

SCM15

Explorer 10

1/12th Scale

The Early Pioneers

Space
Cadet
Models



Explorer 10 Assembly Instructions

By
Space Cadet Models
in 1/12th Scale

We would like to thank you for your purchase of our fifteenth Space Cadet Models kit. It is a depiction of the Magnetic and plasma probe NASA launched on March 25, 1961. The mission was battery powered and lasted for 52 hours. The kit contains several 3D printed parts and three different diameters of brass tubing, that you will need to cut to specific lengths. Each of these lengths have two ways for you to measure them with. First the length in inches is given. Second, there is a printable diagram that can be used to mark the tubing with the correct lengths. Each of these drawings has a "1 inch" marker that must be printed out to be exactly one inch. When this is correct, the drawing for the model part will be the correct size.

PAINTING INSTRUCTIONS

The following paint scheme was derived from the NASA Technical document, D-1175 "THE STRUCTURE OF THE EXPLORER X MAGNETOMETER SPACE PROBE". This document has a paragraph stating "In order to maintain the optimum operating temperature (0 ° to 40°C) of the payload in flight, a system of surface coatings was developed. A mirror finish was applied to a specific proportion of the surface area by vaporizing a coating of aluminum onto both metal and fiberglass parts. Another portion of the surface area was covered with a dull aluminum paint. Certain exterior surfaces, such as the bias sphere, were coated with a carefully defined pattern of both bright vaporized and dull painted areas. For ease of handling, all treated surfaces were covered with a layer of durable strippable plastic (Spraylat SC-1071 B) which was removed just prior to flight." We believe this explains the photos that show the spacecraft as totally black vs others that show flight hardware with the dull and bright aluminum surfaces.



Bright Aluminum Paint
(Chrome or close)



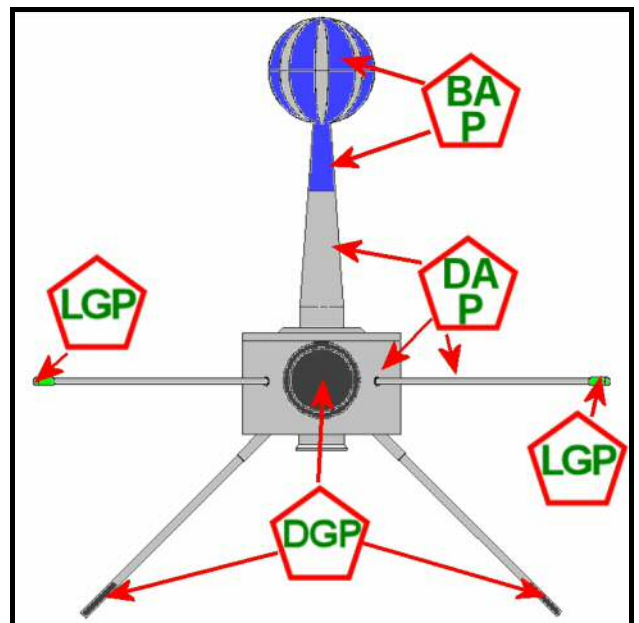
Dull Aluminum Paint
(or silver with dull coat)



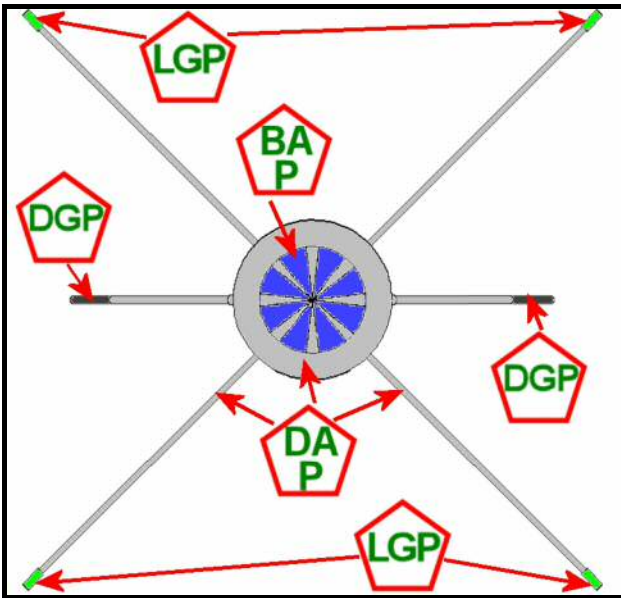
Dark Gray Paint



Light Gray Paint



Figure# 1



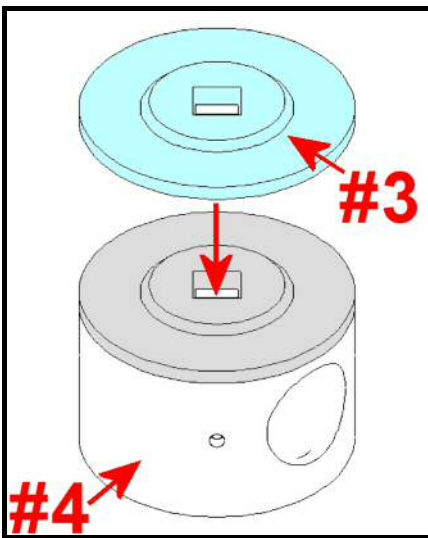
Figure# 2

The tips of the four antenna booms should be painted Light Gray, and the tips of the two flux gate probes should be painted dark gray as well as the body mounted plasma instrument. The remaining parts of the booms and the body should be painted with either Alclad ALC-117, "Dull Aluminum" or with a Silver Paint coated with a thin layer of dull coat. The areas shown as Bright Aluminum Paint should use a good silver Paint with possibly a clear coating, or with Alclad ALC-107 Chrome for plastic.

There are no decals with this model, as we could not find any photo or indication of any markings on the spacecraft. There of course could have been some small writing, denoting some caution or purpose, but we did not see any.

STEP# 1

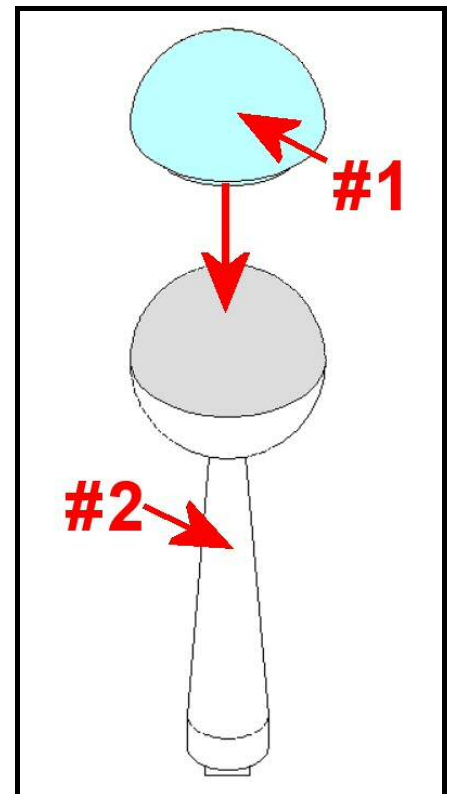
Find parts numbered as 1 and 2. Glue Part# 1 to the top of Part# 2, as shown in Figure# 3.



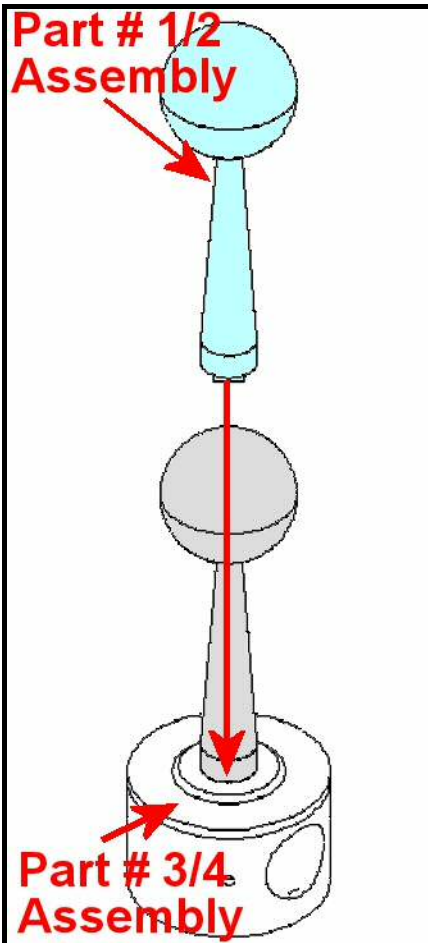
Figure# 4

STEP# 2

Find parts numbered as 3 and 4. Glue Part# 3 to the top of Part# 4 as shown in Figure# 4.



Figure# 3



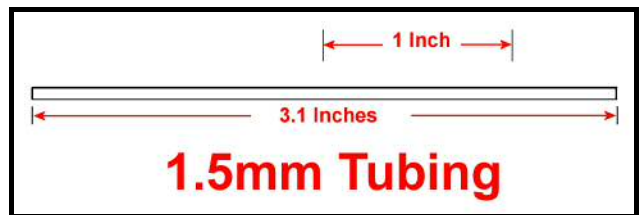
Figure# 5

STEP# 3

Take part assembly #1/2, from STEP# 1, and part assembly #3/4, from STEP# 2, and glue them together as shown in Figure# 5.

STEP# 4

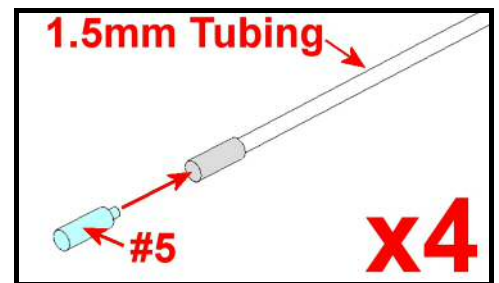
Find the supplied 1.5mm brass tubing an, using the template shown in Figure# 6, cut four tubes that are 3.1 inches in length.



Figure# 6

STEP# 5

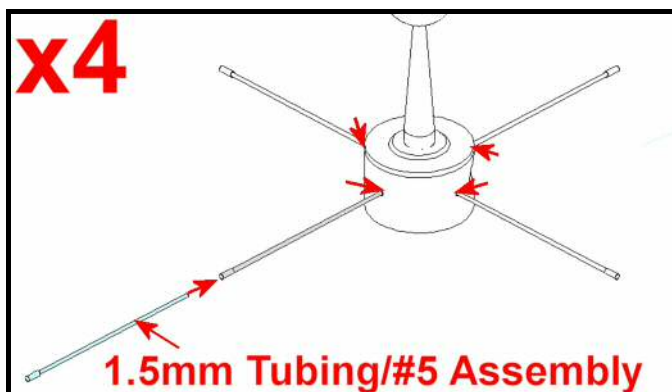
Find the four small antenna boom weights, Part# 5, and glue the small tab into the hole at one end of the cut, 1.5mm brass tubes. Repeat this for a total of four times.



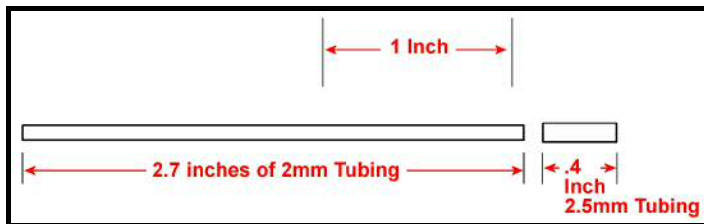
Figure# 7

STEP # 6

On the body assembly, from the previous steps, please note, that there are four holes, space ninety degrees around the circumference of the main body. Take the four antenna booms that you assembled in STEPs #4 and #5, and glue them into these holes. Refer to Figure# 8.



Figure# 8



Figure# 9

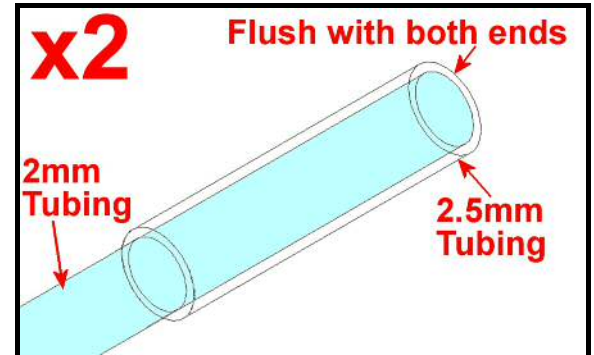
STEP# 7

Find the 2mm and 2.5mm brass tubing, that is included, in the kit and cut them to the lengths in the template, shown in Figure#

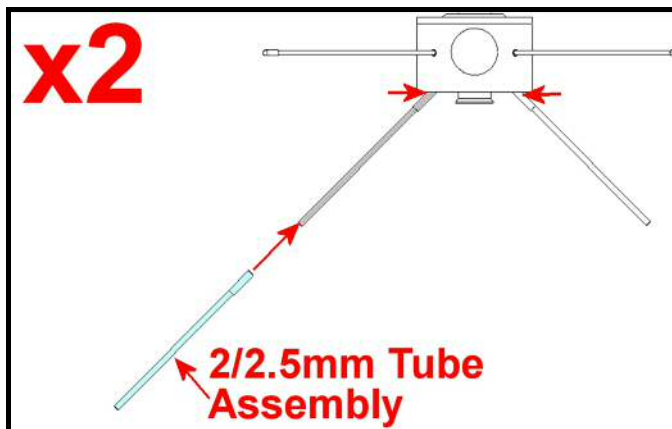
9. You will need two 2.7 inch long, 2mm tubes and two 0.4 inch, 2.5mm tubes.

STEP# 8

Slide and glue the .4 inch, 2.5mm cut tube onto the end of the 2.7 inch, 2mm tube. Make sure that the two ends are flush with each other, as shown in Figure# 10. Do this with both sets of tubing.



Figure# 10



Figure# 11

STEP# 9

Take the 2/2.5mm tube assemblies and glue the 2.5mm ends into the bottom of the body. The holes should hold the probes at 45 degrees. Refer to Figure# 11 for placement of both assemblies.

This completes the assembly of your Explorer 10 kit. If you have not pre-painted the parts, you can now follow the Painting Instructions, as stated on page# 3. Thank you for your consideration by purchasing our kit, and we hope it has been an interesting kit to build.