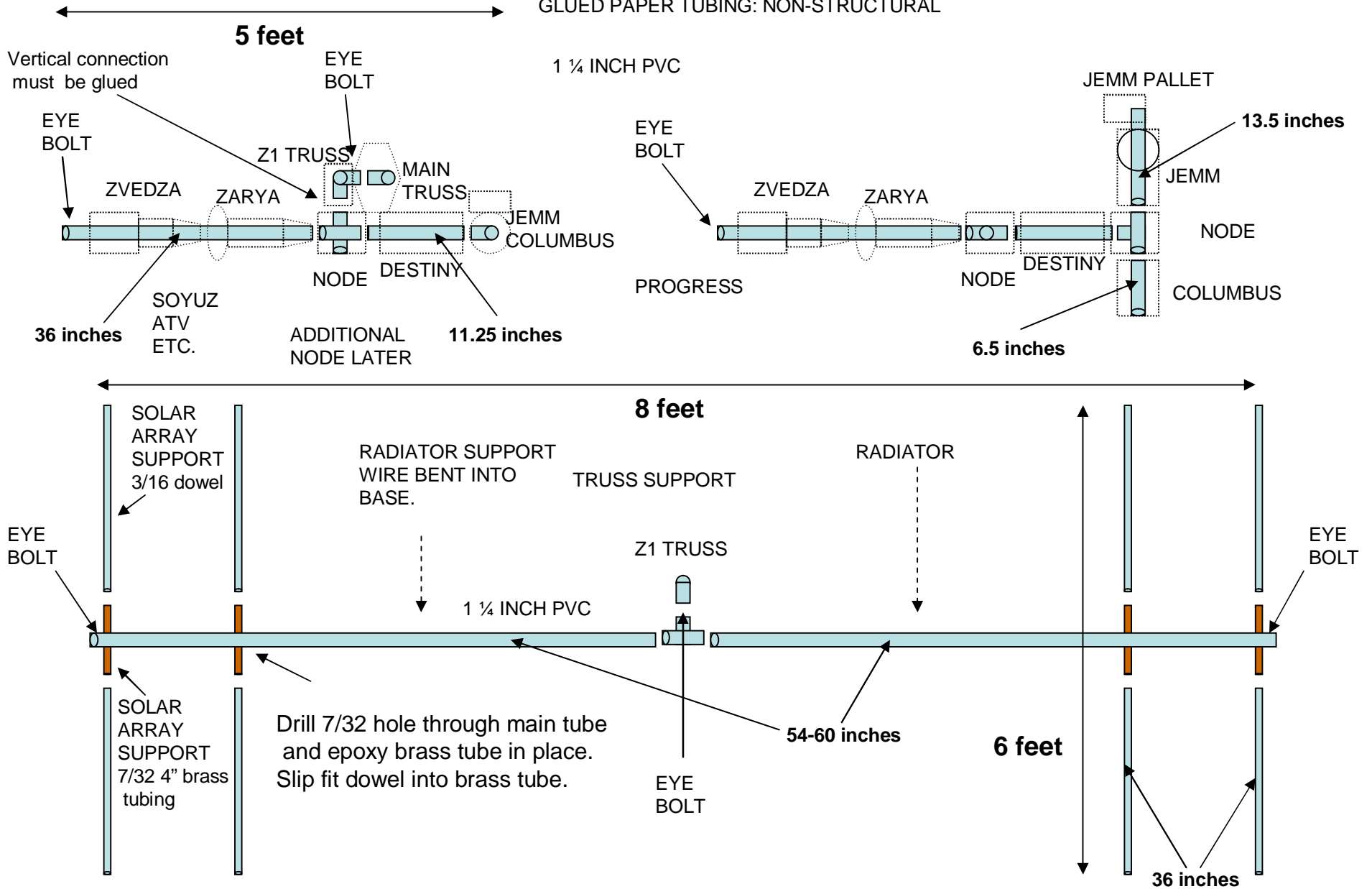


ISS – 4.5” 1:40 scale

- Building this model requires a moderate level of modeling skill and an intimate familiarity with the International Space Station structure – see http://www.nasa.gov/mission_pages/station/main/index.html
- Model is approximately 1:40 scale; sized to use 2 liter soda bottles to shape the modules. The finished model will be 6 feet high across the main solar arrays, just over 8 feet wide across the main truss, and about five feet long along the main spine where the modules mount.
- Most sections consist of a cylinder using a bottle as a form and two end caps. More complex shapes are formed from cones and boxes. Sections are assembled with 1 ¼ inch PVC tubing running through the part and connectors where needed. Most conics are formed by cutting on the solid radial lines, then forming and overlapping to the dotted line.
 - Non-structural connections are made with either a paper tube rolled to the same outside diameter as the tubing (1.68 inch/43mm) or with slip-fit cylinders. These connections include the cupola, airlock, JEM small experiment module, the PIRS docking compartment and Soyuz spacecraft.
 - To make a slip-fit docking connection, first close the open ends of the modules to be joined with a circular piece of card. Using a mandrel (cylindrical form), roll and glue a cylinder at least 1 inch long from card stock. When dry, roll a second cylinder over the first, wrapping tightly. When gluing the second cylinder, make sure you don't glue it to the first (inner) piece. Cut a ½ inch (1 cm) section from both cylinders and glue one piece to each of the parts to be joined. When dry, the two cylinders should slip over each other for a friction fit. Secure with glue for a permanent display.
- The truss is assembled from hexagonal and rectangular box sections. Each section is capped and that end cap has a hole to allow the 1 ¼ inch PVC support tubing to pass through. The tubing runs off-center to accommodate the shape of the S1 and P1 truss sections.
- The main solar arrays are made from plain paper segments (to save weight) supported by a 3/16 inch dowel glued up the center of each array. The arrays are mounted to the truss using a 7/32 inch brass tube secured in a hole drilled through the main truss PVC support tube. The solar array dowels then slip into the tubing.
- The radiators for the solar arrays are suspended from a dowel attached to the main truss and attached to the outer end of the radiator.
- The main thermal radiators are suspended from a stiff wire that runs up the center of the mount, then bends 90 degrees and extends out to connect with the end of the top radiator panel. All three panels are tied together at the outer end with a strip of card to hold them up.
- The finished model should be suspended from (or supported at) at least four points: both ends of the truss, the center of the truss, and the back end (Progress/Zvezda) of the central spine.

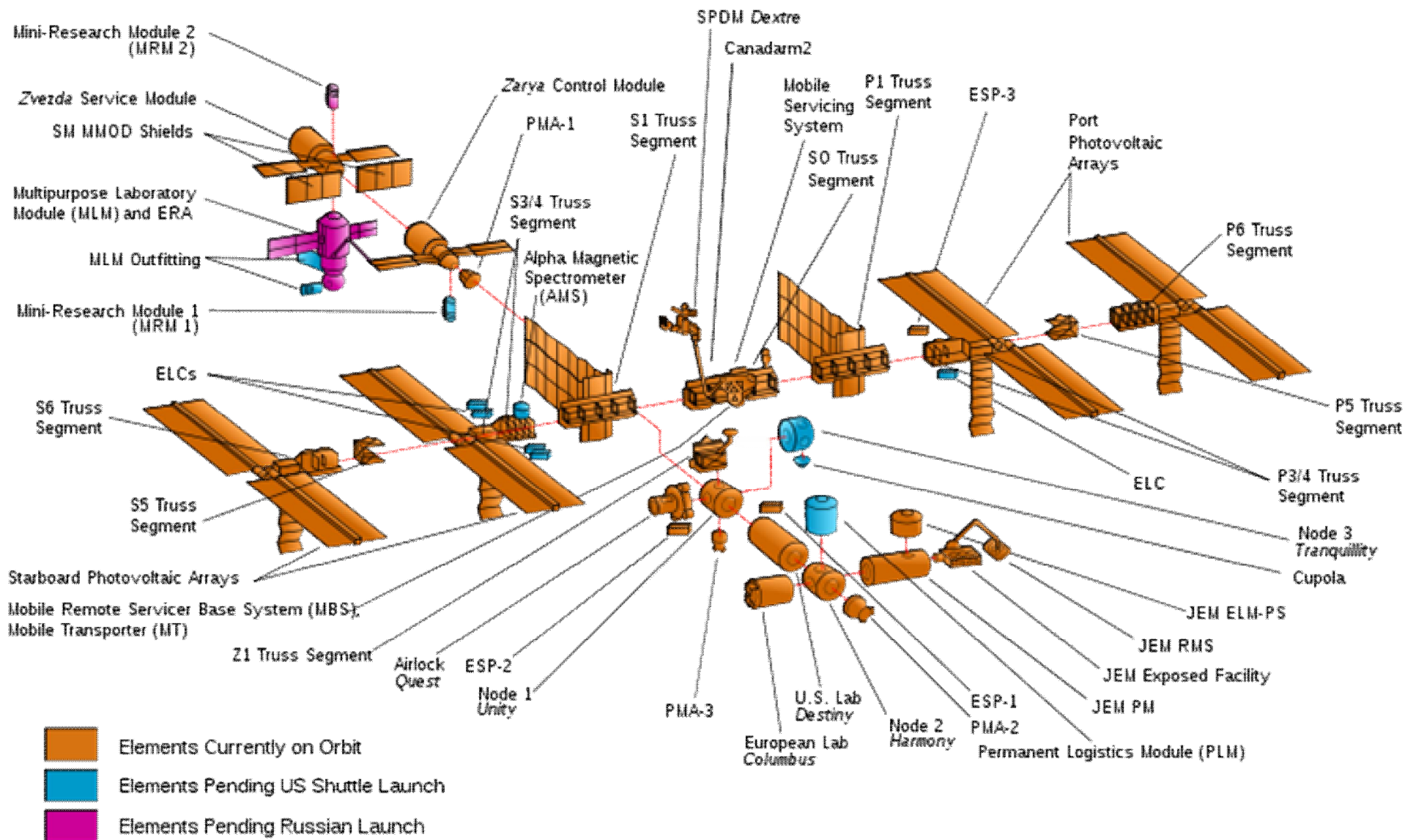
STRUCTURAL SUPPORT CEILING HANGER DISPLAY

ADDITIONAL STRUCTURE (NODE, LS MODULES, CREW VEHICLES) ATTACHED WITH
GLUED PAPER TUBING: NON-STRUCTURAL

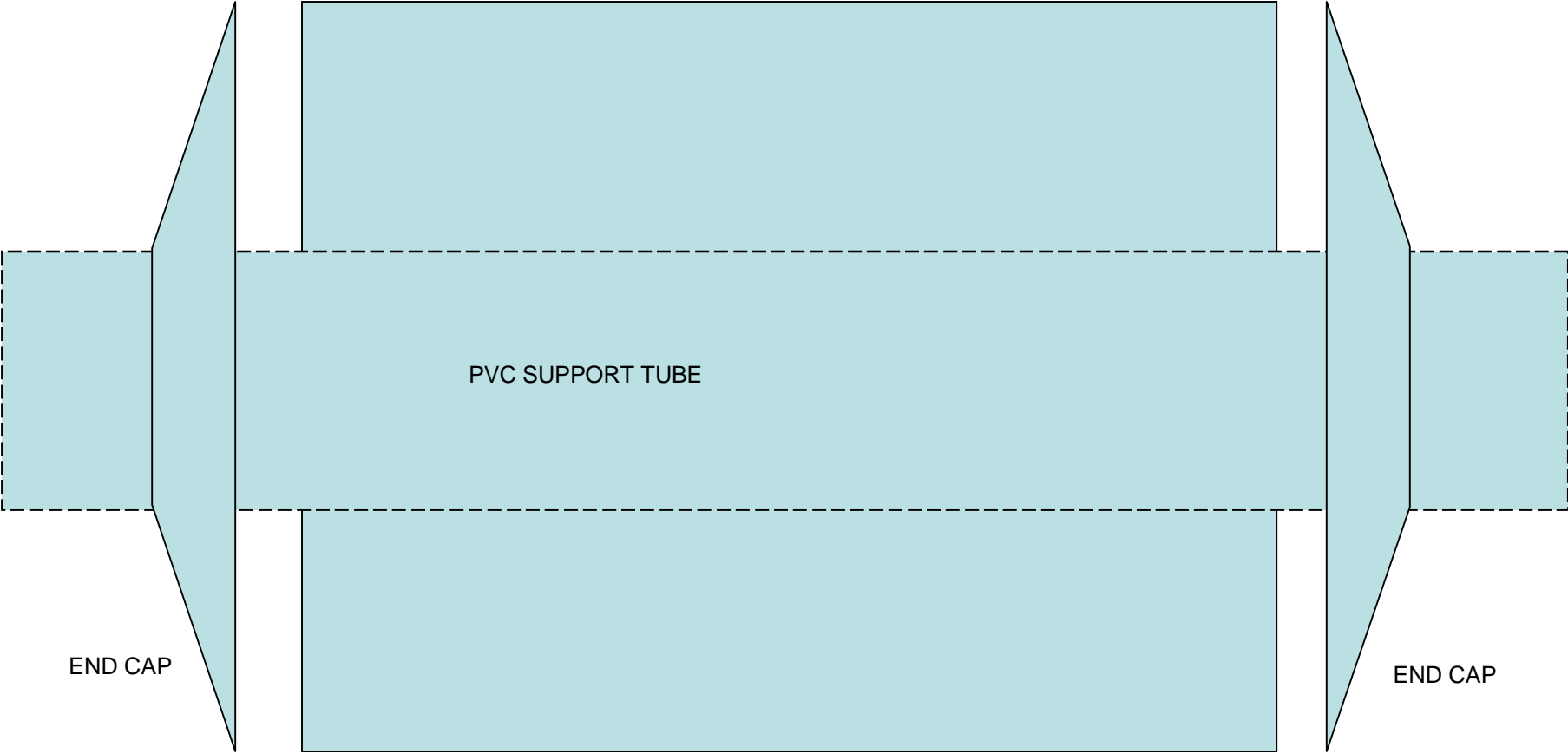


ISS Configuration

As of July 2009 (23/A)



Modules

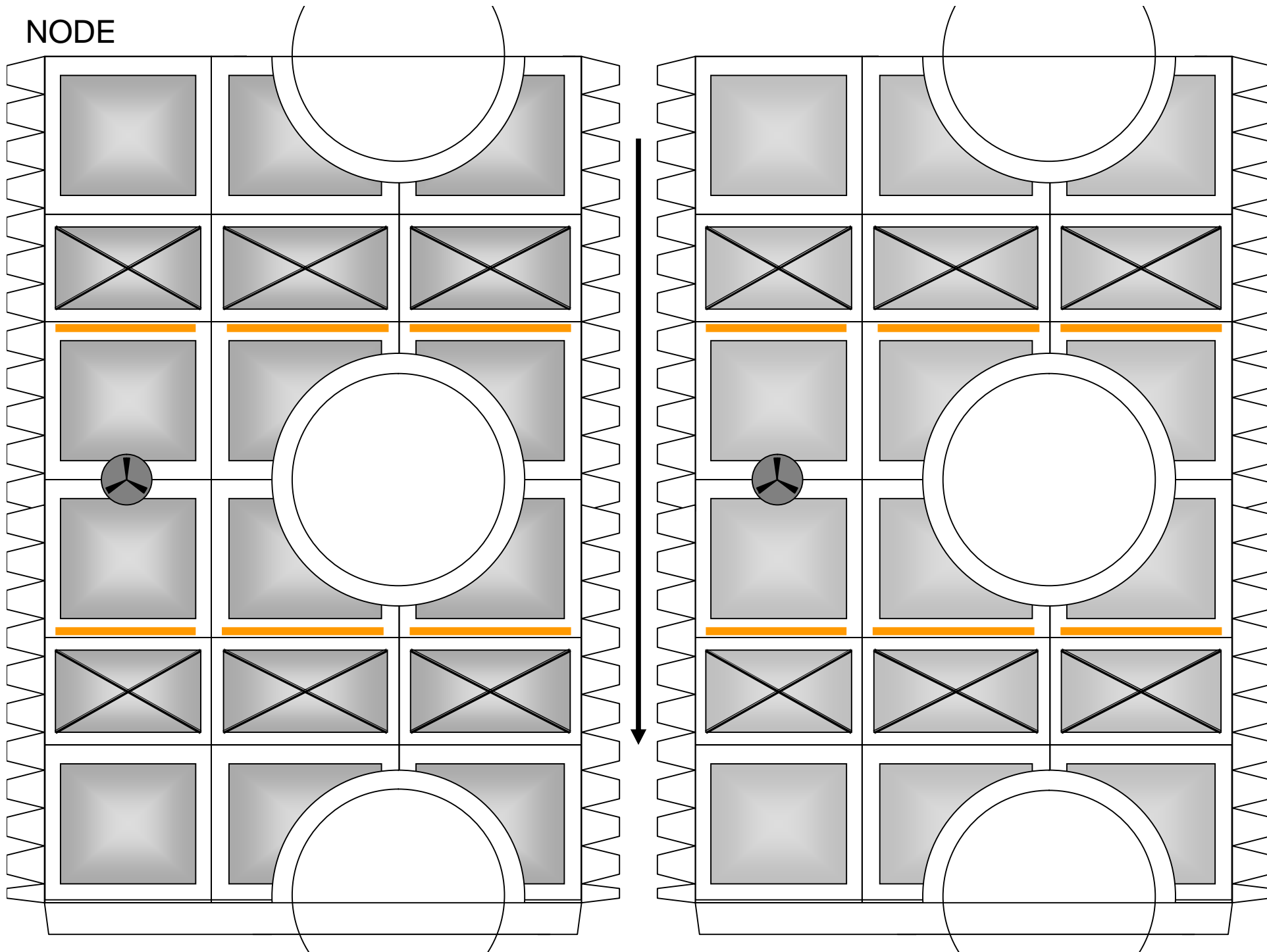


END CAP

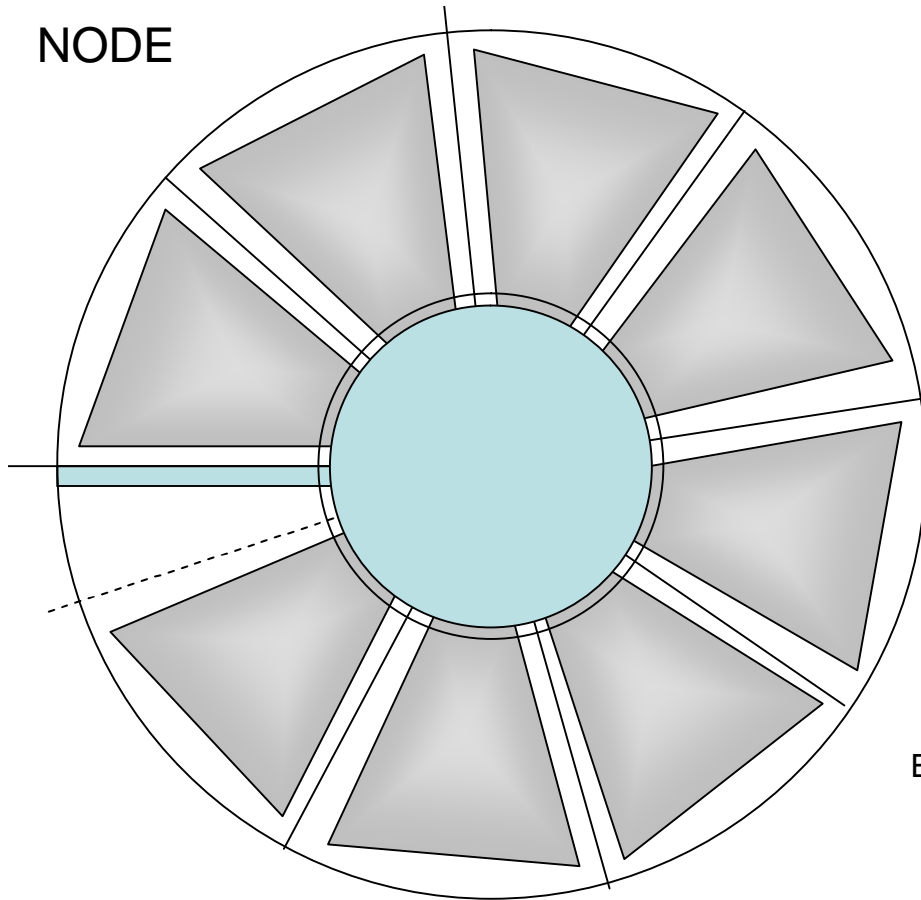
END CAP

CYLINDER

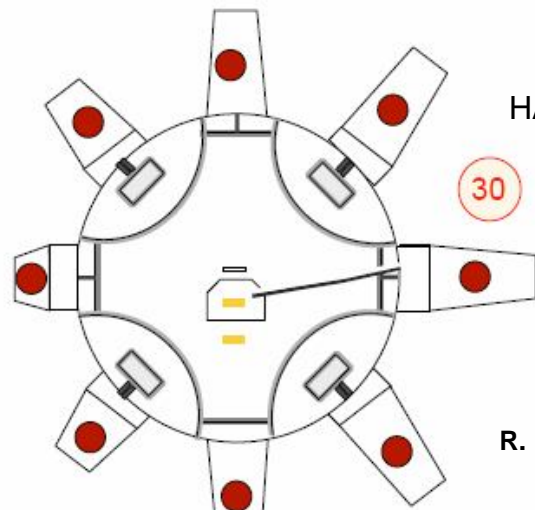
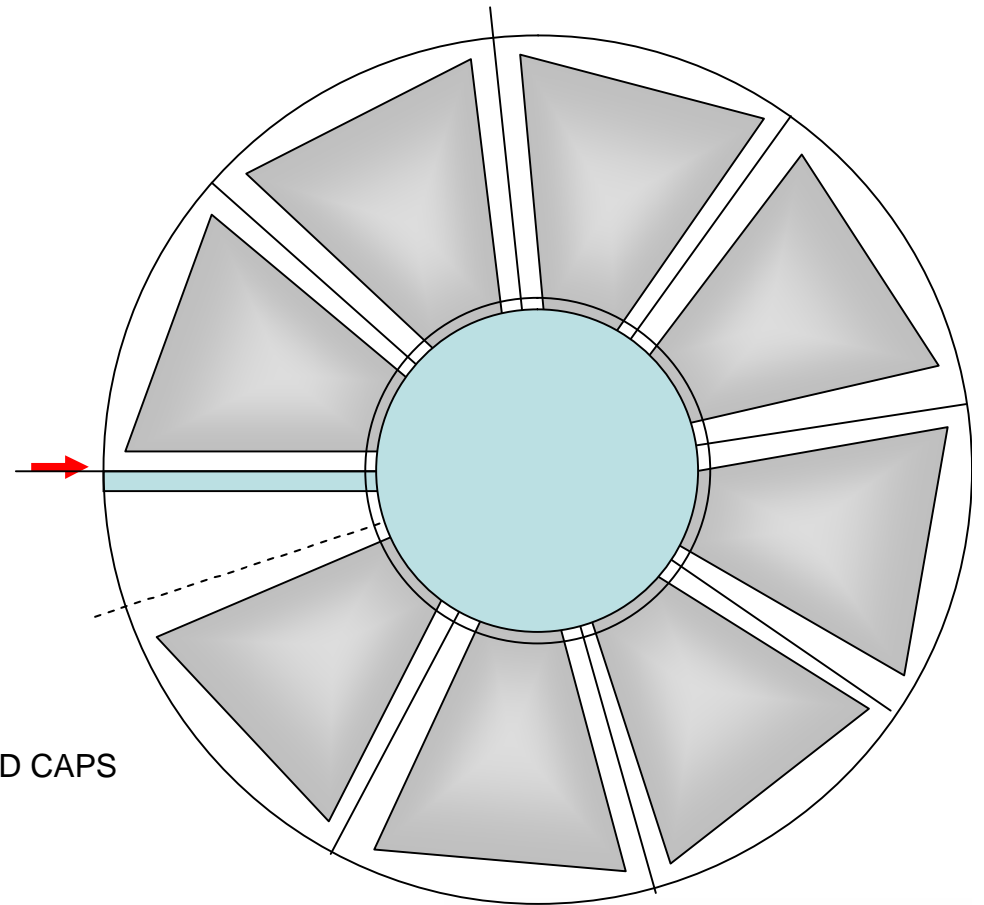
NODE



NODE

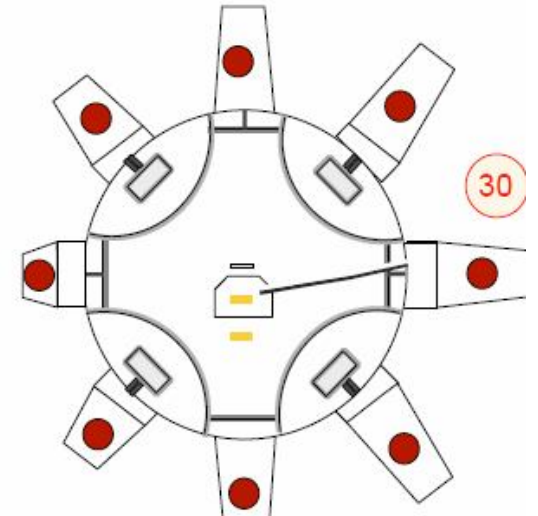
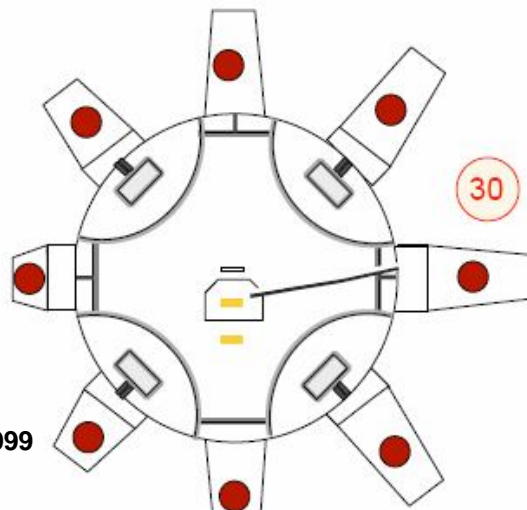


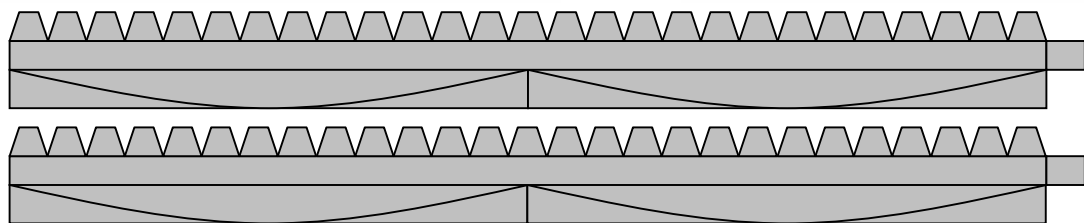
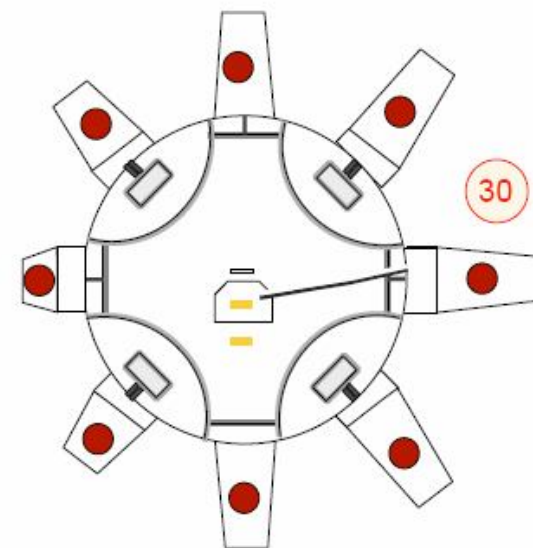
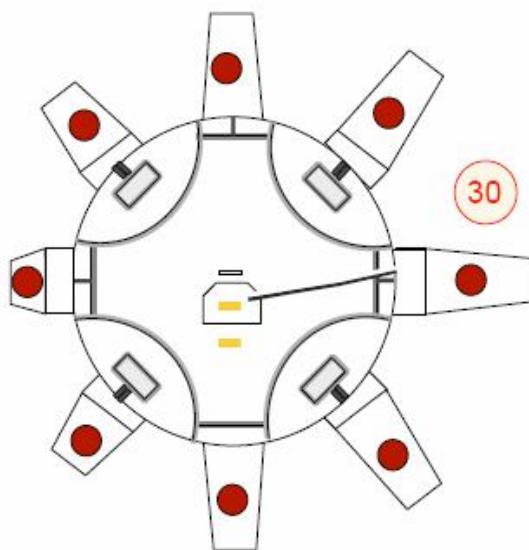
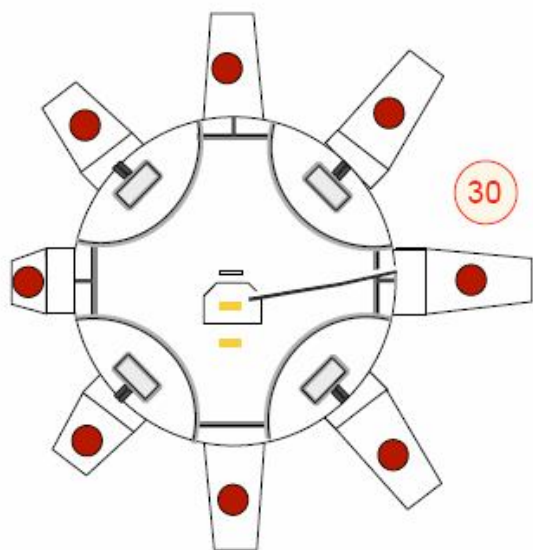
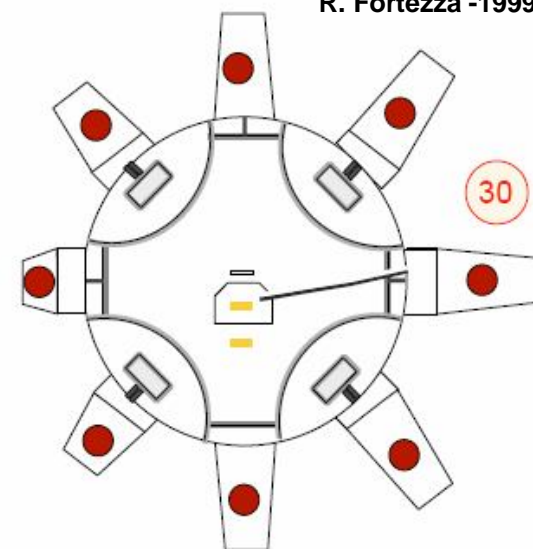
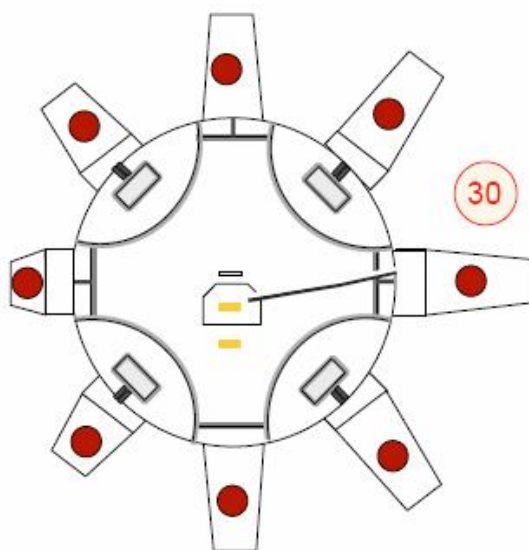
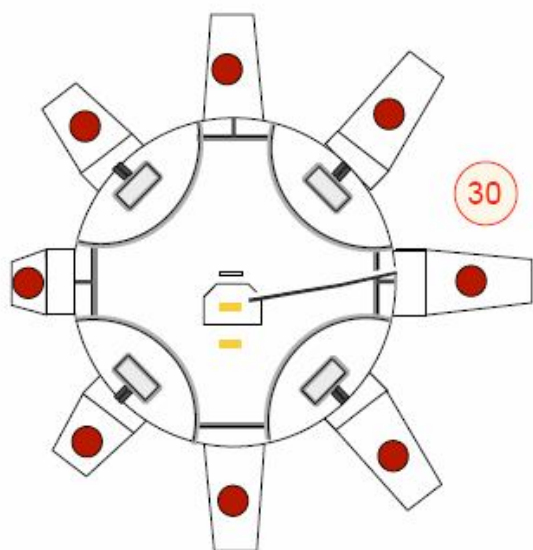
END CAPS



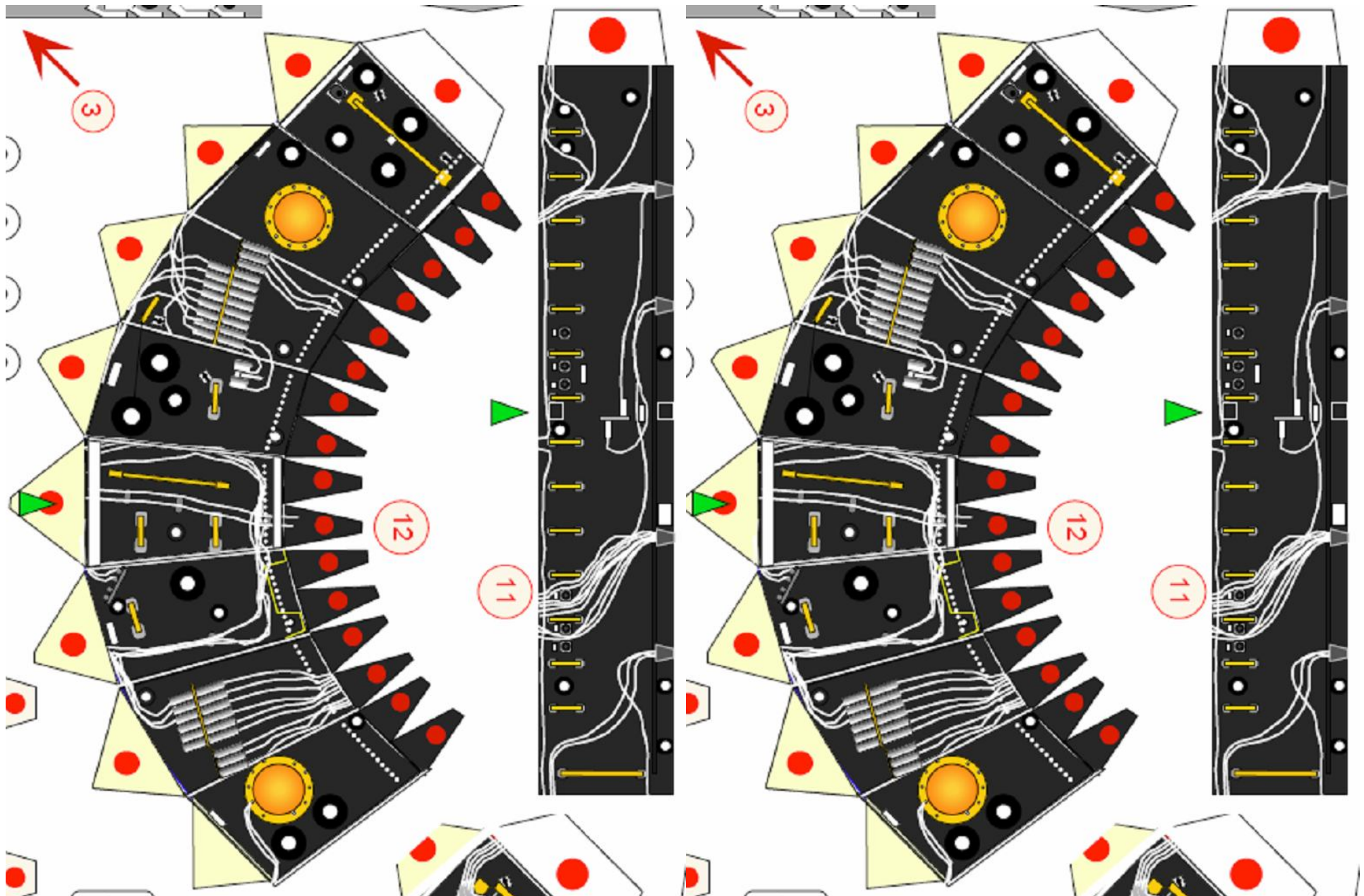
HATCHES

R. Fortezza -1999

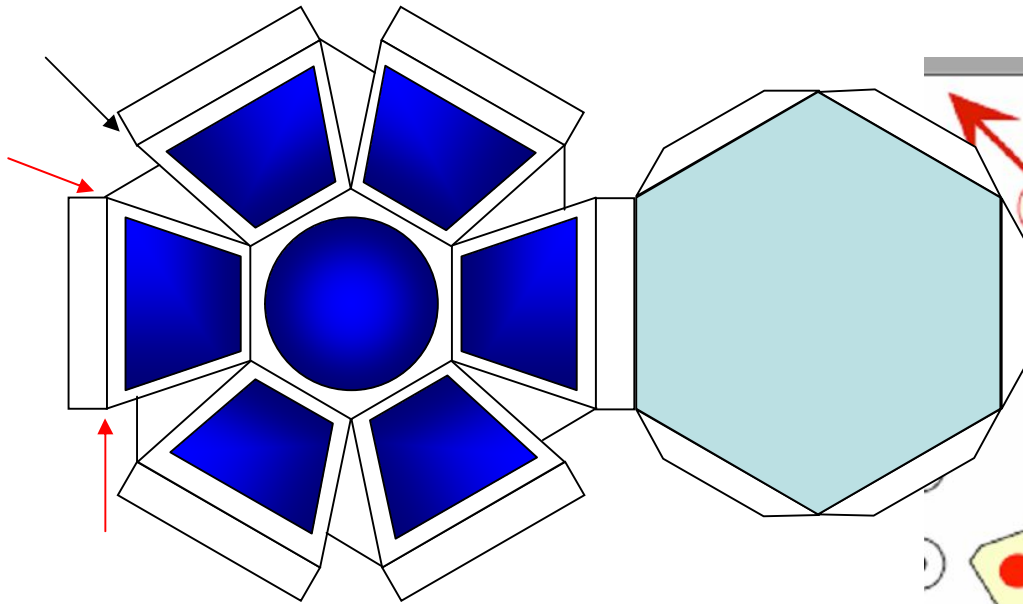




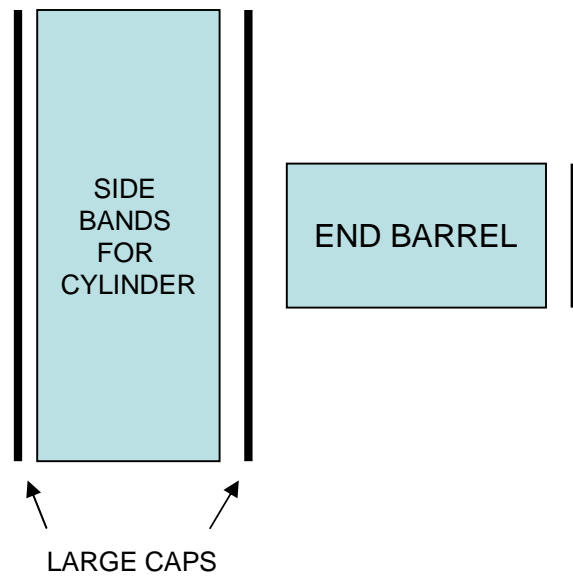
NODE – docking adapter



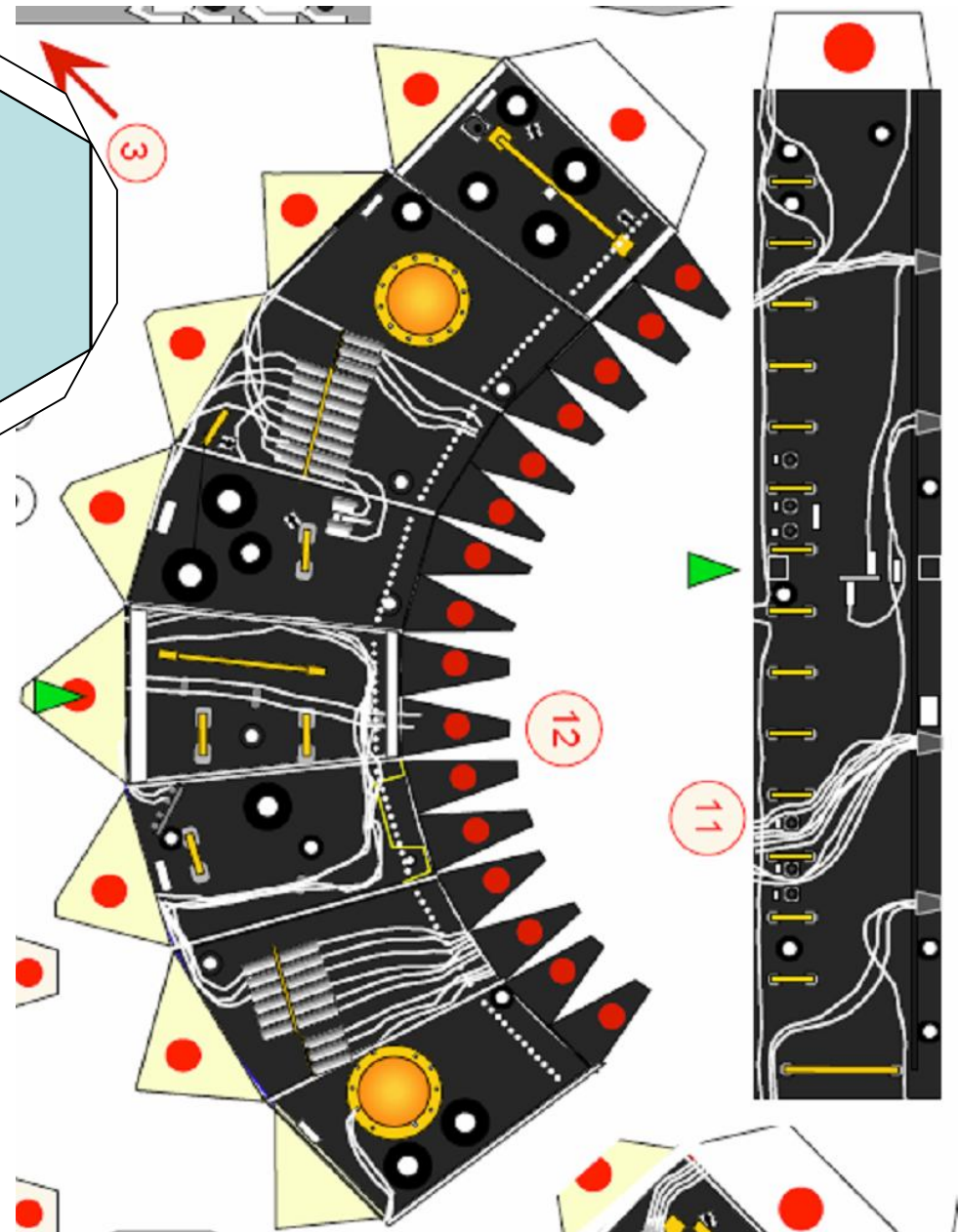
NODE – cupola



NODE - AIRLOCK

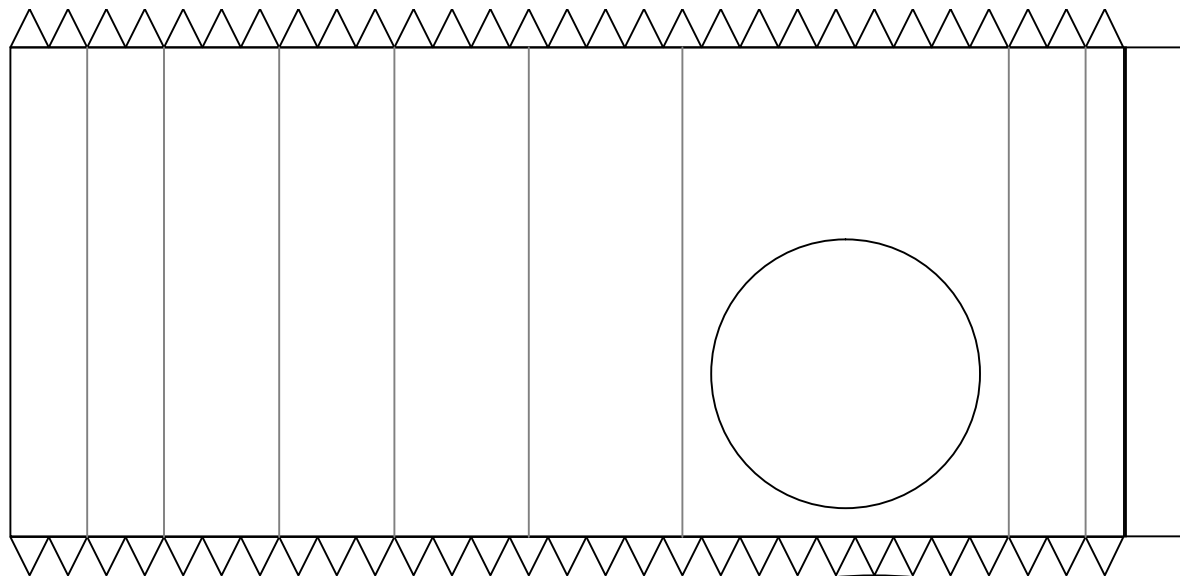
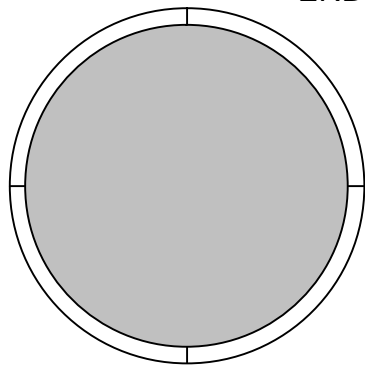


R. Fortezza -1999



NODE – airlock

END BARREL



LARGE CAPS

