APPLYING WATERSLIDE DECALS

In this tutorial we're going to cover how to correctly apply waterslide decals. Done properly, decals can look convincingly real, and provide a level of precision and consistency that is simply impossible to do by hand. Conversely, done incorrectly, decals can look worse than a rough piece of freehand work or no marking at all. Through this tutorial I'll show how to avoid the common pitfalls of decal application and how to achieve the result shown above.
The decals used in this tutorial were designed and printed by myself, but the principles apply to all waterslide decals. Similarly, although here we're working on a Warhammer 40,000 Space Marine, the same methods can and should be used whenever waterslide decals are being used.

This is the third .PDF tutorial realeased on the Winterdyne Commission Modelling Blog.
This article focuses on application of waterslide decals, and attempts to help avoid some of the most common pitfalls.
I hope it's found interesting and useful.

Cheers,
Winterdyne.

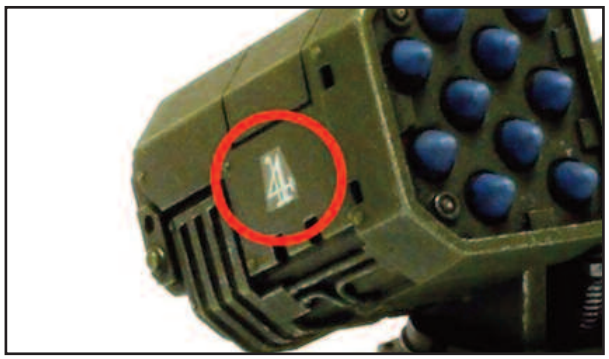
You Will Need

A sharp knife
A good pair of scissors
A good pair of pointed tweezers
Cockatil sticks
Decals
A plastic bag to keep them in
MicroSol & MicroSet
A wet pallette (a piece of sponge in a tub of water is ideal)
Gloss varnish
Matt varnish to finish

1 Preparing the Model for Decals

Decals should be applied after your basic paint job is done, but before weathering - this allows the decalled area to be weathered along with the rest of the model easily. Attempting to weather before decals are applied and then match weathering again (or worse yet washing away or having to match a pigment or powder finish) is a difficulty that is best avoided.
The first step in decal application is to gloss the miniature.
A lot of people don't like a gloss finish, but the key here is to understand that the shiny surface is *smooth*, whereas a matt surface is rough, and that the finish is temporary.
A rough surface will allow the decal to sit over little trapped pockets of air that cause the silvering effect shown here. (Image taken from www.forgeworld.co.uk, used without permission, red ring added by the author).
Once this happens it's nigh on impossible to get rid of - the best that can be done is to overpaint the decal up to the printed designas far as possible.
So that said, we need to gloss the model. I swear by 'Klear' floor polish through an airbrush for this. The truth is it doesn't matter as long as the surface is smooth and shiny. Whatever you use, allow your varnish to dry thoroughly before starting to apply the decals.

Gloss: *Decals require a smooth surface to avoid silvering. A matt surface will not do.*



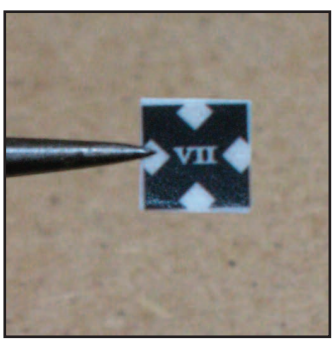
Silvered: *A decal applied to a matt surface is very likely to 'silver', making it very obvious.*

2 The Decalling Process

When applying decals it's sometimes tempting to cut them all out before applying them. I strongly advise against this - it leads to rushing the application, losing, dropping or otherwise destroying decals and a finish you'll likely be disappointed with.

Take your time - putting on decals correctly is not 'faster than freehand', quite often it works out slower. Decals shouldn't be viewed as a shortcut - they can be every bit as tricky as freehand.
You may need to cut out sections of the decal sheet in order to get at a particular decal - this is fine, but remember to keep the other decals safe.

Using scissors, knife and tweezers as appropriate, trim the decal as close as possible to the printed area. You may wish to leave a very small border of film to allow the decal to be moved without scratching the design on it.



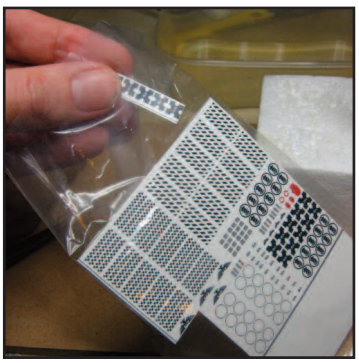
Step 1 - Trim Decal: *Decals should be trimmed as close as possible to the printed area.*

Top Tip

Bag Them!

There is nothing quite as disheartening as having to stop work because you've put your cup of coffee down on your decal sheet and ruined them, or realising that you've spilt water on the sheet, or paint or any one of a number of other little accidents that can and do happen.

Avoid these situations by making a habit of putting your decals away (ideally in a plastic bag) once you've trimmed off what you're going to use. This also helps in avoiding the loss of those tiny loose decals that can stick to your skin and disappear into the lair of the dreaded carpet monster. Fuzzed up decals are no fun.



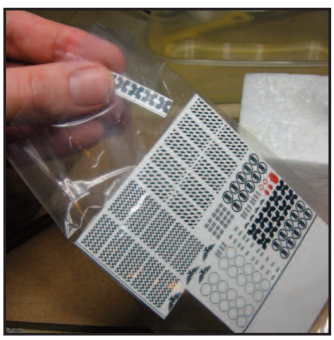
Bag Them! *Religiously put your decals away after you've trimmed off what you're going to use.*

Once we've trimmed the decal we're going to apply, put the rest away. This is covered in the tips section above, and I'm mentioning it again here because other than the gloss coat it is in my opinion about the most important thing to get in the habit of. Do it now.

Ok, that done, we place the decal on the wet pallette. Do not immerse the decal in water, particularly if it's home printed. Decals printed on a home printer (especially inkjets) have to be sealed with a layer of varnish to protect the water based ink. If this varnish isn't good enough, the decal's ink will get dissolved by water and you'll get a blurry, smudged decal. You stand a better chance of saving the decal when you apply if the ink isn't wet to start with.

The wet pallette allows water to seep into the backing paper from the back, and the decal film to keep it from the ink. The adhesive gets moistened and the decal becomes usable. Leave the decal on the pallete for a while.

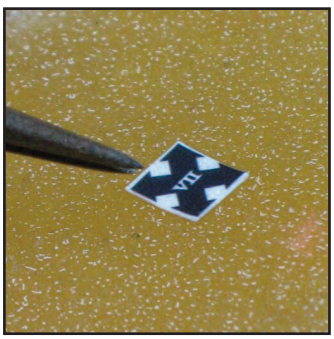
Using a soft brush (a used, but clean drybrush is ideal) apply a coat of MicroSet (or first-stage decal setting solution) to the model, where the decal is to be placed. The purpose of this substance is to improve adhesion and conformance of the decal - helping it bend and stick to the surface. Don't flood the whole area, as we don't really want the solution getting on top of the decal until we're ready to bed the decal down.



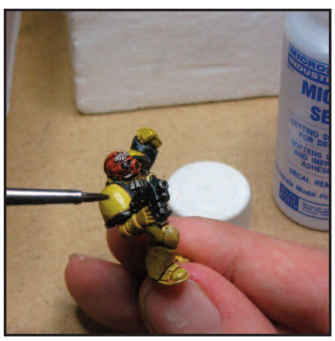
Step 2 - Bag It!: *Put the decals you're not using away now.*

Seriously.

Right now.



Step 3 - Moisten Decal Backing: *Place your decal, printed side up, on your wet pallette.*



Step 4 - Apply MicroSet: *Using a soft brush, apply MicroSet to the area where the decal is to be placed.*

Keep checking the decal on the wet pallette to see if it's coming loose from the paper. Large decals will take longer. Once it begins to move reasonably freely, place the decal paper on the model close to where you want the decal to go.

Gently, with the point of your tweezers (or a cocktail stick) pull the decal onto the model. Try to avoid touching the printed area as you may scratch it or the sealant covering it.

Never push the decal, always pull. Pushing can cause the decal to fold under itself (which as it's sticky is hell itself to undo).

Generally once more than 50% of the decal is in contact with the model you'll be able to pull the backing paper away leaving the decal in place.

Once the backing paper is gone (bin it) use the tweezers or cocktail stick to adjust the position of the decal so it's mostly correct. Don't worry about it lying level just yet.

Using a soft brush gently work out the folds in the decal towards the edges. I find pressing with the side of the brush and rolling it to be quite effective. The key is not to let the decal fold onto itself - you will occasionally need to pull the decal a little more. The brush will also pick up excess setting solution from the model, so dry it on a paper napkin occasionally. The decal should now be very nearly flush to the model.

Step 5 - Place Decal:
With the tip of your tweezers Gently coax the decal off its backing paper onto the model.

Step 6 - Adjust Position:
Gently pull, don't push the decal into place. Don't worry about bedding it down yet.

Step 7 - Snug Down Decal:
Using a soft brush, gently start to iron out folds in the decal to get it to bed down onto the model surface.

Top Tip

Accept No Substitute!

I've heard of people using spirit vinegar in the place of decal solutions. This said, I have no idea what concentrations are needed, or how easy it is to get a consistent result with a homebrew product.

MicroScale have been making these solutions for years, and they're about the best known on the market. For the money involved in buying them you really might as well - the time and effort in getting replacement decals and the satisfaction of a successful job is more than worth it.
I am in no way affiliated with MicroScale Industries - all I am saying is that these products work well, consistently. I've had the same two bottles of product for the last 4 years. They last for absolutely ages.

MicroSet & MicroSol:
You want these.

With the decal nearly flush, it's time to make sure it sits level, and to remove as much of the visible film as possible. To this end we use a stronger setting solution (MicroSol). With a soft brush, apply the Microsol on top of the decal. Allow this to sit briefly before using the brush to apply gentle pressure to the decal and to remove excess setting solution.

Over the next few minutes you may see your decal crinkling up - this is perfectly normal and the crinkliness will disappear as the solution evaporates. The decal is now extremely fragile as the film is being eroded by the setting solutions. Attempting to move it is most likely just going to damage the decal.

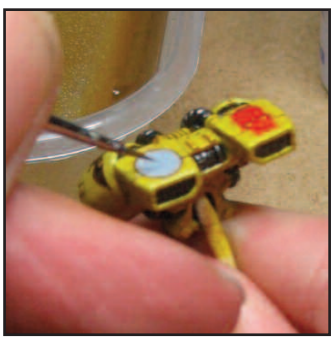
Allow the solution to dry completely. If the decal is still not conforming to the surface a further application of MicroSol may be needed. Some deep panel lines and recesses may require that the decal be slit - this can either be done with a fresh razor blade or an extremely sharp hobby knife. It's important not to attempt to slit the decal whilst it's wet, as this can lead to it tearing rather than being cleanly cut.

Some decals may require touching up, and some may require painting such as the 2 stage chapter badges I've used here. The first stage is a simple circle which is painted in before applying the second stage (using exactly the same steps as before) is applied on top. If you do use an intermediate painting stage it is important to remember to gloss again before applying the next decal to reduce the risk of silvering.

Once all the decals are done they should be sealed with at least one coat of gloss to protect and seal them before the entire miniature is finished with the topcoat of your choice. Here I've used a mix of Tamiya X-21 Flat Base and Klear Floor Polish.

Step 8 - Apply MicroSol:
The decal is nearly done - apply a little MicroSol to soften it and don't try to move it now.

Step 9 - Bed Down:
With a soft brush press the decal down so it conforms to the surface.



Step 10 - Paint Where Needed:
Do touch-up paintwork or intermediate stage painting now.

Step 11 - Varnish:
Once all decals are done, gloss coat to seal and protect them before finishing with matt.

3 Finished Article & Final Words

Finally it's time to do any weathering, seal again(!), and base up. With so many coats of sealant going on it's really quite important to use something that goes on thin. This generally means a self-levelling, runny varnish, which in armour modelling circles for the last decade at least has been 'Future' floor polish, or 'Klear' in the UK.
At the time of writing (December 2010) in the UK, Klear floor polish has had a change of formula. Its usefulness in modelling terms is now unclear. At some point I'll try it out and see for myself, but you may want to look into alternative gloss varnishes. GW's 'Ard Coat gloss is extremely shiny, and looks to be a suitable alternative when applied by hand. I'm not sure how well it goes through an airbrush though.
There are 16 separate decals on this model. Can you spot them all?