, the credit can be used against the replacement item(s) or a future purchase.

Special Notes:

Perkins does offer customized solutions and due to the customization of these items, Perkins cannot accept returns or refunds on anything custom ordered. This includes industrial units, cane lifters, and other items which have been specially fabricated to the customer's specifications. Unfortunately returns on these products cannot be accepted.

Perkins Manufacturing Three-Year Limited Warranty

PERKINS MANUFACTURING COMPANY warrants its products to be free from defects in material and workmanship under normal use for a period of **three (3) years** from the date of delivery to the first purchaser.

Any claim under this warranty must be handled in accordance with PERKINS' warranty procedure.

This warranty is expressly limited to the repair or replacement in PERKINS' discretion of any component or part of any PERKINS product unit manufactured by PERKINS which is brought to PERKINS attention promptly after discovery and is proven to PERKINS' satisfaction to have been defective in material or workmanship.

This warranty shall not obligate PERKINS to bear the cost of labor or transportation charges in connection with the repair or replacement of defective parts, and it shall not apply to a product upon which repairs, or alterations have been made unless authorized in writing by PERKINS.

Any damage, wear & tear or improper use, substitution of parts not approved by PERKINS, modifications other than those done by PERKINS or as authorized in writing by PERKINS, or any alteration or repair by others in such a manner which, in PERKINS' judgment, materially and adversely affects the product shall void this warranty. Operation at an actuator cycle time of less than six seconds shall void this warranty. Wear items used for anti-friction purposes are not covered by this warranty.

Periodic maintenance is required in order to maintain warranty but is not covered by warranty. Please refer to the maintenance section of the service manual for instructions.

PERKINS makes no warranty of products manufactured by others and supplied by PERKINS, the same being subject to warranties, if any, of their respective manufacturers.

PERKINS shall not assume any liability for any incidental, consequential, direct, or indirect damage, loss or delay of any kind, including, but not limited to, the loss of profits, product or downtime.

PERKINS warrants any service parts it may sell for a period of ninety (90) day from the date of delivery for replacement only. The item being replaced must be returned to PERKINS for evaluation upon its request. The cost of labor to replace such part shall be the responsibility of the owner. PERKINS does not warrant any used parts.

PERKINS, whose policy is one of continuous improvement, reserves the right to improve its products through changes in design or materials as it may deem desirable without obligation to incorporate such changes in products of prior manufacture.

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