10 Boulder Parkway
N. Oxford, MA 01537
866-353-5826
pioneersales@wastequip.com
www.pioneercoverall.com

Model A2100
Air Operated Tarping System

Installation Instructions

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.

Read and understand these instructions completely before starting.

Use these instructions with the drawings included to install your system.

These instruction cover the standard unit as well as the optional housing.

NOTE: In order to ensure proper operation of this system, water that may collect in the air tank (s) must be drained daily. if water collects in the system and freezes in cold weather, the system could stop working and may cause damage to the components.

NOTE: The spring loaded roller assembly (G 605 a) is telescopic from 82" to 95" as shipped from the factory, but can be collapsed down to 75.5" by safely cutting the right side roller tube.

NOTE: Because there is a lot of work to be done underneath the body, it is typically much easier to install this system prior to mounting the body onto the truck. When working underneath the body, make sure the body is safely and securely supported.

NOTE: Installation of this system should be performed by a skilled installer who is familiar with safe tarp operation and mechanics.

NOTE: Please be aware that there may be updates and/or modifications to this system, its component parts, and its use. This is strictly a guide to help with the proper installation and use of this system.

NOTE: You should become familiar with all applicable federal, state, and local laws, rules, and regulations (including, but not limited to, department of transportation regulations) regarding the installation and use of these types of systems.

1. LOCATING AND INSTALLING THE ROLLER ASSEMBLY- STANDARD

The Roller are Bearing Plates are shipped from the factory pre-assembled for ease in installation.

Pick a suitable place on the front of the body to mount the Bearing Plates and Roller Assembly. It should be placed as far forward as possible to allow complete access to the body and far enough back so the Rear Section will remain approx. 2" to the rear of the Bearing plates in the uncovered position. The Bearing Plates should mount to the outside of the cab shield with the hardware provided and should be a minimum of 88" wide between them to allow the tarp to roll onto the roller without rubbing on the plates.

The Drivers Side of the Roller Assembly has a bolt passing through the collar and roller shaft to build spring tension and the Passengers side has a setscrew in the collar. Any adjustments in width are to be made by loosening the setscrew in the passengers side plate and sliding the plate in or out until the proper width is reached and then re-tightening the setscrew.
Position the Roller Assembly and Bearing plates on the body in the proper location making sure it is square to the body.

2. ADJUSTING THE ROLLER WIDTH - STANDARD

Loosen the setscrews in the bearing on the right side of the roller. Remove the sheet metal screws that hold the roller tubes to the center section. Slide the right side of the roller (tube and bearing) toward the right side Bearing Plate. Stop when the bearing is 1/8" away from the right side Bearing Plate. Tighten the setscrews on the bearing to lock the right side in place. Locate the center section so it is centered between the roll halves (the center is marked with a black line). Drill -2- 1/8 " holes into the Center Section using the Sheet Metal Screw holes in the Outer Tubes as a guide. Re-install the Sheet Metal Screws into the Roller to hold everything in place. Cut off the excess shaft leaving approximately 1" protruding past the end of the collar.

2A. LOCATING AND INSTALLING THE OPTIONAL HOUSING

NOTE: THE HOUSING (G 601) IS TELESCOPIC FROM 83" TO 97" WHEN THE SLOTS ARE USED, BUT CAN BE MADE SMALLER BY REMOVING THE BOLTS AND DRILLING NEW HOLES.
THE SPRING LOADED ROLLER ASSEMBLY (G 605) IS TELESCOPIC FROM 82" TO 95" AS SHIPPED FROM THE FACTORY, BUT CAN BE COLLAPSED DOWN TO 75.5" BY CUTTING THE RIGHT SIDE ROLLER TUBE.

The Housing and Roller are shipped from the factory pre-assembled for ease in installation.

Pick a suitable place on the front of the body to mount the Housing and Roller Assembly. It should be placed as far forward as possible to allow complete access to the body and far enough back so the Rear Section will remain approx. 2" to the rear of the Housing in the uncovered position. The housing width should be as least as wide or wider than the outside of the body. A determining factor is the width of the tarp that was ordered with the system. The Housing must a minimum of 88" wide between them to allow the tarp to roll onto the roller without rubbing on the end of the housing.

Position the Housing on the body in the proper location making sure it is square to the body. Adjust the housing width and securely tighten the fasteners that hold the housing together. Install the Housing to the cab shield with the hardware provided. If the width of your Housing Assembly falls into the 83" to 97" range, the Roller width is easily adjustable.

Loosen the setscrews in the bearing on the right side of the roller. Remove the sheet metal screws that hold the roller tubes to the center section. Slide the right side of the roller (tube and bearing) toward the right side of the housing. Stop when the bearing is 1/8" away from the right side of the housing. Tighten the setscrews on the bearing to lock the right side in place. Locate the center section so it is centered between the roll halves (the center is marked with a black line). Drill -2- 1/8 " holes into the Center Section using the Sheet Metal Screw holes in the Outer Tubes as a guide. Re-install the Sheet Metal Screws into the Roller to hold everything in place. Cut off the excess shaft leaving approximately 1" protruding past the end of the collar.

3. DETERMINING THE PIVOT POINT

NOTE: ON SOME TRUCKS, YOU MAY RUN INTO AN INTERFERENCE WITH THE TIRES. IF THIS IS THE CASE, YOU MAY HAVE TO MOVE THE PIVOT POINT EITHER TO THE FRONT OR REAR OF THE MEASURED PIVOT POINT IN ORDER TO PROVIDE CLEARANCE FOR THE TIRES.

The proper pivot point is determined by using two tape measures on diagonals along the side of the body. The end of one tape measure is placed in the center of the tailgate, while the end of the other tape measure is placed 2" to the rear of the drivers side Bearing Plate. Place the ends in the locations shown above and run the tape measures diagonally along the side of the body to the bottom of the rub rail. Cross the tape measures over one another. The actual center of the pivot point will be 2" below the rub rail so take this into consideration when making your measurements. Move the tape measures back and forth until the measurement on both tape measures is the same at the point where they cross over one another. Mark this pivot point location on the body.

Because the body may not be square and it is **very important** the pivot points and shaft be parallel to the roller, measure from the roller shaft on the drivers' side to the pivot point that was marked on the body. Duplicate this measurement on the passenger side of the body.

4. INSTALLING THE SHAFT SUPPORTS and CROSS SHAFT

It will be necessary to drill or otherwise cut cross-holes through the long sills or longitudinals of the body. In order to locate the holes in the proper place, it will be necessary to transfer the pivot point mark that was made on the rub rail to the longitudinals using a square. The center of this hole will be 2" below the outer end of the rub rail if the underside of the body is straight.

NOTE: If the body you are working on flares upward from the long sills to the rubrail, you will have to locate the cross holes 2" below the point where the long sills meet the underside of the body.

Mark the hole locations and cut an appropriate size hole for the particular body you are working on.

On Canadian or Heated bodies with formed long sills, two pieces of 2" OD tube, called cross tubes, are provided which need to be welded into the long sills to contain the exhaust gases and to stiffen the body where the holes were cut.

On Unheated bodies, it is advisable to cut a 2" OD hole through the long sills and then reinforce the area around the holes.

Cut the appropriate holes in the long sills and insert the tube if needed. Do not weld in at this time.

The cross shaft is cut to length for a body that is 96" wide at the rub rail. Measure your body from side to side at the rub rail. Add 5" to this measurement, cut the cross shaft and deburr.

Example: Body is 94" wide

94" + 5" = 99"

Shaft length to be 99"

Mark the centerline of the cross shaft.

Insert the cross shaft through the holes in the long sills, installing –2- shaft supports and collars as you go. The shaft supports with bushings and the collars must go onto the shaft so the collars and bushing flanges face outward from the center of the body. Push the cross shaft through the long sills until the cross shaft is 2 ½" beyond the side of the truck. If cross tubes are to be used, install a shaft collar on the outboard side of each one at this time. Install the shaft support with bushing onto the cross shaft on each side of the truck so the flange of the bushing is facing outward.

Measure from the roller shaft to the center of the cross shaft and locate the cross shaft in the proper place. Tack weld the outermost shaft supports to the underside of the rub rail so the flat plate of the shaft support is even to the outside of the rub rail. Repeat for the other side making sure the dimension from the roller shaft to the cross shaft is the same on this side as on the other side.

NOTE: If your body flares upward from the long sills to the rub rails you will have to install the extension plate A 2139 (provided) to the shaft support in order to keep the shaft straight. The shaft must be parallel to the floor of the body.

Measure from long sill to long sill to find the left to right centerline of the body and draw a line that extends from approx. 6” in front of the cross shaft to 36” to the rear of the cross shaft.
Tack weld the remaining shaft supports w/bushings to the underside of the body. They should be located approx. 5 ½” away from the left to right centerline of the body.
Locate the centerline of the cross shaft on the left to right centerline of the body.
Slide -2- shaft collars up against the bushing flange and tighten. Check to see if you have 2 ½” of shaft sticking out on both sides of the body from the rub rail to the end of the shaft. If cross tubes were used, tack weld in place and slide the shaft collars up against the cross tubes and tighten the setscrew. Re check your pivot point measurements, correct as necessary.
Turn the shaft by hand to make sure it rotates freely and does not bind up. Correct as necessary.
On aluminum bodies, mounting angles are provided to weld to the body and then bolt the shaft supports to the mounting angles.

5. INSTALLING THE CYLINDER MOUNTS AND CYLINDERS

Measure from the center of the cross shaft toward the rear of the truck 27 5/8” and mark on the underside of the body. This is the point where the base mount for the cylinders will be located. Measure outward from the centerline of the body that was marked earlier 4 ½” on each side of the centerline. The front to rear centerline of the base mounts must align with these lines that are now 9” apart. The center of the mounting tube must be in alignment with the 27 5/8” line that was marked earlier. Carefully align the Base Mount Brackets with these lines, keeping them square, and tack weld in place.
On aluminum bodies, holes are provided in the base mount for bolting to the aluminum body.
Install the yokes onto the rod end of each cylinder and screw down firmly against the locknut.

Temporarily install the cylinders onto the Base Mounts using the clevis pins provided. Assemble the Bellcrank Assembly to the Yokes with the clevis pins provided making sure the strap that holds the bellcranks together is facing away from the cylinders. Rotate the cylinders and the bellcrank assembly so the scalloped out portion of the bellcrank assembly rests on the cross shaft. Carefully align the bellcrank assembly with the centerline of the shaft and body and tack weld in place.

6. INSTALLING THE ARMS, BOWS and REAR SECTION

Install the arm adapters onto the cross shaft with the shaft collar on the inside so the face of the collar is against the flange of the bushing. Install -1- bow into each upper arm and then install these pieces onto the arm adapter by tightening the setscrews on the bottom of the arm. Temporarily secure the bow to the upper arm and swing the arm from the front to the rear to check the pivot point. Adjust the bow in or out to cause the rear section to rest in the proper position both at the tailgate and at the front of the truck. The rear section should end up in the center of the tailgate.

(NOTE: The arm length may be trimmed if necessary.).
Once everything is in the proper position, install the Rear Section between the arms and bolt together using the hardware provided.
Once again, swing the framework to the rear of the truck to check the position of the rear section in relation to the tailgate. Swing the arms back to the front of the truck and then tack weld the arm adapters to the cross shaft. Make sure the arms are in the same forward position on both sides of the truck and the collar portion of the arm adapter is pushed up against the flange of the bushing.
After the arm adapters have been welded to the cross shaft, again rotate the arms to the rear of the truck to make certain that everything underneath the body is OK. Check to make certain there is no interference between the yokes and the bellcrank and the cylinder stroke is adequate for the body.
Note: The cylinders and bellcrank are designed to travel through an arc of 120 degrees from fully open to fully closed, but most bodies will only require 90 to 110 degrees of travel.

Once you are satisfied the framework is pivoting properly and everything is in correct alignment, disconnect the cylinders from the mounts and bellcranks and then weld everything up solidly. The cylinders will be reinstalled as part of the next step.

7. INSTALLING THE PNEUMATICS

Follow the Pneumatic Diagram and install the air lines per the diagram.

Set the air pressure on the truck so the tank pressure will be 120 psi.

Please note that all the fittings are DOT approved push in style with sealant already applied to the pipe threads which makes installation easy. The air line itself is furnished in one continuous length so it can be cut to fit with a sharp utility knife. Make the cuts as square as possible to ensure a good connection. When running the air lines along the chassis or on the underside of the body, attach the air lines to stationary objects along the way to make a neat installation. Watch out for sharp edges or chafe points, which can cut or abrade the air lines. If any of these conditions exist, move the air line or cover with chafe guard.

The system, when plumbed properly is designed to **cover** when the button is pushed **IN** and **uncover** when it is pulled **OUT**. **The CENTER (neutral) position of the valve is not to be used.**

The air valve is mounted to a bracket that is designed to be situated in the cab of the truck, usually on the pedestal between the seats. Other mounting locations that make it easy to operate may be chosen. Allow enough clearance down through the floor of the cab for the air lines.

Start installing the pneumatics by installing the valve in the cab. Install the Pressure Switch (A 2105) into a port on the air tank using a 3/8 NPT brass nipple and liquid teflon

type pipe sealant (not provided). Install -1- 3/8 NPT x 3/8 tube connector (A 2125) into the outlet of the Pressure Switch.
Install -1- ¼ NPT x 3/8 tube 90 deg. Ell (A 2129) into each cylinder per the schematic.
Install -1- ¼ NPT x 3/8 tube Male Branch Tee (A 2128) into each cylinder per the schematic. The fittings on the cylinders should be on the inside of the cylinders facing one another. Please note the locations of the fittings on the pneumatic schematic.

Install the cylinders onto the mounting brackets and yokes. Install the clevis pins and cotters and open the cotter pins properly.

Install the air line from the Pressure Switch to the inlet of the Air Valve. Install the air lines from the Air Valve to the cylinders by running them from the cab, down along the chassis to the pivot point of the body. Leave enough slack in the lines to allow for dumping the body, and then go along the underside of the body to the cylinders. Connect the cylinders to one another per the schematic using short pieces of tubing making sure the tube does not kink. Follow the schematic carefully making the proper connections.

Push the knob on the air valve in. Move the arms manually to the rear of the truck. Close the flow controls all the way by pulling up on the red ring and then turning clockwise.

8. INSTALLING THE TARP & LOADING THE ROLLER

TARP - ALL MODELS
RECTANGULAR & 9' WIDE TAPERED

Wrap the Tarp 3/4 of the way around the roller in a clockwise manner as viewed from the drivers side and attach to the roller using -5- 3/4" Sheet Metal Screws and Fender Washers provided. Make sure the tarp is centered from left to right and is straight across the roller and the Fender Washers are firmly in place over the grommets. Also, make sure the shock cords (on tapered tarps) are on the top.

COVER SHOCK CORDS - ALL MODELS WITH 9' WIDE TAPERED TARPS

The shock cords on the top of the tarp are designed to fold the tarp upward and inward so that the 9' wide tarp will roll up between the bearing plates on a narrower cab protector. This is accomplished by firmly tying one end of the shock cord to a loop on one side of the tarp, then passing the other end of the shock cord through the loop in the center of the tarp towards the other side. Stretch the shock cord so that it pulls the tarp up and in. The amount of tension applied to the shock cord will vary depending on how narrow the cab shield is. Tie a secure knot in the loose end of the shock cord when a satisfactory amount of tension has been applied to cause the tarp to wind properly. The best test for this is to check the tarp while it is being wound on the roller. The tarp should not "bunch up" and/or rub on the bearing plates nor should it pull in too far away from the bearing plates. Shock cords that are too tight are as bad as those that are too loose. Be patient, they may have to be adjusted a couple of times in order to get them right. Make sure that the first couple of winds that go

onto the roller are smooth and even. If not, then the tarp will wind up faster on one side than the other because of the extra fabric, which will give a larger circumference to the roller. **NOTE: REMOVE ANY AND ALL SHARP EDGES OR CORNERS ON THE TOP OF THE BODY THAT THE TARP MAY COME IN CONTACT WITH. PAY PARTICULAR ATTENTION TO THE TAILGATE PORTION OF THE BODY AS WELL AS THE CAB SHIELD PORTION. FAILURE TO REMOVE THESE SHARP AREAS WILL RESULT IN TARPS BECOMING CUT AND FAILING AS THEY COME INTO CONTACT WITH THESE AREAS.**

Attach the tarp to the roller as above. Disassemble one Bow from the Rear Section and slide the Pocket in the rear of the tarp onto the Rear Section. Re-assemble the Bow and Rear Section. Insert -1- Cover Spring (G 2014) into the grommet at the rear of the tarp. Center the tarp on the rear section and drill -1- 1/4" dia. hole approximately 2" away from the edge of the tarp, horizontally through the rear section on both sides. Install -1- 1/4" cotter pin (provided) into each hole and open fully. Attach the other end of the spring to the eye of the cotter pin. If the system includes a 9' wide tapered tarp, tie the cover shock cords as outlined above.

9. LOADING THE SPRING LOADED ROLLER ASSEMBLY

Install the G 615 Crank on the Drivers' side of the roller shaft. Remove the 5/16 Bolt and nut from the shaft collar found on the left side Bearing Plate. Loosen the setscrew located in the shaft collar on the right side Bearing Plate. Turn the crank handle CLOCKWISE as viewed from the drivers' side 25 Revolutions and re-insert the bolt, attach the locknut and tighten. This amount of winds should work well on bodies up to 20’ in length. If more tension is needed, because of a different tarp, add 2 or 3 winds at a time until you are satisfied with the way the tarp winds up. **DO NOT EXCEED 35 WINDS.** Tighten the setscrew in the shaft collar on the right side Bearing Plate. Remove the Crank Handle and store in the Cab of the truck for future use.

10. ACTIVATING THE PNEUMATICS and TESTING THE SYSTEM

The speed f the arms is governed by the Flow Controls. They restrict the amount of air flowing out of the cylinders. In the COVER mode, when the valve is pushed in, the amount of air coming out of the rod end of the cylinder is controlled by the Flow control that is connected to port #2 (Pressure Knob Out). In the UNCOVER mode, when the valve is pulled out, the amount of air coming out of the base end of the cylinder is controlled by the Flow control that is connected to port #4 (Pressure Knob In).

Start the truck and build air pressure in the tank. Pull the knob on the air valve up to UNCOVER. Slowly open the flow control that is connected to port # 4 to allow air to escape from the base end of the cylinder by turning the knob counterclockwise. DO NOT allow the cylinder to go beyond center. Push the knob in to COVER. Slowly open the flow control that is connected to port #2 to allow air to escape from the rod end of the cylinder by turning the knob counterclockwise. Cover the load completely and then pull the knob out to allow the arms to move to the front of the truck. Adjust the flow controls so the arms do not slam.

A good rule of thumb is: there should be a delay of approx. 20 seconds between pushing the knob in to cover and when the arms actually begin to move toward the rear of the truck. The delay when uncovering is approx. half of that of covering. Run the arms back and forth a few times while adjusting the flow controls until the correct speed is achieved. Remember the **speed of covering** is controlled by the flow control that is attached to the **lower port** and the **speed of uncovering** is controlled by the flow control that is attached to the **upper port**. When the proper speed has been achieved, lock the flow controls in place by pushing down on the red ring. The lock ring will be installed later.
NOTE: If the speed of the arms is too fast, it will cause the arms to slam into the bow rests causing damage to the system.

Install the Bow Rests (4) at the front and rear of the body to serve as supports and stops for the arms. The Bow Rests at the rear of the truck should be placed so the Rear Section sits approx. ½" above the tailgate hinges so the tarp does not rub on the tailgate. At the front of the truck, the Bow Rests should be placed so the Rear Section stops approx. 2" to the rear of the Bearing Plates.

11. WINDSCREEN MOUNTING – STANDARD

After operating the unit, the last item to be installed is the windscreen. The tarp should be rolled up onto the roller so that the windscreen may be placed as close to the roller as possible without interfering with the tarp. A general guide is to have the windscreen 2-3" in front of the tarp when rolled up onto the roller. The purpose of the windscreen is to keep air flowing over the tarp and not under the tarp that will cause billowing of the tarp which in turn will shorten its life. It is imperative that any air that might flow under the roller be stopped. Even if this means adding blocking in between the ribs on a ribbed cab shield. The height of the windscreen when properly installed should be just over the top of the roller assembly when the tarp is rolled up.

These units use a 2 piece curved windscreen that is to be BOLTED to the cab shield, with -6- bolts, nuts and washers provided, in front of the roller as outlined above. Each piece is 48" long and they may be overlapped in the middle if the 2 pieces together are too wide for the cab shield. The only place where the windscreen is to be welded is to tack the 2 pieces together where they butt or overlap in the middle. It has been shown that welding the windscreen to the cab shield results in the cracking of welds and weakening of the windscreen.

12. FINAL CHECKS and ADJUSTMENTS

Operate the system to Cover and Uncover to make sure everything is working well and the arms are landing softly on the Bow Rests. Adjust the Flow Controls if necessary by pulling up on the red ring and turning the knob. When the speed has been adjusted properly, push down on the red ring and install the steel lock ring into the space between the red ring and the adjusting knob.
Check all Cotter Pins to make sure they are open fully.
Check all nuts & bolts to make sure they are fully tightened.

Check to make sure all welding has been done.
Check all air lines to make sure the connections are pushed in properly and that the air line itself has been properly secured and no chafe points are evident.
Check to make sure the tarp rolls and unrolls properly and the shock cords on expandable tarps are tied properly.

13. OPERATING THE SYSTEM

COVER the load by pushing the button on the valve in.
UNCOVER the load by pulling the button on the valve out.

DO NOT MOVE THE BUTTON TO THE CENTER (NEUTRAL) POSITION
Always move the button all the way in or out.
If during covering or uncovering, you need to reverse the movement of the arms, because of a possible interference with something overhead, you can at any time during the cycle, move the knob in the opposite direction.

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.

MAINTENANCE TIPS

1. Replace any worn or broken parts immediately.
2. Check all pneumatic connections, to make sure that nothing has loosened up causing air leaks.
3. Periodically check all fasteners, screws, nuts, bolts, cotter pins, etc. Tighten and/or replace as necessary.
4. Drain the air tanks on a regular basis to prevent water from entering the system.

TIPS FOR THE OPERATOR

1. Make sure that the truck is clear of any overhead obstructions before using the unit.
2. Do not operate the unit under any overhead wires.
3. Keep hands clear of any moving parts.
4. Make sure that nobody is in the truck body or in the path of the arms when using the unit.
5. DO NOT USE THE PIVOT ARMS AS HANDLES OR STEPS WHEN CLIMBING UP ON THE BODY.
6. Only operate the tarping system when the body is horizontal, that is, when the body is in the down position.
7. DO NOT OPERATE THE TARPING SYSTEM WHILE THE VEHICLE IS IN MOTION.
8. Drain the air tanks on a regular basis to prevent water from entering the system.

9. If during covering or uncovering, you need to reverse the movement of the arms, because of a possible interference with something overhead, you can at any time during the cycle, move the knob in the opposite direction.

REV. 2-29-00