



*Installation Manual*

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# **LaneShield™**

June 2005 / 61-900021-000

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## Statement of Intent

*This manual has been provided for use by Brunswick **trained** installation personnel. Any other use is prohibited.*

### **LaneShield™ Installation Manual**

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Reorder Part No. 61-900021-000

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# Introduction

## MAINTENANCE

**Caution!:** A good maintenance program to keep house balls repaired will reduce potential abrasion and/or damage of LaneShield. Bevel all holes in balls and fill sharp edges/cracks with ball plug.

For optimum performance of the LaneShield product, it is important to maintain steady temperature and humidity levels within the bowling center after LaneShield has been installed. The recommended humidity is 45%  $\pm$ 5%. The recommended temperature is 75°F  $\pm$ 5°F. Failure to maintain these recommended temperature and humidity levels will cause LaneShield to expand and contract, which may cause "waving" of the LaneShield.

Use proper mats and carpets to avoid abrasive particles from being tracked onto approach or lane.

Damage to LaneShield such as scratches from abrasion, creases from sharp edges/cracks at ball holes, or dents caused by lanes with voids, soft wood, or otherwise unsound support; due to improper maintenance or preparation/installation, is not covered under the warranty.

## Chemical Resistance

Water based Lane Cleaners and isopropyl alcohol are recommended for use on LaneShield.

Avoid solvents or solvent based cleaners (such as pinsetter cleaners , toluene, xylene, etc.). Solvent or solvent based materials may cause damage to LaneShield such as blistering.

The following items are incompatible with LaneShield: Acids, Aldehydes & Ketones (i.e. Acetone), Alkalis (Ammonia), Aromatic Hydrocarbons (Benzene, Toulene, Xylene) and Esters (Ethyl Acetate).

## Pinsetter Installation Carts

Do not roll any carts with heavy loads, such as those used for pinsetter installation, down lanes with LaneShield in place. Damage to LaneShield could result.

## Temporary Bleachers

Bleachers for tournaments or other similar, temporary structures should not be built and placed on LaneShield lanes. Damage to LaneShield could result.

## Pre-Installation Lighting

It is necessary to have adequate lighting above lane markings (i.e. range finder arrows), for proper visibility. Relocation or additional lighting may be necessary.

## PACKAGING

### Model #L2-310001-000 - LaneShield Lane Pair Package - Contains:

Lane Shield (enough for two lanes)	2 rolls
Lane Shield Installation Manual	1 each
Lane Marking Dots (pkg of 10)	2 packages
Lane Marking Arrows (pkg of 7)	2 packages
Lane Shield Double Sided Tape (4" x 36 yds)	varies per order
Lane Shield ABC/WIBC Certification Sticker	varies per order
* Lane Shield Graphics Package (2 graphics)	1 per center

\* Item not for sale as a replacement part

## Model #L2-310002-000 - LaneShield Starter Kit - Contains:

* Wood Carrying Case	1 each
* Router Fixture	1 each
1 1/2 Diameter Router Bit with 2 Cutting Tips	1 each
Spare Router Bit Cutting Tip	2 each
Trim Tool	2 each
Deburr Tool	2 each
* Straight Edge	2 each
* 1-1/2 H.P. Electric Router	1 each

\* Items not for sale as a replacement part

## LaneShield Replacement Tools, Parts and Supplies

1-1/2" Diameter Router Bit with 2 Cutting Tips	1 each	61-860270-000
Spare Router Bit Cutting Tip	1 each	61-860285-000
Trim Tool	package of 5	61-860268-000
Trim Tool Replacement Blades	package of 10	61-860271-000
Deburr Tool	1 each	61-860267-000
Deburr Tool Replacement Blades	package of 10	61-860272-000
Lane Shield Installation Manual	1 each	61-900021-000
Lane Marking Dots (pkg of 10)	package of 10	61-860280-000
Lane Marking Arrows (pkg of 7)	package of 7	61-860279-000
LaneShield Double Sided Tape (4" x 36 yds)	1 roll	61-860265-000
LaneShield ABC/WIBC Certification Sticker	package of 8	61-860266-000
LaneShield (enough for two lanes)	2 rolls	61-860264-992
LaneShield (enough for one lane)	1 roll	61-860264-991

## Recommended Brunswick Supplies

IPA 99 Cleaner	package of 12 qts	61-860254-000
Brunswick Injecta-Patch (3 oz. Cartridge) Epoxy	1 each	61-860256-000
Lane Maintenance Applicator Bar	1 each	61-860230-000
Brunswick Towels	package of 12	61-860233-000
Tac Cloth ( Each)	1 each	61-860026-002
Tac Cloth ( Roll)	150' roll	61-860026-150

## Recommended Miscellaneous Supplies

Small Block Plane  
Utility Knife  
Small Laminate Roller  
Heat Gun  
Plastic Putty Knife  
Gloves  
Safety Glasses  
Knee Pads  
Shop Vac  
Gutter Mop  
Tape Measure

**NOTE:** It is imperative that the lane machine in the Bowling Center be in good working order before using it on LaneShield. All maintenance must be up to date on the machine and recorded. Any issues with LaneShield caused by improperly maintained equipment will NOT be covered by warranty. If you need assistance with your Brunswick Lane Machine maintenance, please call 1-800-323-8141.

# Lane Preparation

## PATCHING, NAIL HOLES, INJECTION & FOUL LINE PREPARATION

The condition of the lane is very important to the success of any LaneShield installation. Carefully examine lanes for any thin or loose boards prior to, and after sanding. Replace all thin or broken boards. Replace or inject loose boards. Do the same for arrows, range finders and face screw dowels. As an alternative, remove face screw dowels and fill cavity with epoxy. **All nail holes must be filled with epoxy.** *Never* use plastic wood. Plastic wood shrinks when cured and leaves a noticeable low spot in lane. Plastic wood also breaks down easily with ball impact. Refer to Figure 1.



Figure 1

Foul line preparation is critical to the installation. Any thin or broken foul lines must be replaced. **All foul lines must be injected.** Foul lines that are tight in summer often become loose in winter when heat is turned on. If there is any question about foul line quality, replace and inject foul line.

A certain amount of board movement is tolerated by the rest of the lane. Lane injection is recommended, but not required.

**Special Note:** Lane Shield is not recommended for centers prone to moisture or flooding problems.

## OIL TREATMENT

One of the many benefits of LaneShield is that it does not allow oil penetration. This makes removal of existing oil stains especially important. Make sure all powder residue left from treatment is removed from lane. **Wet oil treatments are not recommended.**

## LANE SANDING

Follow procedure you would normally use if applying lane finish. Remove as much "dish" and "ski slope" as possible from foul line area. Sanding to at least ABC/WIBC specification of .030" (0.8 mm), is recommended. This is to ensure that straight edge and router sit flush to lane surface to allow for proper depth of cut. A good rule of thumb is to be sure that a 10 inch (254 mm) perimeter around the foul line is sanded flat.

Final abrasion should be made using 180 grit screen. Tests have shown that using finer grit screens makes dust removal more effective.

It is very important to vacuum entire lane, focusing on removing dust from gaps between boards, before applying sealer and basecoat.

## RESURFACE, SEAL LANE

Resurface and seal lane with two coats of Astro Lane Sealer applied with squeegee per instructions before LaneShield is installed. Make sure that bevel depth at foul line provides adequate step down for LaneShield thickness. Allow one to two hours minimum dry time between coats.

Alternate process: May route by foul line, before sealer coat, and seal routed ramp with lane sealer. Make sure excess finish does not cure in bottom of bevel cut by foul line.

## BEVEL FOUL LINE

Starting at foul line, route a 0.100 inch (2.5 mm) deep bevel, similar to Guardian installations. Use router (#61-860269-000) to make multiple router passes, creating a ramp 6 to 8 inches (152-203 mm) in front of foul line. Refer to Figure 2.

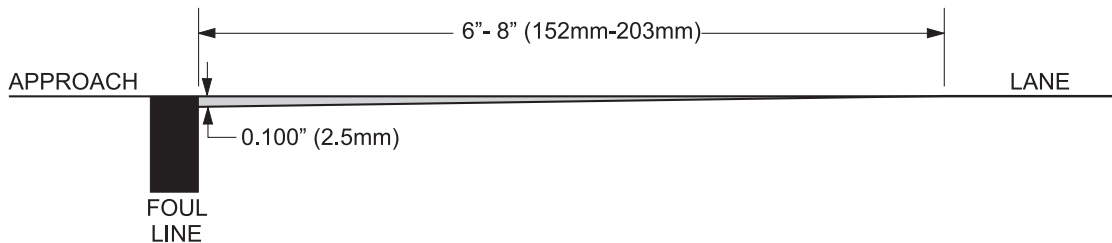


Figure 2

## Brunswick Lane Shield Router Instructions

1. Remove router base from carrying case. Remove stop collar from tapered end of main shaft on base plate and slide router cross-carriage assembly completely off main shaft assembly. Rotate router carriage 180 degrees and slide assembly back onto base plate main shaft. Position and fasten stop collar back onto main shaft assembly.
2. Remove electric router from its carrying case and install 1-1/2" diameter dual tip router bit. Care should be taken to ensure the router bit shaft be inserted fully into router collet and properly tightened. Using the proper size Allen wrench, check the Allen screws that hold the cutting inserts to the tool head for proper tightness. Using depth adjustment on router, rotate black knob counterclockwise to adjust motor to its upper limit for height.

3. Carefully install electric router into router cross-carriage assembly. Ensure router base is inserted fully into circular opening in cross-carriage mounting plate. Rotate “L” shaped clamps 90 degrees and thoroughly tighten black knobs on cross-carriage to clamp the router tightly in place.
4. Using tape measure or similar device, measure 14” (356 mm) from lane side of foul line and with a pencil mark this distance with a slight hash mark (about 1/4” [6.4 mm] long) on the outside edge board of the lane surface. Measure and mark both sides of the lane.
5. Apply one piece of 1-1/2” masking tape (42” [1.07 m] long) to approach surface directly over rangefinder dots located 2-1/2” behind foul line on the approach. This will prevent any marring of the approach from the follower wheel during the routing process.
6. Carefully pick up the router fixture assembly and place front edge of base plate (edge nearest main rail assembly) on the previously drawn hash marks located at 14” (356 mm). Base plate should be centered from edge to edge of lane width. Using your fist, bump main rail on base plate fore and aft to adjust front edge to align with the hash marks. Once positioned, the blue follower wheel should be located directly over the previously applied masking tape.

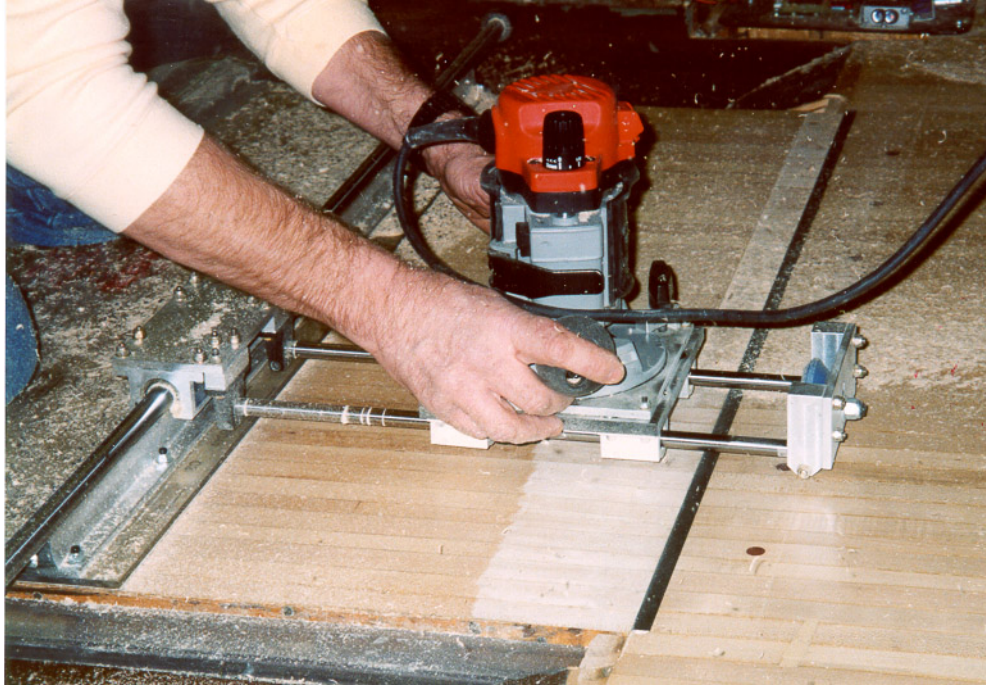
***Note:** When moving the router and fixture assembly, be careful to keep the underside of the base plate clean and free of all wood chips and debris. Failure to do so will prevent the base plate from laying flat on the lane surface, which can alter the performance of the fixture.*

7. Double check to insure the front edge of the base plate is located on the 14” (356 mm) marks. If not, adjust fore or aft accordingly.
8. Slide the router cross-carriage assembly all the way toward the foul line until it reaches its travel limit. With the router motor off, unlock the depth adjustment-locking lever and turn the depth adjustment knob clockwise to lower the cutting tips until they just touch the lane surface. Slide the router cross-carriage back to the main rail assembly and then turn the depth adjustment knob and additional 1/2 turn clockwise. Engage the locking lever to lock in the depth setting.

***Note:** Prior to turning the router on it is imperative that the operating person kneels on the main base plate to prevent base plate from shifting its location. Sandpaper is attached to the bottom side of the base plate to aid in preventing any accidental movement. It is advisable to always turn the router motor on when the router unit is located all the way back, nearest the main rail assembly and furthest from the foul line. This will prevent any accidental damage to the lane surface or the router fixture.*



9. Turn the electric router on and with both hands on the router base handles, slide the router cross-carriage toward the foul line over the outside edge board of the lane. Refer to Figure 3. As the router nears the foul line you should notice the router bit cutting slightly within the last few inches of the foul line. Once you reach the end of the cross-carriage travel limit (at the foul line), move the cross-carriage assembly sideways along the main rail assembly 2"- 4" (toward the left), then return the cross carriage back towards the main rail assembly away from the immediate foul line area and turn the motor off. Using a small sample of Brunswick Lane Shield material, place it in the beveled area and check for proper depth.



*Figure 3*

10. If greater depth is desired, with the router off, disengage the locking lever and rotate the depth adjusting knob at the top of the router  $\frac{1}{4}$  turn clockwise, engage the locking lever. Turn the router on and route the same area as done earlier by sliding the cross-carriage assembly down the right edge of the lane toward the foul line and routing an area approximately 2"-4" (50.8 - 101.6 mm) toward the left. Repeat this step until the proper depth of .080" to .100" (2.0 - 2.5 mm) is achieved.
11. Once the proper depth is achieved, you may now proceed to complete the routing process by turning the router on, sliding the cross-carriage toward the foul line on the right edge of the lane to the end of its travel limit, then continue routing all the way across the foul line working from right to left. Due to the power of the router, use caution and try to control the left to right movement so as to maintain a smooth, slow and precise cut at the foul line. Once you reach the opposite end (left side) reverse direction and go back to the original starting location and turn the router off.
12. Make a visual check of the routed area to ensure that the groove just barely grazed the foul line. The optimum goal is to cut into the foul line no more than  $\frac{1}{32}$ " (2.4 mm). Adjust base plate fore and aft accordingly to correct for any errors.
13. Once base plate location is verified and corrected (if necessary), with router nearest main rail assembly, turn router on and proceed to route the remainder of the beveled area by repeatedly

sliding the cross-carriage back and forth parallel to the lane board direction while also advancing the cross-carriage across the main rail starting on the right side of the lane and advancing toward the left side of the lane.

14. Upon completion, turn the router off and inspect the beveled area for consistency and smoothness. If satisfactory, proceed to next lane, if not, adjust router depth to take another slight finishing cut. Due to the variance in the approach area where the follower wheel travels, you may notice a variance in the actual width of the finished beveled area. Do not try to make additional cuts to correct for this condition. Additional cuts will only make the depth of bevel greater while having little or no effect on any width variance.

*Note: If during the routing process chips or chunks of wood are removed, it is advisable to fill these areas with epoxy filler and proceed to the next lane to allow epoxy filler to cure. Once cured, repeat steps 6 through 15 to cut down the epoxy filler.*

15. Remove routing fixture from lane and sand beveled area, extending beyond bevel cut onto flat lane, with random orbit sander using #100 grit sandpaper to remove any swirl or router marks left behind. Refer to Figure 4.



*Figure 4*

16. Erase the pencil marks at 14" (356 mm) as performed in step #4.
17. Routing process is now complete.
18. Thoroughly clean up all wood chips and debris. Wipe area clean using towels and tack cloth.
19. Apply one thin coat of Bull's Eye, fast drying shellac (by Zinser - available in most building supply stores) using a 2" foam type paintbrush. Allow to dry 20 minutes before hand sanding sealed area using #100 grit sandpaper.

# Lane Shield Installation

## CLEAN LANES

Enough cannot be said about the importance of proper lane and approach cleaning prior to installation of LaneShield. The static nature of plastic attracts dust. Small particles of dust between LaneShield and lane surface are very noticeable. The surrounding environment should also be as clean as possible at the time of application.

Sweeping and damp toweling the lane do not do an adequate job of dust removal.

Due to the porosity of wood, dust becomes trapped in the wood grain and can only be removed by vacuuming.

1. Sweep as much dust as possible from lanes, approaches, capping and gutters.
2. Vacuum the entire lane, gutters, capping and approach. *Pay particular attention to cleaning foul line area.*
3. Wipe approaches using a clean, lightly water-dampened towel.
4. Follow with dry towel to remove excess moisture.
5. Allow plenty of dry time to ensure all moisture has evaporated.
6. Use a towel bar wrapped with a tack cloth and wipe lane and approaches.

*Note: A Brunswick Master Key lane stripper with a damp cloth is an excellent method to remove dust from the lane. **The towel should be machine washed and spin dried, the night before it is to be used.***

*Note: After the lane has been damp wiped, no one should walk on it and all moisture must evaporate. This will eliminate the possibility of dirt being tracked onto the lane or working its way up from between boards, and it will prevent moisture from being trapped under the LaneShield.*

## INSTALL LANE SHIELD

1. Starting at foul line, roll out LaneShield (Teflon top side is down). Refer to Figure 5.



Figure 5

2. Remove protective layer (now on top surface), by pulling from pin deck to approach. Refer to Figure 6.

*Note: Do not walk on this clean LaneShield surface before it is flipped onto the lane in steps 3-5.*



*Figure 6*

3. Pull LaneShield back onto itself by lifting the pin deck end and pulling onto the approach. Refer to Figure 7.



*Figure 7*

4. Pull LaneShield back onto itself again, starting at center of lane (doubled) pulling onto approach. Refer to Figure 8.



*Figure 8*

5. Pull end of LaneShield out from bottom layer, effectively reversing, so teflon top side with release line is now up. Pull this end down full length of lane toward pin deck. Refer to Figure 9.



*Figure 9*

6. Remove top protective layer. Refer to Figure 10.



*Figure 10*

7. Position LaneShield flat, so it extends evenly over lane (excess even, in left and right gutters) and extends over foul line approximately 6" (152 mm) so it can be cut to exact dimensions. Refer to Figure 11.



*Figure 11*

- Using towel bar and towel, push all air out from under LaneShield from foul line toward pin deck. Refer to Figure 12.



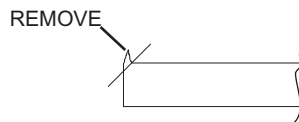
*Figure 12*

- Using aluminum straight edge (#61-860283-000) and LaneShield Trim Tool (#61-860268-000) cut LaneShield straight on approach side of foul line. Refer to Figure 13. Use Deburr Tool (#61-860267-000) to remove any sharp edges from top and bottom of cut made at foul line.



*Figure 13*

**Note:** Only sharp burrs need to be removed. Do not remove excess material, creating a sharp beveled edge. Refer to Figure 14.



*Figure 14*

**Note:** Check and remove any residue from deburr process from underneath LaneShield.

10. Clean beveled area of lane with IPA 99 (#61-860254-000) then apply three strips of double sided tape (#61-860265-000) at the foul line in the area that was beveled, while making sure that the LaneShield does not shift its position. Be careful to avoid trapping any air underneath tape as this will show through LaneShield and reduce adhesion to the lane.

*Note: Corners of LaneShield beyond width of foul line may need to be trimmed if they prevent cut edge from fitting tightly against the foul line.*

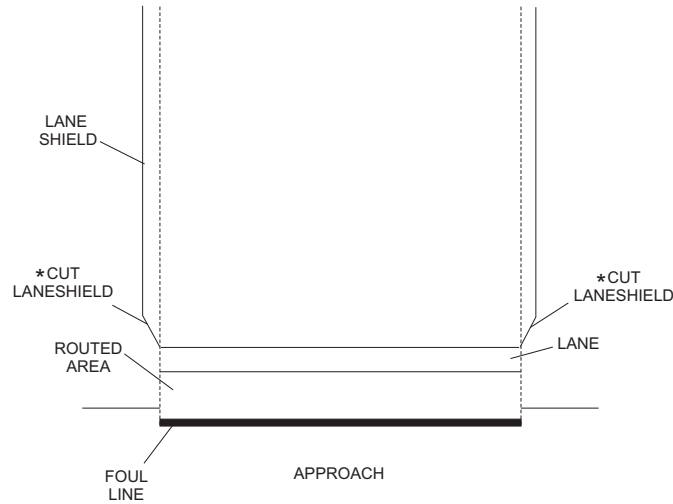


Figure 15

**\*IMPORTANT:** Do not cut LaneShield narrower than the foul line or lane width.

11. Roll back LaneShield and wipe bottom and top of LaneShield with IPA 99 (#61-860254-000) to remove any dirt and grease before applying LaneShield to tape.
12. Remove backing from double sided tape, holding LaneShield so it does not contact double sided tape. Bowing the LaneShield up. Place cut edge of LaneShield into bottom corner of bevel cut against the foul line. Refer to Figure 16.



Figure 16



13. Press LaneShield from center of lane out to both edges, then onto the double-sided tape, making sure it stays tight against the foul line. Using laminate roller, press entire taped area of LaneShield firmly, while gently heating with heat gun (LaneShield should be slightly warm to the touch only). Do Not overheat.

*Note: Increased contact between LaneShield and lane surface will appear darker in the tape area.*

14. Using towel bar with terry cloth over it, push LaneShield so it is tight from foul line to pin deck end of lane. Repeat as many times as necessary to remove all air from between the lane and LaneShield. Refer to Figure 17.



*Figure 17*

15. Using Trim Tool (#61-860268-000) and aluminum straight edge (#61-860283-000) score LaneShield flush with the edge of the lane. Score (cut) should be at a depth of one third the thickness of the LaneShield (suggest two passes with the second pass overlapping the start of the first pass). LaneShield should be trimmed to fit exact width of lane. Refer to Figure 18.



*Figure 18*

**Note:** When trimming, make sure that LaneShield is fully supported by the lane Surface. Do not allow any LaneShield to overhang the edge of the lane or pin deck. This may result in damage to the LaneShield. Cutting less than width of lane will create an unwanted shelf which may allow cleaner to wick under LaneShield. Bevel off edge of LaneShield if necessary to eliminate any shelf areas (especially if LaneShield were cut slightly too narrow).

16. Cut pin deck end of LaneShield 1/4-1/8" short of flat surface of tail plank to allow some expansion room. Refer to Figure 19.

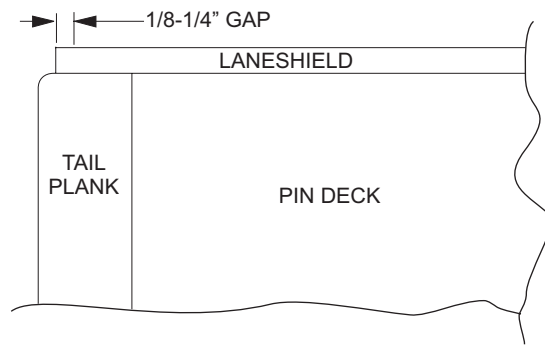


Figure 19

17. Cut LaneShield on an angle at the corners of the pin deck where there is no flat surface to support LaneShield. Refer to Figure 20.

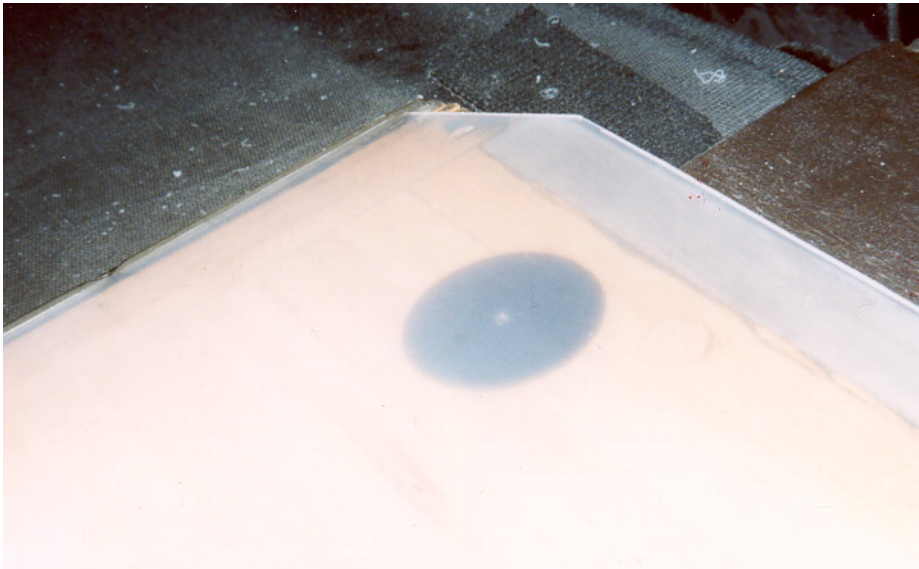


Figure 20

18. In pin deck area snap excess material down to start separation at scored line. Pull excess edge up over itself, shearing towards foul line. Refer to Figure 21. Be sensitive to any extra resistance that would indicate that LaneShield has not been fully scored. Cut deeper to insure that excess material separates on scored line where desired.



*Figure 21*

19. Using Deburr Tool (#61-860267-000) pull in direction shown on tool and remove burr from top edge of trimmed LaneShield. Refer to Figure 22.



Figure 22

*Note:* Only sharp burrs need to be removed. Do not remove excess material, creating a sharp beveled edge. Refer to Figure 23.

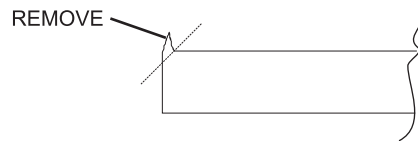


Figure 23

*Note:* Check for and remove any residue from deburr process from underneath LaneShield.

20. Allow a minimum of one week for LaneShield to relax. After the one week period, use the following optional pin deck taping procedure if necessary, to prevent lane machine from lifting and creasing corners of lane shield, or if pin deck end of LaneShield tends to shift sideways.
21. **Optional pin deck taping procedure** - apply double sided tape to the pin deck in two places, one between the 7 and 8 pin spots and one between the 9 and 10 pin spots. Tape should be assembled and applied per the following procedure to allow LaneShield expansion movement lengthwise on the lane (without rippling) and to prevent side to side to side movement of the LaneShield.
- Leaving the backer paper on, cut two pieces of double sided tape approximately 8" (20 cm) long.

- b. Overlapping the tape approximately 2" (5 cm), bond the adhesive sides of the tape together and crease the tape at the midpoint of where the tape overlaps. Refer to Figure 23.

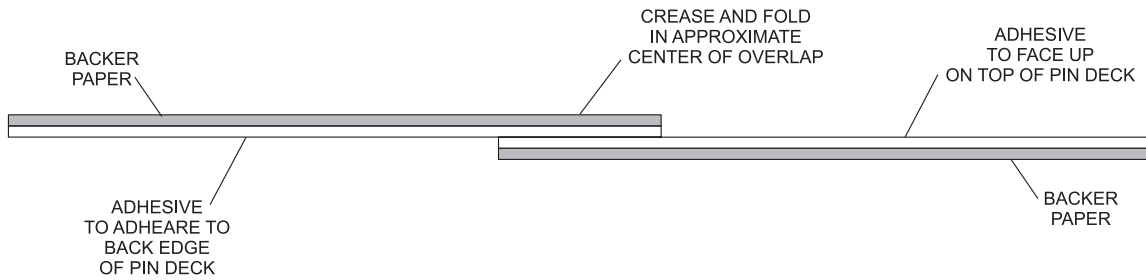


Figure 23

- c. Thoroughly clean the top and back edge of the pin deck prior to applying the two pieces of tape. Apply the tape to the pin deck, crease on the edge, so the backing of the tape is in contact with the top of the pin deck, overlapping approximately 1" (2.5 cm) over the back edge, with the adhesive side facing up. Refer to Figure 24.

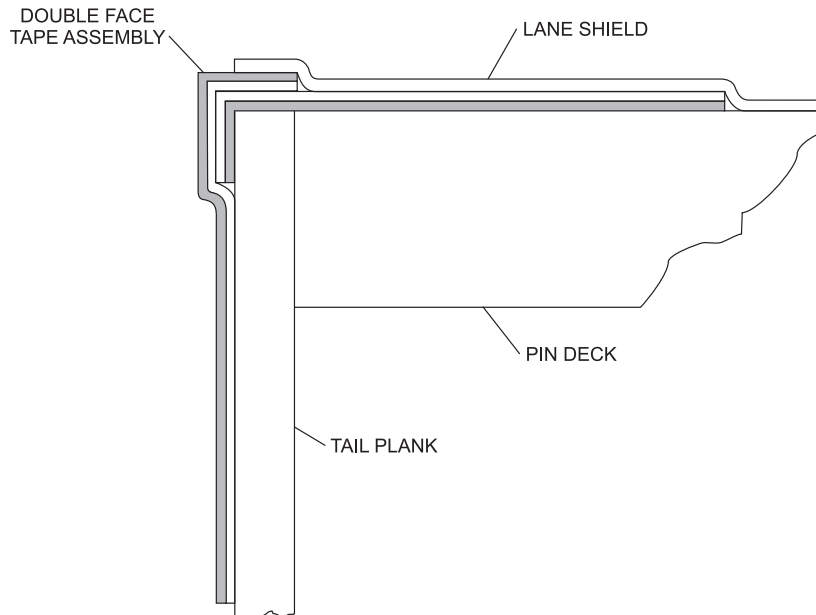


Figure 24

- d. Make sure the double sided tape is securely attached to the back edge of the pin deck and that there is a good bond between the tape and the LaneShield.
22. Apply self adhesive ABC/WIBC Certification sticker to the bottom of LaneShield near the pin deck.
  23. Use towel bar wrapped with terry cloth towel and push LaneShield flat starting at foul line before running lane machine.
  24. If lane, machine causes any movement of LaneShield (pushing trapped air ahead of lane machine), it will be necessary to repeat step # 23.