Vinyl Installation Guide

Everything You Need to Know

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Assumptions

I am assuming you have never applied a vinyl graphic before and you have set aside some time in your busy day to apply the graphic so you are not rushed. The graphic you have purchased is cut to your desired design and size, and is ready to be applied. The vinyl graphic is made from a high-performance, high quality vinyl (you need to make sure it is a "2 mil Cast 7 year" vinyl). Anything less will fade, peel, and not conform to curves as easily. Don't settle for the cheap stuff! And my last assumption is you want to learn everything you can to do the job right in a short period of time. Well let me tell you, you've come to the right place and ANYONE can do it! But you must follow some orderly instructions to get everything to turn out right. So let's get on with it.

Tools

The list below outlines the necessary tools and materials you'll need to install your graphic correctly. We'll discuss each of these individually.

1   Squeegee made for applying vinyl

2   Masking tape

3   Ruler or measuring tape

4   Vinyl application fluid

5   Denatured Alcohol and Silicone/Wax remover

6   Spray bottles

7   Water hose

8   Cheap paper towels

9   Razor knife

10   A sewing pin

11   Level (optional)

12   China marker (optional)

13   And a garage or covered area (optional). We'll discuss each of these tools in depth so you know the why and how.

First, the **squeegee** is usually made of vinyl or plastic and is single or double edged about four inches in width. Wherever you got the graphic should carry them. If not, you can purchase from your local sign shop. Be sure the edges are not nicked. They should be smooth. If they are not, it will cause streaks or bubbles when you apply your graphic (if it's nicked, contact me and I will share a trick with you on how to make it smooth …) . If it's new, you should be fine.

Masking tape will be used to position and hold the graphic while you are squeegeeing (more on that later). Have a **ruler** and/or **measuring tape** available to position and align the graphic properly to your surface.

The "applying graphics with fluid vs. dry" debate continues, but let me tell you, for beginners (and many seasoned pros agree), using a "wet" application is the best way to go for larger graphics. **Application fluid** allows much more freedom in positioning, you are less prone to getting

wrinkles, premature sticking is alleviated, and many more problems that could be encountered are avoided. Using a vinyl **application fluid** made specifically for vinyl graphics is by far the best way to go. Many sign shops (and web sites) will tell you to use soap and water, but if you want your installation to go smoothly and last, be sure to use vinyl application fluid. We carry products on www.gakvisuals.com. I use ActionTac here at the shop, which I've found to be a great product for all applications. It's sort of a "one-in-all" product. It cleans the surface, promotes adhesion when you start applying pressure, lets you "float" the graphic into position, great on glass, etc. If you get it, you can read the bottle for more information. We used to provide a "soap and water" solution- however, more and more soaps have lotions and other chemicals that adversely react with vinyl. If you do not use vinyl-specific application fluid, use water *only*- no soap- or add soap at your own risk.

You'll need **Denatured Alcohol** to remove any residues (more on this later) and Citrus Cleaner & Degreaser, Total Prep, Prep Sol, etc.) to remove any wax, tar, silicone and/or grease from the surface. This is a critical step. These types of products can be purchased at your local paint or hardware store. Always follow the instructions on the label, make sure it can be used on painted surfaces (or fiberglass if it's a boat) and test in an inconspicuous area.

The **spray bottles** can be purchased at any hardware store. They might carry them at your local drug store, not sure. The spray bottle is used to spray the application fluid and cleaning fluids onto the surface and graphic.

You'll use **soap and water** to clean the surface initially. Household dishwashing soap is fine. Just use a few drops. Have a hose available to wash down and rinse off the surface.

Use the cheapest **paper towels** you can buy. Make sure these don't say "lint free" or something else. Only the cheapest. They will not have any chemicals in them to contaminate the surface. It's all about contamination these days! Use a clean paper towel for each step.

 A small **razor knife** (the kind with breakable blades) with a new blade to make any needed cuts. You'll use the **sewing pin** to prick any bubbles to release trapped air under the graphic. Yes, it happens, but it's NO big deal. It happens to everyone including the pro's, but you would never know it once the bubbles have been popped.

You may want to use a **level** if you intend on installing the graphic, well, level. Don't eyeball it. The contours on a car and the lines will throw you off big time. It's OK not to use a level however- "if it looks good, it is good."

If possible have a **covered area** where you can work. It makes a big difference. Not only will it keep "things" from landing on your surface, but it shields against wind. Wind is not your friend, especially when doing a large graphic installation. It can be done, but it's just more tricky. It also helps you regulate the temperature. The optimum temperature range for vinyl graphic adhesion is 60 – 80 degrees F. It can be done colder (the air and surface should always be above 40 degrees F) or hotter (use a hose and water to cool the surface), but between 60 – 80 is ideal.

Surface Preparation

The most critical part of installing a graphic has nothing to do with "installation." It's all in the cleaning preparation. Your goal is to get your surface as clean as possible. Not only will it make your graphic stick much better, but it will last longer and be easier to work with and position. You need to get rid of two elements: organic (bugs, sap, dirt, etc.), use the soap and water to do this. Easy! Now dry it with those paper towels. Next you need to get rid of petrochemicals (wax, tax, grease, oil, gas residue, etc), this is where the other chemicals mentioned comes in. Wet one towel with the chemical and put in one hand. Hold a dry paper towel(s) in the other. As you wipe with the wet towel, follow immediately with the dry towel. The goal is to not let the chemical dry on the surface. Okay, almost done. Finish using the same technique (two hands, two towels) but

with the Denatured Alcohol. This removes any remaining residue from the surface. (Of note, ActionTac is a cleaner as well and does all of this in one fail swoop). You're ready to install. Move the car (or boat, motorcycle, whatever) into the garage or undercover if possible. If not, try at least to be in the shade. Now, admire how freaking clean your car looks! WOW! (As a note if it's not clear already, DO NOT wax your car in advance if you know you are going to install a graphic – wax is not your friend here). In addition, wait at least 60 days after a fresh paint job before installing a graphic- or make sure the paint is fully cured.

Positioning

Examine the area where you want to install your graphic. Be creative. Even though you imagined it on the rear quarter panel for example, move it around. Turn it upside down (don't try this if it's letters   ). You may find it looks better in a different spot than where you imagined it. Your car or boat is a palette for you to express your creative juices, let'em flow! Once you've determined where you want it, tape the graphic's edges with the masking tape and step back again for a final look. Make any necessary adjustments. You can use your **China marker** to make marks for alignment, or use some extra masking tape directly next-to and above the edges of your graphic. Tape comes off easy, is a straight line and is easy to see- works for me.

Remove the graphic off the surface leaving the alignment marks or tape. Now you are ready to install!

Installation

Hinge Free Method (for all types of small graphics- "peel and stick it")

Since we are doing a "wet" application using application fluid, follow these steps.

1   Use your spray bottle to soak the surface with the application fluid.

2   **Slowly** peel off the "release liner" (this is the wax paper on the back of the graphic) away from the graphic. The top sheet is called "transfer tape" (it's similar to large masking tape… ours is sometimes clear). Make sure the graphic sticks to the transfer tape. You don't want any part to stick together.

3   Next, Spray the sticky side of the graphic with your application fluid as well. You can spray the sticky side as you are pulling the graphic away from the liner.

4   Apply the graphic to your surface and flatten it by pulling the corners into position. Try to get all the wrinkles and air bubbles out without applying pressure.

5   Squeegee technique is **very** important here! Hold the squeegee at a 45 degree angle and with overlapping firm strokes, begin squeegeeing the graphic from the **middle** to the edge. Firm pressure. It's rare you'll use too much pressure, but very common to not use enough pressure. This will get rid of most air bubbles, adhere the graphic properly, and squeeze the application fluid away from under the graphic.

6   Spray the top of the graphic (transfer tape) with the application fluid and squeegee once again. This will loosen the transfer tape and make removing the tape much easier.

7   Begin by pulling the edge of the transfer tape at a zero degree angle. The transfer tape should be pulled directly along the surface. Don't pull it straight up. If the graphic is not sticking, resqueegee it back down and **WAIT** a little while. It **WILL** stick. Glass takes the longest to dry.

Hopefully it looks pretty sweet! The graphic is sometimes still "moveable," so be careful immediately after applying wet. If the graphic starts to pull up with the transfer tape, just lay it back down, squeegee again and wait a little while. This might happen with a wet application. Professional application fluid sticks it pretty good. If it's just not staying down for some reason, you might want to use a hairdryer to heat the graphic a bit.

Once the tape is removed, look for any air bubbles. You'll probably have a few if it's a large graphic. No worry. Simply press around the air bubble to raise the air as much as possible to a single point. Next, take your pin and poke a small hole at the edge of the bubble and use your finger to press the air and fluid towards the pin hole. After the graphic settles and with a little time you never see it.

If you are applying a layered graphic (two colors) with application fluid, it's a good idea to let the graphic you just installed sit a day or two before beginning the next one. You don't want the graphic you just installed to move any or pull away when you lay the next one on top or remove it's transfer tape- just a precaution. It is also my advice aesthetically to go with multiple colors. It looks so much better (red graphic with a black outline, etc.). It's also very easy to align the colors perfectly using the "wet" method since you can see through the transfer tape to make a perfect alignment. It's amazing how far you could go!

The next three application techniques are *very* helpful. If you do a dry installation just skip everywhere application fluid is mentioned and hold the graphic taught a few inches above the surface while you are squeegeeing (just high enough so it doesn't touch the surface). It is

also preferred, when installing dry, to not fully remove the release liner. Just pull it back a little at a time as you squeegee. This gives the graphic some "body" and holds the shape as you squeegee.

The "**Horizontal and Vertical Hinge Method**" are the most common hinge application techniques. Hinges are used to hold the graphic in place while you squeegee.

Horizontal (best for large lettering that is not "connected" like script fonts)

1   Position lettering or graphic on clean surface. Tack to desired location with small pieces of masking tape on either end.

2   Apply a long piece of masking tape across the top of the lettering or graphic.

3   Remove small pieces of masking tape at both ends.

4   Cut lettering or graphic into smaller areas vertically. (With letters, cut between the letters. With graphic, cut between sections taking care not to cut through any vinyl). The hinge at the top holds the graphic and maintains the graphics spacing in tact. You are basically just making the graphic "smaller" by installing smaller sections of it at a time.

5   Starting at the right (if right-handed), flip one section over at a time and remove release liner.

6   Apply the application fluid to the surface and the back of the transfer tape (sticky side).

7   Lay the graphic on the surface pulling the corners to remove any bubbles and wrinkles, etc. as described above.

8   Squeegee each section into place using the squeegee technique described above.

9   Re-squeegee entire line of lettering or graphic when complete.

10   Remove application tape.

11   Check for bubbles and release as described above.

Vertical (best for medium to large sized graphics that are continuous)

1   Position lettering or graphic on clean surface. Tack to desired location with small pieces of masking tape on either end.

2   Apply a long piece of masking tape across the right side (if you are right handed or vice-versa).

3   Remove small pieces of masking tape at both ends.

4   Starting at the right (if right-handed), flip the graphic back and remove release liner.

5   Apply the application fluid to the surface and the back of the transfer tape (sticky side).

6   Lay the graphic on the surface pulling the corners to remove any bubbles and wrinkles, etc. as described above.

7   Squeegee using the squeegee technique described above.

8   Re-squeegee entire line of lettering or graphic when complete.

9   Remove application tape.

10   Check for bubbles and release as described above.

The "**Center Hinge Method**" will allow you to work from the center of a graphic outwards. It effectively makes the graphic half as small from an installation standpoint.

Center Hinge (best for windshield or large "connected" or "continuous" lettering (i.e. script) or graphic)

1   Position lettering or graphic on clean surface. Tack to desired location with small pieces of masking tape on either end.

2   Run another piece of masking tape **vertically through the *center* of the lettering or graphic**, making sure it adheres firmly above and below the lettering as well. Vertical tape will act as a center hinge.

3   Remove one small piece of masking tape from either end.

4   Lift graphic or lettering from that end and pull release liner away. Continue to pull liner away until close to vertical center hinge.

5   Cut release liner with scissors and discard while holding the graphic and transfer tape away from the surface. (Yes, this is much easier with two people)

6   Apply the application fluid to the surface and the back of the transfer tape (sticky side).

7   Lay the graphic on the surface pulling the corners to remove any bubbles and wrinkles, etc. as described above.

8   Starting from center vertical hinge, squeegee lettering down onto prepared surface using the squeegee technique described above.

9   Remove small piece of masking tape on other end **as well as vertical tape used as center hinge** (what you just squeegeed will act as the "tape" to hold the graphic in place). Lay remaining half over applied lettering or graphic.

10   Remove the rest of the release liner, apply fluid and again, beginning from center, squeegee into place.

11   Remove application tape.

12   Check for bubbles and release as described above.

SlamWrap Install Notes

First of all, thank you for purchasing one of our graphics! The vinyl used for these graphics is very special. Almost all of the graphics in this line have two really neat features:

> 1 They have "control tac". This means the graphic begins sticking once pressure has been applied. Until that time, they are reposition-able. Just "snap" it back up and resqueegee. They do not need to be installed wet.
>
> 2 They also have "air release". When you receive your graphic you may see a grid pattern in the vinyl or in the release liner. This provides small channels for air to be routed as the graphic is squeegeed down. The air goes out the channels leaving a *very* bubble free installation.

Because of these features, our SlamWrap line of graphics are probably the easiest graphics to install, and they aren't too bad to look at either.

Non-Masked Graphics -Install Notes (no application tape over the graphic)

"Fill-ins, Windshield Visors, Eyelids, Printed Window Perforated Vinyl" etc.

Use these notes if you ordered a graphic that is not masked (i.e. the letters/graphic are not covered with a layer of application tape).

It's quite simple to install these. Here's how you do it:

> *1.* Clean the surface as outlined in the *Surface Preparation* section.
>
> *2.* Spray the surface with application fluid liberally.
>
> *3.* If the graphic is an "eyelid" style or larger style graphic (i.e. – not small letters), carefully lift the vinyl graphic at one of it's edges and begin pulling back gently. While pulling back, have a friend spray the adhesive side of the graphic with application fluid. Continue pulling back and spraying. If the graphic touches itself, you should be able to pull it apart since it's wet.
>
> *4.* Lay the graphic on the surface and slide into desired position.
>
> *5.* Let it sit for a minute or two and use a squeegee to gently press out bubbles and wrinkles so the graphic is laying flat. If it's a printed graphic, be sure not to use too much pressure, you don't want to scratch the print. *NOTE - You can tear a piece of the release liner (waxy backing paper) and wrap over the blade of the squeegee to reduce the chance of scratching the vinyl. Make sure the graphic

hasn't moved. If it has, just reposition. This will get harder to do the longer it sits.

6. The adhesive will start to activate more and the graphic will begin to stick permanently. You may want to use a hairdryer to speed this process up (but I haven't found it's necessary in most conditions).

7. After it has set and began to adhere, you can use a razor knife to make any necessary trims for a finished look.

If your graphic consists of small lettering, here's a trick to remove the graphics from the backing paper.

1   Use a razor knife or x-acto knife and carefully get under an edge of the vinyl.
2   Use your finger to press the lifted part of the graphic to the blade, so that it sticks better to the blade.
3   You should be able to lift the graphic from the paper easily using the blade and position onto your wet surface.
4   Position, press, wait, and press again.

Pin Stripe Install Notes

If you ordered Pin Striping, you can install it as follows:

1. Clean the surface as outlined in the *Surface Preparation* section.
2. Find the desired position of your pinstripe.
3. Starting with the rear of the vehicle pull back a few inches of the release liner exposing the adhesive side of the stripe.
4. Tack a small section (couple of inches) onto the surface.
5. Begin pulling the striping back towards the front of the vehicle while simultaneously pulling back the release liner exposing the adhesive.
6. Make sure you keep the stripe taught so that it does not touch the surface prematurely (if it does "snap" it up- do not "pull," you may stretch the vinyl).
7. Hold the striping to your eye and get as close to the surface as possible, "eyeing" the stripe along the body lines of the vehicle.
8. Slowly lay the stripe down using body lines as a guide.
9. At the point where the hood begins (or there's a significant change in body slope- generally this is where the hood starts), use your thumb and press the stripe into position just before this change in curve begins. Keep the rest of the striping off the surface.

10. The extra striping will be laid down in a sloping angle to generally follow the body change. You don't want to follow it exactly (it's generally too severe to follow the body line exactly and will not look right.)
11. Lay the rest of the stripe down slowly while gradually lowering your position.
12. The change in direction should be gradual not very severe. Should look "sleek" and "aerodynamic."
13. Use your thumb at a right angle (thumb nail should point to the sky) to press the stripe down. Be sure to use even pressure and not "wiggle" your stripe.

14. To finish the striping (applies if you are installing traditional pinstripe- striping with two or more *separate* stripes), snap up the bottom stripe about 6 or 7 inches from the end. Re apply the stripe in a gradual upward line so that the stripe joins the top stripe to form a point. You can then use a new razor blade to trim the excess and create a finished end.

Multi-Layer Graphics -Install Notes
(Outlines, Shadows, Very Large Graphics)

It's quite simple to install these. Here's how you do it:

1   Clean the surface as outlined in the *Surface Preparation* section.
2   Spray the surface with application fluid liberally.
3   Have a friend help you with the installation.. It makes it much easier if it's a large graphic.
4   Installing the first layer as described in the above sections (hinge-free, vertical hinge, etc). If your graphic was Blue with a White Outline, you would install the White graphic FIRST (use the same technique for graphics with a Shadow).
5   The next layer (Blue) is laid on top of the White layer with each person holding the ends of the graphic taught and slowly laying the graphic down on the bottom layer. Use your application fluid so it's easy to reposition.
6   Snap up the graphic if it's not aligned and try it again. It can sometimes take a while to get it just right. If you've snapped up 3 times (you might be able to go more…situations differ), spray more application fluid to ensure the graphic doesn't stick before you're ready.

*NOTE – with more complicated alignments and with graphics that are very large, registration marks may be placed around your graphics to help align the different sections. The first layer applied will include small squares (registration marks). The other layers will have similar small squares so when you lay the top layers down, you can see through the graphic making, it easy to align them to the registration marks of the bottom layer. Once all the graphics are applied, just use your fingernail to lift the registration marks from the surface.

Tips, Tricks, and Trickery

First, let's start with the Trickery: curves, molding and body creases. Try to avoid these areas whenever possible. When dealing with valleys be sure and use the squeegee's edge at a 90 degree angle to push the graphic into the valleys and hold the squeegee horizontally when moving over molding. The most important thing to remember here is to take your time. Look for a plan of attack. Each situation will require a slightly different technique. A warning about molding- Some cars have a gap (1 - 2 inches) between the door molding. It is almost impossible (and not worth trying) to run vinyl over the gap.

If you begin to see a problem occurring STOP immediately. If you continue past the problem area too far, you will probably never recover. Snap back the graphic to just before the problem area and try again.

When dealing with curves you need to be very careful since curves can extend in "compound" directions. Since a graphic is two-dimensional and curves can be three-dimensional, problems can occur. Your best approach (besides avoiding severe curves) is to try and position the graphic in the area you want and cut the transfer tape to release some of the tension to ease placement. Be careful not to cut the vinyl or wrinkle it. Always have a back-up plan. If the area you are attempting is too difficult to pull off without problems move it to another preselected area for placement while it's still wet and ready to go. You can always use a different style graphic (thinner or smaller) in the problem area down the road.

With areas that are involve severe compound curves and that's the **only** place for your graphic, it is impossible to install the graphic wet- it must be done dry… which without practice is difficult to do. Installing dry allows the graphic to firmly stick and when you need to conform around a curve you can pull and stretch the graphic slightly to mold it to the curve. If you find yourself in this situation, going slow and in VERY small steps is the way to go. Use the edge of the squeegee to push the vinyl out at about 1/8 of an inch at a time using an arching motion, sort of like a windshield wiper. Once you have gone as far as you can go- you'll begin to see "pinches" and stress in the vinyl and application tape- remove the application tape from the part of the graphic that has been squeegeed down AND from the part that has not been squeegeed down- keeping the graphic taught and apply some heat with a hairdryer or heat gun. Just start with a little heat. Heat causes the vinyl to soften which allows for more play and pliability. Your thumb works very well in these situations as does a sock or soft cloth over the edge of your squeegee. You do not want a hard plastic edge scratching the graphic. It can't be stressed enough about going slow, squeegeeing in very small increments when installing dry over curves and stopping immediately and backing up if you see a problem area occurring. You won't find much success trying to use heat while the transfer tape is on the graphic.

Now for my tips and tricks! When placing a graphic across body panels, pretend they are not there. Also, be sure and clean inside the body panels thoroughly, i.e. open the door, trunk, or hood and make sure those little curves are just as clean as the more visible surface. After you have removed the transfer tape, and gotten rid of any air bubbles, use your razor knife to carefully cut between the body panels. Be sure and cut the vinyl at the edge of the front door panel, leaving the excess vinyl on the following panel and wrap that inwards by opening the door (or using the squeegee). You are trying to make the vinyl less susceptible to air and rain when driving. Natures elements will hit a solid strip of vinyl that you pressed inwards instead of an edge.

Before installing the graphic, trim away any excess application tape and release liner. You can leave about a ••• inch around the graphic. Just be sure you don't accidentally cut your graphic. *The smaller you can make the graphic, the easier installation is.*

Hopefully you did not get any wrinkles, but if you did, you can remove small wrinkles with your fingernail by pushing toward the edge to redistribute excess material. Severe wrinkles should be slit to overlap material if they can't be redistributed. This is preferred to leaving an air pocket in the vinyl. If the wrinkle is at the very edge of the graphic you can carefully lift the edge and use a lighter or hairdryer/heat gun to heat the vinyl very gently and this will allow you to gently pull the vinyl removing the wrinkle and reapply.

If the transfer tape starts to "gum up" (turns a milky white- the adhesive is coming off the transfer tape) while your are squeegeeing, be careful not to let any of the adhesive get under your graphic. If you see the milky white adhesive forming, you have usually squeegeed long enough and you'll need to wait or apply a little heat if the graphic has not begun to stick.

If the vinyl sticks together after you have removed the release liner you can use a little application fluid at the juncture where the graphic is sticking together and carefully snap small portions at a time, or pull gradually if the vinyl is not distorting.

Wash your graphic with a MILD soap and water solution- do not wax your vinyl. Many chemicals may interact in harmful ways with the vinyl. Be careful of high pressure car washes, they can peel your graphics right off your car if you are not careful and they aren't good for your car anyway. Watch out for bird tirds, they can stain your vinyl.

If you have RainX on your windshield, use ActionTac or a citrus cleaner with limonene as the active ingredient. If you have gone through a car wash and selected the "wax" treatment this could also hamper graphic adhesion. It can't be stressed enough that surface cleaning is key.

If you install "chrome" or "specialty" vinyl be aware it only lasts about a year. If you still want it, it's best to install the chrome on glass. If you want it on a different surface, put a piece of regular vinyl underneath it (i.e. and outline). When it's not looking so good after a year or three, it makes it much easier to remove. This vinyl does not conform well at all to curves.

If you find the information you have just read valuable, you may be interested in my website http://www.gakvisuals.com. I carry a complete line of custom graphics and decals for the doit-yourselfer. You can also find more insider tips and tricks like using colors to create harmony and creative uses for graphics. All of the techniques, tips and application suggestions discussed here, I use in my business daily. If you have any questions or if I can be of any help if the future, don't hesitate to contact me. I'm always willing to help fellow enthusiasts of all kinds.

Sincerely,

Gregory A. Kolles
www.gakvisuals.com

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