



**TransTech**  
Systems, Inc.

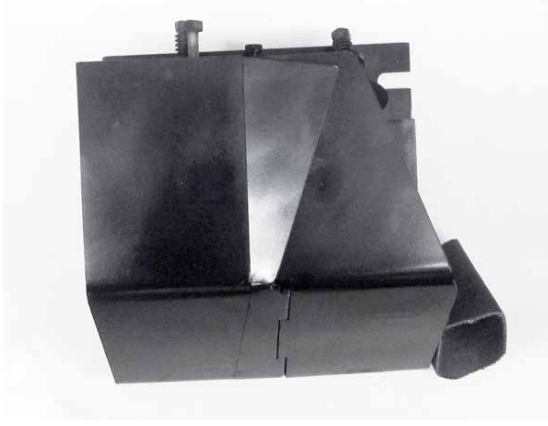


**Notch Wedge Joint Maker  
Instruction Manual™**

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# **1. Purpose and Use of the TransTech Notch Wedge Joint Maker**



The Notch Wedge Joint Maker™ (NWJM) is used as a paver attachment tool to help construct higher density, longer lasting longitudinal joints between asphalt mats. Through several simple adjustments, the NWJM™ can help a paving crew construct various shapes of vertical and tapered mat edges.

It is designed primarily to construct a precompacted, tapered mat edge with an adjustable vertical “notch” or “step”, creating a tapered edge commonly known as the “Michigan wedge joint”. The NWJM™ is typically used in a matched pair, one for the right side of the paver and one for the left side of the paver. When closing a longitudinal joint over a tapered edge, the NWJM™ is adjusted to pre-compact asphalt on the closing side of the longitudinal joint in order to maximize the density and quality of the resulting joint.

The following instructions explain the basic installation and adjustments needed to use the NWJM™ to construct a pre-compacted “Michigan wedge joint”.

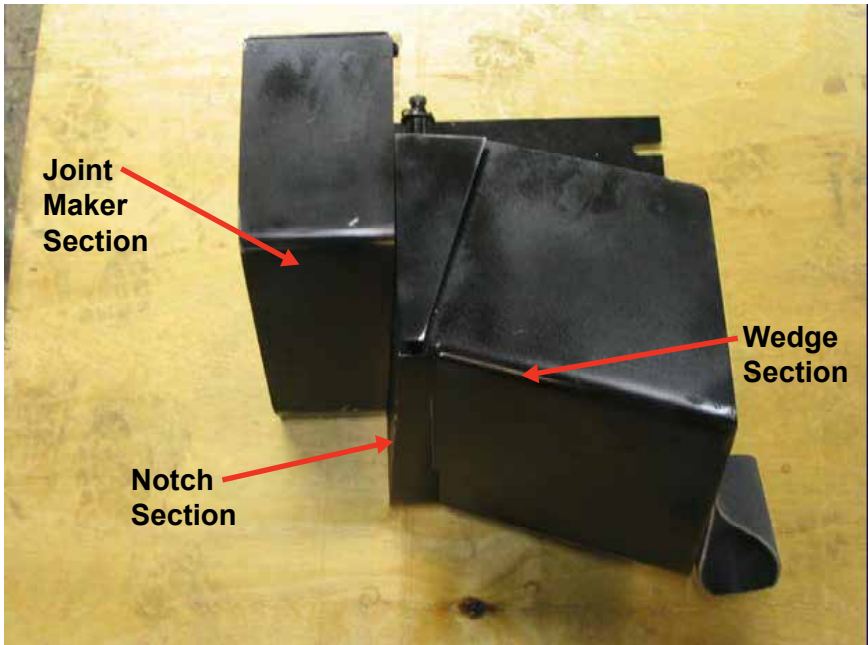
**1.1 Caution!**  
**HEAVY! To Avoid Injury,**  
**Use Care When Lifting and Installing.**

## 2. Explanation of Key Parts

The Joint Maker Section pre-compacts the last four inches of the top of the asphalt mat. This gives higher density to the asphalt so that the edge maintains its shape and quality.

The Notch Section pre-compacts and shapes the “notch”, the vertical drop off of the top of the asphalt mat, which is critical to the construction of a Michigan wedge joint. The depth of this notch is adjustable.

The Wedge Section pre-compacts and shapes the wedge, or tapered section, of the mat edge. It also controls the vertical drop at the outer edge of the tapered section. The Wedge Section width is approximately 10”.

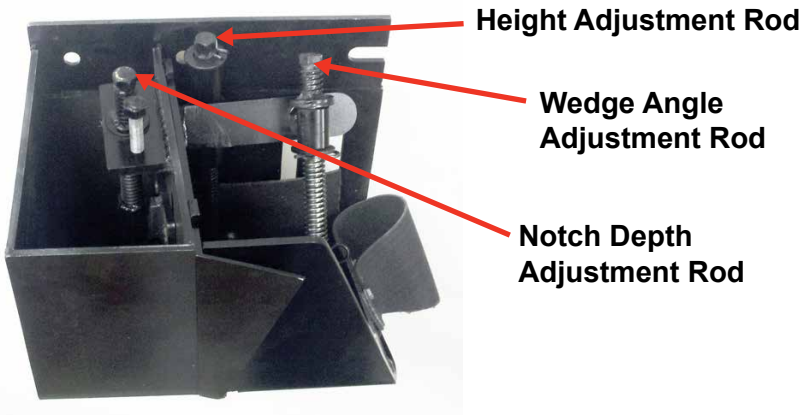


## 2. Explanation of Key Parts

The **Height Adjustment Rod** controls the height of the Joint Maker Section at or above the bottom of the screed plate.

The **Notch Depth Adjustment Rod** controls the depth of the notch section.

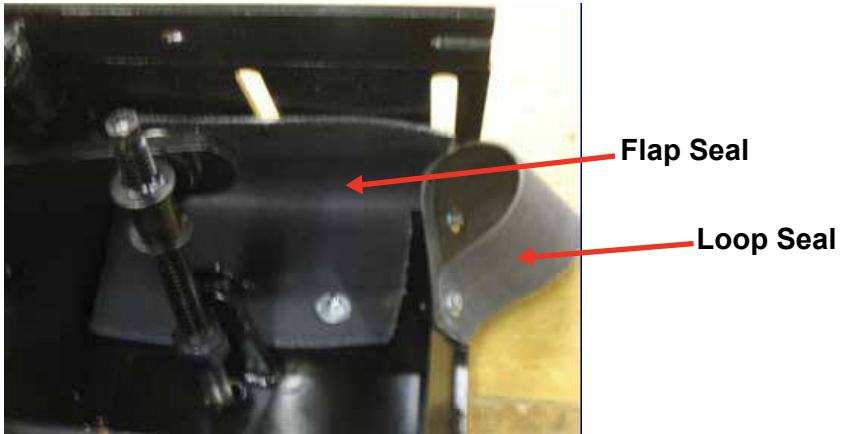
The **Wedge Angle Adjustment Rod** controls the angle of the wedge, or taper section as well as the height of the vertical drop at the outer edge of the tapered section.



**Note:** All three adjustment rods are designed to move the particular section in the upward direction when the rod is turned Clockwise and in the downward direction when the rod is turned Counterclockwise.

### 3. Flexible Seals

There are two flexible seals on the Notch Wedge Joint Maker™. The first is in a “Flap” shape and is positioned behind the Wedge Section. Its purpose is to prevent any asphalt material that might fall inside the NWJM™ to leak out the back of the device onto the finished tapered area. The second flexible seal is in a “Loop” shape and is attached at the outer edge of the Wedge Section. Its purpose is to prevent material leakage between the outer edge of the Wedge Section and the end gate during paving.



## **4. Instructions for Installation of the NWJM**

The NWJM™ can be installed on the hydraulic screed extension and/or on one foot and two foot wide bolt-on screed extensions.



### **Notes:**

**Set up will require installation of mounting holes on the screed extensions. Mounting hardware is included.**

### **4.1 Tools Required**

Drill, Drill Bits, Tap, Socket Set, and in some installations it may be necessary to have a cutting torch and welding capability.

**For assistance during installation  
and usage of the NWJM™**

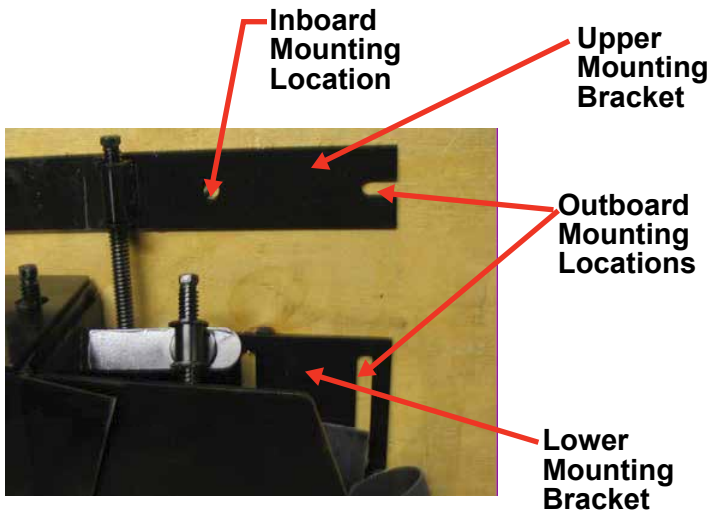
**call TransTech at  
1-800-724-6306 for Customer Support.**

## 4.2 Mounting Hole Locations

### Notes:

Three mounting holes are needed for the NWJM™

There are two mounting areas on the NWJM™. The first is the “**Inboard Mounting Location**” and the second is the “**Outboard Mounting Location.**”



### Approximate Mounting Hole Locations:

- The location of the **Inboard Upper Mounting Hole** is approximately 14 inches above the bottom of the screed plate and approximately 7 inches in from the end gate side of the screed extension.
- The location of the **Outboard Upper Mounting Hole** is approximately 14 inches above the bottom of the screed plate and approximately 1 inch in from the end gate side of the screed extension.
- The location of the **Inboard Lower Mounting Hole** is approximately 6 inches above the bottom of the screed plate and approximately 6 inches in from the end gate side of the screed extension. Note: In our latest models this slot has been eliminated.
- The location of the **Outboard Lower Mounting Hole** is approximately 6 inches above the bottom of the screed plate and approximately 1 inch in from the end gate side of the screed extension.



## 4.3 Installation of the Notch Wedge Joint Maker

- Disassemble the upper mounting bracket from the NWJM™ assembly by removing the hairpin cotter pin from the Height Adjustment Rod.
- Using the bracket as a template, place it so the inboard mounting hole is approximately 14 inches above the bottom of the screed plate and the end gate side of the bracket is against the end gate.
- Mark the 2 mounting hole locations. Drill and tap each hole for a ½-13 UNC bolt. If the metal in the mounting areas is too thin to tap satisfactorily, drill the screed plate for a clearance hole for a ½-inch bolt and weld a nut on the back of the hole.
- Fasten the Upper Mounting Bracket to the screed plate.
- Re-assemble the NWJM™ by inserting the height adjustment rod through the collar on the upper mounting bracket and fasten with the hairpin cotter pin.
- Mark the location of the lower mounting hole through the outboard slot in the lower mounting bracket. Drill and tap the mounting hole for a ½-13 UNC bolt.

**Note:** the NWJM™ does not need to be removed for this operation. Again if the metal in the mounting area is too thin to tap satisfactorily, drill the screed plate for a clearance hole for a ½ -inch bolt and weld a nut on the back of the hole.

- Install the lower bolt through the slot in the lower mounting bracket but do not tighten.

**When all three bolts are in, the NWJM™ is ready to be adjusted to a height of 1 inch above the bottom of the screed.**

- Rotate the Joint Maker Section Adjustment Rod until the Joint Maker Section is 1" above the bottom of the screed plate. (Remember clockwise rotation raises the Joint Maker Section and counterclockwise rotation lowers the Joint Maker Section.)

**During normal paving conditions, the bottom edge of the Joint Maker Section should be approximately one inch above the bottom of the screed plate.**

- Tighten all three mounting bolts.

### 4.3 Installation of the Notch Wedge Joint Maker



The Joint Maker Section is set 1" above the bottom of the screed

The wedge section has not been lowered. It is at the "0" position

The notch section has not been lowered. It is at the "0" position

**The Notch Wedge Joint Maker is now mounted!**

**Note:** At no time should the Joint Maker Section be adjusted to extend below the bottom of the screed plate. It should be 1" above the bottom of the screed.

**“End Of Installation Section of Manual.”**

# Using the Notch Wedge Joint Maker

## 5.0 Instructions for the Adjustment of the NWJM During Paving

At the beginning of the paving process, the NWJM™ should be in the zero horizontal orientation, positioned 1” above the bottom of the screed.

### 5.1 Positioning the Notch Section

The Notch Section of the NWJM pre-compacts and shapes the “notch”, the vertical drop off from the top of the asphalt mat, which is critical to the construction of a Michigan wedge joint.

The Notch Section is lowered below the level of the Joint Maker Section by rotating the Notch Section Adjustment Rod counterclockwise.

#### • Notch Adjustment

Rotate the Notch Adjustment Rod (clockwise for up and counterclockwise for down) until the Notch begins to form in the mat behind the screed. Increase the depth of the notch as needed to ensure a step is present after rolling.

### 5.2 Positioning the Wedge Section

The wedge Section of this device provides a taper on the mat edge allowing for traffic transition from the unpaved lane to the newly paved lane during construction and is an integral part to the Michigan wedge joint.

The wedge section is adjusted by rotating the Wedge Section Adjustment Rod counterclockwise.

#### • Wedge Adjustment:

Rotate the Wedge Adjustment Rod (clockwise for up and counterclockwise for down) to form a ramp from the bottom of the notch to the road base. Allow for the wedge to stop at a toe height equivalent to the size of the largest aggregate in the mix.

## 6.0 Guidance on Using the Notch Wedge Joint Maker

### 6.1 Calculating Mat Widths

It is important to know that the NWJM increases the width of the mat being laid by approximately 4”. This extra width needs to be included when deciding on paving width of each paving pass.

## 6.2 Settings at Initial “Takeoff” of the Paver

Under most paving conditions, the initial “takeoff” of the paver is done at full mat depth off of blocks or prior paving. Special precautions must be taken when using the NWJM under paving conditions where “takeoff” is from a “zero” mat height and the screed is then raised to full mat depth. Failure to make proper adjustments could result in damage to the device and interruptions in paving.

When adjusted to produce a notched, tapered edge, the Notch Section and Wedge Section of the NWJM are set lower than the bottom of the screed plate. When paving begins at “zero” mat height, these two sections need to be in their zero position and raised above the bottom of the screed plate then lowered into position once the full mat depth is reached.

## 6.3 Recommended Rolling Patterns

Rolling of the mat edges and of the longitudinal joint when paving the closing pass is critical to achieving the best tapered mat edge and the highest density longitudinal joint.

**It is recommended that the first rolling pass on the freshly laid mat be made with the roller drum overlapping the air at the tapered edge by about 3-5 inches.**

The roller should be driven straight up to the back of the paver and back without turning the roller. If possible, this should be done in vibratory mode. This process “sets” the higher density edge and reduces deformation of the notch during the balance of rolling. If the notch is losing its height in this process, it may help to do this first rolling pass in static mode, then the remainder in vibratory.

**DO NOT ROLL THE TAPER.** Attempting to roll the taper can result in damaging or destroying the notch area. This will seriously degrade the performance of the joint when closed.

When closing the longitudinal joint, it is recommended that the first rolling pass be made with 3-6 inches of the roller drum overlapping the edge of the first mat, i.e. with most of the roller drum over the hot mat.

Another key point about the closing paving pass is that it is critical that the second mat be laid down over the taper section with enough material to accommodate rolldown. If the uncompacted mat is laid “flush” with the edge of the first, or “cold”, mat the roller will bridge on the edge of the cold mat and density in the joint section will be greatly reduced.

It is critical that the longitudinal joint area be rolled at least as many times as the center area of the asphalt mat in order to achieve the highest possible density.

These suggestions are a general guide. If maximizing density in the longitudinal joints is a key objective, cores in the joints should be taken on a regular basis and adjustments in the NWJM and in rolling patterns be executed to increase density results. TransTech customer service personnel are available to assist customers in analyzing results and developing alternatives.

## 6.4 Adjusting the Edge Shape During Paving

Under most paving conditions, the shape of the tapered edge can be adjusted during paving. The height of the notch can be increased or decreased by rotating the Notch Section Adjustment Rod. The angle of the Wedge Section and the height of the vertical drop at the outer edge of the taper can be adjusted by rotating the Wedge Section Adjustment Rod. Only minor adjustments should be necessary during paving; the most common is adjustment of the Notch Depth.

**Warning!** During paving, parts of the NWJM™ are positioned below the bottom of the screed plate. If the mat thickness is reduced during paving, the NWJM™ could be severely damaged. This is particularly true at the point of takeoff or at the end of a paving run. The user will bear the expense of repair if damage is sustained under these circumstances.

**Warning!** During paving, the NWJM™ could be exposed to contact with the crossfeed auger and auger shaft if the hydraulic screed extension is drawn in too close to the main screed. Severe damage could occur to both the crossfeed auger and the NWJM™ if they come in contact.

## 6.5 Keeping the Paver End Gate in Proper Position

**In order for the NWJM™ to work properly, the paver end gate ski must be kept riding directly on the surface being paved.** Most end gates have a tension rod or compression spring mechanism which can be adjusted to keep enough downward pressure on the ski so that it does not lift up during paving. If the end gate lifts off the pavement for any reason, asphalt may flow out the side of the paver and not provide enough asphalt to the NWJM™ to achieve proper precompaction in order to construct a high quality notched tapered edge.

## 7.0 Closing the Longitudinal Joint over a Tapered Edge

The NWJM™ is designed in a pair, with one unit for the left side and one unit for the right side of the paving machine. When closing a longitudinal joint, the NWJM™ can be adjusted to achieve increased density when covering a tapered edge. This adjustment of the NWJM™ can also be made to achieve a precompacted vertical open edge when paving a vertical “butt” joint.

- Ensure that the Joint Maker Section is one inch above the bottom of the screed plate.
- Rotate the Notch Depth Adjustment Rod so that the Notch Section is level with the bottom of the Joint Maker Section (zero position).
- Rotate the Wedge Angle Adjustment Rod so that the Wedge Section is level with the bottom of the Notch Section and parallel to the bottom of the screed plate (zero position).

With these settings, bottom edges of all three sections of the NWJM™ should be in a straight line one inch above the bottom of the screed plate. The NWJM™ will precompact asphalt in the outer section of the mat for its width of approximately 16 inches.



**Call 1-800-724-6306 or  
518-370-5558 for replacement parts**

<b>7500-0243 Wedge Screw</b>	 A black metal wedge screw with a threaded shaft and a wedge-shaped head, shown next to a wooden ruler for scale.
<b>7500-0241 Notch Screw</b>	 A black metal notch screw with a threaded shaft and a notch-shaped head, shown next to a wooden ruler for scale.
<b>7500-0242 Height Adjustment Screw</b>	 A black metal height adjustment screw with a threaded shaft and a height adjustment head, shown next to a wooden ruler for scale.
<b>7000-0218 Loop Seal (End Seal)</b>	 A black, trapezoidal loop seal with a textured surface, shown against a white background.
<b>7000-0219 Flap Seal (Bottom Seal)</b>	 A black, rectangular flap seal with a textured surface, shown against a white background.



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