

## Railroad Track Pan Installation Instructions

***Please note:***

*Before beginning the installation process, a detailed review of your Railroad Track Pan order is recommended to make sure that all items have been received and are not damaged. Please contact us and not attempt to install your Track Pan System if any parts are missing or damaged.*

*All installation personnel should read this document in its entirety **before** the installation process begins.*

*Proper personal protection equipment must be worn while installing Railroad Track Pans, Composite Model. All safeguards must be taken to insure that the area of track where installation is to take place will have no rail traffic or other activity that may present hazards to installation personnel. All applicable OSHA, DOT and other governing regulations must be followed. We are not responsible in any manner for equipment, property or personnel used in the Track Pan installation process.*

*The following installation instructions have been prepared with the assumption that a complete track pan system (i.e., center track pans with grates, side track pans with grates) is being installed. If, as an example, your installation requires center track pans only, disregard all references to the installation of side track pans.*

### Tools Required to Install Railroad Track Pans

- Metal Rake
- House Broom
- Shovels
- Channel Lock pliers (12 inch), adjustable wrench, or socket set
- Tape measure
- Carpenter's yellow marking crayon
- Drill (for installations with underground piping only)
- ½" Drill Bit (for installations with underground piping only)
- Router (for installations with underground piping only)
- ½" carbide roundover bit for router (for installations with underground piping only)
- Propane or butane fired torch with a flame head diameter of at least 5/8" (utilize a flame spreader if available). (For multiple pan installations with gaskets)
- Adjustable C-Clamps (for installations where pans will be glued together and/or installations with underground piping)
- Chemical resistant nitrile or polyethylene gloves (disposable) (for installations where pans will be glued together and/or installations with underground piping)
- Permanent marker (for installations where pans will be glued together and/or installations with underground piping)

## Site Preparation

1. Before installing Railroad Track Pans, Composite Model, minor preparation of the installation area is, in most cases, required. Outline the area in which the Railroad Track Pans are to be installed. Railroad Track Pans are approximately 20 feet in length. Multiply 20 feet x the number of center pans in your system and this will give you the approximate length of the system. With an appropriate tape measure and marking crayon, mark the beginning and end of the system on the foot of the rails. Within this area any ballast, weeds, or other debris that is higher than the top of the ties needs to be removed. Before Composite Model Track Pans are installed the ballast in this area needs to be flush with or lower than the tops of the ties. If your system includes Side Track Pans then the ballast on the field side of the rails will need to be flush with or lower than the tops of the ties and away from the rail three to five feet from the web of the rail.
2. **Joint Bars:** Joint Bars hold two pieces of rail together. They are typically placed on the gauge side and field side of the rail web and are bolted together with six bolts (three bolts facing in toward the middle of the track and three facing out.) If possible, remove joint bars and the bolts and weld rails together. If this is not possible inspect joint bars and the bolts and make sure they are fully tightened using an appropriate wrench. Once they are securely tightened, place a metal cutting blade on the circular saw, and wearing proper hearing and eye protection, cut off the excess threads of these bolts. If your system only contains Center Track Pans then the bolts facing out do not need to be cut off.
3. **Rail Anchors:** Rail anchors prevent the rails from moving on the railroad ties as the locomotive pulls or stops the train. You will notice them in the area between the rails. Usually they are opposite one another and against the ties. Depending on your situation these anchors may need to be removed and replaced with a low profile anchor or removed altogether. Contact us and/or the Railroad for additional guidance. Railroad Track Pans, Composite Model are designed to accommodate most standard rail anchors, including pandrols.

**Note:** *Extremely large rail anchors may be a problem and should be checked with a pan placed over the rail anchor prior to moving forward with the install.*

4. **Railroad Spikes:** Check all Railroad Spikes to see that they are all driven down tight to the foot of the rail.
5. Remove dirt and other debris that may have collected on the inside and outside web surfaces of both rails.
6. Finally, sweep off the tops of the ties leaving a clean surface on which to install the Railroad Track Pan System.

**Disclaimer:** *We assume no liability for damages incurred to Railroad Track Pans or the Railroad Track Pan system due to installation on railroad ties that are in poor condition and thus enabling the rail anchors to damage the pans. We also assume no liability for damages incurred to the Railroad Track Pans or the Railroad Track Pan System or loss of containment by the Railroad Track Pan system caused by failure to remove and replace track joint bars or splice bars.*

## General Installation Guideline

### With *no* Below Grade Piping:

We recommend that all Center Track Pans be completely installed *before* beginning installation of the Side Track Pans. The installation of the *non-piped* system will be more efficient as a result.

### With Below Grade Piping:

Center Track Pans and Side Track Pans (if ordered) must be installed concurrently to allow for proper positioning of the drain manifold and filling of the pipe trenches under the Track Pans.

**PVC piping is used for the underground Drain Manifolds** PVC has adequate strength and the necessary flexibility to give a long-lasting installation. Contact us for suggested piping layouts or other information.

**Important:** *Your Track Pan order has been customized to meet your needs. The Track Pan walls that will be located at the very beginning and the very end of each System have **not** been drilled out to allow flow-through.*

## Installation of Center Track Pans

1. The *beginning* Center Track Pan should be installed with the undrilled, contoured portion of the pan at the *starting end* of the Track pan System.



2. It is important to install the Center Track Pans so that they are centered between the two rails. This will facilitate the installation of the Center Track Pan gaskets at the end of this process. In order to keep them centered we recommend cutting four blocks of quarter-board (5/4) wood 6 inches long. These blocks are to be used as spacers to keep the Center Track Pans centered between the two rails while assembling.



3. Line up the drilled holes on the end-wall of the *beginning* Center Pan with the drilled holes on one end-wall of the second Center Track Pan. Pull back the second Center Track Pan enough to be able to apply the adhesive to the outside of the end-walls that will be attached together. Three installers are best.
4. *Before opening the adhesive*, it is good practice to mark one side of the adhesive cartridge and the corresponding side of the gray cap that keeps the adhesive closed (think of the adhesive as Side A and Side B). This will be helpful when closing the adhesive between uses and ensure that the cap is placed back in the adhesive so that Side A material does not mix with the Side B material, which will create a permanent bond and render the remaining adhesive unusable. Wearing chemical resistant nitrile or polyethylene gloves, open the adhesive tube and attach one static mixer to the end of the adhesive.



Using the adhesive dispenser, apply adhesive to each side of the end-wall of each pan.



Push the second pan into the first pan, while keeping the first pan in place, carefully aligning the flow-through holes in each end-wall. Once the two pans are together, use C-Clamps to tighten the two pans together between the two flow through holes and on the outside of each flow through hole.



While still wearing chemical resistant gloves, wipe the excess off of the inside of each flow through hole and any excess that has come up over the end-walls.

5. Unless you are immediately ready to dispense the adhesive again, remove the static mixer and dispose of it. Clean any excess off the adhesive tube (without getting side A into Side B) and then replace the adhesive cap (with the proper side in the associated half of the adhesive) and store the adhesive out of direct sunlight in as cool a place as possible. This will extend the life of the adhesive and ensure that the adhesive will be able to be used as long as possible on the job. The adhesive will set in roughly 15-30 minutes, depending on the temperature at the time of install.
6. Continue with this process until all Center Pans have been installed and glued together.
7. If using gaskets to seal the Railroad Track Pans, Composite Model to the rails, position one gasket on each side of the Center Track Pan.

***Important:*** To maximize the seal between the rails and Railroad Track Pans, Composite Model, all track sealing gaskets should be “welded” together end-to-end. The instructions that follow should be followed in a



*detailed manner. The track gaskets should be welded end-to-end before they are installed at the track area.*

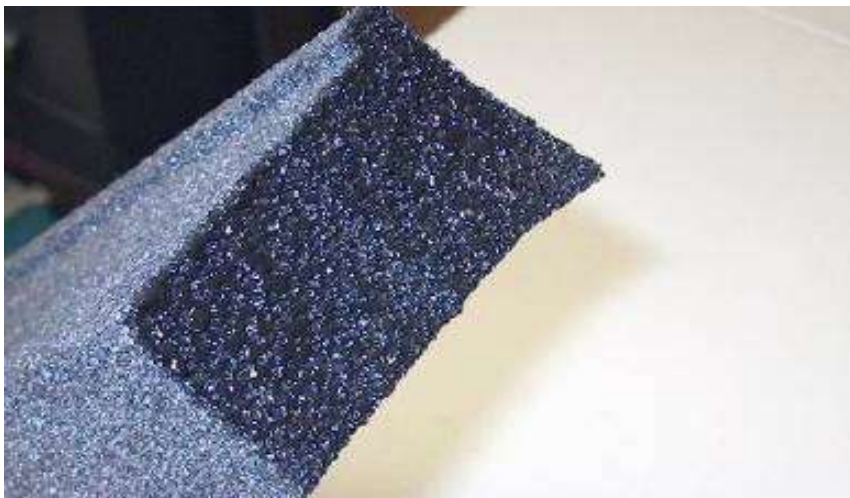
- a. Use a propane or butane fired torch with a flame head diameter of at least 5/8 inch (if a flame spreader is preferable).
- b. Light the torch and adjust it to a medium-low flame.

**Caution:** *The torch can cause fires and burns. Be aware of the flame reach and the proximity of flammable objects. Be aware of those people around you.*

**Note:** *These next two steps c. and d. happen quickly – approximately 4 to 8 seconds – and must proceed into step d. as a single smooth and continuous operation.*

- c. With one person holding the gaskets and a second person using the torch, quickly “brush” the flame across the ends of the gaskets.

**Note:** *The result should be the end of the gasket material is molten and shiny but not deformed on the edges. See picture below.*



- d. Press the ends of the gaskets firmly together while aligning all of the surfaces and pressing gaskets down to a flat, clean surface. Also be sure to hold the gaskets so that the long axis is straight. Hold the gaskets in this position for about 45 seconds. See picture below.



***Note:** the weld that has just completed will not achieve full strength for another 1 hour to 3 hours (best results are achieved if left overnight). Try not to put much stress on completed welds until they have had time to cool completely.*

- e. Repeat steps **c.** and **d.** to produce gaskets of the total desired length.
8. After all of the Center Pans have been installed and the adhesive has cured and the gaskets are in place, it is necessary to install the Center Pan Seam Covers at each pan-to-pan connection. Using the same adhesive for attaching the Center Pans together, run a bead of adhesive over the edge where the pans connect and another bead of adhesive on the underside of the Seam Cover. Flip over the Seam Cover and position it on the edge where the pans attach. Using weighted objects, if necessary, ensure that Seam Cover remains in place until the adhesive cures.





9. If using grates as a walking surface for the Railroad Track Pans, Composite Model, prepare ten grates for each Center Pan by inserting two Grating Pedestals into the diamond on the underside of each grate. These pedestals will prevent the grates from sagging over time.



10. Position ten grates in each Center Pan, using the grating locator positions on the pans.





## Installation of Side Track Pans

**Note:** It is important to note that there are significant design differences on the outside surface of the long sides of the side track pans. One (1) side contours all the way to the ground. This is the side that must be positioned on the field side, away from the rail web. See photo below.



1. The *beginning* Side Track Pan should be installed with the undrilled, contoured portion of the pan at the *starting end* of the Track pan System.



2. Loosen the bolt on two Side Pan Rail clip as far as possible without completely removing it. This will give maximum flexibility during installation of the Side Pans. You will need to use two Side Pan Rail clips for each Side Pan.



**Note:** Side Pan Rail Clip shown on top of Track Pan for illustration purposes only. Actual installation will be underneath the Track Pan and rail.

3. Space out the two Side Pan Rail Clips evenly throughout the length of the Side Pan, making sure that the location of each Side Pan Rail Clip is between railroad ties.
4. With the “L” portion of the Side Pan Rail Clip aligned towards the field side of the rail, slide the other end of the Side Pan Rail Clip under the rail and pull back until it is secure against the rail.



5. Stand the contoured, field-side of the Side Pan into the notches on the two “L” portions of the Side Pan Rail Clips. These “L”s will support the outside grating structure of the Side Pan and help prevent sagging and cracking over time on the field side of the Side Pan.





6. Slowly lower the Side Pan towards the rail until it is sitting flat on the railroad ties. Insert the two 5/4 board shims between the rail and the edge of the Side Pan.
7. With the shims in place, tighten the bolts of the Side Pan Rail Clips until the clips are holding the Side Pan against the shims. *Do not overtighten* the bolts, as it may cause the resin of the Side Pan to crack.
8. Follow the above steps 1-6 for the next Side Pan.
9. After lining up the drilled holes on the end-wall of the *beginning* Side Pan with the drilled holes on one end-wall of the second Side Track Pan. Pull back the second Side Track Pan enough to be able to apply the adhesive to the outside of the end-walls that will be attached together. Three installers are best.



10. Wearing chemical resistant nitrile or polyethylene gloves, open the adhesive tube and attach one static mixer to the end of the adhesive. Using the adhesive dispenser, apply adhesive to each side of the end-wall of each pan. Push the second pan into the first pan, while keeping the first pan in place, carefully aligning the



flow through hole in each pan. Once the two pans are together, use C-Clamps to tighten the two pans together outside of the flow through hole. While still wearing chemical resistant gloves, wipe the excess off of the inside of the flow through hole and any excess that has come up over the end-walls. *(Refer to Step 4 – Connecting Center Pans for photos)*

11. With the shims in place, tighten the bolts of the Side Pan Rail Clips until the clips are holding the Side Pan against the shims. *Do not overtighten* the bolts, as it may cause the resin of the Side Pan to crack.
12. Unless you are immediately ready to dispense the adhesive again, remove the static mixer and dispose of it. Clean any excess off the adhesive tube (without getting side A into Side B) and then replace the adhesive cap (with the proper side in the associated half of the adhesive) and store the adhesive out of direct sunlight in as cool a place as possible. This will extend the life of the adhesive and ensure that the adhesive will be able to be used as long as possible on the job. The adhesive will set in roughly 15-30 minutes, depending on the temperature at the time of install.
13. Continue with this process until all Side Pans have been installed and glued together.
14. If using gaskets to seal the Railroad Track Pans, Composite Model to the rails, position one gasket on rail side of the Side Track Pan.
15. After all of the Center Pans have been installed and the adhesive has cured and the gaskets are in place, it is necessary to install the Center Pan Seam Covers at each pan-to-pan connection. Using the same adhesive for attaching the Center Pans together, run a bead of adhesive over the edge where the pans connect and another bead of adhesive on the underside of the Seam Cover. Flip over the Seam Cover and position it on the edge where the pans attach. Using weighted objects, if necessary, ensure that Seam Cover remains in place until the adhesive cures.



16. If using grates as a walking surface for the Railroad Track Pans, Composite Model, position five grates in each Side Pan, using the grating locator positions on the pans.



*Your Track Pan system should now be ready and fully operational. If you have any questions, please contact us.*