

# REFIT ENTERPRISE

## Window Drilling Templates For 1/537 Scale



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### INTRODUCTION

Thank you for purchasing ParaGrafix's window template set for the classic 1/537 scale refit USS Enterprise it. We have made every effort to ensure that these parts can be used successfully by a modeler of modest experience, but there may be items that require advanced modeling techniques. For a basic primer on the use of photoetch, please visit <http://www.paragrafix.biz/instructions.asp> for printed instructions and <http://www.paragrafix.biz/video-instructions-1.asp> for videos.

Please note that some pieces in this photoetch set will be easier to work with if they are annealed. Annealing will make the brass more pliable so that it can bend around the kit parts without springing back. Please see the video on annealing at the above link for instructions on how to do this.

### MATERIALS

In addition to the photoetch, you will also need photoetch cutting scissors\* or a knife\*\* to remove individual pieces from the main fret, a file to remove material left from cutting, and super glue (aka CA or cyanoacrylate). Putty will be needed to fill the existing kit windows. For best results, use a putty that can be drilled through cleanly as some new windows are very close or overlap the old ones.

If lighting this kit, note that all windows have been sized for 0.06" (1.5mm) optic fibers and the optional marker lights around the docking ports are sized for 0.01" (0.25mm) optic fibers. You will need drill bits of these sizes as well. (0.01" drill bits are very fragile. You will want several spares.)

For the airlocks you will need plastic or metal tubing – Plastruct #90606, 1/4" (6.35mm) diameter or K&S # 8138, 0.219" (5.6mm) respectively – plus matching drill bits.

DO NOT USE super glue to attach plastic optic fibers and they will break. Use epoxy cement or white glue.

\* We suggest using Xuron's 9180ET scissors.

\*\* We prefer a #17 Xacto chisel blade.

### Key

Kit part (plastic): 1

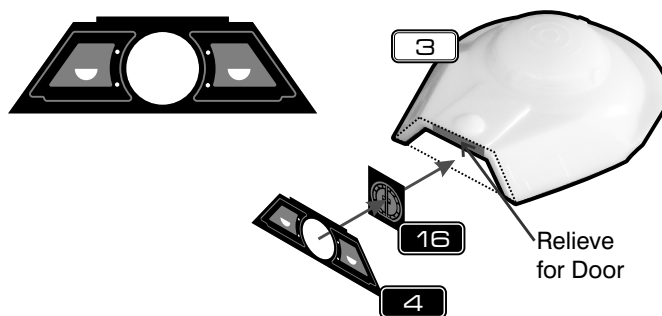
Photoetched part: 1

### BRIDGE AIRLOCK

Note: etch parts 4 and 16 replace kit part 4.

Make a small relieve to kit part 3 to receive the top of the airlock door (4), then attach etch parts 4 and 16.

The 4 small holes around the airlock are based on the ones around the large secondary hull model used for the docking scene. They are not seen on the hero model of *Enterprise* – you can fill them in with modeling putty if you do not want them visible on your model.

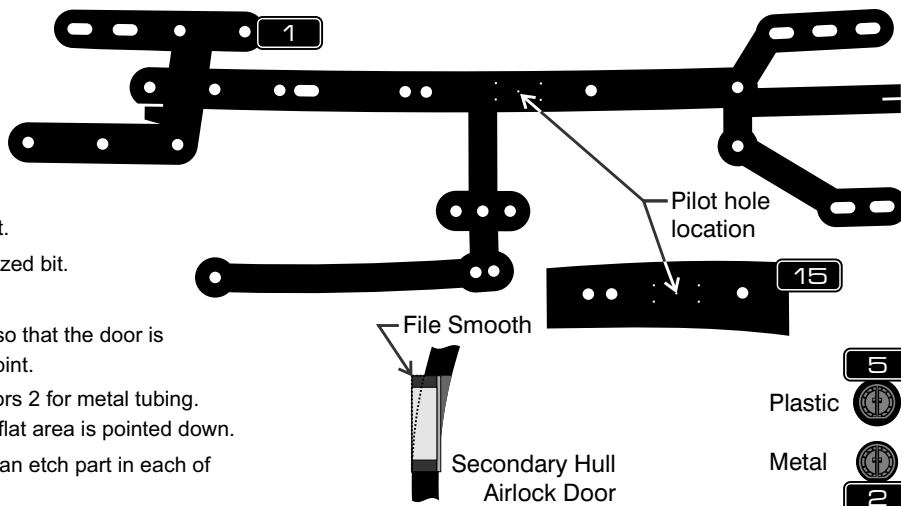


### OTHER AIRLOCKS

The positions and sizes of the four non-bridge airlocks can be corrected using the plastic or metal tube listed in the introduction under "materials". The installation instructions are the same for each:

- Drill a pilot hole using a 0.01" (0.25mm) bit.
  - Expand the hole using the appropriately sized bit.
  - Cut tubing to at least 0.06" (1.5mm) long.
  - Attach the airlock door, glue into the hole so that the door is inset about 0.04" (1mm), smooth outside joint.
  - Use doors part 5 for plastic tubing and doors 2 for metal tubing.
- Make sure to orient the door so that the small flat area is pointed down.

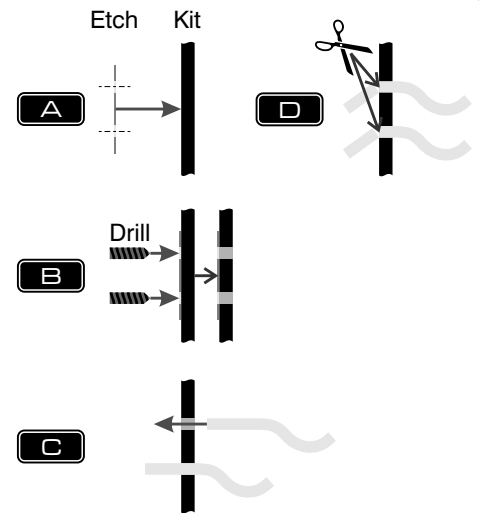
If you prefer not to update the airlocks, mount an etch part in each of the 4 kit airlocks.



## GENERAL WINDOW PROCEDURE

This is the general procedure that will be used for all windows on the ship, with the exception of the officers lounge, rec deck, and arboretum:

- Fill all window holes using the filler of your choice. Since some of the new windows will be close, or intersect the old ones, make sure your filler can stand up to being drilled without cracking – left over sprue (kit “trees”) mixed with liquid model cement (Tenax 7R or equivalent) makes an excellent filler. Alternatively, stretch pieces of sprue so that they fit the window openings, then glue them in place with liquid cement and file smooth.
- **A:** Align the window drilling guides as specified in each sections’ instructions and secure with tape. Note that most drilling guides will be used more than once. Annealing ones that curve will help them maintain contact with the model’s surface.
- **B:** Use a 0.06” (1.5mm) drill bit to open up all window openings. You can work the drill sideways to extend the oblong window holes. Remove the template.
- **C:** Fit a fiber optic into each window with a short length sticking out and secure in place. For the oblong windows, file a piece of clear sprue to fit the opening, then mount an optic fiber behind it. DO NOT USE SUPER GLUE as it will destroy the fiber. Epoxy or white glue is best.
- **D:** Assemble and paint the model, then trim off the excess optic fiber.



## B/C DECK

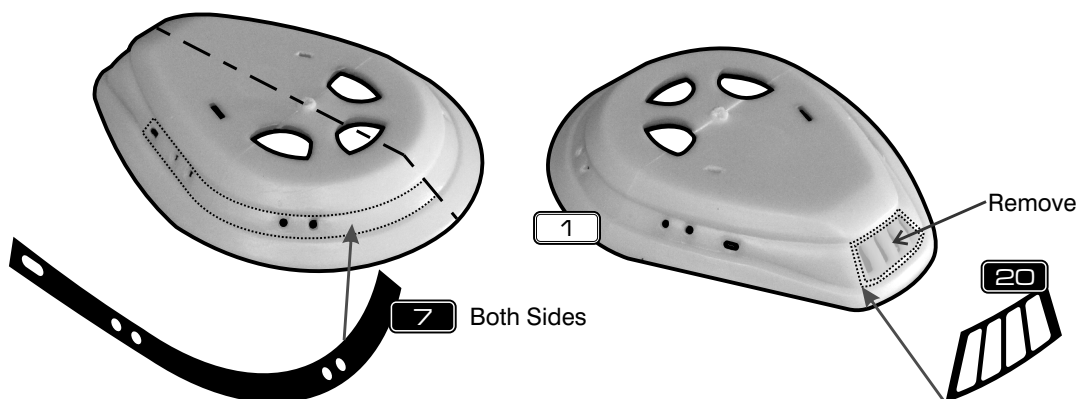
TIP: Anneal parts 7 and 20 so that they are easier to bend in place.

### MAIN WINDOWS

Fill in 10 windows spaced around the rim of B/C deck (the top of kit part 1). Align the end of etch part 7 with the centerline and wrap it around inside the “groove”. Follow the instructions in “General Window Procedure” for creating the new windows.

### OFFICERS LOUNGE

Shape lounge windows (20) to shape on the hull, then trim out the kit windows. Extend the kit windows so there is still plastic to hold the etch part, but it’s not showing through. File down around the window so that the metal will sit flush. Glue the window, 20, in place. Use clear soda bottle plastic to make new window “glass” and glue it in place using Micro Krystal Klear or equivalent.



## PRIMARY HULL EDGE WINDOWS

Attach the primary hull edge windows (kit parts 6) to the lower primary hull, part 2, and fill the windows.

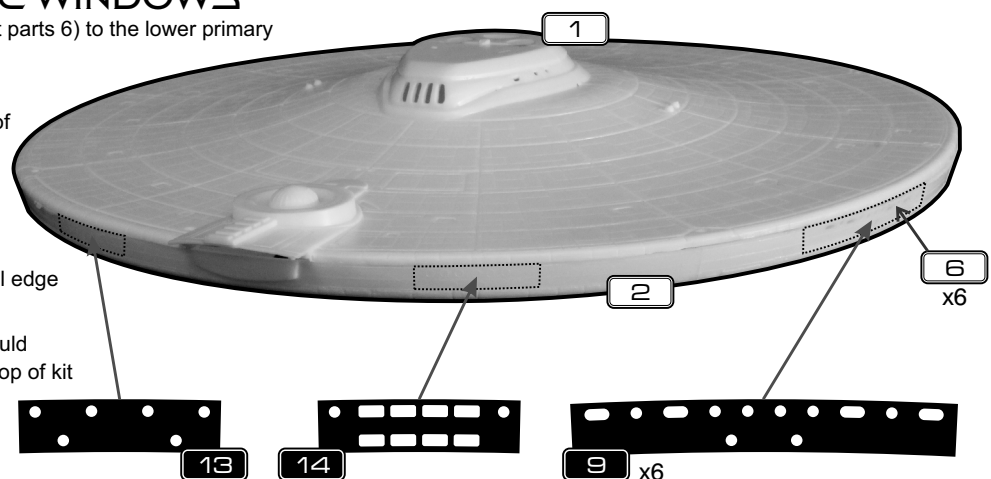
Mount etch parts 9, 13, and 14 (9 will be moved and drilled 6 times for the 6 sets of windows).

Mount parts 13 and 14 so that they are centered on the deflector grid lines.

Follow the steps in “General Window Procedure” to create the new primary hull edge windows.

**NOTE:** The large windows on part 14 would leave very little plastic remaining on the top of kit part 2 if used as a cutting guide. We suggest that builders thin the plastic where 14 goes by the thickness of the part (0.01”, 0.25mm), then cut out the space where the windows are. 14 can then be cemented in place and the two round holes drilled out for optic fibers.

The main rec deck windows in 14 can be “glassed” with clear soda bottle plastic and adhere it in place with Micro Krystal Klear or equivalent.



## GANGWAY AND LOWER PRIMARY HULL WINDOWS

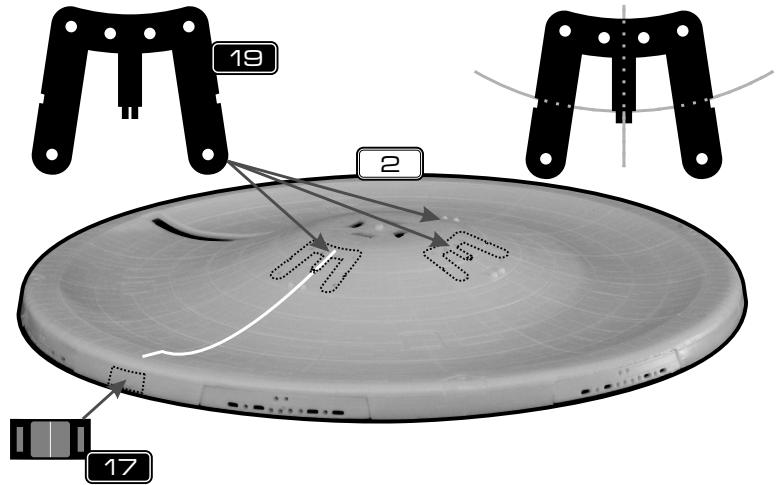
### GANGWAY

The gangway is slightly raised from the hull of the ship, so there's no need to create a recess for it. If you have any version of the kit other than the original "smoothie" released in 1979, just file off the slightly raised, round gangway. Attach kit part 17 centered on the 90° gridline as shown.

### WINDOWS

Repeat 3 times for each location.

Fill the existing windows, attach template 19 in each of the 3 positions shown, and complete the windows as described in "General Window Procedure".



## INTERCONNECTING DORSAL

Repeat for both sides, kit parts 8 and 9.

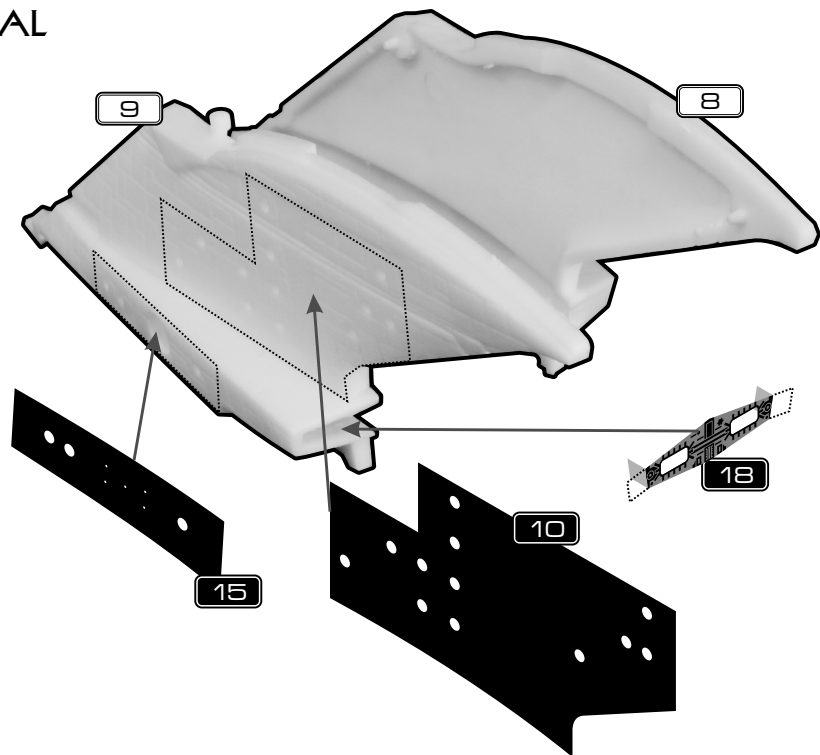
Fill the existing windows and airlock doors.

Attach templates 10 and 15 as shown and complete the windows as described in "General Window Procedure".

Drill the pilot hole for the new airlock and once the template has been removed complete the airlock installation per "Other Airlocks" on page 1.

Note that there are 4 holes around the docking port pilot holes. These are for the 4 lights seen in the closeup model used at the beginning of *Star Trek: The Wrath of Khan*\*. These lights are not on the hero model and may be omitted.

\* Although the actors are seen walking into the torpedo room just inside this door, the exterior footage was reused from *Star Trek The Motion Picture* and depicts docking in the port side access way located on the secondary hull.



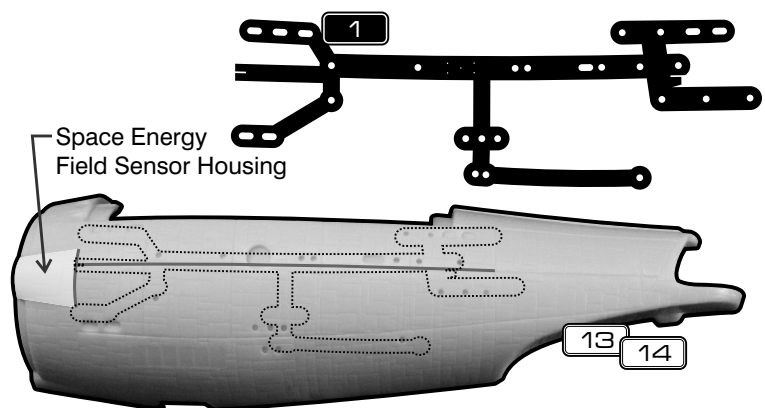
## SECONDARY HULL WINDOWS AND AIRLOCK

**TIP:** Template etch part 1 should be annealed before use. You will find this makes it easier to conform to the shape of the hull.

As always, fill the existing windows and airlock on kit parts 13 and 14.

Attach template 1 as shown. Use the back end of the Space Energy Field Sensor housing and the central gridline to align the template. The front of the template should be up against the back end of the SEFS while the two grooves should be centered on the gridline.

Follow the instructions in "Other Airlocks" and "General Window Procedure" to drill and install the airlocks and windows.



Note that there are 4 holes around the docking port pilot holes. These are for the 4 lights seen in the closeup model used at the beginning of *Star Trek The Motion Picture*. These lights are not on the hero model and may be omitted.

## ARBORETUM WINDOWS

**TIP:** You will want to anneal both the jig and arboretum windows, 11 and 12, so that they conform to the hull.

Repeat for both sides.

This procedure is similar to that used for the officers lounge windows (see page 2), with some differences.

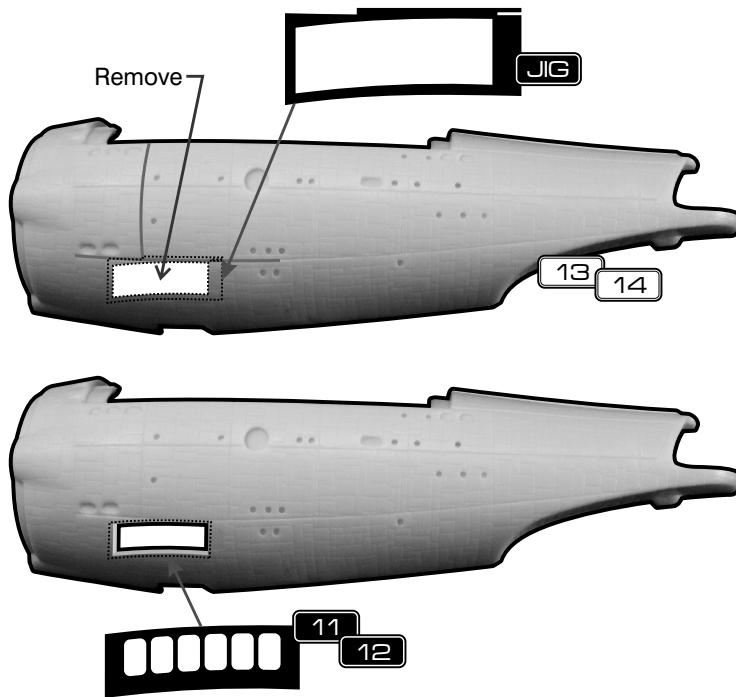
Mount the jig as shown, aligning it to the grid lines. Mark just inside of the jig and cut out enough material to clear the windows, while leaving enough plastic to glue the new windows in place.

Thin down the plastic around the opening by the thickness of the photoetched parts (0.01", 0.25mm) so that the windows fit flush.

Form the window parts, 11 and 12, on a section of hull above or below the window opening so that they have the proper shape, then glue into position. Note that the parts are mirror images so make to form them each in the proper direction. If you put them on the wrong sides, the window frames won't be vertical.

11 goes on the starboard (right) side with kit part 14, while 12 goes on the port (left) side with kit part 13.

Use clear soda bottle plastic to make new window "glass" and glue it in place using Micro Krystal Klear or equivalent.

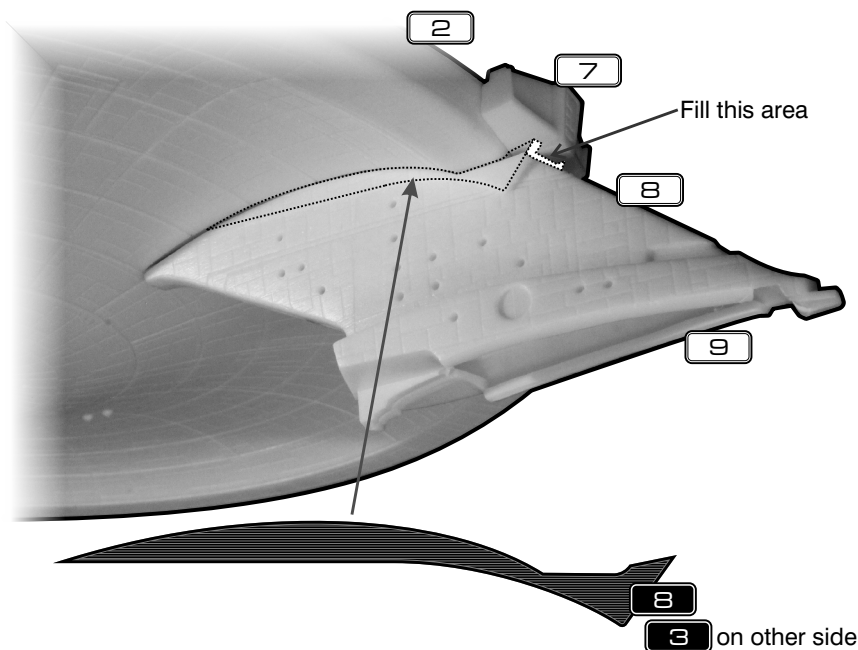


## IMPULSE ENGINE VENT

**NOTE:** Do not install the impulse engine vents, etch parts 3 and 8, until after the primary hull has been permanently attached to the interconnecting dorsal.

Mount the impulse vents on either side of the dorsal where shown.

Not that there is a gap between the two vents, just under the impulse engine. Fill this gap with filler putty. AVES, or similar 2 part epoxy filler, is ideal for this as it doesn't shrink and can be smoothed using water up until it has hardened.



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