Bid Specifications

Model D6275xx-27k Combo Euro/US Side-loading Cart Lifter

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Functional Intent

1) The Lifter shall lift plastic refuse containers and dump the contents of the containers into the hopper of a refuse collection vehicle, and then return the emptied container safely to the ground.

2) The Lifter will be compatible with all styles/brands of carts up to 360 litres in size, that have been designed to meet ANSI Type C for European semi-automated collection containers.

3) The Lifter will also be compatible with all styles/brands of carts between 30 and 96 gallon in size, that have been designed to meet ANSI Type B for US semi-automated collection containers (2-bar style) with a bar-to-bar spacing between 14 ¾" to 15 ¼".

4) The design of the lifter will allow for the easy engagement/disengagement of the plastic carts, regardless of type. The operator will be able to switch from US cart to European carts without making any adjustments or modifications to the lifter.

5) The design of the lifter will not interfere with access to the hopper for the hand loading of bulk items or the removal of prohibited material.

6) The contact of the lifter with the plastic carts will be designed to eliminate or minimize scratching and wearing, in order to maximize cart life.

7) Weight Capacity of the lifter will meet or exceed ANSI's current standard container capacity limit of 350 lbs. *Note: Capacity is limited by the adjustment of the relief valve.*

8) The pressure required to lift a 400lb load will be 1650 PSI. (350lb of refuse and approximately 50lb for the plastic cart) *Note: Maximum pressure available depends on model of the truck's pump, as well as the truck's main relief valve setting.*

9) Complete cycle time to lift, dump, and return a cart will be within 6-8 seconds. *Note: Cycle time is controlled by the flow rate delivered to the lifter. To achieve a cycle between 6-8 seconds, the flow should be adjusted to approximately 3.5 gpm per lifter.*

10) The lifter will be rated for usage of not less than 700 times a day.

11) The container will be dumped at an angle of 45 degrees above the horizon to ensure a complete dump of the refuse.

12) Operating temperatures will be between -30^{o} F to $+120^{o}$ F.

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13) Overall design shall provide for the maximum possible safety for the operator.

14) The D6275xx-27k is designed for use on sideloaders.

Performance

1) The upper clamp bar mechanism is controlled by two, non-adjustable linkages, which locks and unlocks the cart automatically during the lift-cycle, so as to secure the cart to the lifter throughout the lift cycle.

2) The Lower Latch mechanism pivots and slides, which locks and unlocks the cart automatically during the lift cycle. The length is not adjustable. The spring on the lower latch helps reduce scratching the plastic cart.

3) The design of the Lifter shall allow for 18" of ground clearance in the stored position to reduce bottom-out damage, when mounted at 51 ½" to the top of the mounting plate.

4) On this unit, the mounting height shall be 51 ½" from the top of the mounting plate to the ground. Such mounting height will position the plastic teeth at the ideal height for engaging and lifting most carts.

5) The lifter's is in the fully dumped position, there will be approximately 15 3/4"of clearance between the top of the mounting plate and the dump edge. The D6275xx-27k must be mounted no lower than 15 ¾" from the top edge of the sill it is dumping over.

Construction

1) All structural components of the Lifter will be AISI A36 HRS or better.

2) All hardware, such as bolts, nuts, washers will be Grade 8 & zinc plated for corrosion resistance.

3) The lower plastic bumpers and faceplate form a supporting edge for the cart surface that is 21 7/8" wide for improved cart stability and support.

4) The driver arms will be 3/8" thick HRS.

5) The upper teeth are constructed of high quality 4.2 million molecular weight or better solid virgin UHMW plastic that conforms to ASTM 4020-96 to prevent scratching the containers.

6) The upper hook is 8" wide, free from all rough/sharp edges. It is constructed of A36 steel and pivots out of the way when not needed, for lifting of European carts using the teeth.

7) Lower Latch is controlled by two (2) 1/2" thick idler arms for balanced and reliable action. It also pivots out of the way when not needed, when lifting European carts.

8) All nuts will be all-steel locknuts with distorted thread for secure assembly.

9) The lifter assembly shall have a mounting plate that is ½" thick, and will attach via five (5) ½" bolts or studs to a secondary ½" thick rear plate that is permanently welded to the truck.

10) All pivot pins will be zinc plated .0005" + clear chromate & seal +5 for the best corrosion resistance.

11) The bearings on the linkage pivots shall be self-lubricated steel composite bushings

Rotary Actuator

1) The lifter will use a helical 27K rotary actuator (no rack and pinion) for its lifting motion. This actuator will produce up to 27,000 in/lb of torque at 3,000 PSI, and has a total potential rotation of 220 degrees.

2) The rotary actuator will provide consistently even torque throughout the lift cycle, which will allow the cart to be lifted smoothly, extending the life of the cart.

3) The actuator is designed and built to stop internally, no external stop required.

4) The design of the actuator contains multiple internal seals to prevent both internal and external leakage.

5) The actuator is a closed hydraulic device, meaning that unlike a typical hydraulic cylinder, the rotary actuator is free from exposure to external debris on each cycle.

6) The internal splined gearing mechanism of the actuator offers complete transmission of torque thru it's many teeth all at the same time, meaning the stress of the load, no matter the physical position, is constantly being held by the entire assembly of teeth, and not just a single gear tooth or keyway such as on inferior designs.

7) The actuator features a hardened (annealed) main shaft that is at least 1 13/16" in diameter, and rotates upon 2 internal bearings constantly immersed in hydraulic oil for balanced and smooth motion and long life.

8) The shaft and casing are hardened (annealed) and both longer life &corrosion resistance.

9) The torque of the actuator is transmitted to the driving arms by a 28-tooth involute splined hub that offers superior torque transmission. The teeth of the hubs are also hardened (annealed) for long life & corrosion resistance.

10) The casing of the rotary actuator shall be a casted, two-piece design that is easier to open and service and offers fewer intrusion points for debris.

11) The rotary actuator can be rebuilt and seal kit/spare parts are readily available. Videos and instructions on rebuilding actuators are available per request.

12) The actuator is commercially available and is suitable for use with standard hydraulic oil, ATF, or aviation grade hydraulic fluid.

13) The internal teeth of the actuator are fully immersed in hydraulic oil at all times, preventing corrosion and extending tooth life.

14) There shall be seals located between the hubs and the actuator casing that will prevent corrosion and grime from inserting itself in between the shaft and hub, helping to extend the life of the shaft, and make disassembly for maintenance easier.

Hydraulics (sold separately)

1) The hydraulic system does not require any electrical wiring or solenoids, although if the customer specifies electric push button controls, they are available, ask for details.

2) Tap-In Kit shall include Diverter Valve (single or double depending on order), hand valve/s, and hoses and fittings required to make most installations. Some installations may require additional fittings not provided. Care should be taken to order the correct kit for your model truck at the time the order is placed.

3) The Diverter Valve is a priority flow control with an adjustable flow relief made from a single block of steel. The valve can accept full system pressure/flow through its body with minimum back pressure or heat. The valve will send the specified amount of flow to the hand valve and allow the rest of the flow to continue to the packer valve. Both the packer valve and the lifters can be used simultaneously without a pressure loss.

4) If there are two lifters being installed, the Diverter Valve will come with an attached 50/50 Splitter Valve, which will keep the flow to the two lifters equal and both lifters will be able to operate simultaneously and at full speed.

5) The Hand Valve has a built in adjustable relief valve and a dead-man stop feature. Release the handle and all motion to the lifter stops. If there will be two lifters mounted per truck, they will each have their own Hand Valve that will allow the units to work independently of each other.

6) An Adjustable Flow Control Valve will come with each unit, mounted to the bottom of the Rotary Actuator, to cushion the motion of the lifter in the downward motion.

7) All hoses, fittings and valves are rated for use in high-pressure, 3,000 PSI systems.

8) Provided in the Tap-In kit are hose clamps for managing the proper hose placement.

Maintenance

1) This unit has self-lubricated bearings at all the necessary pivot points, greasing this unit is unnecessary.

2) Intervals for required adjustments to the Lifter shall not be less than 6 months.

3) The hook to hook spacing is fixed and is already positioned to be suitable for the widest variety of carts, therefore no adjustment of the hook spacing is necessary.

4) Most parts are kept in stock and will ship the same, or the following day, depending on availability.

5) The faceplate assembly and all major components can be removed and replaced/repaired without the need of removing the entire unit from the truck.

6) The Lifter will be installed on a rear mounting plate that allows fast dismounting of the lifter for repair or replacement.

Finishing

1) All metal surfaces will be prepared and power washed prior to painting, to remove oils, rust, welding slag and grease.

2) All parts shall be de-burred and descaled for maximum handling safety and longest lasting finish.

3) Lifter will be powder-coated “Butter Cup Yellow” (#UFY503s7) unless otherwise specified. Custom colors are available on request.

4) The lower latch is powder coated.

5) Completed unit will have all appropriate safety decals, in both English and Spanish.

6) Lifter will come with an identification tag permanently affixed to the side member that has the serial number of the lifter necessary for warranty purposes.

7) Each actuator is stamped with a serial number for proper identification.

8) Each lifter is packaged ready to run.

9) Any significant amount of oil within the actuator is drained prior to packaging, for shipping safety.

10) All lifter shipments will be inside a durable cardboard box mounted atop a pallet, with plastic wrap/steel strapping to secure the lifter to the pallet and prevent exposure to the elements.

11) The lifter will come packaged with an instruction manual that contains detailed instructions on the proper mounting and care for the lifter, as well as a spare parts key and ordering information and other useful data.

12) The D6275xx-27k unit weighs approximately 275 lbs. When considering shipping costs, please account for packaging, such as the wood-reinforced double walled cardboard box that protects each lifter, plus the pallet. The hydraulic kits will add to the shipping weight as well.

Warranty

1) The Lifter shall be warranted against manufactures defects for a period of 3-years. The standard warranty does not cover labor costs associated with replacing a component, shipping charges, or downtime resulting from a damaged component. See Warranty Page included in the instruction manual or call (708) 482-9500 for complete details.

2) The actuator and all major components are MADE IN THE USA.

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