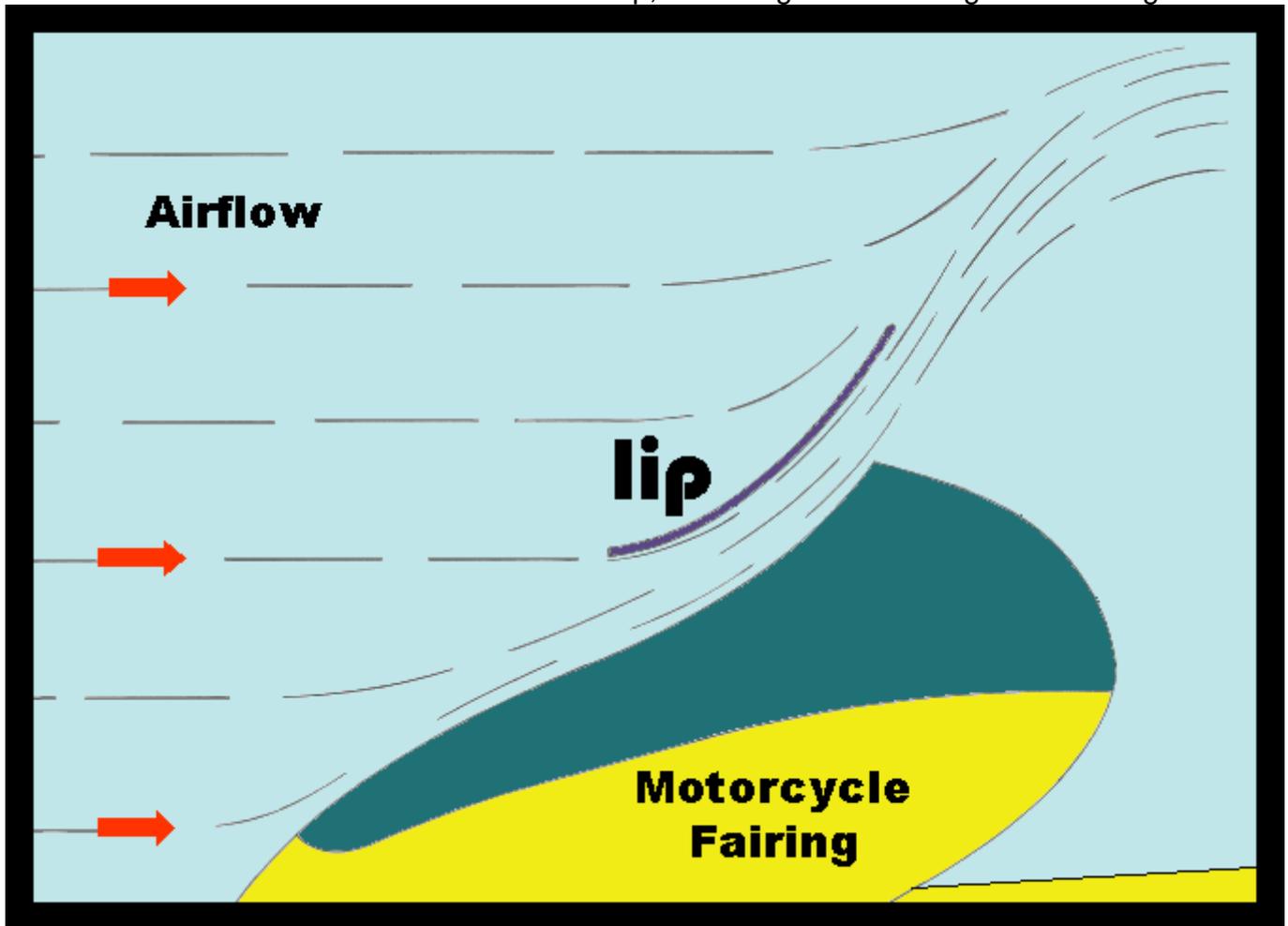


Why do I need a Laminar LIP (Patent Pending) on my motorcycle?

We used to say if you ride a Goldwing or some other motorcycle that requires you to look through the windshield then you don't need a LIP. If you ride a fairing-equipped bike and you look over the top of the windshield, then perhaps a LIP would make your riding more pleasant. We have found that even riders that look through the windshields and their passengers can have a more pleasant ride with a LIP.

The design of some fairings allows the wind to flow around one side then the other creating buffeting at the rider's helmet. LIPs are designed to trap the air from flowing around the sides of the windshield and redirect it to flow over the top, lessening or eliminating this buffeting.



The LIP is an inverted airfoil located above the rear edge of the windshield. As air flows between the windshield and the LIP, it follows the underside airfoil of the LIP and is redirected more vertically. This air eddy then diffuses the oncoming air, in effect, to raise the blast of this oncoming airflow. The end result is that there seem to be three different air speed zones as you ride along at a set speed:

1. Behind the windshield - very little wind speed
2. Above the windshield for 6 to 8 inches or more - a wind pressure well reduced from actual speed
3. Above this height the blast that was at windshield height before the LIP was installed

Because all fairings and windshields are different, the effectiveness of the LIP may vary model to model.

Another feature of the inverted airfoil is that it increases down pressure on the front wheel. As a motorcycle proceeds down the road, air pressure (effectively from the front-- although the air really is not moving, the bike is) tends to rotate the motorcycle around its roll center lifting the front wheel and loading the rear. The LIP opposes this action to some degree.

The LIP does all this without your having to add a larger windshield. In many cases it works better than the taller replacement accessory windshields, because although they may be taller, they do nothing to control airflow. Sport bike riders also can benefit from the LIP. When cruising along normally the wind pressure will be raised, and when flat on the tank behind the LIP turbulence will be much less.

[What do LIP owners say about it?](#)

**So, now that you know what the Laminar LIP is, how can you ride without it?
Laminar LLC, 2612 Croddy Way, Unit E, Santa Ana, CA 92704 - Phone 714-540-8006**

Please note: Every LIP model we make is listed on the Applications page, they fit only the stock motorcycle windshields. The list is kept up to date.

Observations from behind Motorcycle windshields

Some people ride motorcycles without fairings or windshields while others ride motorcycles that seem fully enclosed to these folks. There are "Touring bikes" with shields that are nearly roofs to the riders. We were surprised when one of the riders with this type shield asked if we had a LIP for it. We are "Laminar LLC" and we make a product we call the "LIP" that can be mounted to the top of a motorcycle windshield to provide additional wind, bug, rain protection. The rider of this roofed bike said his passenger was still getting buffeting, the LIP solved this problem.

When we started our first WebPages said: "If you ride a Goldwing you probably do not need a LIP". We have removed this statement because, after a few years experience, we now have a different outlook. We sell a lot of LIPs for Goldwings and other large "Touring Motorcycles". Most people want to look overtop their windshields as they ride for many reasons. To limit the number of layers they are looking through and to help with the feeling of open-ness. We have found that if a rider is looking just overtop a windshield he will experience buffeting at least at the top of his head/helmet. By mounting a LIP, while still keeping it below the rider's line of sight, the buffeting will be removed. The LIP allows the rider to lower the shield and yet have a quieter, more comfortable ride.

Every motorcycle rider is looking for something different. Some riders would not use a fairing or windshield for any reason, for others a motorcycle is not equipped unless it has a shield. These riders are not so concerned about how they appear but they want to be comfortable, riders to whom a 300-mile ride is not the ride they prepare for all year - but a breakfast run.

There may be a time when a rider that has a minimal fairing or windshield may want to increase it's effectiveness. We offer the "LIPs" and the taller "Touring LIPs" just for these times. "These times", may be a weekend ride or all the time.

"Naked bikes" are very hot right now. Because they have the latest engine technology minus the weight of a fairing they are very quick. Especially under 100 MPH, above that speed it seems the aerodynamics of the fairing was worth the weight penalty, It becomes a chore to hold your body onto a naked motorcycle at freeway speeds and gets to be hard work as the bike's top speed is approached.

Just adding a small shield or quarter fairing makes the task of staying on the motorcycle much easier. We make a product we call a "Speed Shield" that will fit onto several "Naked Motorcycles". "Speed Shields" make a freeway ride much more pleasant by removing some of the feeling of being blown off the bike. On "Track Days" they offer a shield to get down behind on the straights. In most cases a small shield is more comfortable to ride behind than no shield.

When riding a "Naked Bike" the wind above the headlight(s) puts pressure on the riders' torso, arms and head/helmet equally. These bikes do not have buffeting. When a windshield is added

some air is forced to the sides while most is forced to the top of the shield thus the increased wind pressure is moved from the lower torso to the arms, upper torso and head/helmet. As the size of the windshield is increased so does the wind pressure at the sides and top of the shield, the air must go somewhere. This wind pressure can make riding behind a larger windshield less comfortable than using a smaller shield. The higher shield may direct the concentrated airflow to the rider's face and ears. Adding a LIP to a low shield may also raise the airflow into a noisy area, the difference, with the LIP there should be no buffeting. Remember many factors are involved in finding a quiet, buffet free ride on a motorcycle. Rider position, helmet/face mask, speed, earplugs even clothing can contribute. The larger, farther from the rider and more vertical a windshield is positioned the more likely for buffeting to be introduced. Good examples of this are the newer large "Dual Purpose Motorcycles". In general these bikes have narrow, vertical and distant windshields and are very difficult to control the buffeting. Though it has better wind protection a Goldwing is more likely to buffet the rider than a VFR. The Cruiser styled windshields may be the worst for buffeting. Some bikes with large windshields buffet so badly that a rider or passenger may suffer headaches after a short ride. Adding a LIP to these shields can make them much more pleasant to ride behind. We have had many riders say that their passengers would not ride behind them until they had installed a LIP.

The "sport bike" rider though may be looking for more wind protection and a quieter ride. Buffeting is not usually a big problem. The stock "sport bike" shields are low with the top being more in a horizontal plane than vertical. Other manufacturers' accessory touring shields for the sport bikes are usually longer and turn more vertically at the top. This can introduce buffeting to the sport bike rider. So he gets a trade off, more protection but with more noise and helmet shaking. A LIP on a stock sport bike windshield will offer the added protection of the "Accessory Touring Shield" but be quieter in most cases. For riders of the latest models of many "Sport Touring Motorcycles" we offer "Touring LIPs". These offer more wind protection and a quieter ride than accessory windshields.

For the quietest ride we recommend having a windshield with a LIP mounted, the top about 18 inches in front of the rider, the top of the shield/LIP at a height that allows the rider to see the road about 40 feet ahead of the motorcycle, over top all, while sitting on the bike. Mainly, only "Touring Motorcycles" and a few "Sport Touring Bikes" have large enough windshields (with LIPs) to allow this quiet comfort. "Sport bikes" can only approach this nirvana by using a "Touring LIP" on the stock windshield.

GENERAL INFORMATION and FAQs

What is the LIP warranty and return policy?

We offer a 30 day trial period and warranty, if the part is returned in sale condition there is no penalty. If we must remove bugs and scratches then up to a 20% restocking fee may be charged. If we cannot repair the part we will send it back. If during this time it must be returned for any reason, please contact Laminar for a Return Merchandise Authorization (RMA) number. This number and the date of the invoice (less than 30 days old) must be written on the outside of the returned box or Laminar cannot accept it back. The part then may be returned, shipping prepaid. Include a copy of the original invoice with reasons for the return. Save all packaging, and repack the LIP carefully, as it was shipped in the original packaging, be sure to insert it into the plastic bag first.

How are LIPs attached?

Each Laminar LIP is designed for a particular motorcycle model. There can be no universal LIP. Mounting methods also differ. If possible existing windshield mounting screw locations may be used. In most cases 3M Dual Lock(TM) or 3M VHB tape is used for attachment. These materials were designed to meet and surpass the rigors of attachment in an automotive environment. The Laminar LIP application utility is so unique that it has a Patent Pending.

What Material is used in the LIPs?

The LIP is made of an impact modified clear or smoked acrylic to make it more impact resistant as well as scratch resistant, this material is DOT approved.

Why we use 3M (TM) Dual Lock.

In the search to find an application method to adhere our Laminar LIPs to motorcycle windshields we listed the requirements.

1. Versatile, we have 130 different LIPs to mount.
2. No holes to drill
3. Strong
4. Removable
5. Allow the LIP to be removed and/or adjusted after installation
6. Durable

After 20 years of investigation we have found nothing remotely close to Dual Lock in having these qualities. Certainly though Dual Lock has its drawbacks. Over time and/or if used improperly the pedestals can be damaged so that the mated strength is substantially reduced. The adhesive must be applied to a warm clean surface or adhesion will be much less. In these days of 200 mph motorcycles, strong headwinds and turbulent truck induced wind gusts the Dual Locks may be stressed beyond their design strengths. The mated integrity of the Dual Locks should be checked prior to each ride. If you are a rider that pushes the envelope of what can logically be expected of the Dual Locks perhaps you might elect to use nylon machine screws to mount the LIP. We at Laminar offer to send these fasteners free to anyone that desires them. We however, cannot warrant any products damaged by this drilling or fastening procedure.

We still believe that the Dual Lock system is a good system for most riders but if you ride significantly faster than the speed limit you might consider a mechanical fastening system.

Any problems with attachment usually relate to:

1. The windshield surface not being clean and dry. If you attach the LIP to a dirty windshield, then how long you can enjoy the LIP depends on how well the dirt adheres to the windshield.
2. The parts and air temperature not being above 70 degrees when applied. The temperature must be above 70 degrees F. for the 3M adhesives to bond well.
3. The 3M adhesive is time setting, and 24 hours are recommended to permit a permanent bond. Once setup, the bond is very strong; cold or wet weather then has little effect.

How soon will I receive my order?

All in-stock items will ship within 48 hours. If a product is back-ordered you will soon be notified and given an estimated shipping date. Any product back-ordered and not shipped within 10 working days from the date of order will be reconfirmed prior to shipment.

How will the LIP(s) be shipped?

Express Mail or UPS ground unless otherwise specified. See [How to Order](#), for specifics.

Laminar LLC, 2612 Croddy Way, Unit E, Santa Ana, CA 92704, Phone 714-540-8006

Rider Magazine test of a LIP on a Triumph Sprint ST Oct - 2002

GEAR

Laminar LIP

A certain amount of air turbulence occurs on the surface of all fairings, regardless of shape and size. Due to its viscosity, as air moves across the surface of an airfoil, it changes from a laminar (smooth) flow at the forward area to a more turbulent flow toward the trailing edge. That would be the seating area, and that would be why a helmeted rider experiences that unseemly bobble-head effect.

The working theory behind the design of the Laminar LIP is to extend the smooth airflow of a stock sport or sport-touring motorcycle windscreen, thereby relieving the wind pressure and turbulence that riders face.

The LIP consists of an inverted airfoil placed above the upper portion of the existing windscreen. It's designed so that when mounted, there's a gap of roughly an inch between the LIP and windscreen to allow some oncoming air to pass between the screen and the airfoil. The air then follows the airfoil shape of the bottom surface of the LIP in a more vertical direction, interrupting the air pressure hammering on the rider. In essence the

offending airblast is pushed an additional 6 to 8 inches higher.

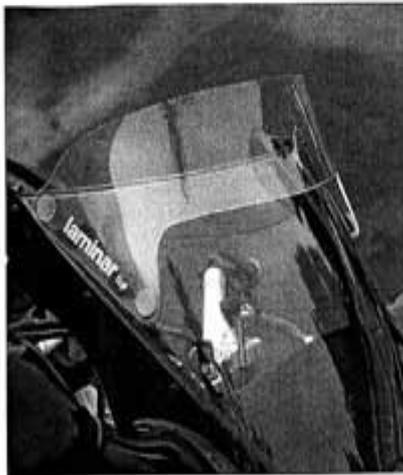
Keep in mind that this is indeed rocket science—research by NASA to

the research? I'd have to say so.

I had the luxury of testing the Laminar LIP on a Triumph Sprint ST on a recent 3,000-mile road trip.

During the ride I removed and replaced the LIP at least a dozen times during various times of the day and riding conditions. Once the LIP is installed, removing it is easy, due to the hook and loop-type fasteners (3M Dual Lok), that remain in position on the windscreen.

My impression of the LIP during the trip was that I'd rather ride with it in place than without. The LIP redi-



rected turbulence primarily around my chest and arm area and higher, but judging by the quantity of bugs that hit my helmet face shield it didn't quite clear my noggin. To be fair how-

SHOP TALK

ever, I am over 6 feet tall. The reduction of constant air pressure working against my upper body, however, made the LIP a very welcome addition.

The LIP is constructed of a modified clear acrylic to make it more impact- and scratch-resistant. Depending on the motorcycle, it can be attached to the windscreen with the existing windscreen mounting screws, 3M automotive tape or the supplied 3M Dual Lok fasteners. I went with the quick-and-easy Dual Lok. Instructions for each application are easy to follow and should require no more than 5 or 10 minutes to complete. The adhesive does require 24 hours to completely set. It's also important not to let your fingers touch the adhesive when peeling back the protective paper from the mounting tabs.

A sport or sport-touring fairing is clearly an inherent compromise from a full-fledged touring fairing, but the LIP makes that compromise less obvious without disrupting the lines of the bike. In fact the LIP looked as though it was a part of the motorcycle's design. The Laminar LIP sells for \$75 plus shipping and is available for many motorcycles with windscreens or windshields. For current LIP applications contact Laminar LLC, P.O. Box 15701, Santa Ana, California 92735-0701; (714) 540-8006; www.laminarlip.com.

Claf Wolff

Rider October 2002

1. General Laminar LIP Mounting Instructions

One, or a combination of three methods, is used to mount the Laminar LIP to the motorcycle windshield:

1. Windshield mounting screws.
2. 3M Dual Lock(TM)
3. 3M(TM) VHB acrylic tape for automotive applications.

The 3M adhesives are very strong and durable provided a few precautions are taken prior to application:

1. The windshield surface must be clean, free of oil or wax, and dry. Do not use plastic polish for this cleaning as it leaves a film. Some aging windshields such as the ST1100 Honda may have the hard coating flaking off. This coating must be cleaned away before mounting the LIP.
2. The air and surface temperatures must be greater than 70 degrees Fahrenheit.

If your LIP contains holes, then it is intended that it be screwed onto the windshield at existing screw locations. Longer screws may be required. Use the included nylon or rubber washers between the LIP and the windshield. Take care not to over tighten the screws. **DO NOT USE THREAD LOCKING ADHESIVES** they will cause the plastics to craze.

If your LIP has no holes, then the 3M adhesive, tape or Dual Lock, will be used to hold it to the windshield. Place the LIP onto the windshield and locate the best fitting position. The LIP should be centered side to side, and the rear edge should match or extend beyond the rear edge of the windshield. On sport bikes the location of the LIP is pretty well determined by the shapes of the LIP and the windshield. On sport touring motorcycles the location of the LIP is more flexible. You may wish to experiment. When confident of the correct location use masking tape to mark on the windshield where the LIP should be located. Assure that the windshield is clean and dry then remove the protective film from the 3M adhesive. Take care not to touch the adhesive as the oils from your skin can impair the adhesion; carefully locate one side of the LIP while keeping the other side from touching the windshield. It may be helpful to place the motorcycle on the centerstand and have someone face the bike and tell you when the LIP is level. Next, carefully locate the other side of the LIP onto the windshield. Remember you will be staring at this relationship for a long time. You may find that the LIP must be pulled apart, side-to-side, slightly when mounting it. This is intentional so that the LIP shape keeps the adhesive under compression for added security. Press the pieces together firmly, looking through the windshield to assure that the adhesive is seated uniformly.

The adhesive sets up over a 24-hour period and by then should be very secure. The Dual Lock can be separated to remove the LIP from the windshield. To do so, carefully use a butter knife, or similar tool, to separate one interlocking half from the other by working it between them. The Dual Lock does lose its holding ability after twenty or so cycles of removal. An indicator of wear is when you do not feel it snap when pressing it together; at this time it should be replaced. Radio Shack and many auto parts stores carry Dual Lock, or contact Laminar.

Bottom end view of LIP

