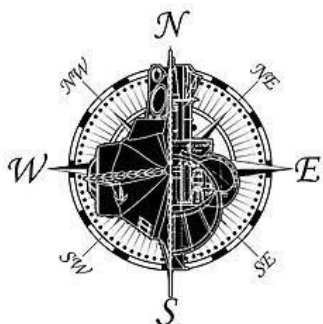


Assembly Instructions

1:48 Scale Nautilus Submarine



The
NAUTILUS DRYDOCKS, LLC
Exceptional Products For The World of R/C Submarines

983 Tivoli Dr., Naples, FL, USA 34104 Phone: (239) 877-4280
www.nautilusdrydocks.com sales@nautilusdrydocks.com



Congratulations on your purchase of this 1:48 model kit of Captain Nemo's Nautilus from the 1954 movie, "20,000 Leagues Under the Sea".

This model kit was painstakingly crafted by talented master modeler Scott Brodeen and has been brought to you by the Nautilus Drydocks and our partners. Materials used are primarily high-quality casting resins. Some high-detail parts such as the dive levers and ship's wheel have been printed on high precision 3D printers in order to assure the maximum level of finish possible.

The builder is encouraged to do their own research when it comes to detailing and finishing the model. Many additional features and details can be added to create a breathtaking display, limited only by your imagination and talent.

If you have questions about your kit, please ensure that you've fully read through these instructions. If you still have questions, feel free to reach out to me at any time.

Thanks for your purchase! Enjoy the journey of bringing your model to life.

Handwritten signature of Bob Martin in blue ink.

Bob Martin
The RCSubGuy
The Nautilus Drydocks, LLC
info@nautilusdrydocks.com

STEP ONE: Pre-Assembly Preparation

Prior to assembling your model, ensure that you have an **adequate work area set aside**. This model kit is over 4ft in length when assembled, and you need to have enough room to lay out the pieces and work on them without lack of space hampering your assembly efforts.

Ensure you have **adequate lighting and ventilation**. Some adhesives can cause unwanted fumes and odors, and you don't need to add to your assembly challenges by having to also deal with an irate spouse or roommate.

Check all parts for damage. Resin is very easy to repair using thin CA for clean breaks or cracks and repairs will in no way compromise the strength or appearance of the completed part.

Clean all parts of casting flash using a sharp hobby knife, files and sandpaper. Any visible seams can be addressed with glazing putty or filler. Preparation at this point will save time later. It's tempting to simply plow ahead and start glueing things together, but *please* take your time and tidy up your parts well now.

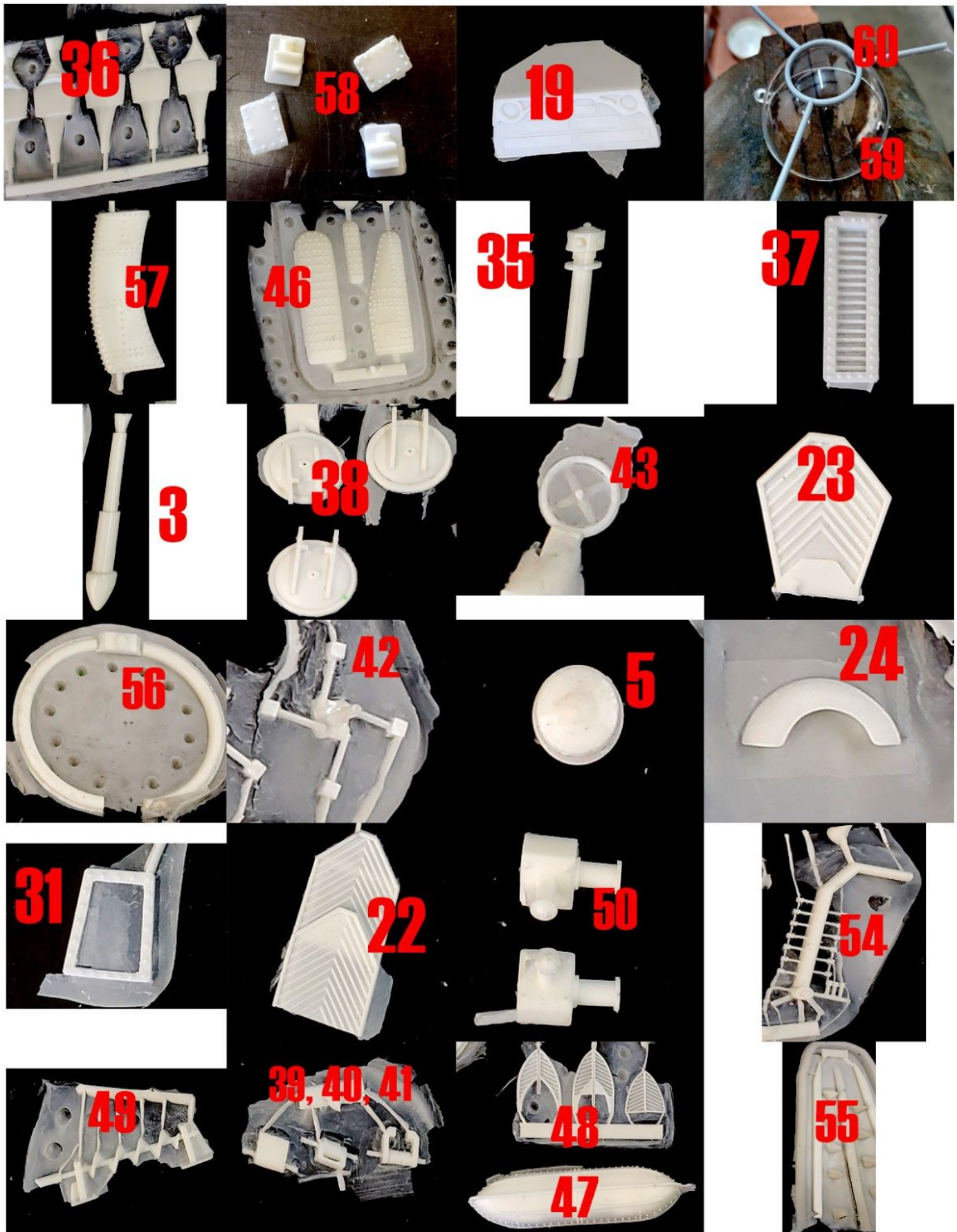
After all parts are devoid of flash or seams, **wash them thoroughly** with a solution of warm, soapy water. Use a toothbrush to scrub small parts. You need to remove any residual mold release from the parts, or paint and glue may not adhere properly in later steps.

Basic Materials Required/Recommended:

1. Universal boat stand. This can be purchased or built. I don't recommend using the kit's stand, as you will be painting and glueing the kit prior to display and you don't want to ruin these stand parts.
2. Adhesives:
 - Thin and thick viscosity CA glue
 - 5 minute two-part epoxy
3. Small files with various contours
4. Tweezers
5. Sandpaper: 200 and 400 grit
6. 1/32" drill bit (thumb drill or drill bit)
7. Sharp hobby knife with spare blades
8. Rotary tool with cutoff discs, sanding drums, and cutting tools
9. Heat gun
10. Large and small adjustable clamps
11. Glazing putty and body filler (I recommend Nitrostan and Evercoat Rage respectively)
12. Filler primer
13. Dark silver spray paint
14. Modern Master Iron Paint and activator
15. Semi-gloss clear paint
16. Pastel chalks
17. Acrylic paints for details (black, gold, white, red, copper, silver, brown)
18. Detail paint brushes
19. Masking tape
20. Razor saw

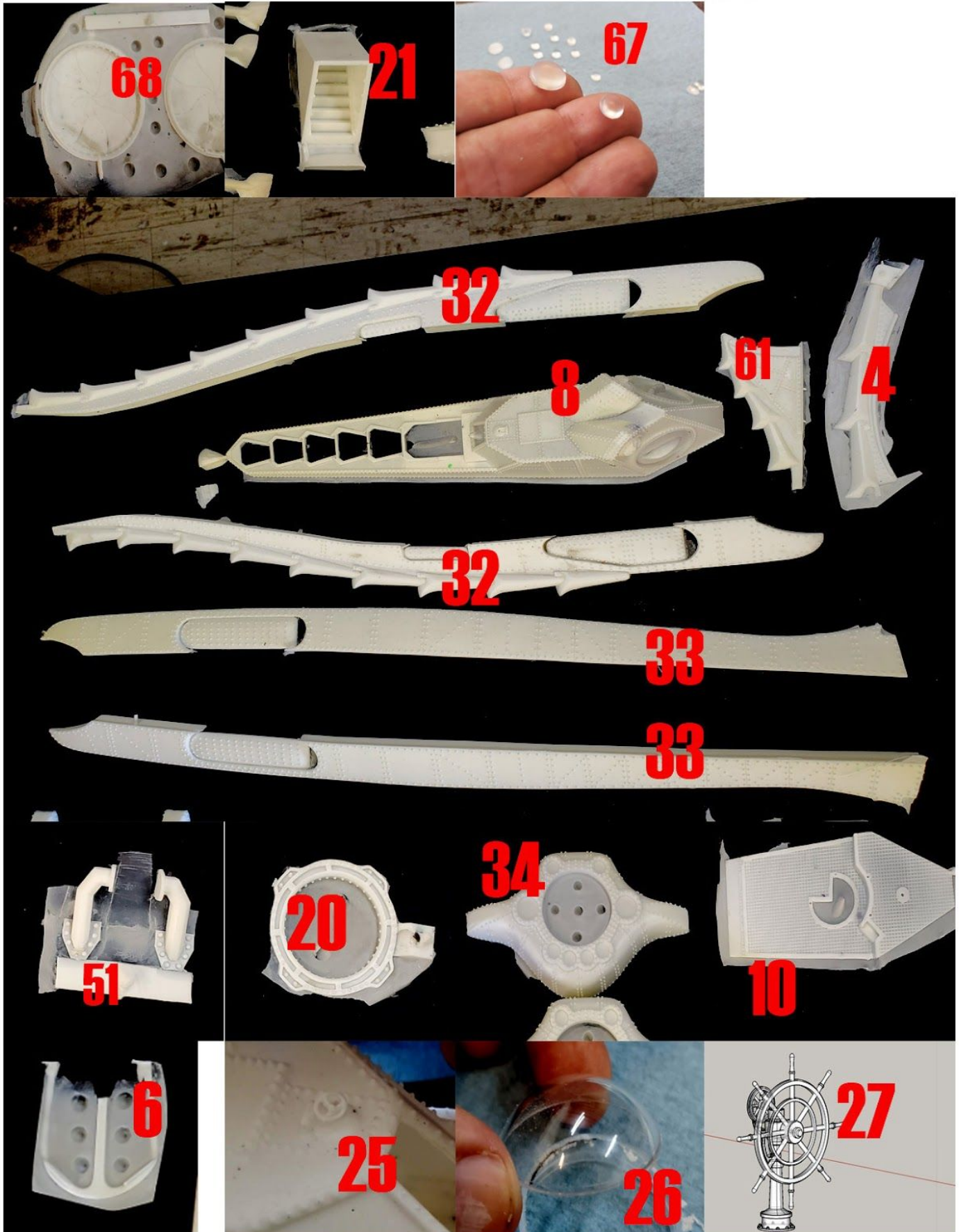
Model Kit Parts - Check prior to assembly. See following pages for a visual reference to each part:

<ol style="list-style-type: none"> 1. Upper hull 2. Lower hull 3. Forward Ram 4. Raker arch 5. Anchor windlass 6. Anchors (x2) 7. Wheelhouse: 8. Main wheelhouse body 9. Wheelhouse walls (port and starboard) 10. Wheelhouse floor 11. Wheelhouse overhead girders (x10) 12. Wheelhouse "jukebox" 13. Wheelhouse piping (x3 pcs) 14. Wheelhouse balance gauge 15. Wheelhouse atomic counter 16. Wheelhouse gauges (x6) 17. Wheelhouse commander 18. Wheelhouse ice cream cones (x2) 19. Wheelhouse map table 20. Wheelhouse viewport surrounds (x2) 21. Wheelhouse descending staircase 22. Wheelhouse retractable hatch 23. Wheelhouse Breathers (x5) 24. Wheelhouse alligator eyebrows 25. Plastic camera obscura hatch wheel 26. Wheelhouse viewports (x2) 27. Ship's Wheel 28. Dive levers 29. Depth tube 30. Clear styrene plastic sheeting 31. Inside rear window frame 32. Forward side keels (x2) 33. Aft side keels (x2) 34. Salon housings (x2) 35. Propeller hub 	<ol style="list-style-type: none"> 36. Propeller blades (x5) 37. Ballast grates (x8) 38. Hatches (x3) 39. Forward dorsal hatch mounting bracket 40. Aft dorsal hatch mounting bracket 41. Ventral hatch mounting bracket 42. Hatch mechanisms (x3) 43. Hatch wheels (x6) 44. Deck cleats (x4) 45. Deck bollards (x4) 46. Spare dive planes (6pcs) 47. Skiff 48. Skiff covers (6pcs) 49. Spiral speed indicator 50. Forward lower keel mechanisms (L/R) 51. Forward lower keel mechanism piping (L/R) 52. Forward lower keel filter (x2) 53. Brass rod 1/32" diameter 54. Lower aft keel phosphoric atomizer (L/R) 55. Prop shroud supports (x4) 56. Prop shrouds (x2) 57. Rudder 58. Rudder shaft retaining plates (x2) 59. Salon viewports (x2) 60. Salon window guards (x2) 61. Dorsal fin 62. Wheelhouse lever 63. Sheet plastic - 1/8" x 4" x 4" 64. Sheet plastic - styrene 2" x 2" 65. Display stand uprights (x2) 66. Nautilus display plaque 67. Clear cast floodlight lenses 68. Salon Irises
---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------



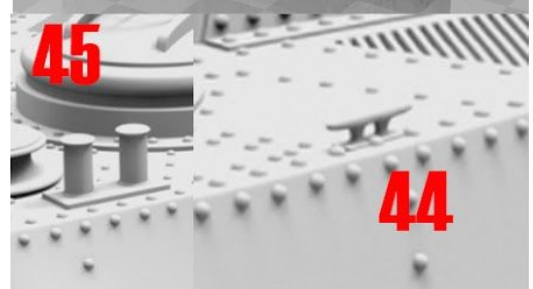
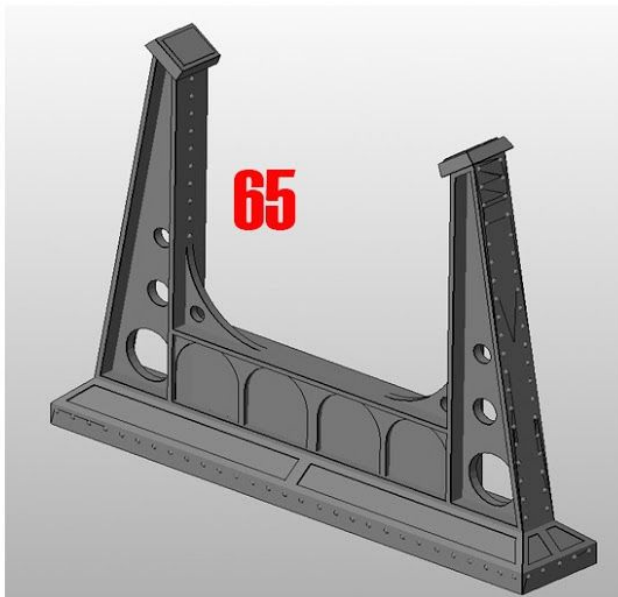
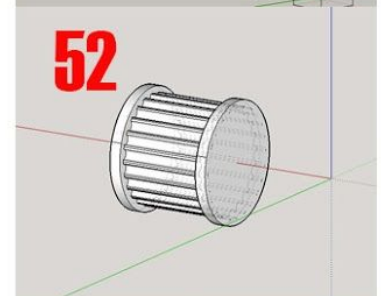
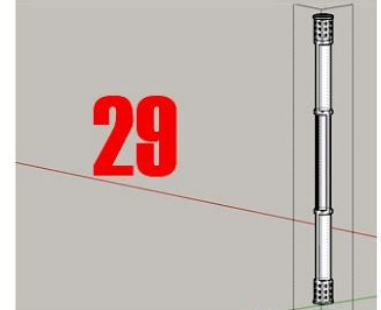
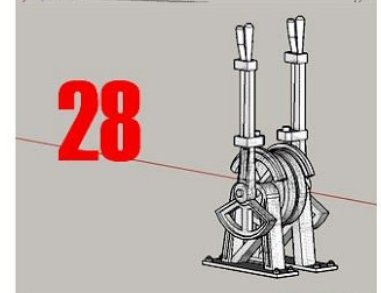
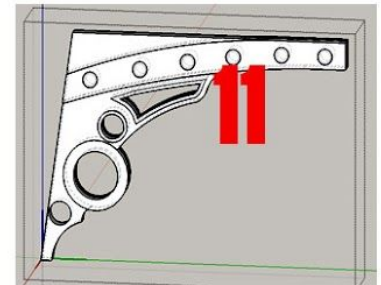
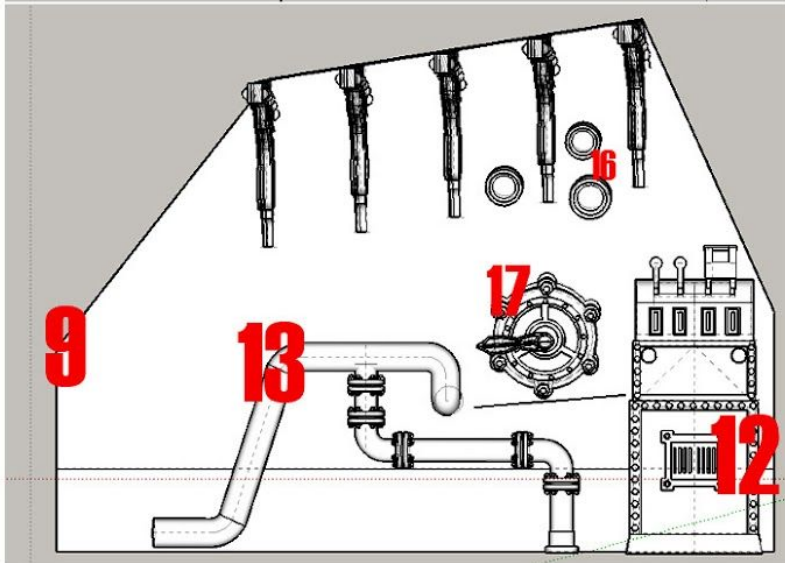
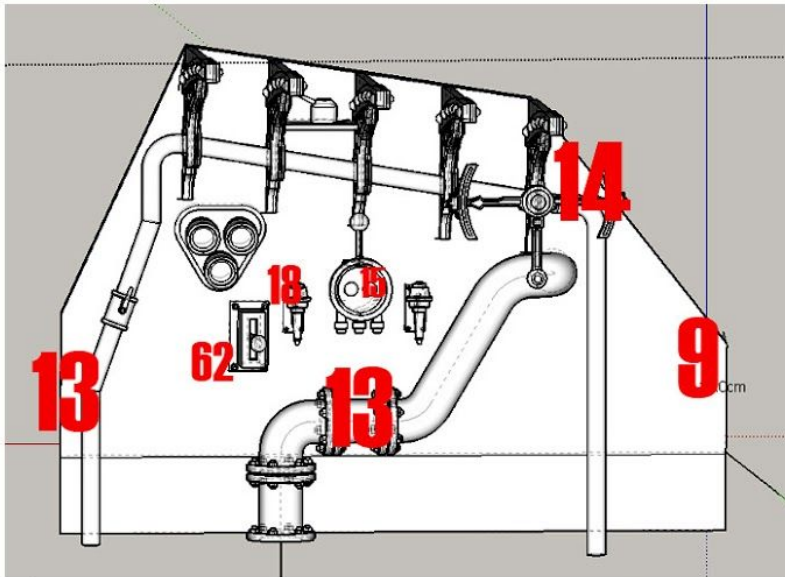
Model Assembly Instructions - Nautilus Submarine by the Nautilus Drydocks

6



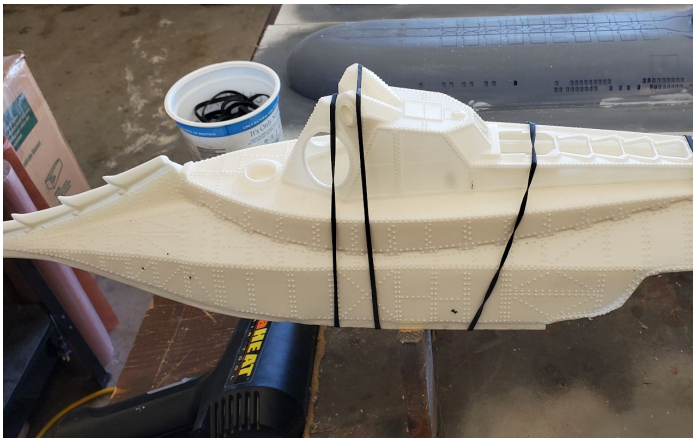
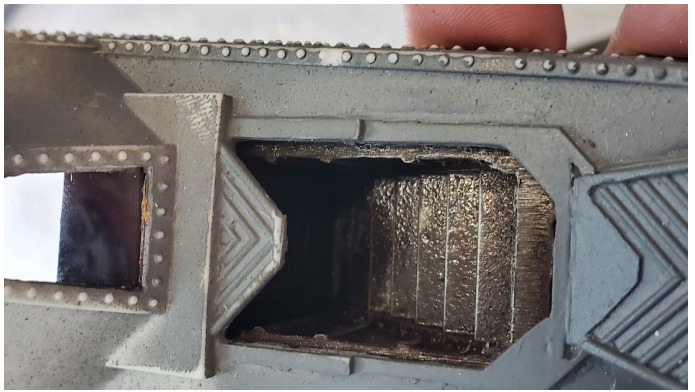
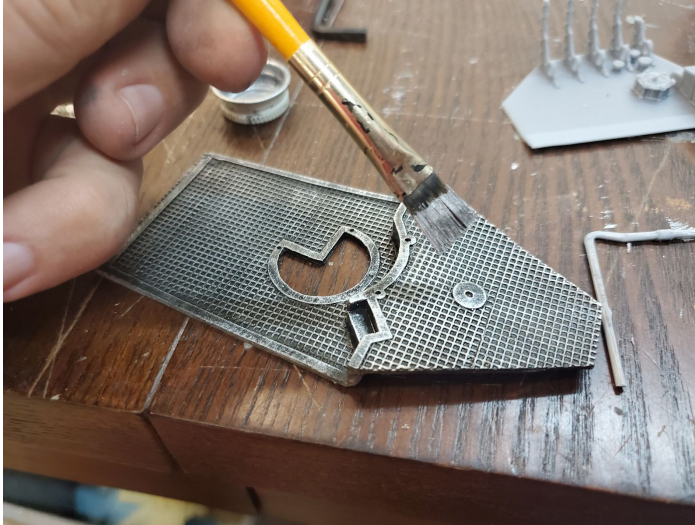
Model Assembly Instructions - Nautilus Submarine by the Nautilus Drydocks

7



NOTE: Photos of the following assembly steps are for reference only. Parts supplied with your kit may differ slightly from these prototype parts.

STEP ONE: Building the Wheelhouse

1	<p>As it is the most detailed part of the kit, I like to begin with working on the Nautilus' wheelhouse. Begin by test-fitting the part on the upper hull, ensuring that the rear of the part is oriented correctly over the tab in the upper hull. If there are any gaps, use large elastic bands or clamps to pull the part into place and carefully heat it with your heat gun to alleviate the stresses. Once cooled, it should retain its shape as a perfect fit against the hull. If there are small gaps, they can easily be filled with thick CA or filler at a later step.</p> <p>DO NOT overheat the part, as you can cause buckling in the resin part that will be exceptionally difficult to repair. Heat just enough that the resin becomes flexible, not malleable.</p>	
2	<p>Test fit the descending staircase in the wheelhouse and file as needed to get a tight fit. I suggest tacking the part in place and then test-fitting the wheelhouse with the staircase attached, just to ensure proper fitment against the upper hull. Once you are assured of fit, mark the part, remove it from the wheelhouse, and pre-paint it.</p> <p>You can also take this opportunity to add a door at the bottom of the staircase, if desired, by simply gluing a piece of flat plastic over the opening. You can also add railings at this time, if desired. It may not hurt to pre-paint this part at this time as well.</p>	
3	<p>Prepaint the wheelhouse floor. I spray paint flat black and then dry-brush with silver to bring out the amazing grating details.</p> <p>Install the wheelhouse floor into the upper hull. You may want to file or sand the edges of this part in order to leave a gap around the perimeter. This will allow better fitment of the wheelhouse walls in the following steps.</p>	

Model Assembly Instructions - Nautilus Submarine by the Nautilus Drydocks

9

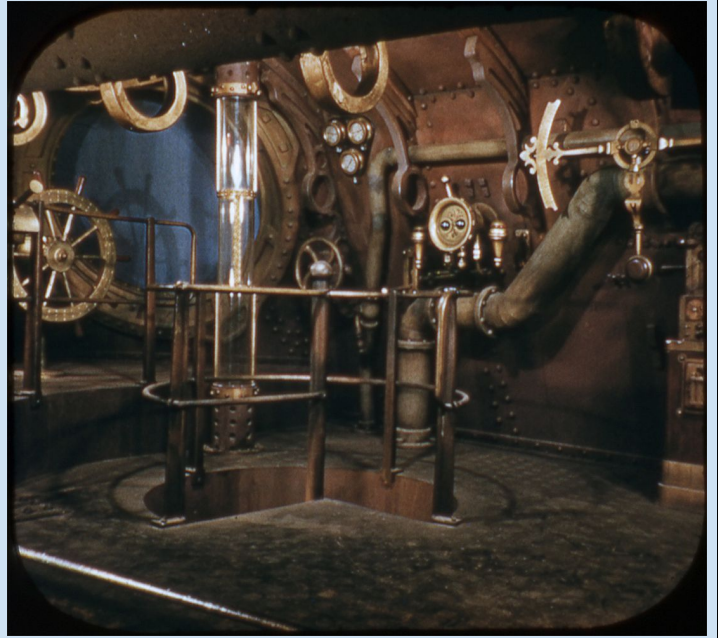
4

A Note On Painting:

This would be a good time to pre-paint the interior of the wheelhouse with a base coat of paint. You can use your artistic license at this point. The set of the movie had rust-brown walls and brass/gold instruments.

Bear in mind that there is a difference between *true* appearance and *scale* appearance. If you're lighting the boat, the color of your lighting can change the interior color dramatically. Also bear in mind how reflective the surfaces are.

Play around with colors and use what you feel will look best. This is your model. Do what looks good to YOU!



5

Install the map table in the rear of the wheelhouse. Some sanding or filing of the edges may be necessary for a perfect fit.

The table slips tight against the wheelhouse walls at the top and sides and fits tight against the wheelhouse floor.



Model Assembly Instructions - Nautilus Submarine by the Nautilus Drydocks

10

- 6 Glue the wheelhouse walls to the interior of the wheelhouse casting. Note that they will protrude beyond the bottom of the part and butt up against the wheelhouse floor. Some filing or sanding may be required in order to get a perfectly flush fit. Also note that the recess for the wheelhouse in the upper hull has a lip around it. You'll need to ensure that you leave a 1/16" gap between the bottom of the wheelhouse interior walls and the exterior walls to allow perfect fitment.

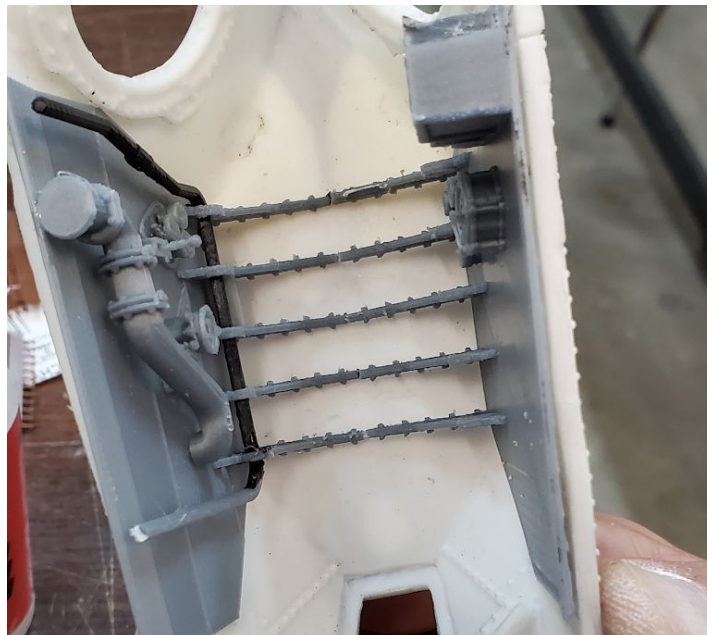
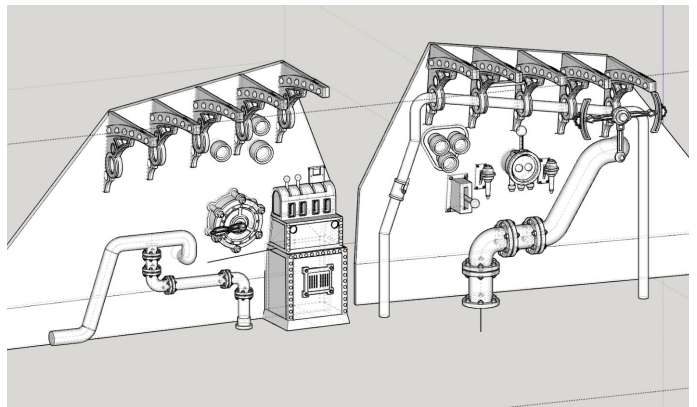
Glue the overhead girders to the wheelhouse walls, using the notches for spacing. These girders are all of equal size, so when you install the wheelhouse walls into the wheelhouse itself, you'll need to trim the tips so that they match up with their counterpart on the other side.

Note the position of the interior parts using the diagram to the left and install the balance gauge on the starboard wall on the last girder

Installation of the thin pipe in the starboard wall will require cutting it at the point where it is hidden behind one of the girders and then slipping it into place.

Note that the rear pipe on the port side wall butts against the map table installed in the previous step.

The wheelhouse "jukebox" on the forward part of the port-side wall butts tight against the raised wheelhouse floor dias. You can either install on the wheelhouse wall, or on the floor of the wheelhouse. Just check fitment prior to committing to glue.



- 7 Once you are satisfied with the placement of the interior detail pieces, install the ship's wheel and dive levers.

The ship's wheel is placed over the circular plate on the wheelhouse floor.

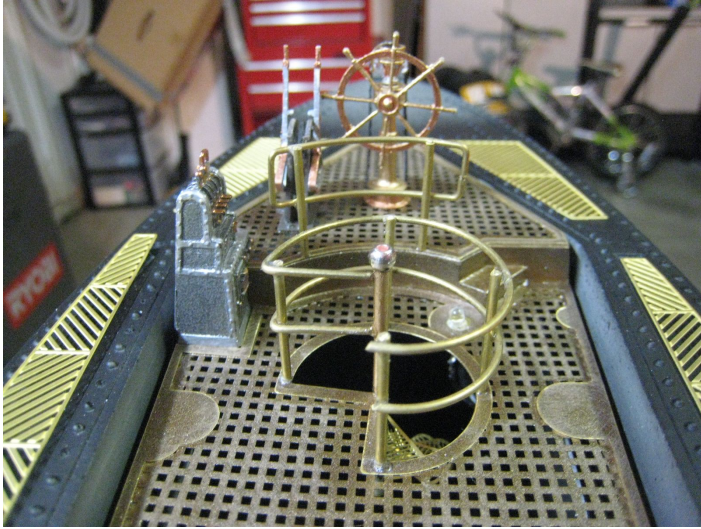

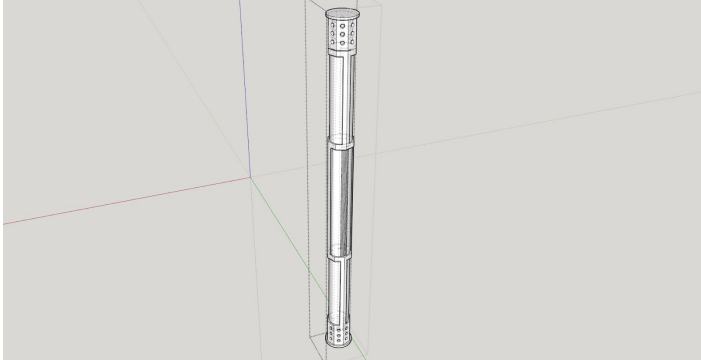
The dive levers are situated on the port side of the raised dias, next to the ship's wheel. Because the movie producers elected to build the filming set out of scale to the filming miniatures, the wheelhouse is significantly more cramped inside than the movie might indicate. Placement of the dive levers will be tricky, as you need to allow proper spacing between the ship's wheel and the wheelhouse wall and viewport.

Play with this spacing until you're satisfied with the look and feel of the display and then glue it down permanently. Ensure that the dive levers do not interfere with the wheelhouse when put in place. Be sure to allow for the clear window when you do this fitment.



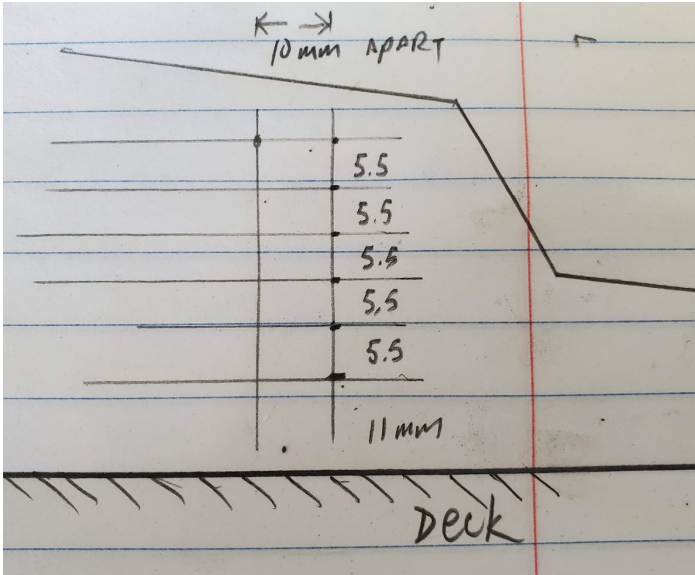


Model Assembly Instructions - Nautilus Submarine by the Nautilus Drydocks

11

8	<p>At this point you can add additional details to the wheelhouse by fabricating and installing the brass railings.</p> <p>There are two areas to consider, the first being the rear rail on the back of the conning floor. There are two post holes indicated in the wheelhouse floor part. The railing is a simple rectangular design that is bent to follow the curved contour of the dias.</p> <p>The spiral staircase railing has the same simple design, but you must fabricate and install five posts and then bend the rails to follow the perimeter of the opening. I find that using a cylinder with a diameter that is approximately 30% smaller than the desired diameter as a bending jig will yield a bend that is close to what you're after.</p> <p>NOTE: The kit <i>does not</i> include parts for the creation of the brass railings.</p>	
9	<p>Install the interior viewport surrounds. The protruding trapezoidal brackets are oriented at the 2, 4, 8 and 10 o'clock positions.</p> <p>Make sure that these inserts are perfectly centered on the viewport openings by checking alignment from the outside of the wheelhouse prior to permanently glueing in place.</p>	
10	<p>The dive tube is a clear part. The outer framework can be painted gold/brass.</p> <p>The dive tube is installed just to the left of the stairs that go up to the conning platform. Check fitment between the floor, dive tube and wheelhouse roof prior to glueing in place. I recommend putting a brass rod in the wheelhouse floor and drilling a 1/16" hole in the bottom of the dive tube to act as a mounting pin. This adds strength and makes fitting the part much easier. Some trimming of height may be necessary</p>	



Model Assembly Instructions - Nautilus Submarine by the Nautilus Drydocks

12

11	<p>The wheelhouse has ladder rungs that run up the port and starboard side of the assembly. There are six rungs per side, plus another one which is mounted to the roof, 14 in total.</p> <p>Use the supplied 1/32 diameter brass rod to create your rungs. To do so, bend the rod into shape with pliers. I find that if you use a tabletop to do the bending and press firmly down while you do so, you can get a nice, sharp bend. Each run is u-shaped with the ends exactly 10mm apart (center to center).</p> <p>Using the drawing at the right as your guide, use your 1/32 drill bit to drill out the 28 holes needed to mount your rungs. Press-fit each rung into place and once you have spacing of approximately 3mm from the hull face, secure in place with a drop of thin CA glue.</p> <p>If you're up for the investment, MicroMark sells a superb "ladder rung bender" that makes the creation of uniform rungs a snap!</p>	
12	<p>Glue the small hatch wheel to the top of the camera obscura hatch on the top of the wheelhouse</p>	
13	<p>Trace the perimeter of the rear wheelhouse window on to the supplied clear plastic sheeting and cut out to shape. This part should go into the inside face of the rear wheelhouse and fit flush against the frame.</p> <p>Once placed properly, install the inside rear window frame over the clear part and secure in place. Be careful if you use CA to adhere this part, as the fumes can fog the clear plastic. You may opt to use white glue, clear styrene adhesive, or other water-based glue for this part.</p>	

Model Assembly Instructions - Nautilus Submarine by the Nautilus Drydocks

13



14	<p>The breathers can be mounted in either open or closed configuration. Each one is a different size, beginning with the largest just behind the wheelhouse and going to the smallest just in front of the dorsal fin.</p> <p>You will need to sand/file each of these parts to fit perfectly. It is possible to drill a very small hole in the base of each breather in order to create a hinge mechanism. In this case, a mounting bracket would also need to be fabricated from plastic sheet to create a mounting point on the wheelhouse. The exact implementation of this is up to the builder and is beyond the scope of the basic assembly covered in these instructions.</p>	
15	<p>The rear access stairway can be displayed in either open or closed state.</p> <p>The way that the breathers work means that you must have the hatch in the retracted position in order to raise the breathers. If you elect to have raised breathers, you must display the sliding hatch in the retracted position.</p> <p>If displaying closed, simply trim the part to length and glue in place.</p> <p>If displaying open, cut the sliding hatch approximately where the angled faces intersect as per the photo at right. Glue this part to the retraction housing just under the rear wheelhouse window, approximately 1.5mm from the top of it.</p>	

At this point, you should have a completed wheelhouse assembly, ready for priming and painting. Mask off the wheelhouse viewports using painter's tape applied from the inside of the wheelhouse. Mask the rear window with the same tape, carefully cutting the edges with your hobby knife to get a perfect fit. Ensure all edges of the tape are fully pressed down in order to avoid bleeding of paint and weathering at a later step.

STEP THREE: Assembling the Hull


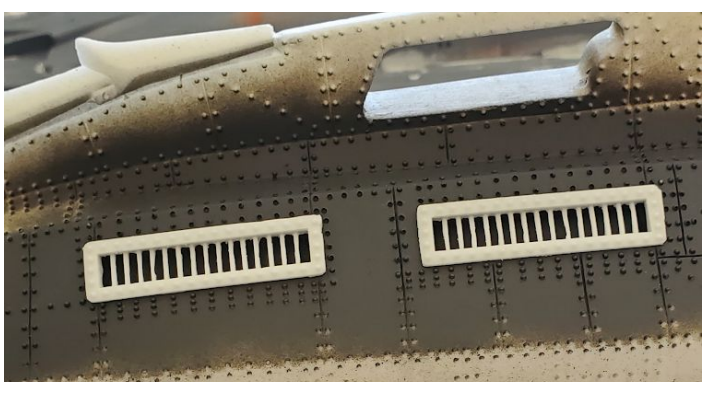


Of all steps in the buildup of this model, the next one will be the most challenging and potentially frustrating. Gear up for some trial, error, trial, error, and finally (after much coffee and/or liquor) you'll end up with a nicely assembled upper and lower hull.

Let's get started...

<p>16</p>	<p>There are 9 main parts that we are going to be dealing with in this step. These include the upper and lower hulls, the left and right salon bubbles, the left and right forward side keels, and the left and right rear side keels.</p> <p>The upper and lower hull must be glued together permanently, so if you have ideas for enhancements to your build for anything that will require access to the inside of your model, now is the time to think through them. These can include things such as the Nautilus Drydocks LED lighting kit, and the operational propeller motor, available separately from www.nautilusdrydocks.com</p> <p>Place the lower hull on your boat stand and then place the upper hull on top. Note the alignment of the parts. Check the front side keel against the nose of the boat and see if any of the lip/flange needs to be ground down or removed in order to achieve proper alignment between the top and bottom hulls. I found that the nose flanges needed to be ground down, but the rest of the boat required spacing of around 1/8" between the hull flanges for a perfect fit.</p>	
<p>17</p>	<p>Install the spiral speed indicator in the recessed opening in the lower keel.</p>	



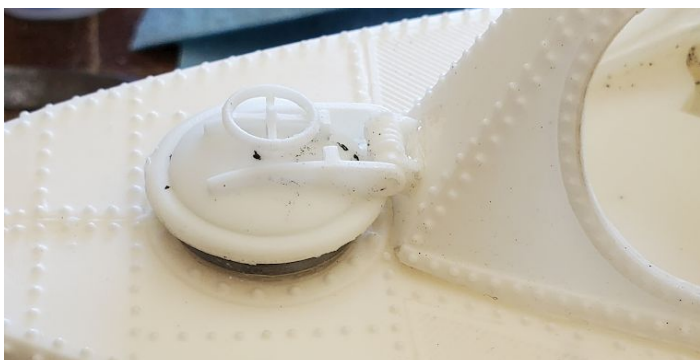

Model Assembly Instructions - Nautilus Submarine by the Nautilus Drydocks

15

18	<p>Before we glue the top and bottom hulls together, let's add the detail parts to each. It's easier to place each on a flat surface to work on them than having to work with the stand.</p> <p>Start by applying flat black paint to the ballast intake recesses.</p>	
19	<p>Insert the ballast grates into the recesses, ensuring you fully press them flush with the hull prior to securing with thin CA glue</p>	
20	<p>There are three hatches. Test fit each against the three hatch openings in the upper and lower hull and mark them as to their locations (they are different sizes)</p> <p>Install a hatch wheel in the top of the parts. Install the hatch locking mechanisms in the lower part of each hatch and add the interior hatch wheel</p>	 

Model Assembly Instructions - Nautilus Submarine by the Nautilus Drydocks

16

21	<p>OPTIONAL: If you are not going to make your hatches functional, you can skip this step.</p> <p>Drill out the hatch access holes using a large drill bit, and then progressively larger sanding drums on your rotary tool. You can also use large, flat woodworking bits, or hole saws of the appropriate size. Be sure to leave approximately 2mm of wall on the hatch access tubing.</p>	
22	<p>The upper rear dorsal hatch is secured to the dorsal fin using the u-shaped mounting bracket.</p> <p>You'll note that the dorsal fin has not been permanently bonded to the upper hull yet. This is done so that you can get proper spacing between the fin and the hatch tube. The mounting bracket should be mounted so that the inside edge is situated in such a manner that when the hatch is opened, the hatch wheel fits into the cutout of the dorsal fin.</p> <p>Once you have the bracket and fin in place, secure with thin CA permanently.</p> <p>You may find that you need to fabricate a spacer to fill any gap between the dorsal fin and wheelhouse parts.</p>	
23	<p>The forward dorsal hatch gets mounted to the forward face of the wheelhouse.</p> <p>Place the wheelhouse assembly in place and set the hatch on the hatch tube in the upper hull. Put the hatch mounting bracket in place. You may need to file the sides in order to get a snug fit between the hatch bracket arms.</p> <p>Once the mounting bracket is in place and you're satisfied with the placement, secure permanently in place with thin CA, ensuring none bleeds into the seam between the hatch and hatch bracket parts.</p>	
24	<p>In the same manner, the lower ventral dive hatch is set in place, the mounting bracket is set in place, and the bracket secured to the lower hull permanently.</p>	

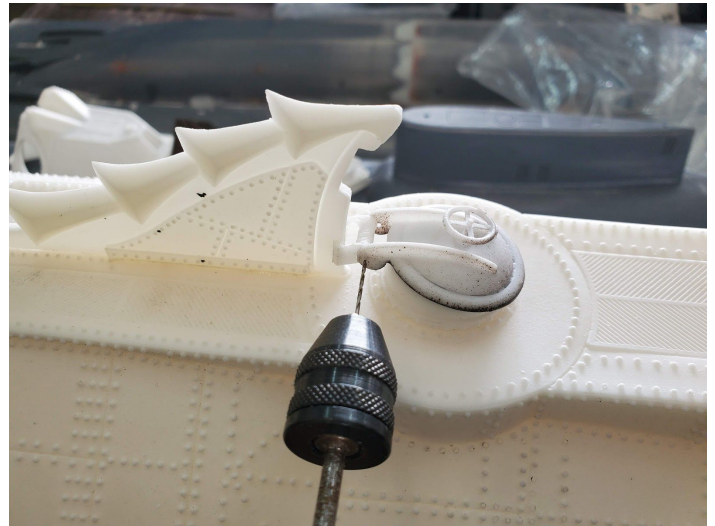
Model Assembly Instructions - Nautilus Submarine by the Nautilus Drydocks

17

25

To make the hatches functional, drill a 1/32 diameter hole through the hatch arms and bracket, ensuring perfectly perpendicular orientation to the boat's long axis. A crooked hole at this point will get you a hatch that sits properly when closed, but is crooked when opened.

Insert a 1/32 diameter brass rod into the hole and check the operation of the hatch. It should open and close smoothly. Once fit is assured, snip the rod flush.. Use a dab of thick CA to cover the exposed ends and secure the pin in place permanently. Do not use thin CA as it can allow the adhesive to flow through the parts and fuse them permanently together.



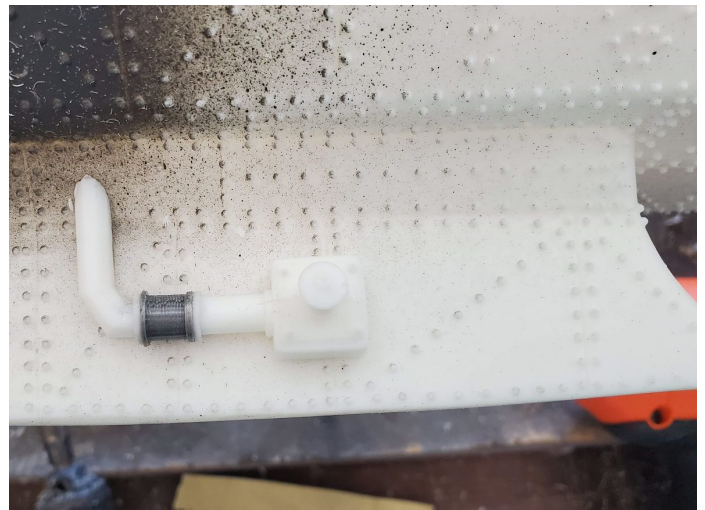
26

The forward lower keel mechanism gets installed by drilling out the orientation holes in the lower hull and aligning the parts to them. The piping extends from this part toward the bow.

Use the supplied reference photos later in this manual to ensure proper location.

The perimeter of the mechanism filter part is then sanded so that it fits centered to this piping.

The mechanism pipe riser is then installed



27

The phosphoric atomizer part is installed in a similar manner on the rear lower keel

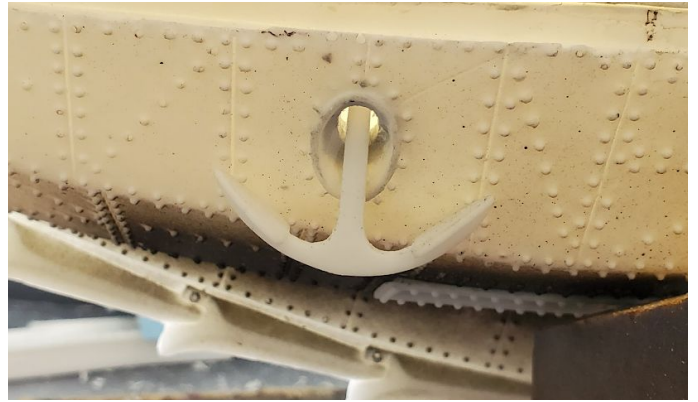


Model Assembly Instructions - Nautilus Submarine by the Nautilus Drydocks

18

28

The two anchors are now installed in the lower hull by drilling out the anchor retraction housings with a bit large enough to accommodate the shaft of the anchor. Note that you will want to drill this hole at an approximate 45 degrees into the hull as you want the anchor to hang as upright as possible.



29

OPTIONAL:

If you will be installing lights, you will want to drill out the floodlight holes of the salon bubbles. Leave a 1mm flange around the inside perimeter to serve as a stop for the floodlight lenses at a later stage.

If you will not be lighting the model, you can skip this step and keep the flat bottoms of the floodlights as they are.



30

The salon iris inserts can be glued to the salon bubbles. Ensure that they are perfectly centered in the opening before committing them with CA glue.



Model Assembly Instructions - Nautilus Submarine by the Nautilus Drydocks

19

31

Adhering the top hull to the bottom is going to pose the biggest challenge. Take your time. Ensure fitment. Commit to glue only when you're satisfied with how things are looking.

Begin with the top hull and one of the salon bubbles. Use the supplied plastic sheet to cut tabs measuring approximately $\frac{1}{4}$ " x $\frac{1}{4}$ ". You will use these to create a backing that you can rest the salon bubble on to ensure that the part sits at the correct depth in relation to the upper hull. Tack these tabs to the inside face of the upper hull where the salon bubble will be installed. Ensure that you do so on the recessed area and not the thicker hull area or else your depth will not be correct.

Rest the salon bubble in place and check for correct depth in relation to the upper hull. Tack the top edge of the salon bubble to the upper hull, moving slowly and glueing the edge about $\frac{1}{2}$ " at a time. Thick CA is what you'll want to use as your adhesive of choice.

You may need to gently heat the bubble in order for it to perfectly conform to the hull.

Once you're satisfied with the fitment of the upper edge, commit it with a full bead of the thick CA glue



32

Once the upper edge is fully cured and solidly installed, place the lower hull against the lower edge of the salon bubble and use the same process of placing mounting tabs and then methodically tacking the edge of the bubble against the lower hull. Once perfectly in place, commit with a full bead of thick CA.

Once both sides of the hull are glued together in this manner, you'll have the proper spacing to proceed to the next step.



Model Assembly Instructions - Nautilus Submarine by the Nautilus Drydocks

20

33

Done properly, you will have a very minimal gap, and the thick CA works well as a gap-filler. Use primer on the finished seam to check for gaps, bubbles or voids



34

Check the spacing of the upper and lower hull sections by using the side keels. Use the supplied plastic to create spacers of the correct width and then glue the upper and lower hulls together at these spacer points.

You'll likely find that the upper and lower hulls will have a gap of about $\frac{1}{8}$ " between them, but that the nose of the boat will need to have the edges filed so that they meet closer together at the correct spacing.

Again, use the side keels as your guide for the proper gap to leave between upper and lower hull pieces.



Model Assembly Instructions - Nautilus Submarine by the Nautilus Drydocks

21

35

OPTIONAL:

If you would like to make the dive planes practical, remove the cast dive planes from the side keels by scoring along the seam with a sharp hobby knife. That done, you should be able to wiggle the dive plane up and down and snap it free with minimal effort.



36

Sand the inside faces of the side keels in order to ensure maximum adhesion.

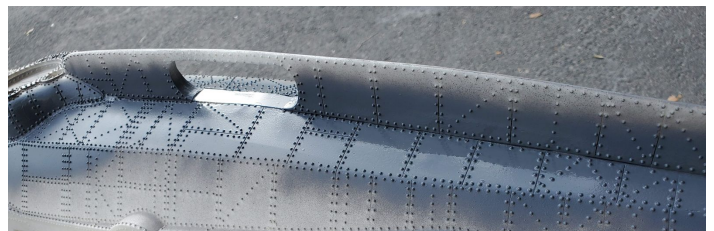
Start at the salon bubble and install all four side keels by tacking from the center of the boat and working your way forward. You may need to heat the parts to get them to fit perfectly with no gaps and ensure that they are not under excessive tension when installed.



37

Properly done, there should be very little in the way of gaps to address with the side keels. Use thick CA along the seam and wipe clean to glue the parts together and fill any small gaps.

Prime the seam and check for any areas of concern.



Model Assembly Instructions - Nautilus Submarine by the Nautilus Drydocks

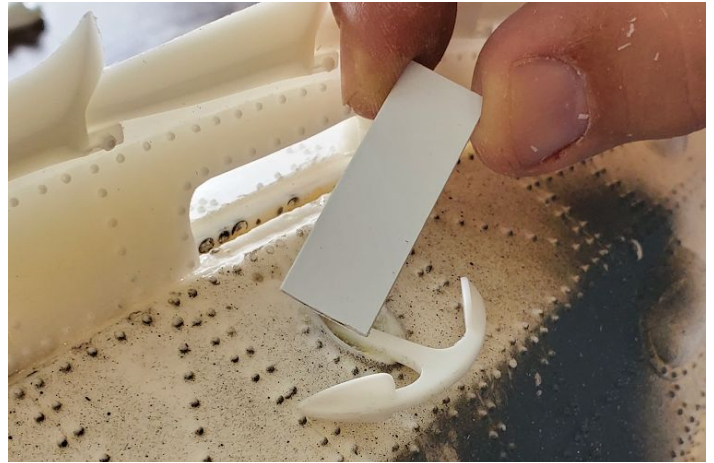
22

38

After you install the side keels, you will notice that the areas behind the dive planes are going to show the gap.

Use the supplied styrene sheet to cut rectangular blocking plates that you can install over these gaps.

Note that this illustration shows the dive planes removed for the optional step of making them practical.



39

If you are making your dive planes practical, place them in the open holes in the side keel and ensure you have a proper perimeter gap by sanding/filing the edges.

Mark the center of the dive plane with a pencil, and the corresponding locations on the side keel and hull.



Model Assembly Instructions - Nautilus Submarine by the Nautilus Drydocks

23

40

Drill a 1/16" hole through the center of the diveplane. I find that you will want to file a flat spot on the edge of the part prior to trying to start your pilot hole in order to stop bit wander.

This is a very critical step and it is easy to misalign the bit and drill through the face of the dive plane. Measure twice, set up carefully, and drill slowly.

Note that the photo here shows a 3/32" drill bit. While you can make that work, the smaller hole will give you more room for error.



41

Mark out the placement of the 1/16" hole for the side keel and hull, ensuring that it is aligned to your previous marking and centered on the width of the side keel.

Put the dive plane in place and press a length of 1/16" brass rod through the side keel, through the dive plane, and finally into the hull. Snip any excess rod off with some side-cutters.

TIP: Put the brass rod in a drill chuck and spin the shaft into the parts. This makes installation much easier than trying to force the rod straight in.



42

Properly done, your dive plane should have a minimum of 30 degrees of travel up and down. A drop of thick CA on the outside exposed rod will hold it in place.

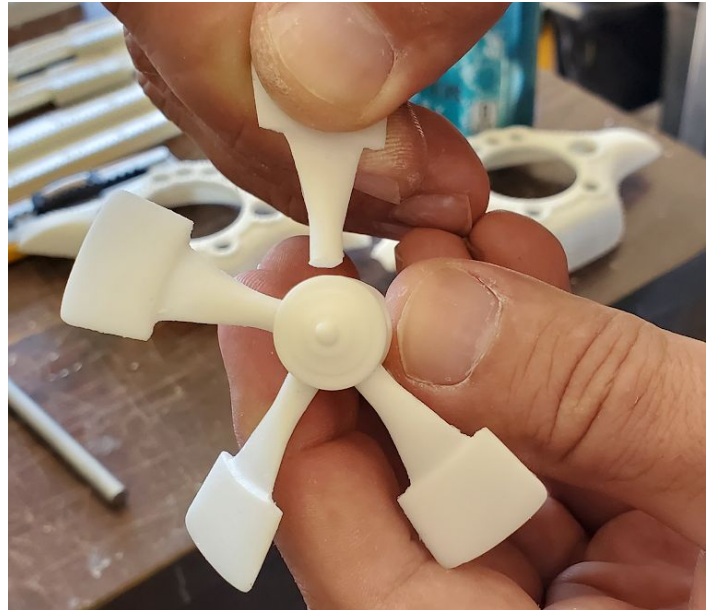


43

The propeller is assembled from six pieces: the five blades and the central hub. These parts have very good friction fit, and once placed properly, thin CA will lock them in place.

Blade angle should be approximately 30 degrees from the plane of the propeller.

It would be a good idea to draw out a template on a piece of paper and use that to ensure that you install the blades at perfect 72 degree increments (360 degrees / 5 blades).

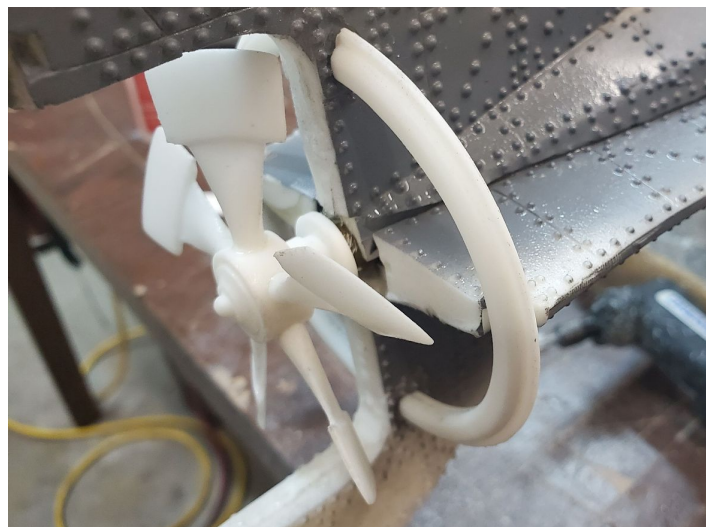


44

If necessary, use filler to make the rear of the hull, side keels and tail verticals meet with a perfectly flush face.

Drill out the hull to accept the propeller shaft, press the propeller into place and adhere with CA glue. You can also elect to leave the propeller unglued so that it can be spun by hand.

Install the propeller guards, ensuring that both sides are parallel to each other. Some filing of the side keels may be necessary.



45

Mark out the propeller guard at 45 degree increments from vertical and horizontal. You can use a compass or calipers to measure the center of each upper and lower half of the left and right guards.



Model Assembly Instructions - Nautilus Submarine by the Nautilus Drydocks

25

46

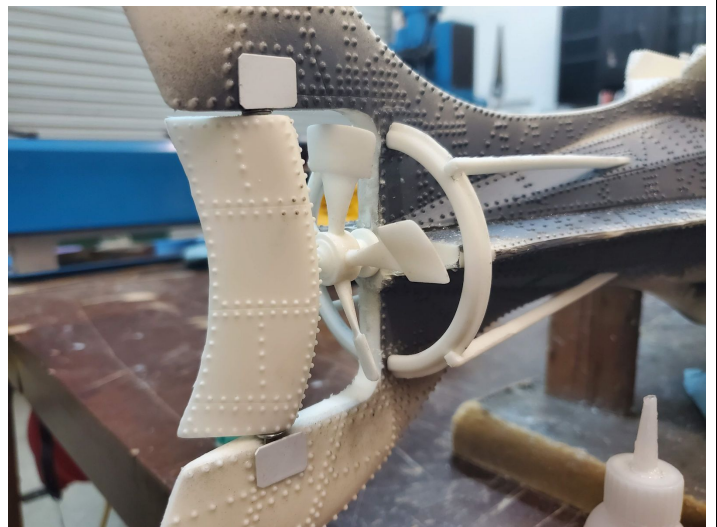
The propeller guard struts are installed at the marked points using thick CA. The bases are adhered to the pads located on the upper and lower hulls.



47

The rudder is installed into the recesses in the upper and lower tail. Ensure smooth swiveling of the propeller. You may need to place some small washers on the upper and lower shafts in order to get perfectly centered placement between the upper and lower tail pieces.

Place the rudder shaft retaining plates and check the rudder again for movement and binding. Once satisfied with the fitment, glue the retaining plates in place



48

The skiff covers are composed of six individual parts that can be either glued to the skiff itself, or kept as a separate part to make the interior of the skiff accessible.

The two largest pieces get installed onto the skiff itself.



Model Assembly Instructions - Nautilus Submarine by the Nautilus Drydocks

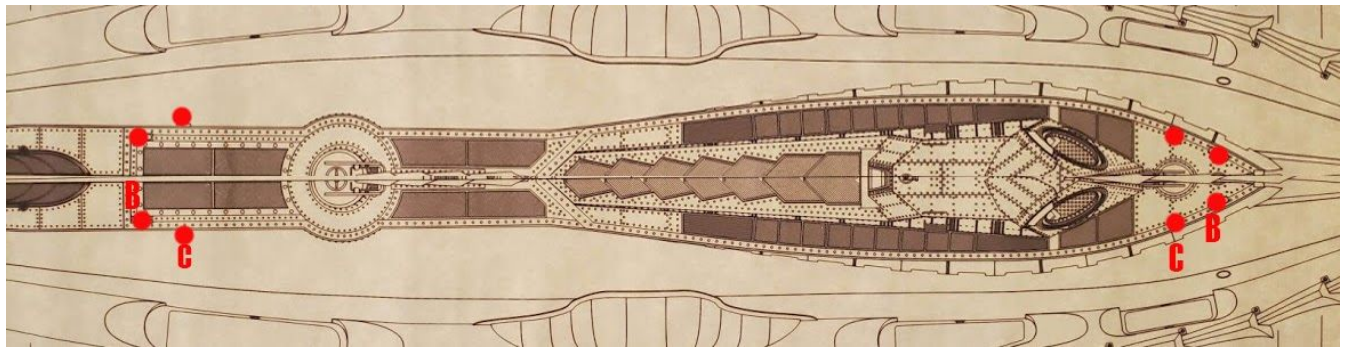
26

49

The two smaller sections are stacked together and glued. If you use a flat surface, you can assemble this by stacking the parts and glueing together with thin CA



There are 4 cleats (marked C below) and 4 bollards (marked B below) to install. Note that the rearmost cleat is attached on the vertical deck face approximately 5mm from the top of the deck.



50

You can elect to permanently affix the wheelhouse to the upper hull or you can create a bolt-down or magnetic hold down system so that you can retain access to the interior of the wheelhouse shell.


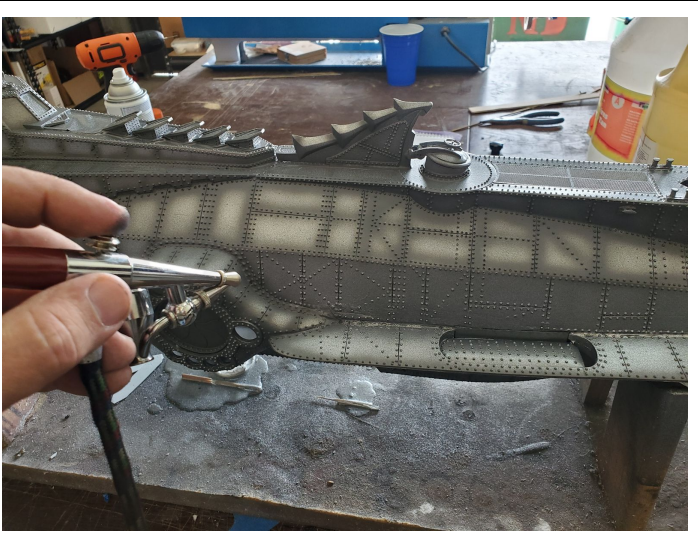
The raker arch is then attached to the top of the wheelhouse and the bracket just behind where the rakers in the upper hull end.



STEP FOUR: Painting the Model

There is, honestly, no right or wrong way to paint the model. If you have a vision for what you want it to look like, then go right ahead and paint it that way. The Nautilus in the 1954 film had no less than three different paint finishes for the various models (bright brass for the filming hero model, rusty brown for the deck set, and even straight black for the glowing ram attack at the beginning)

What I will outline in the following steps is simply how I elected to paint the boat. Feel free to follow along or take your own stab at it.

51	<p>Block off the wheelhouse windows with rags, cotton balls or paper towel to stop paint from getting onto your beautiful wheelhouse interior. Also be sure to block off the descending staircase if you elected to model the rear hatch retracted.</p> <p>Begin by priming the model with a high quality spray primer. This will help the paint adhere to the model and help smooth out any scratches or imperfections in the resin.</p> <p>Once your prime coat is dry, paint the entire model with a dark silver. This will provide the metallic sheen that is visible under the rust coat we will apply later.</p> <p>For the following steps, it is assumed that you will also paint and weather the skiff in the same fashion (don't forget!)</p>	
52	<p>Use your airbrush to lightly highlight the panel lines. I used a shade of gray just slightly darker than the silver base coat. If the panel highlights look too stark in contrast, you can "dust" the entire model with the same dark gray to help even things out.</p>	

Model Assembly Instructions - Nautilus Submarine by the Nautilus Drydocks

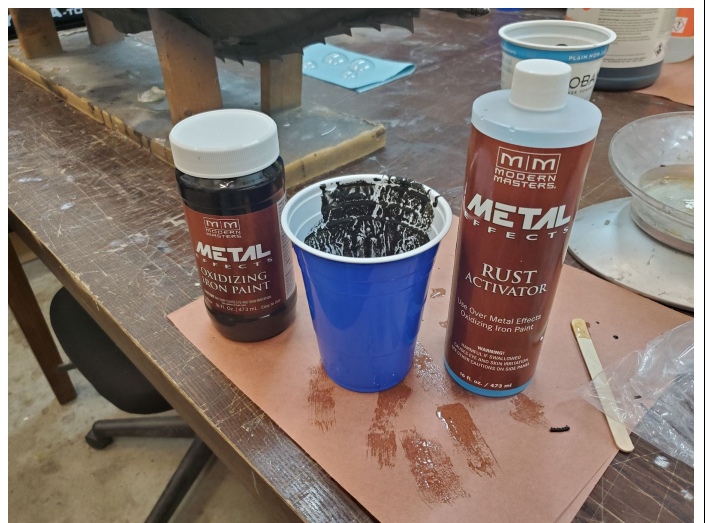
28

53

The “secret sauce” to the painting that I use is the product called, “Modern Masters Iron Paint”. This is a solution of actual iron particles suspended in an oily (somewhat smelly) solution. It comes out thick and black, like tar.

Unlike their previous iteration, you need to buy their blue activator solution in order for the paint to properly oxidize.

You want to mix the activator and the paint approximately 50/50 to start with. When you run your brush up the side of your mixing cup, it should leave an opaque finish. Play with consistency until you’re happy with it.



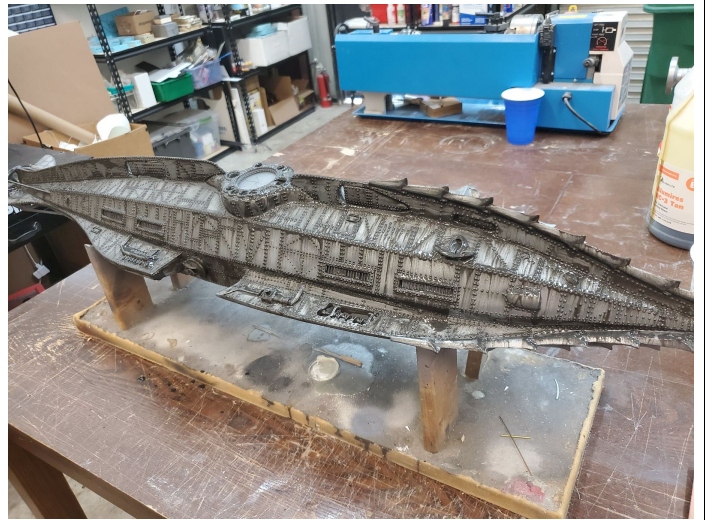
54

At this point, you simply wash the entire model (except the irises!) with the solution. Let it flow down the model and make puddles. Always apply the solution vertically from top to bottom so that it helps with the illusion of weathering flowing down the hull.

It will look like a muddy, nasty mess. Good! That’s what we’re after!

Once the entire model is covered, let it dry. As it does so, it will change from black to dark brown to light brown. As much as you might want to, don’t touch up the finish if you think it needs more or less. Doing so will make the “repair” very evident.

Let it do it’s thing, then take stock.



55

Once the model has dried, it will be quite orange. Don’t worry. This is all part of the process.

Use a shop rag to gently wipe the hull in a downward direction. This will remove some rust from the open parts of the panels while leaving the rust in the areas that it would naturally focus, in recesses, seams, joints and around rivets.

Don’t be overly aggressive in removing the rust. We want to keep things rusty!



Model Assembly Instructions - Nautilus Submarine by the Nautilus Drydocks

29

56

We will now hit the model with *semi gloss* clearcoat. Matte finish will not provide the proper coloring (and actually turns some of the rust pink!). Gloss makes the whole thing too shiny. Semi gloss is a nice balance between the two.

You can apply it in lighter coats. What we're trying to do here is get rid of the dusty orange and let the clearcoat darken up the rust finish. Doing so in light coats helps keep the rust varying shades of rust.



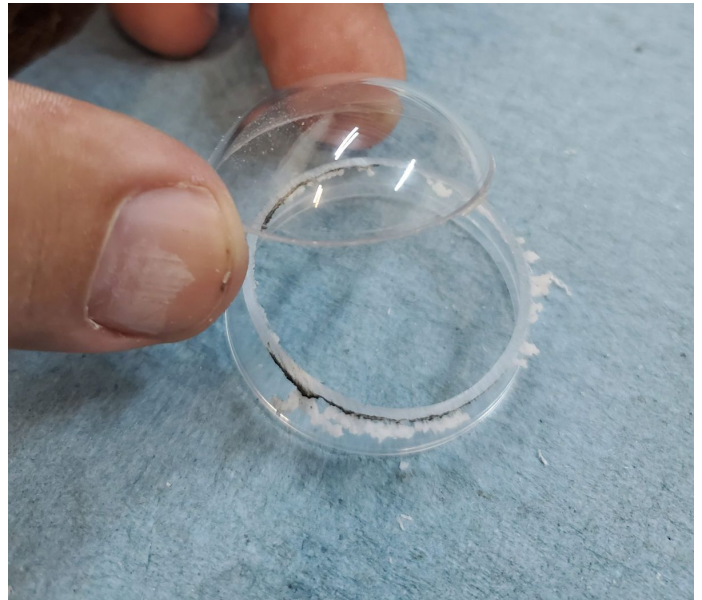
57

We are now at the point where we can cut and install our clear windows.

I find the best way to go about this is to cut the window about $\frac{1}{8}$ " larger in diameter than the opening, and then use coarse grit sandpaper to grind down the bottom face until it fits perfectly into the opening. To do so, place the sandpaper rough side up on a flat surface and rub the lower face of the window on it.

This is not a quick process, but you don't want to cut away too much and have the window slip through the flanges and into your model's interior.

You will do this for both wheelhouse windows and both salon windows using the same procedure.



Model Assembly Instructions - Nautilus Submarine by the Nautilus Drydocks

30

58

Done correctly, the window will rest on the flanges in all locations.

If you're good, the parts will actually press-fit into place, requiring no glues to keep them in place. If you can manage this, you're also retaining access to the areas behind them with little fuss in the future. If not, don't stress. Use some clear silicone at a few spots along the perimeter to hold it in place.



59

I like to use pastel chalk to mimic the streaking that flows downward from the scuppers. In reality, the Nautilus' waterline is very high (just above the top of the salon housing), and the streaking would not extend below the waterline, but as this is for display, use your artistic license and do what looks good to you.

A bit of white chalk from the edges of the scuppers applied with a soft brush is what you want. Don't use too much. With weathering, less is more. Apply a bit, then take a few steps back. You'll be surprised how far a little will go.



Model Assembly Instructions - Nautilus Submarine by the Nautilus Drydocks

31

60

The salon iris should, in theory, still be the same color as your basecoat, a dark silver. I like to drybrush a bright silver over the leaves to help offer the illusion of metal that has been rubbed.

Once you're happy with your iris, install your salon window, and the salon framework over top of that.

The clear cast floodlight lenses should be filed to fit their respective holes. You can use white glue to adhere them into place. If you will be using the model for RC applications, use thin CA glue. These lenses should sit so that the crease around the perimeter is even with the face of the hull that they are mounted in. (IE: The rounded part of the lens should protrude past the face of the hull)



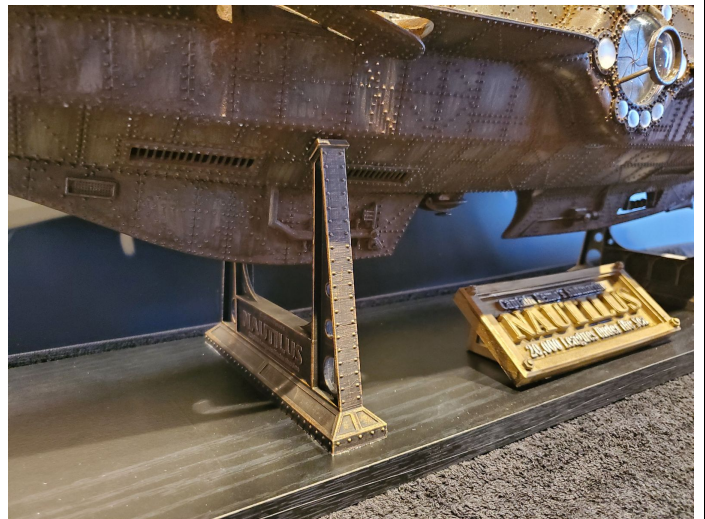
61

The last thing you need to do is build your display stand. There are two identical upright stand parts. These can be painted any number of colors. I elected to go with a flat black base and gold dry brushing, but feel free to do what you think will look good.

These uprights need to be secured to a display base of some kind. You can use melamine shelving, hardwood, or any number of materials for this.

The uprights are spaced in such a manner that they rest against the hull between the two pairs of ballast grates forward and aft.

The display plaque can be mounted vertically, horizontally, or you can create an angled bracket to display it at a slope.



62

Interior faces such as the inside of the hatches (if you elected to model them practical) can be painted silver or dark brown.

Once the final details are complete, you are the proud owner of the Nautilus and can take the helm in your efforts to rid the world of the "hated nation".

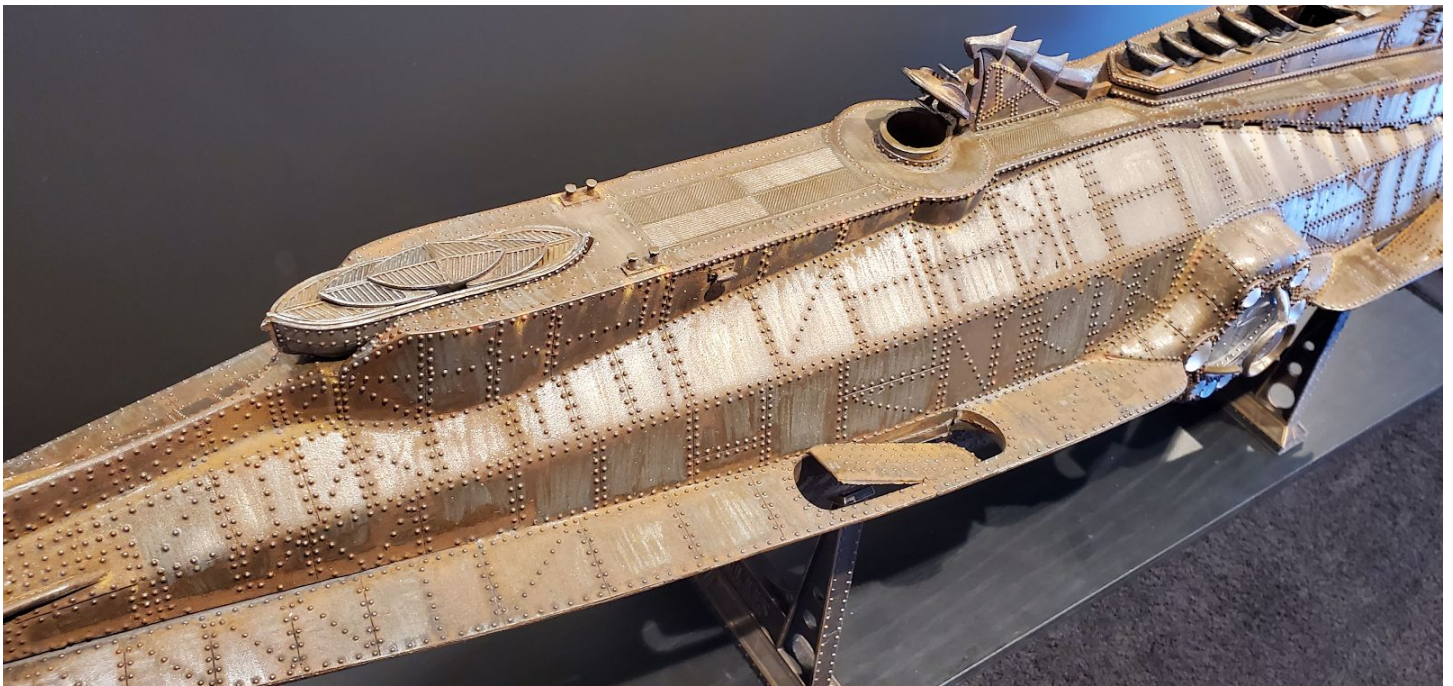
CONGRATULATIONS!



Model Assembly Instructions - Nautilus Submarine by the Nautilus Drydocks

32

The following photos represent an example build only. Again, feel free to build the model as you feel it should be built!





Model Assembly Instructions - Nautilus Submarine by the Nautilus Drydocks

34

