THE-SMART-RAIL® SYSTEM

CLEAN, PEEL, STICK & INJECT ADHESIVE

FOR 100% SATISFACTION. FOLLOW THESE INSTRUCTIONS CAREFULLY.

THE-SMART-RAIL elements are:

A = the BODY
B = the WALL
C = the TAIL
D = the INSIDE CORNER
E = the BONDING STRIPS

THE HULL AND RAIL SURFACE TEMPERATURE MUST BE AT LEAST 70 DEGREES (F). In cooler weather, an outdoor heater directed onto the application area can be used to raise the temperature.

RESOURCES
1: A roll of white paper towels
2: 1 pint ACETONE, as a solvent wash
3: A quality non-ratchet caulking gun with swivel feature
4: 1 pint ISOPROPYL Rubbing Alcohol
5: A Disk Sander with appropriate grit sander paper
6: A few sharp pencils.
7: A capable assistant and yourself

1. SURFACE PREPARATION FOR FIBERGLASS BOATS

Decide location of each rail to be installed, port & starboard. Mark and measure the exact length of each rail (they may differ slightly) and mark the lengths on the hull. Within the marked application area, REMOVE ALL PAINT, DIRT AND WAX, NOT the Gelcoat. For high speed (+ 30kts) or boats with old Gelcoat, sand/remove Gelcoat down to the laminate, then prime with resin so that the TAIL bonding strip and structural adhesive bond directly to the the primed fiberglass laminate. Use a sander with aluminum-oxide paper until smooth, then WET SAND with the abrasive paper provided, dipping the paper in water frequently to rinse out loose particles. Wet-sand to a smooth surface.

Thoroughly wipe the application area with ACETONE, frequently changing towels. Wipe dry with a clean towel before liquid dries. A final wipe with the ISOPROPYL ALCOHOL completes this operation. Gelcoat retains moisture, so allow it to DRY THOROUGHLY.
2. INSTALLATION GUIDE LINE

FIRST: MARK A VERTICAL START LINE ON BOTH SIDES OF THE BOW AT EQUAL DISTANCE FROM THE STEM

M-1000: A displacement hull does not provide for a predetermined rail location. The perfect solution is to study the effect of waves striking the bow in all sea and speed conditions to determine the optimum location of the rail. The guide line is generally set above the bow wave at cruising speed. Once the first side is done, measure distances from the water line up to the guide line, every foot. Then mark those positions on the other side. Reviewing the placement guide is recommended.

M-2000: Using the RAIL TEMPLATE, press its INSIDE CORNER firmly onto the chine, with the WALL and TAIL pressed up against the side and underside of the chine (see fig. 4/ Page 6). While holding this position, slide the TEMPLATE slowly along the application area, from stem to bow, drawing a pencil line on the hull, using the WALL top as a guide (practice sliding the TEMPLATE along the chine before marking). The resulting line must be exactly parallel to the chine, no bumps or dips. NOTE: See Fig. 4 on Page 6. In some cases, the M-2000 may be installed slightly back of the stem for a better fit on the disappearing chine.

Some hulls have a DISAPPEARING CHINE, (this is when the chine gradually tapers or becomes flat at the bow); have the ASSISTANT place a straight ruler in line with the line you just drew; and continue drawing the line towards the bow. When both sides of the boat are done, stand facing the bow and make sure the two lines meet at the bow.

The radius of the chine edge may increase going aft. The chine angle may vary from bow to stem. Make sure that the position of the rail is at the same general angle as fig. 4/Page 6, and not excessively angled up or down. The flexibility of the TAIL, when HEATED, allows you to fit it to the changing angles. Practice with the TEMPLATE, and the handling of the rail with your assistant, making sure that both know beforehand exactly what to do and when.

From this point on, pick one side of the boat and perform steps 3 to 6, without interruption. Make sure that no foreign material has corrupted the area.

3. APPLICATION OF 3M-94 PRIMER

Four ampoules are supplied, one for each 9ft bonding strip area. Thumb-crush ampoule on DOT, shake a few times, pointing ampoule downwards. Lightly apply primer to hull, below the guide line, along the 9ft area where the upper 1/2" bonding strip is applied; shake ampoule frequently. With the next ampoule, repeat process for the lower bonding strip area. NOTE: Model-2000: while applying primer under the chine, point the ampoule downward frequently to supply constant flow of primer to wick. Primer evaporates quickly; a light coat is sufficient. Double coat “disappearing chine” area if there is one.

4. REMOVAL OF GUARDS & RELEASE LINER FROM THE WALL BONDING STRIP

With hands CLEAN, remove the PROTECTIVE GUARDS from the WALL and TAIL. Then completely remove the clear RELEASE LINER from the WALL’s BONDING STRIP ONLY. DO NOT remove the RELEASE LINER on the TAIL BONDING STRIP.
5. **RAIL APPLICATION -- WALL SECTION**

Once in place, THE RAIL STAYS! SO MAKE SURE YOU FOLLOW THE GUIDE LINE.

Starting at the BOW, the INSTALLER applies the WALL, \( \frac{1}{4} \) g. below the GUIDE LINE, with FIRM thumb pressure. The ASSISTANT holds the rail away from the hull, level with the GUIDE LINE, stretching the rail aft, protecting it from contact with ANYTHING. Continue applying the WALL up to the end of the rail, inch by inch with one hand holding the BODY, and the other hand applying firm THUMB pressure on the wall. Follow the guide line to get a smooth installation.

Using the single round edge wheel of the INSTALLATION TOOL, from the bow end, apply roller pressure, first along TRACK-1, then 2, and 3. NOTE: apply approximately 30lbs. pressure, advancing a few inches at a time (determine the pressure on a bathroom scale).

Marking the rail every foot with a pencil, top and bottom, will help in monitoring progress of the TOOL procedure. Check off each section after roller pressure is completed for Tracks-1, 2, 3.

This procedure prevents air being trapped between hull and bonding strip.

6. **RAIL APPLICATION -- TAIL SECTION**

Start the TAIL application at the aft (back) end. Bending the BODY upwards allows you to remove the RELEASE LINER, 12" at a time, so that the TAIL does not prematurely bond to the hull. The ASSISTANT checks for a straight body alignment while the INSTALLER applies FIRM THUMB PRESSURE, HOLDING A FEW SECONDS IN EACH POSITION.

As you approach the bow, if you reach a DISAPPEARING CHINE, the ASSISTANT may heat the TAIL with a HAIR DRYER to increase flexibility. FIRMLY PRESS THE BODY INTO THE HULL while pulling back the TAIL so that the TAIL is bonded to the then vertical part of the hull. Practice this procedure before removal of the release liner.

**THE TAIL BOND IS UNDER THE GREATEST STRESS: PERFECT BONDING OF EVERY INCH IS ESSENTIAL.**

The ASSISTANT, using both hands on the INSTALLATION TOOL, applies about 30lbs. pressure along Track-1, 2, & 3 from bow to stern. Extra pressure on the TAIL along the DISAPPEARING CHINE is recommended, along with heat from the HAIR DRYER, because the TAIL tries to return to its original angle (M-2000 model only).

Return to Step 3 for the other side. Once BOTH are completed to this point, go to Step 7.

7. **STRUCTURAL ADHESIVE SET-UP**

REMEMBER: the mixed adhesive hardens in approximately 15 minutes.

First decide between the straight and the curved needle tip; depending upon the angles of the application. **Do not remove cap on adhesive yet (even if you are curious!).** The adhesive will mix.
8. ASSEMBLY OF ADHESIVE APPLICATION TOOLS.

When you have bonded BOTH port and starboard rails, and if you are ready to apply the structural adhesive; set up the dispensing system as follows: insert the cartridge nose-first through the oval opening of the clear sleeve until its flange fits snugly against the end of the sleeve. Now put the whole assembly into the caulking gun (fig. 1 / Page 6); secure the sleeve to the caulking gun with tape. Place the blue plunger into the back end of the cartridge (fig.1 / Page 6). MAKE SURE THE PLUNGER IS ALLIGNED PROPERLY WITH CARTRIDGE. Select the desired needle tip, bent or straight (one or the other is easier to use depending on the position you assume in handling the caulking gun). Remove the cap from the adhesive cartridge with a ¼ turn. Make sure the exposed resin and activator have not hardened; clean out the channels if necessary with a small nail. Do not mix the two elements on the nail. Install the static mixer on the cartridge with a firm ¼ turn. If using the bent needle tip, align it in the caulking gun so that the bend points upwards and away from the direction of travel, i.e. starting from the stern end and working towards the bow, the bent needle tip points toward the stern, and visa versa. Firmly force the needle tip on to the mixing nozzle.

Squeeze out a small bead of adhesive until it changes from light yellow to white. This indicates a correct mixture. The adhesive system is now ready for use.

9. ADHESIVE APPLICATION

STRESS IS GREATEST ON THE TAIL, SO THE FOLLOWING IS CRITICAL!

For the M-2000 only, this process is applied in two passes; each pass includes both rails. One hand operates the gun and the other steadies needle tip. Starting at the chosen end of one rail, insert the needle tip under the TAIL edge so that it just touches the edge of the BONDING STRIP (see page 6, fig.2): INJECT THE ADHESIVE DEEPLY INTO THE GAP, filling it with a 3/8” bead (like spot welding), then pull the needle out STRAIGHT, advance about 1 3/4” and inject another 3/8” adhesive bead and so on until you reach the rail’s end. Do the next rail in the identical way. The ASSISTANT, with latex glove, presses the adhesive beads well into the gap. DO NOT REMOVE ANY ADHESIVE. Latex-sensitive people should use vinyl gloves instead.

After the beads have hardened, set up a fresh set of cartridge/mixer/needle into the caulking gun. Return to the starting point and fill each bare 1 ½” section, injecting the adhesive to fill the gap completely. With glove, smooth out the edge of the adhesive so it overlaps the TAIL edge and hull.

With remaining adhesive, apply a small amount of adhesive along the top of the WALL; fill the gaps at rail ends (INSIDE CORNER), and apply a 2nd overlapping coat along the TAIL edge particularly at the waterline, and along the DISAPPEARING CHINE, if any. Use all the adhesive supplied. After the adhesive has cured, any high points can be sanded.

*Allow the adhesion process to run its course. The structural adhesive cures in 1 hour. 80% adhesion of Bonding Strips in about 2 hours, 100% in 36 hours at 70 F. After the structural adhesive has cured, you may heat the WALL and TAIL with the Hair Dryer to accelerate the bonding process.

For the M-1000 only, insert the needle tip deeply into the gap, and inject adhesive, moving about ¼” at a time, completely filling the gap. Lightly smooth out the adhesive before it hardens. Make up new assembly as required, and continue the second coat after the first has hardened. Remember to fill the ends and top wall with a small amount of adhesive.
10. CONNECTING RAILS.

The rail ends MUST meet at a perfect 90 degrees. Use table or chop saw, rough up ends with 120 grit paper. Spacing the rails 1/16 to 1/8 apart, apply a strip of clear packing tape over the top of joint, then deeply inject the adhesive from the bottom, using the needle tip until the joint is filled. Remove excess adhesive from the bottom.

11. PAINTING THE RAILS

Before applying paint or trim tape, wipe the surface down with Acetone. Vinyl spray paint, (available at automotive stores) because of its flexibility or oil bottom paint can be used.
A primer may be needed for some paints. Consult with a paint professional.

12. CUSTOMIZING THE ENDS OF THE RAILS

After the adhesive has hardened, taper the ends with a disk sander/medium grit paper. Rub with an Acetone soaked rag, to smooth out the area. It is advisable to round off all sharp edges.

NOTE: STORAGE OF RAILS AND ADHESIVE KIT BEFORE INSTALLATION
Store rails in a cool, dry area. To extend the shelf life of the adhesive, cartridges should be properly packaged and kept under refrigeration (do not freeze). Before using, allow rails and adhesive to reach the required minimum 70 F application temperature.

WARNING! Do not use the rail as a foot step or hand hold.

With the rails installed, the boat may well turn much more sharply, especially at speed, possibly creating an unexpected centrifugal force which could put passengers at risk. Try smooth turns first to familiarize yourself with performance changes. Test the boat under all sea and speed conditions before active use. Also, follow the safety recommendations of manufacturers of all products used during installation. Keep all adhesives away from open flame, sparks, and children.

RAILS MUST BE PROTECTED FROM THE LIFTING STRAPS. USE WOODEN BLOCKS OR SAND BAGS. Place warning label at helm.

SMART MARINE PRODUCTS CORP. (SMPC) makes no warranties, expressed or implied, including but not limited to, any implied warranties of merchantability or fitness for a particular purpose. The exclusive remedy, if any, to the original buyer/user of THE-SMART-RAIL shall be the refund of the purchase price (no more than the suggested retail price) of, or to repair or replace the product at SMPC's option, provided the product is returned shipment prepaid, after SMPC has been notified in writing and has agreed in writing to accept such responsibility, we are confident that you will be delighted with the performance improvements of your boat. Your comments and suggestions are welcomed. AGAIN DO THE JOB RIGHT THE FIRST TIME!
User Reports

"With FAST RAILS®, the FOXSEA gained 4 knots on both cruising and top speed. Also, THE SMART RAIL® greatly reduced bow spray." Capt. Bud, FOXSEA, Ft. Lauderdale, FL

"THE SMART RAIL® reduced 90% of bowspray while heading into rough quartering seas and 25 knot winds on my 53 ft. Viking, from the Bahamas to main land Florida. FAST RAILS® reduced fuel consumption by 5 gal/hr at 14 knots and planed at 300 rpm less. No more choking black smoke for the crew" F. TROOP, Hallandale, FL

"In 1989 THE SMART RAIL® system was installed bow-to-stern on our 46 ft. Bertram. This reduced the bow spray at least 85% and jacked up our max speed 3 knots. Then, in 2005, the after rail sections were replaced with a pair of 8 ft. FAST RAILS®. This reduced our planing by 500 rpm. Plus a noticeable decrease in "Rock & Roll". This will allow for a propeller adjustment for even better performance. Capt. Dave, SHOOTING STAR, Ft. Lauderdale, FL

"A pair of FAST RAILS® increased my speed by 4.2 knots with no increase in fuel consumption." 1979 42 ft. Bertram "Jani".

"I own two 17 ft. Aquasports. The spray rails were put on the boat powered with a 1990 70hp Johnson outboard-the other has a 1998 90hp Honda. Believe it or not, both boats now run at exactly the same speed. The one with THE SMART RAIL® gets out of the water much faster, holds tighter in sharp turns and has a much drier ride. Needless to say, I will be adding THE SMART RAIL® to my other boats. Thanks for a great product." Roger Dart, SEATOW, Panama City, FL

"I have a 24 ft. Sea Craft with a pair of M-1000 rails and I get no Bow spray. Wish I had them 30 years ago." Former New Jersey Boat Builder

A gentleman from Newport, RI said that we had come up with a product that is "too good-to-be-true."

See more User Reports on the web.
In Service Since 1997

$ave Fuel, Increase Speed!
Use "FAST RAILS®"

Tired of Getting Wet?
Use "THE SMART RAIL®"

"The Best Value in the Marine Market Place Today!"

Spray Control for all Boats
Increases fuel economy
Increases performance
Increases Speed

Patented Proven Performers for All Boats!
Made in the USA

Integrity Marine Corporation
Rubes It Up
Mark Demers
President
43 Rose Point Ave
West Wareham
Massachusetts 02576
Office: 508-897-8339
Cell: 508-942-6286
mark@integritymarinacorp.com
www.integritymarinacorp.com
**FAST RAILS®**

Acts as a trim tab on the side of your boat. Install rail sections from stern forward to...

- Plane at Lower R.P.M.
- Reduce Fuel Use - $$$!
- Increase Top Speed
- Increase Boat Stability
- Reduce Wake
- Reduce Side Slip on High Speed Turns
- Reduce trim tab use-less drag
- Reduce Engine Strain, Gain More Engine Life

**THE SMART RAIL®**

Directs Water Downward

Install rail sections from Bow Aft to...

- Reduce Bow spray
- Increase comfort
- Increase visibility
- Increase safety

**THE SMART RAIL®** and **FAST RAILS®** are bonded to your fiberglass, aluminum prepared wood or steel hull with high tech structural adhesives.

**NO HOLES = NO LEAKS**

**Model - 1000 THE SMART RAIL® 1 1/2” wide**

- Bonding strips
- Shock-absorbing channel
- Concave surface directs water flow

**Model - 2000 THE SMART RAIL® 1 1/2” wide**

- Bonding strips
- Structural liquid adhesive

**Model - 3000 FAST RAILS® 3” wide**

- Bonding strips
- Shock-absorbing channel
- Concave surface directs water flow