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# **MODEL RP4500SARG RACK N' PINION - STRONG ARM ROLLMASTER w/ GANTRY**

**Installation, Operation &  
Maintenance Manual**



**WARNING:** In order to prevent damage, the tarp must always be left in the uncovered position when the truck is not in use for a period of more than 2 consecutive hours.



**WARNING:** All repairs and parts replacement should be undertaken by qualified technicians. The buyer assumes all risks and liabilities arising out of his or her repairs, modifications, or parts replacement on the original product.



**WARNING:** Inspect the tarp system before each use for fit, wear and damage. Check tarp system at regular intervals during use. Replace parts at first sign of damage or material wear. If you find anything upon inspection that cannot be corrected, do not use as severe injury could result.



**WARNING:** Do not operate vehicle until you are certain that the tarp system is properly installed and can be safely operated.



**WARNING:** Do not operate the tarping system while the vehicle is in motion and make sure the vehicle is clear of any obstructions (such as overhead wires).



**CAUTION:** Any piece of equipment can be dangerous, even deadly, if not used properly. You are responsible for the proper use of this product and the safe operation of any accessories or related equipment and vehicles. Common sense and caution cannot be built into the equipment and must be supplied by the operator.



**CAUTION:** If for any reason you do not understand all portions of these instructions and warnings, contact the company at the number listed herein for assistance. Do not use, or allow others to use, the tarp system until you (and others) fully understand its operation, these instructions and warnings. Manufacturer assumes no liability or responsibility for injury or damage caused by improper use or failure to read and follow all instructions and warnings.

**ATTENTION DISTRIBUTOR: DO NOT DISCARD.**

Please give this manual to the customer when the unit is delivered.

## RP 4500SARG RACK 'N PINION ROLLMASTER w/ GANTRY

### INSTALLATION INSTRUCTIONS



READ AND UNDERSTAND THESE INSTRUCTIONS COMPLETELY BEFORE BEGINNING THE INSTALLATION. USE THESE INSTRUCTIONS WITH THE DRAWINGS INCLUDED. UNPACK, IDENTIFY AND FAMILIARIZE YOURSELF WITH THE VARIOUS COMPONENTS OF THE UNIT. **REPLACE ALL WARNING LABELS WHEN THEY BECOME UNREADABLE**

THIS SYSTEM IS DESIGNED TO BE USED WITH CONTAINERS THAT ARE THE SAME LENGTH, BUT HAVE DIFFERENT SIDE HEIGHTS. VARIOUS LENGTH CONTAINERS MAY BE USED WITH THIS SYSTEM AS LONG AS THE REAR OF ALL THE CONTAINERS ENDS UP IN THE SAME PLACE ON TRUCK. SHORT STOPS OR THE LIKE MAY HAVE TO BE USED IF THIS SITUATION EXISTS.

PRIOR TO INSTALLING THE FLOW DIVERTER AND COVER CONTROL VALVE INTO YOUR TRUCKS HYDRAULIC SYSTEM, WE RECOMMEND THAT YOU CHECK WITH THE HOIST MANUFACTURER FOR POSSIBLE WARRANTY IMPLICATIONS.

#### **1. MOUNTING THE GANTRY AND ROLL REST**

A. Pick a suitable place on the chassis of the truck directly behind the cab to mount the GANTRY and ROLL BASE/REST ASSEMBLY. Clear away or re-route any hoses, cable, etc. that may interfere with mounting the GANTRY to the chassis. The GANTRY can be mounted to the chassis using the -2- CHASSIS MOUNTING ANGLES provided. These can be bolted to the chassis using grade 8 hardware and then welding the GANTRY on top of these angles or these angles can be welded to existing plates that are already bolted to the chassis. Another method that utilizes brackets, etc. that are already bolted to the chassis, is to weld a piece of channel or tube to existing brackets across the width of the chassis and then mounting the gantry on top of the channel. In either case, allow a minimum of 4-5” between the forward portion of the GANTRY LEGS and the rear of the cab. This will provide clearance for the ROLL BASE/REST as it moves up and down. Square the GANTRY to the hoist and level from side to side as well as being plumb vertically. A GOOD WAY TO MAKE CERTAIN THE GANTRY IS SQUARE TO THE HOIST IS TO CLAMP A STRAIGHTEDGE ACROSS THE INSIDE OF THE “J” HOOKS AND MEASURE FROM THIS TO THE GANTRY LEGS.

If you do drill and bolt into the chassis rails, **DO NOT DRILL INTO THE CHASSIS FLANGE OR ANY CLOSER TO THE FLANGE THAN THE TRUCK MANUFACTURER DID.**

Once the GANTRY is located and welded securely at the bottom, add front to rear gussets to stabilize the GANTRY and strengthen the mounting.

B. Place the ROLL BASE/REST ASSEMBLY on top of the GANTRY and install using -4- 1/2-13 hex nuts and lock washers provided. Install the 36" stroke cylinder onto the clevis eye pads on the GANTRY and ROLL BASE/REST using the clevis pins and cotters provided.

**NOTE: THE PORTS ON THE CYLINDER SHOULD FACE TO THE LEFT OR DRIVERS SIDE WHEN VIEWED FROM THE REAR.**

The exhaust stack may interfere with the ROLL BASE/REST as it travels upward, correct as necessary by installing elbows etc. into the stack.

If clearance between the front of the hoist and the rearmost portion of the cab is a problem, you may use a twin gantry piston conversion kit (LIFTKIT,DUAL). In addition, if you have a hydraulic tank mounted behind the cab you can also use a twin piston conversion kit (LIFTKIT,DUAL). Contact the factory if these situations exist.

## **2. DETERMINING THE PIVOT POINT AND INSTALLING THE MOUNTING BRACKET ASSEMBLIES**

### **NOTE**

THE MOUNTING BRACKET ASSEMBLIES AND ARMS MUST BE MOUNTED TO A FABRICATED STRUCTURE THAT IS BOLTED TO THE CHASSIS. THIS STRUCTURE MUST EXTEND OUTWARD FROM THE CHASSIS TO ALLOW FOR THE WIDEST WIDTH CONTAINER THAT WILL BE CARRIED ON THE TRUCK, WHETHER OR NOT THE CONTAINER IS TO BE COVERED. (ex. self contained compactor containers) THE OUTSIDE WIDTH FROM THE ARM PIVOT PIN TO THE ARM PIVOT PIN CANNOT BE MORE THAN 108" TO BE IN COMPLIANCE WITH THE FEDERAL D.O.T. AND REGULATIONS PROMULGATED THEREUNDER. SOME STATES HAVE REQUIREMENTS FOR STATE AND LOCAL ROADS THAT DIFFER FROM THE FEDERAL D.O.T. REGULATIONS. PRIOR TO INSTALLATION, YOU SHOULD CHECK WITH YOUR STATE AND LOCAL D.O.T. TO ASCERTAIN WHAT STANDARDS APPLY IN YOUR AREA. IF THEY DO NOT COMPLY WITH THE FEDERAL D.O.T., YOU MUST MOUNT THE SYSTEM IN COMPLIANCE WITH YOUR STATE AND LOCAL REGULATIONS.

PIONEERS INSTRUCTIONS ARE PREMISED ON 102" MAXIMUM TRAILER WIDTH ALLOWED BY FEDERAL D.O.T. REGULATIONS.

A. Supplied with your system to make installation easier are -4- CHASSIS MOUNTING TUBE ASSEMBLIES. These are made longer in both directions than you may need so you can cut them to fit your installation. To determine how far out from the chassis you must be with the CHASSIS MOUNTING TUBES, measure the outside width of your chassis and subtract this measurement from 106 1/4". Divide this measurement by 2 to determine how far out from the chassis on each side the CHASSIS MOUNTING TUBES will protrude to support the MOUNTING BRACKET ASSEMBLIES in their proper location. From this measurement

subtract the thickness of the “fish plates” that may already be bolted to the chassis or need to be attached to the chassis where the CHASSIS MOUNTING TUBES will be welded.

EXAMPLE: Chassis width (outside to outside) = 33 1/2”

$$106 \frac{1}{4}'' - 33 \frac{1}{2}'' = 72 \frac{3}{4}''$$

$$72 \frac{3}{4}'' \text{ divided by } 2 = 36 \frac{3}{8}''$$

“fish plates” are 1/2” thick

$$36 \frac{3}{8}'' - 1/2'' = 35 \frac{7}{8}''$$

Horizontal portion of CHASSIS MOUNTING TUBES needs to be 35 7/8” long.

B. Put the longest and highest container that will be covered on the truck. (Typically a 22’ long, 40 yard container). Using a tape measure, place one end of the tape on the top rear of the container, stretch the tape out diagonally toward the front and move it along the bottom of the rubrail of the container toward the front until you reach 168”. (Maximum length of telescopic arms). Make a mark on the container or the fender of the truck at this 168” point. This will become the pivot point for the arms. Remove the container from the truck, making certain the pivot point is clearly marked on the fender or on the hoist itself.

C. The vertical height of the MOUNTING BRACKET ASSEMBLIES is determined by placing a straight edge across the hoist rails and measuring down to the bottom of the fenders. The MOUNTING BRACKET ASSEMBLIES cannot be mounted any lower than the bottom of the fenders to allow for changing tires. Measure from the straight edge down to the bottom of the fender on one side of the truck. Record this measurement. Tack weld the CHASSIS MOUNTING TUBES in place making sure they are plumb and square to the hoist. A good “Rule of Thumb” to use for setting these heights is to mount them in the middle of the chassis. This allows you room to put gussets above or below for strength. Using the straight edge, measure down from the straightedge the distance measured above. Mark the CHASSIS MOUNTING TUBES and cut. Install the chassis mounting tubes back in the same place on the truck, after cutting, making sure they are plumb and square. Place a MOUNTING BRACKET ASSEMBLY on top of these tubes and align the center of the PIVOT PIN (grease fitting) with the pivot point mark determined above. Measure from the hoist to the MOUNTING BRACKET at the front and rear to make certain it is parallel to the hoist. Plumb the bracket vertically and tack weld in place. Check to make sure the BASE ARM/GEAR ASSEMBLY is straight and parallel to the hoist. If not, correct by moving the MOUNTING BRACKET ASSEMBLY in or out as necessary. NOTE: There is a small amount of in and out movement built into the RACK ‘N PINION assembly.

Repeat for other side.

NOTE: A GOOD WAY TO MAKE CERTAIN THAT BOTH PIVOT POINTS ARE IN THE SAME PLACE ON BOTH SIDES OF THE TRUCK IS TO MEASURE ON A DIAGONAL FROM THE ROLL BASE/REST TO THE ARM PIVOT PIN.

Measure across the truck to make certain you are no wider than 108” from Pivot Pin to Pivot Pin. Correct as necessary.

Add Gussets between the CHASSIS MOUNTING TUBES and the “fish plates” in front to rear as well as up and down locations to strengthen the mounting. Weld everything securely.

**SOME POINTS TO REMEMBER ARE:**

- DO NOT WELD DIRECTLY TO THE CHASSIS, USE “FISH PLATES” THAT ARE DRILLED AND BOLTED TO THE CHASSIS. Follow the chassis manufacturers recommendations. Do Not use any hardware below a grade 8.
- Make sure the structure is well supported and gusseted.
- There cannot be any flexing of the supports that hold the MOUNTING BRACKET ASSEMBLIES. This must be as rigid as possible.

The **MOUNTING BRACKET ASSEMBLIES** must be:

- PLUMB (vertically) and level (horizontally).
- Parallel to the chassis.
- High enough to allow access to the tires.
- Must be the same distance out from the chassis on both sides of the truck.

**3. INSTALLING THE TARP, ROLLER AND ARMS**

A. Spread the tarp out on the ground with the Reinforced Side down. The tarp has a pocket at one end, to facilitate mounting to the ROLL BASE, via the TARP TUBE and TARP TUBE BRACKETS (provided).

B. Place the SPRING LOADED ROLLER ASSEMBLY on top of the tarp, opposite the end with the pocket, making sure the roller is properly oriented, that is, the DRIVERS SIDE of the roller (marked with decals) is on the left side of the tarp and the PASSENGERS side is on the right side of the tarp when looking at the tarp from the end where you have placed the roller. This now becomes the rear of the tarp.

Attach the tarp to the roller using -9- #12 x 5/8” long sheet metal screws and fender washers provided. **Start attaching the tarp to the roller by aligning the middle grommet of the tarp with the middle hole on the roller. Work your way outward from the center on both sides and continue to attach the tarp to the roller using the screws and fender washers provided. DO NOT BE ALARMED IF THE TARP DOES NOT APPEAR TO BE CENTERED ON THE ROLLER, THE ROLLER IS DESIGNED TO BE LONGER ON THE DRIVERS SIDE.** Roll the tarp onto the roller by rolling the roller tube itself from the rear to the front, making sure the fold is on the bottom of the tarp. The tarp cannot be any wider than the roller for installation purposes and it must be wound evenly onto the roller.

Place the Roller, with the tarp attached, on top of the ROLL BASE/REST with the DRIVERS side of the roller on the DRIVERS side of the truck, so that 6-8” of tarp hangs down below the rear of the ROLL BASE/REST. The DRIVERS side of the roller has a 3/8” hole drilled through the shaft. Attach the TARP TUBE MOUNTING BRACKETS (2) to the roll base using- 3/8 x 1” bolts and lock washers (provided). Insert the TARP TUBE through the tarp pocket and secure with the 7/16 x 2-1/2” bolts, flat washers, lock washers, and hex nuts (provided). Install the Tarp and tube into the brackets and secure the MOUNTING BRACKET CAPS (2) to the brackets with the 1/4 x 1” bolts, lock washers and hex nuts (provided).

C. Lift the DRIVERS side arm up and slide the base end of the arm into the BASE ARM/GEAR ASSEMBLY. Carefully guide the -2- hydraulic hoses that stick out from the bottom of the arm

between the large plate and the channel shaped pieces. These hoses MUST go on the inside of the MOUNTING BRACKET ASSEMBLIES. Bolt the Arm to the BASE ARM/GEAR ASSEMBLY using -2- 1/2-13 x 3 1/4" long bolts, lockwashers and nuts (provided) for the horizontal holes and -2- 1/2-13 x 4 1/2" long bolts, lockwashers and nuts (provided) for the vertical hole. Tighten securely. Slide the small hole in the ARM EXTENSION onto the roller shaft making sure the pawl engages properly with the sawtooth gear. You will have to manually extend the arm in order to do this. Temporarily, install -1- 3/8-16 x 3" long bolt into the holes in the arm and roller shaft.

D. Install the PASSENGERS side arm into the BASE ARM/GEAR ASSEMBLY in the same way as was done for the DRIVERS side arm. Before attaching the ARM EXTENSION to the roller shaft, slide -1- SHAFT COLLAR onto the roller shaft. Slide the ARM EXTENSION onto the roller shaft as was done before and then slide -1- SHAFT COLLAR onto the roller shaft on the outside of the arm. Slide the roller assembly towards the drivers' side, to be sure that correct engagement between the saw tooth gear on the roller shaft, and the pawl (located on the arm extension) are properly engaged, then tighten the set screws on the shaft collars.

E. Install the STABILIZER BAR, making sure it is facing the REAR of the truck, between the arms using -4- 5/16-18 x 2 1/4" long bolts and locknuts (provided). Slide the two shaft collars on the PASSENGERS side of the roller shaft tight up against the arm forming a sandwich. The outboard shaft collar should be flush to the end of the shaft. Snug the setscrew in the outboard shaft collar and remove the setscrew from the inboard shaft collar. While holding the inboard shaft collar tight up against the arm, drill a small dimple in the shaft thru the setscrew hole using a 3/16 drill. Reinstall the setscrew into the collar using a threadlocker on the threads. Tighten securely so the setscrew "bites" into the dimple in the shaft. Repeat for the outboard shaft collar and setscrew.

F. Install the Ratchet Guard onto the inside of the drivers side arm by loosening the locknuts and opening the "gate" to allow the guard to be slid over the sawtooth gear, pawl and shaft. Close the "gate", tighten the nuts and bolt the guard to the arm using the 5/16-18 x 3 1/2" HHCS and stoverlock nut provided.

G. Install the WINDING DISK onto the DRIVERS side roller shaft and tighten the setscrews. Remove the 3/8 bolt from the arm and shaft. Turn the WINDING DISK 7 revolutions in a counterclockwise direction as viewed from the drivers side. FOLLOW THE DECALS ON THE ARM and DISK.

Hold onto the disk firmly while you are loading the spring. When you have reached 7 turns, stop and insert the 3/8 bolt thru the arm and shaft. Install the 3/8-16 stoverlock nut onto the bolt and tighten securely. Remove the WINDING DISK from the shaft and put in a secure place in the truck.



**WEAR GLOVES and DO NOT LET GO OF THE WINDING DISK UNTIL THE BOLT HAS BEEN INSERTED INTO THE ARM AND SHAFT.**

#### **4. INSTALLING THE HYDRAULICS**

REF: HYDRAULIC SCHEMATIC



NOTE: FILTRATION OF 30 MICRON OR BETTER MUST BE USED WITH THESE COMPONENTS.

NOTE: USE ONLY PIPE DOPE, SUCH AS RECTORSEAL, ON PIPE THREADS. DO NOT OVERTIGHTEN FITTINGS AND DO NOT USE TEFLON TAPE.

NOTE: ON APPLICATIONS WHERE FLOW RATES GREATER THAN 30 G.P.M. EXIST, THE USE OF A RETURN LINE BACK TO TANK FROM THE DIVERTER RELIEF VALVE MUST BE EMPLOYED. REFER TO THE HYDRAULIC SCHEMATIC FOR MORE DETAILED INSTRUCTIONS. FAILURE TO COMPLY WILL VOID THE WARRANTY.

A. Follow the hydraulic schematic and install the FLOW DIVERTER into the pressure line that runs from the pump to the hoist controls. The inlets to the FLOW DIVERTER are #16 SAE. The outlet from the FLOW DIVERTER that goes to the hoist control inlet is also #16 SAE. 1/2" Hydraulic Hoses with reusable fittings and adapters are provided for you to make the connections from; the Priority Side of the FLOW DIVERTER to the Inlet Side of the COVER CONTROL VALVE, and a return line from the COVER CONTROL VALVE to TANK. The FLOW DIVERTER may be hard plumbed directly to the pump or the hoist valve, or it can be remotely mounted.

NOTE: ON HOOK LIFT TYPE SYSTEMS THAT RUN ON HIGH PRESSURE, THE FLOW DIVERTER MUST BE MOUNTED AFTER THE HOIST CONTROLS (DOWNSTREAM) ( See Instructions included with the Diverter)

B. Mount the COVER CONTROL VALVE in a suitable place that will allow for ease in operation, while not interfering with the hoist, container or hoist controls. DO NOT MOUNT IN AN AREA WHERE THE ARMS MAY CONTACT THE OPERATOR.

C. Follow the HYDRAULIC SCHEMATIC and install the proper fittings into the CYLINDERS, FLOW DIVIDER/COMBINERS and COVER CONTROL VALVE.

**DO NOT USE TEFLON TAPE**

The hoses furnished with this system all have reusable ends to allow you to custom fit the hoses for your installation. These ends will be installed once the hoses have been installed.

NOTE: IF THE HOSES ARE CUT, BLOW THEM OUT WITH COMPRESSED AIR TO REMOVE ANY HOSE FILINGS OR PARTICLES WHICH MAY CONTAMINATE THE SYSTEM.

D. Install -1- 6' long and -1- 9' long hose between the UP – DOWN function on the COVER CONTROL VALVE and the fittings on the GANTRY CYLINDER per the schematic.

E. Install -4- 14' long hoses onto the COVER CONTROL VALVE (2 for COVER-UNCOVER and 2 for IN & OUT) per the schematic. Run these -4- hoses down along the chassis toward the rear using wire ties, etc. to attach them to stationary objects along the way. Mark or identify the hoses in some fashion so you will not cross the lines when making the connections. In the area where the hoses end, you will need to mount the -2- FLOW DIVIDER/COMBINERS.



F. COVER-UNCOVER FUNCTION ONLY. Connect -2- FLOW CONTROLS to the FLOW DIVIDER/COMBINER and “TEE” that will control the “COVER-UNCOVER” function with the fittings provided. The INLET side of the FLOW CONTROLS is stamped with the letter “B”.

G. Install the -2- FLOW DIVIDER/COMBINERS in a suitable place on the chassis. They should be situated as close to the MOUNTING BRACKET ASSEMBLIES (front to rear location) as possible. They can be mounted to a non moving hoist crossmember (sub frame) or to a plate that is attached to a chassis crossmember. Install using 1/4” hardware (not provided). Install the reuseable fittings on the -4- hoses and connect to the FLOW DIVIDER/COMBINERS and “TEES” per the schematic. DO NOT CROSS THE LINES.

H. The hoses attached to the telescoping arm cylinders have been pre-assembled to the cylinders and arms at the factory. Identify and mark the 16’ long hose, and the 19’ long hose connected to the Arm Extension Cylinders. DO NOT CROSS THESE LINES.

Slide the loose ends of both arm extension hoses thru the SWIVEL HOSE CLAMPS. Route these hoses toward the FLOW DIVIDER/COMBINERS, install the reuseable ends and make the connections to the FLOW DIVIDER/COMBINER and “TEE” per the schematic.

I. Attach the four remaining hoses to the 16” cylinders and route toward the FLOW DIVIDER/COMBINERS. Install the reuseable ends and make the connections to the FLOW DIVIDER/COMBINER and “TEE” per the schematic.

**NOTE: HOSE LENGTHS AND FITTINGS ARE CRITICAL.**

**EXAMPLE: HOSES THAT RUN FROM THE FLOW DIVIDER/COMBINER TO THE BASE END OF THE CYLINDERS MUST BE THE SAME LENGTH. IN ADDITION, THE FITTINGS COMING OUT OF THE FLOW DIVIDER/COMBINER MUST BE THE SAME. (i.e. both straight or both elbows). THE SAME HOLDS TRUE FOR THE FITTINGS ON THE CYLINDERS.**

**NOTE: THE BASE END PORTS OF THE CYLINDERS MUST BE CONNECTED TO A FLOW DIVIDER/COMBINER AND THE ROD END PORTS MUST BE CONNECTED TO A TEE. THE SYSTEM WILL NOT WORK PROPERLY IF THESE LINES ARE CROSSED. IT WILL ALSO CAUSE DAMAGE TO THE SYSTEM AND PRESENTS A POSSIBLE SAFETY HAZARD.**

J. Make certain that all connections are made per the Hydraulic Schematic and the return lines are connected to the tank. Attach the hoses to each other or to stationary objects along the way to make a neat installation. If any chafe points are evident, slip a large piece of hose or chafe guard over the hose(s) at the chafe point and secure.

K. Using a pressure gage, set the PRESSURE RELIEF VALVE on the FLOW DIVERTER to 100 PSI HIGHER than the hoist Relief. Example: Hoist Relief is set to 2500 PSI. Set the FLOW DIVERTER PRV to 2600 PSI. This can be done by “deadheading” the tilt frame lift cylinders in a down position.

You may have to adjust the PRV on the hoist control to a higher pressure to allow the relief in the diverter to function properly. If this is done, make sure you re-set the PRV on the hoist control to the manufacturers' specification.

L. Bleed the system as follows: Start the truck and slowly engage the PTO to activate the hydraulic system. Operate the COVER-UNCOVER valve to make the arms move toward the rear (COVER). Go up only a few feet, then operate the valve to move the arms toward the front (UNCOVER). Move the arms back and forth a few times to fill the cylinders with oil.



**NOTE: DO NOT ALLOW THE ARMS TO GO OVER "CENTER" UNTIL THE CYLINDERS ARE FILLED WITH OIL. IF THEY ARE ALLOWED TO GO OVER "CENTER" YOU WILL NOT BE ABLE TO CONTROL THEIR DOWNWARD MOVEMENT WHICH COULD CAUSE DAMAGE TO THE UNIT OR PERSONAL INJURY.**

**NOTE: IF THE ARMS WILL NOT MOVE UPWARD FROM THE ROLL REST, YOU WILL HAVE TO ADJUST THE PRESSURE RELIEF ON THE COVER CONTROL VALVE. REMOVE THE CAP AND TURN THE ADJUSTING SCREW 1/4 OF A TURN CLOCKWISE AND TRY THE SYSTEM. REPEAT UNTIL THE ARMS MOVE SMOOTHLY AND IN UNISON.**

**NOTE: THERE IS A CROSS OVER RELIEF VALVE BUILT INTO THE FLOW DIVIDER/COMBINERS. THIS CROSS OVER RELIEF ALLOWS THE CYLINDERS TO RE-SYNCHRONIZE AT THE END OF STROKE. IN ORDER FOR THIS VALVE TO FUNCTION PROPERLY, ALL AIR MUST BE REMOVED FROM THE DIVIDER/COMBINER. THIS IS ACCOMPLISHED AS FOLLOWS:**

Once you have filled the Cover/Uncover Cylinders with oil as directed above, move the arms to the front of the truck so the roller is sitting in the rest. Hold the valve handle for a few seconds to force the relief to open. Crack open the fittings at the base end of the cylinders to let any air escape that may be trapped inside. Re-tighten the fittings and run the system so the stabilizer bar is resting on the top rear of a container. If a container is not available, rest the stabilizer bar on the forks of a forklift to simulate a container. Hold the valve handle for a few seconds to force the relief to open. Crack open the fittings at the rod end of the cylinders to let any air escape that may be trapped in that end of the cylinders. Re-tighten the fittings and repeat this process until ALL air is removed from the cylinders, hoses and valves.

An alternate method is to move the arms to the rest position at the front of the truck. Disconnect the cylinders from the rack gear by removing the setscrew and pin that connects the cylinder to the rack gear. Prop the cylinders up and then extend the cylinders all the way out, hold the valve handle for a few seconds to force the relief to open. Crack open the fittings at the rod end of the cylinders to let any air escape that may be trapped in that end of the cylinders. Re-tighten the fittings and retract the cylinders all the way in, hold the valve handle for a few seconds to force the relief to open. Crack open the fittings at the base end of the cylinders to let any air escape that may be trapped in that end of the cylinders. Repeat this process until ALL air is removed from the cylinders, hoses and valves. Re-connect the cylinder to the rack gear by reinstalling the pin and setscrew. Be sure to use threadlocker on the setscrews when reinstalling.

Check to make sure the unit “COVERS” when the valve handle is moved in that direction. If not, the hoses are reversed. Correct as necessary.

M. Bleed the GANTRY CYLINDER in the same manner as that of the arm cylinders. Operate the Gantry “UP and DOWN” to make certain it is working properly. Be sure to lift the arms and roller off of the ROLL BASE/REST before moving the GANTRY. Check to make sure the Gantry moves “UP” when the valve handle is moved in that direction. Correct as necessary.

N. Bleed the TELESCOPIC ARM CYLINDERS in the same manner as the arm cylinders. Be sure to hold the valve handle at both ends of the cylinder stroke for a few seconds to force the cross over relief to open and re synchronize the cylinders. If the ARM EXTENSIONS do not move in and out, you may have to adjust the Relief Valve as shown above in Section L. Check to make sure the arms move “OUT” when the valve handle is moved in that direction. Correct as necessary.

**NOTE: IN ORDER FOR THE SYSTEM TO OPERATE PROPERLY, ALL AIR MUST BE BLED FROM THE LINES AND CYLINDERS.**

O. Adjust the FLOW CONTROLS to control the speed of the arms in both directions so it takes 15-20 seconds to cover and uncover. These FLOW CONTROLS meter the flow in the reverse direction which means that when you are COVERING, the FLOW CONTROL attached to the “TEE” is controlling the speed and when you are UNCOVERING, the FLOW CONTROL attached to the FLOW DIVIDER/COMBINER is controlling the speed. Adjust these flow controls by turning the adjusting knob in a clockwise direction until the desired “COVER and UNCOVER” time is achieved.

**LOCK THE ADJUSTING SCREW IN PLACE BY TIGHTENING THE SCREW ON THE SIDE OF THE KNOB. ONCE THE FLOW CONTROLS HAVE BEEN SET, THEY SHOULD NOT BE TOUCHED.**

## **5. FINAL CHECKS AND ADJUSTMENTS**

Grease the Arm Pivot Pins

Apply a spray lubricant to the teeth on the RACK and PINION and spray lube the tube the rack slides on.

Lubricate the Telescopic Arm Extensions

Apply a spray lubricant to the stud that the Swivel Hose Clamps pivot on.

Lubricate the Gantry Legs.

Check all fasteners to make sure they are properly tightened.

Check to see that all welding is complete and that gussets have been installed where needed.

Make sure all fittings are tightened properly and there are no leaks in the hydraulic system.

Make sure all hoses have been fastened properly to stationary objects and that chafe guard has been installed where needed.

Make sure that the telescopic arm hoses move freely with the arms as they pivot from front to rear. They should be kept as short as possible so they will not catch on anything.

### **MAINTENANCE TIPS**

Check all fittings and connections weekly. Correct as necessary  
Grease Arm Pivot Pins & Lubricate Gantry Legs weekly.  
Lubricate Telescopic Extensions weekly  
Spray lube the Rack & Pinion Gears weekly.  
The Relief Valves (2) may have to be re-adjusted.  
Replace/Repair any broken/worn parts immediately.

### **TIPS FOR THE OPERATOR**

**DO NOT OVERHANG THE ROLLER /STABILIZER BAR PAST THE END OF THE CONTAINER. THE STABILIZER BAR IS DESIGNED TO REST ON THE TOP REAR OF THE CONTAINER ONLY.**

**WARNING: OVERSHOOTING THE CONTAINER AND RETRACTING THE ARMS, CAUSES THE ARMS TO BE UNSUPPORTED, WHICH WILL CAUSE DAMAGE TO THE ARMS AND PIVOT MECHANISM.**

OPERATE THE ENGINE AT LOW RPM'S ONLY.



DO NOT operate under or near overhead wires.



Keep clear of moving parts.



Make sure that nobody is on or around the container when the unit is in operation.

If the Arms stop while in motion, they have probably come into contact with an obstruction (this shows that the relief valve is working properly). Return the arms to their original position, clear the obstruction and re-activate the unit.

### **OPERATING THE UNIT**

#### **GENERAL**

THERE IS A CROSS OVER RELIEF VALVE BUILT INTO THE FLOW DIVIDER / COMBINERS. THIS CROSS OVER RELIEF ALLOWS THE CYLINDERS TO RE-SYNCHRONIZE AT THE END OF STROKE OR WHEN THEY COME IN CONTACT WITH A STOP. (i.e. Top Rear of Container or Roll Rest)

In order for this valve to function properly and keep the arms and extensions moving together, the operator MUST:

Extend the telescopic arms all the way out, hold the valve handle for a few seconds and then retract, or retract them all the way in, hold the valve handle for a few seconds and then extend out.

When covering, move the arms so the stabilizer bar rests on the top rear of the container. Hold the valve handle for a few seconds to re-synchronize the arms. When uncovering, move the arms to the front so the roller sits in the roll rest. Hold the valve handle for a few seconds to re-synchronize the arms.

**FAILURE TO FOLLOW THIS PROCEDURE MAY RESULT IN ARMS NOT MOVING TOGETHER AND POSSIBLE DAMAGE TO THE SYSTEM.**

### **TO COVER**



#### **WARNING**

1. Make sure that nobody is on or around the container.
2. Make sure the truck is clear of overhead wires.
3. Move the arms upward to clear the Roll Base/Rest and cab.
4. Adjust the telescopic arms in or out to clear the front corner of the container.
5. Raise the Gantry up until the Roll Base/Rest is even to or above the front of the container.
6. Move the arms to the rear of the container to cover the load, stopping approximately 1 foot away from the rear of the container.
6. Adjust the telescopic end in or out so the **stabilizer bar** aligns with the top rear of the container.
7. Move the arms all the way down so the stabilizer bar sits on top of the container.
8. Lower the Gantry, so the Roll Base/Rest is 12-14" below the top front of the container.

### **TO UNCOVER**



#### **WARNING**

1. Make sure that nobody is on or around the container.
2. Make sure the truck is clear of overhead wires.
3. Raise the gantry up until the Roll Base/Rest is even with or above the front of the container.
4. Move the arms to the front of the truck, stopping 2-3 feet from the top front of the container.
5. Adjust the telescopic arms in or out to clear the top front corner of the container.
6. Lower the Gantry all the way down.
7. Lower the arms to approximately 1-2 feet from the Roll Base/Rest or cab.
8. Adjust the telescopic end in or out so the roller aligns with the Roll Base/Rest.
9. Lower the arms all the way down so the roller sits in the Roll Base/Rest.

### **SPECIAL NOTE**

NOT MANUFACTURED OR INTENDED FOR USE WITH HAZARDOUS WASTE

### **SPECIAL NOTE**

Pioneer, A Wastequip Co. will not be held responsible for damages to or caused by this automatic container covering system when it has not been used or installed in the manner prescribed in this manual. Any modifications to the system or deviations from the procedure outlined in this manual must be authorized in writing by Pioneer, A Wastequip Co.

### **WARRANTY**

Pioneer, A Wastequip Co warrants its RP4500SARG covering system for a period of twelve(12) months against proven defective parts and workmanship. Excluded from this warranty is the fabric tarp. This warranty does not include damage to the unit caused by improper use, improper installation or lack of maintenance. Our liability is limited to the replacement of proven defective parts and does not include freight, labor or lost time due to or in connection with the failure of the parts. Any part will be replaced under the conditions of this warranty when Pioneer, A Wastequip Co has authorized a return and has received satisfactory evidence that the part(s) is(are) defective.

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