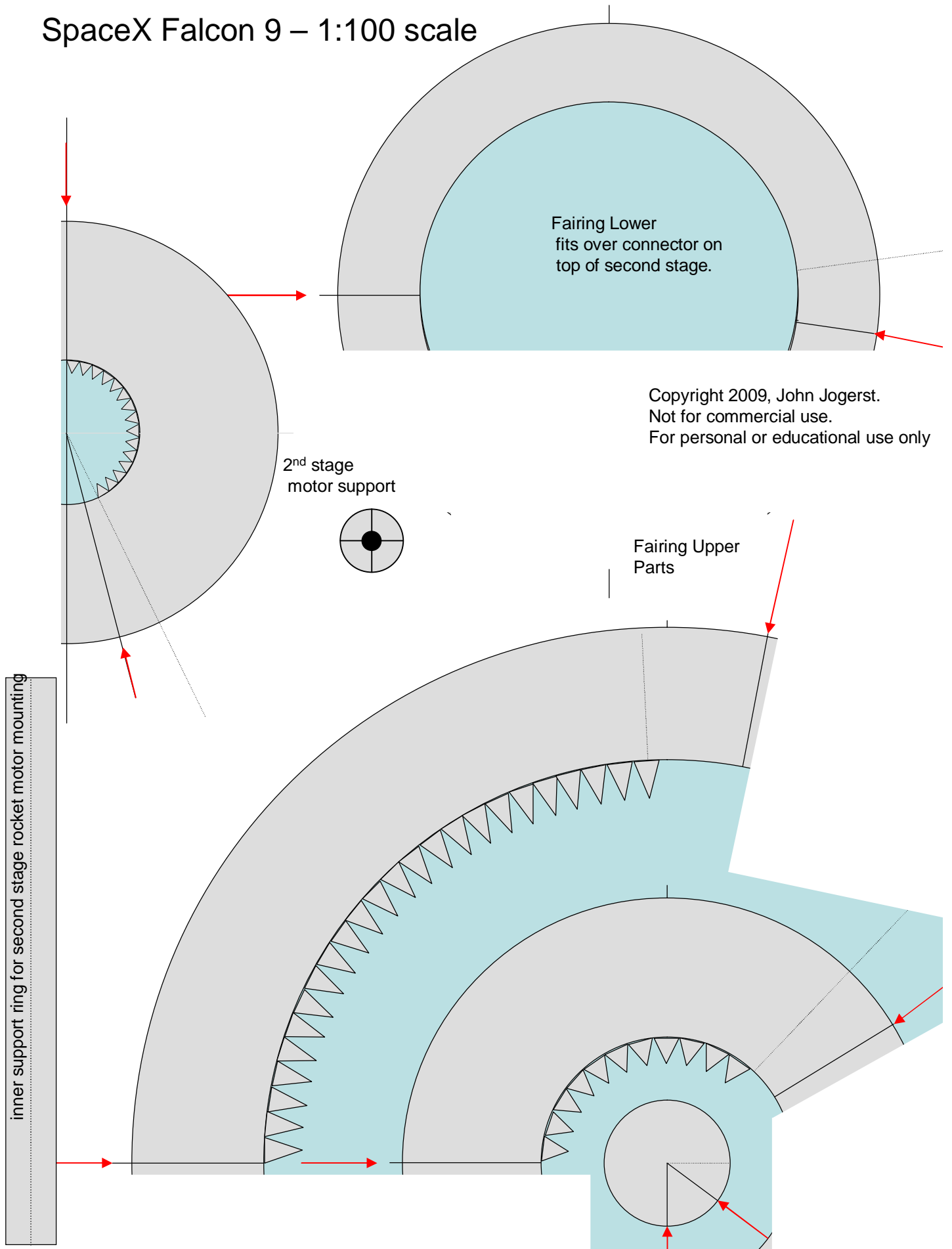


SpaceX Falcon 9 (Heavy modification) – 1:100 scale

- Where it is not obvious, red arrows mark the places to cut.
- Payload Fairing:
 - Cut out the three parts for the upper fairing. Roll the smallest part into a shallow cone, overlapping to the dotted line, and secure with glue. Roll the remaining pieces into frustums and secure. Bend the “teeth” in slightly, apply glue to the inside of each upper piece, and assemble the stack to make the upper fairing (either align all seams and position to the back of the displayed model or alternate so the seams on adjacent parts are on opposite sides of the model).
 - Cut out the lower fairing piece, roll and secure as with the upper fairing.
 - Cut out the fairing body and the two toothed connectors. Roll the body into a cylinder and secure with the tab (alternately, the tab can be cut off and used as a connector strip to form a cylinder with a less obvious seam). Curl the two toothed connectors so they fit inside the cylinder, then glue them to the inside top & bottom with just the teeth exposed.
 - Fairing assembly: bend the teeth on the fairing body connectors inward slightly, apply glue to the inside edge of the upper and lower fairing parts, and attach the upper and lower conics to the fairing body.
 - Booster Nosecones/Dragon Capsule – assemble similarly if used instead of the payload fairing. Assemble trunk module like other rocket body cylinders, closing the bottom with a disk, recessed to allow room for the second stage connector to insert.
- Rocket Body:
 - Cut out and roll the second stage, inter-stage, main body, and bottom of the rocket body into cylinders and secure by gluing the tabs (or use a connector strip as described above). Cut out the connector strips, curl to fit inside the rocket body, and attach to the inside top of the second stage, interstage, main body and bottom parts. Curl the two remaining connector strips (mounting support rings) and glue one inside the bottom part just less than ¼ “ (6mm) from the bottom edge – this will support the rocket motor structure. Glue the remaining strip about 3/8” (10mm) up inside the bottom of the second stage to support the second stage motor structure.
 - Cut out the rocket motor mounting and internal support disks. Glue one support disk inside the upper end of the second stage, one inside the upper end of the main body and one in the top end of the lower rocket body, using the connector strips to locate the disks. Glue another disk inside the main body at about the mid-point. Glue the motor mount inside the bottom cylinder, using the mounting strip for alignment. NOTE – the “corner” rocket motors must line up with the triangles on the outside of the rocket body bottom. Glue the second stage motor support into the bottom of the second stage, using the mounting strip for alignment. Complete the second stage motor mount with the disk.
 - Cut out the fairings for the “corner” rocket nozzles, fold the tabs at the edges inward (away from the printed side), and curl the fairings into half-cones. Using the tabs, glue the fairings in place to cover the triangles on the rocket body bottom. Cut out the fins, fold in half with the printed side out, and glue. Attach fins to the motor fairings.
 - Repeat construction of the first stage and motor section for the two outer core boosters.
- Rocket Motors: Cut out and roll the motors into long cylinders and glue. When dry, carefully cut each into three individual tubes on the marked lines (makes 9). Slit the white end of the motor and bend tabs inward – this will slip inside the small end of the nozzle. Wrap the small rectangular parts around the bottom of the motors to provide a “shoulder” to locate and attach the nozzles. Cut out and roll the nozzles into cones and glue. Use the large outer circle to make the second stage nozzle (make 9 short and 1 long nozzles). When dry, glue the cylinders (motors) to the small end of the 9 short nozzles. Glue the long nozzle to the bottom of the second stage. Optional turbopump exhausts should be laminated to thicker stock and attached to the side of the motors if desired. See picture for detail and diagram on page 6 for orientation.
 - Motor supports – cut out the two rectangles, scoring the lines and cutting the marked red slits. Fold each into an open box, colored side out, and glue the tab. Interlock the two parts using the slits to make a cross shaped support structure. Glue the support structure in place on the motor mounting disk using the lines as a guide.
 - Glue each motor assembly in place on the motor mounting disk using the dark circles to locate the motors.
- Final Assembly:
 - Review the graphic of the Falcon9 Heavy before applying any glue. Note the alignment of the rocket nozzles, engine sections, and core rocket boosters. Apply glue to the inside of the bottom end of the main body and insert the bottom engine section of the rocket. The SPACEX lettering will be to the front for display. The circles and lines that are part of the connections between core boosters will face sideways. The seams for the engine sections and main body **will not be aligned!**
 - Slip the payload fairing over the top of the second stage. Line up the seams on the payload fairing so they are not obvious for display. Slip the second stage over the inter-stage. Slip the inter-stage over the top of the main body/first stage. The Falcon logo on the second stage should be to the front for display and the Falcon 9 logo and SPACEX lettering should be aligned.

SpaceX Falcon 9 – 1:100 scale



Fairing Lower fits over connector on top of second stage.

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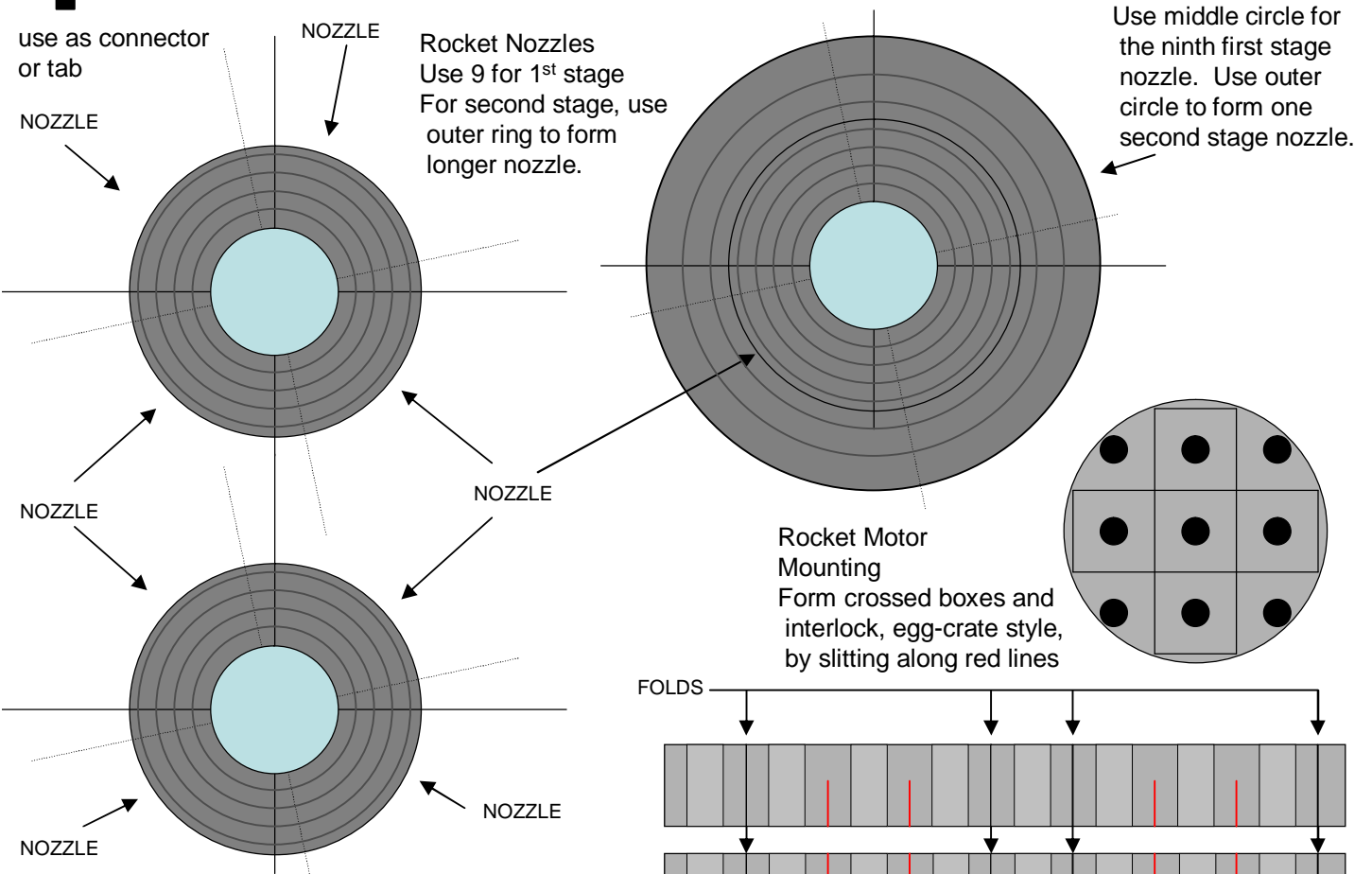
2nd stage motor support

Fairing Upper Parts

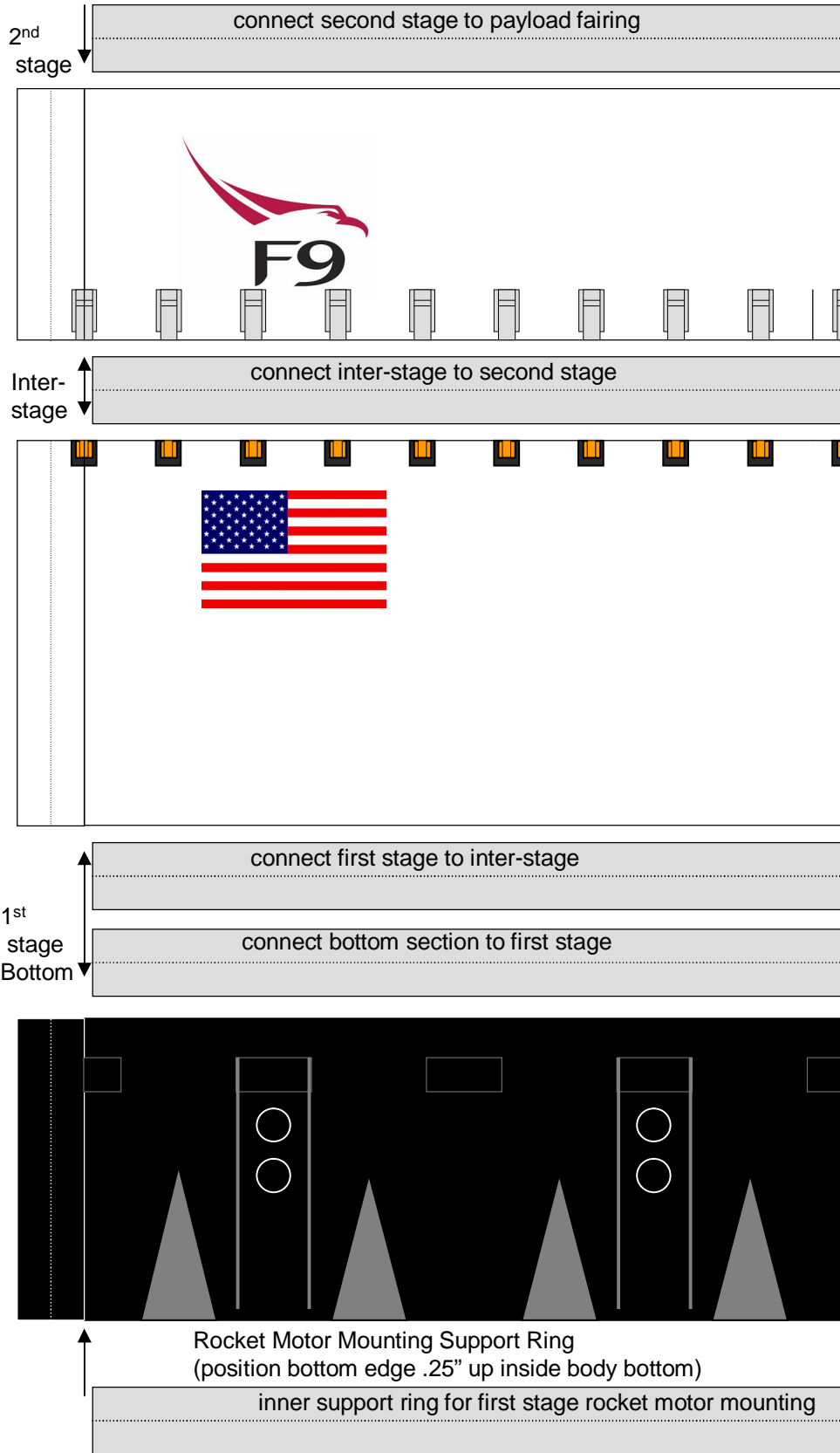
inner support ring for second stage rocket motor mounting

SpaceX Falcon 9 – 1:100 scale

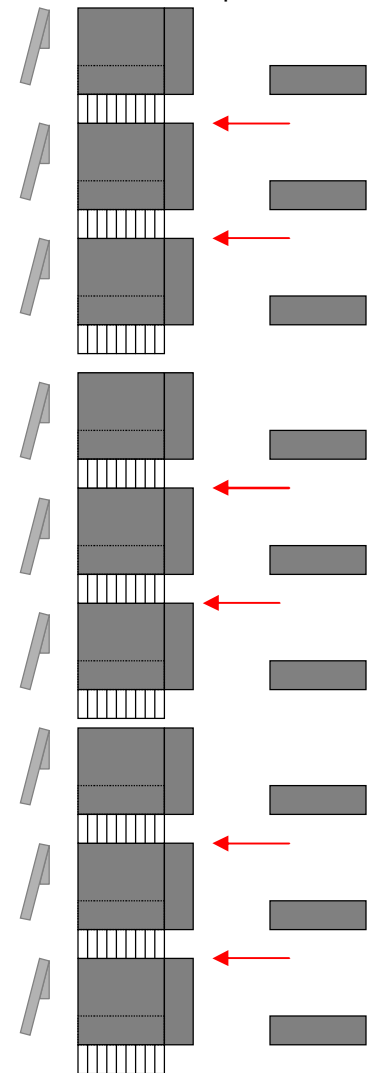
Fairing Body



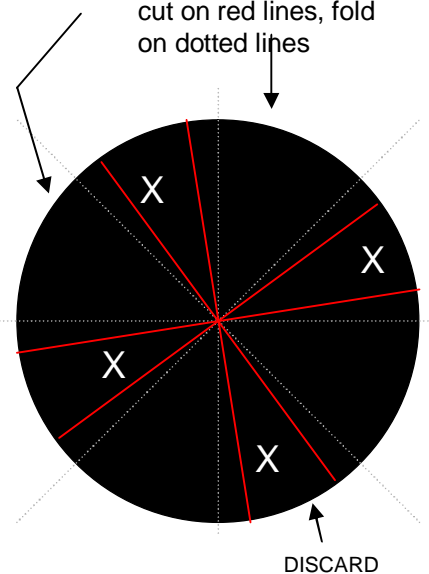
SpaceX Falcon 9 – 1:100 scale



Rocket Motors
Roll into cylinders then
cut into thirds to make
individual parts.



Fairings – “Corner”
Rocket Nozzles.
cut on red lines, fold
on dotted lines



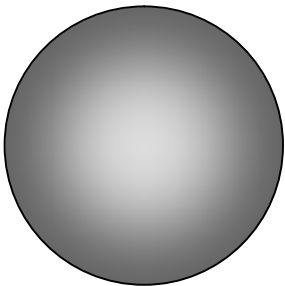
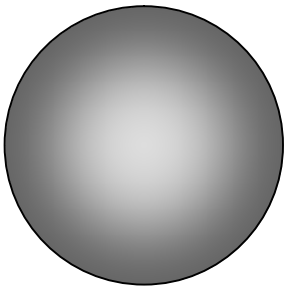
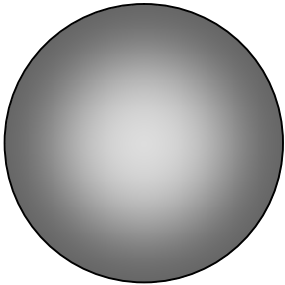
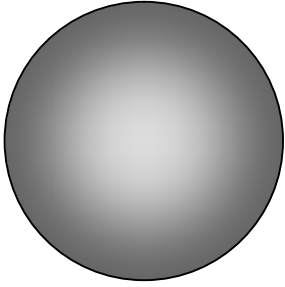
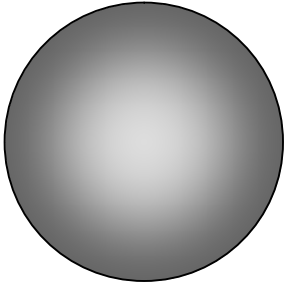
Center core engine block

SpaceX Falcon 9 1:100 scale

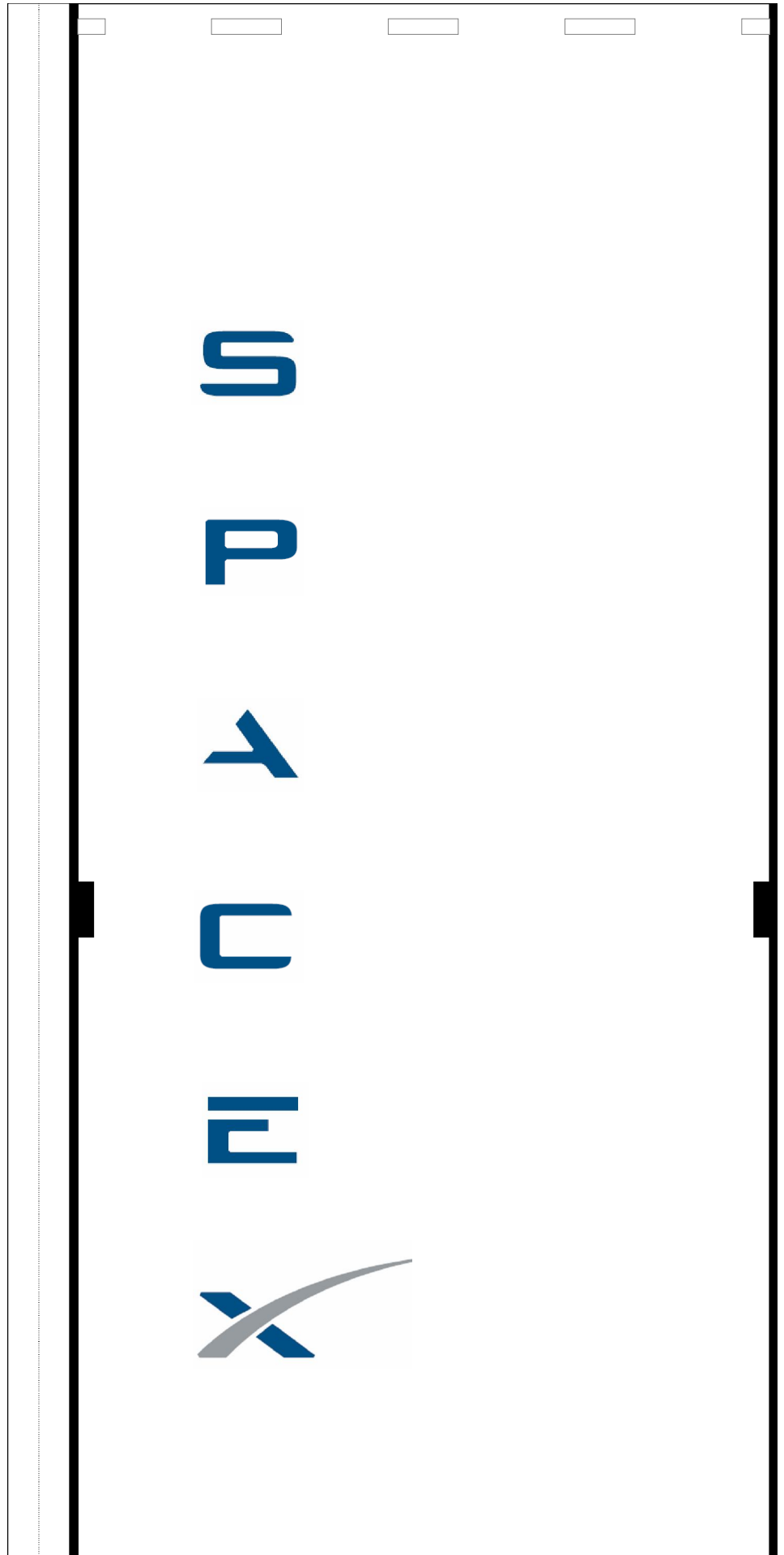
First stage

use as connector
or tab →

Internal support disks, position
as needed.



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height top bottom

.33, x, .75

1, .75, 1.55

1, 1.55, 2.05

2.6, 2.05, 2.05

.55, 2.05, 1.45

1.5, 1.45, 1.45
SECOND STAGE

2.3, 1.45, 1.45
INTERSTAGE

Connector

Support disk

Connector

Support ring

Connector

Support disk

Connector

1.35, 1.45, 1.45

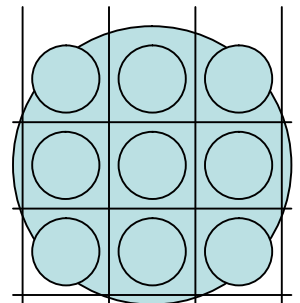
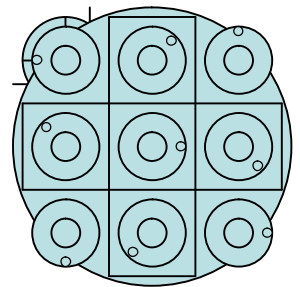
.45, .15, .15
9 tubes plus "box,"
outer ring, and fairings

.45, .15, .35

Support ring

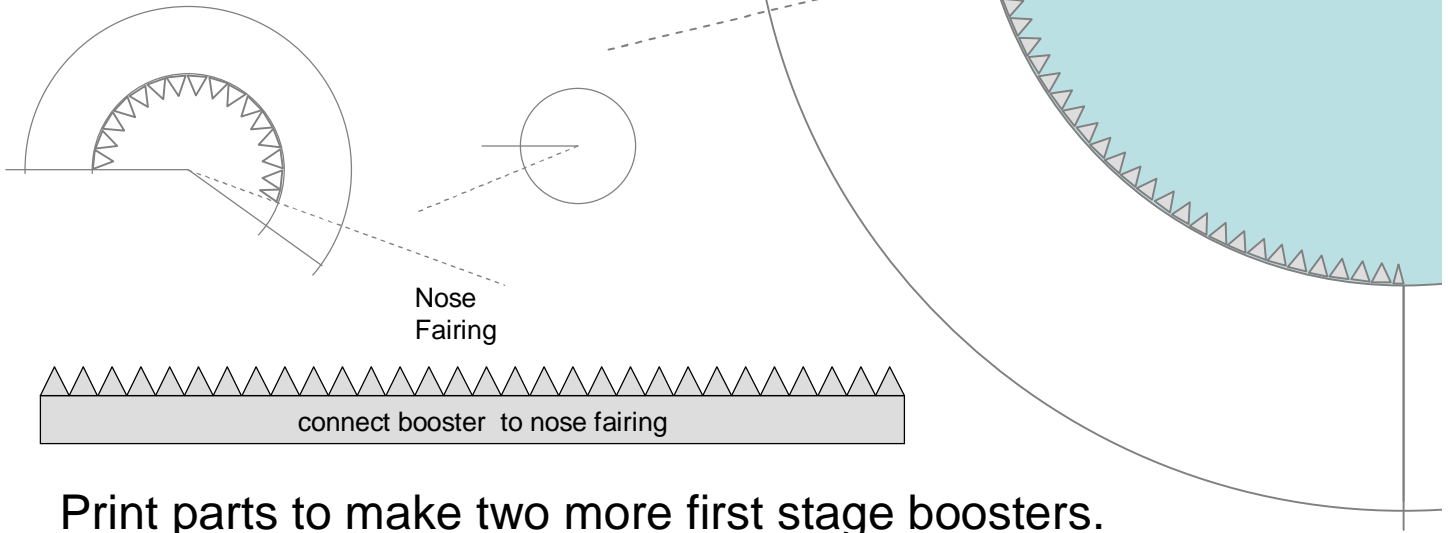


10, 1.45, 1.45

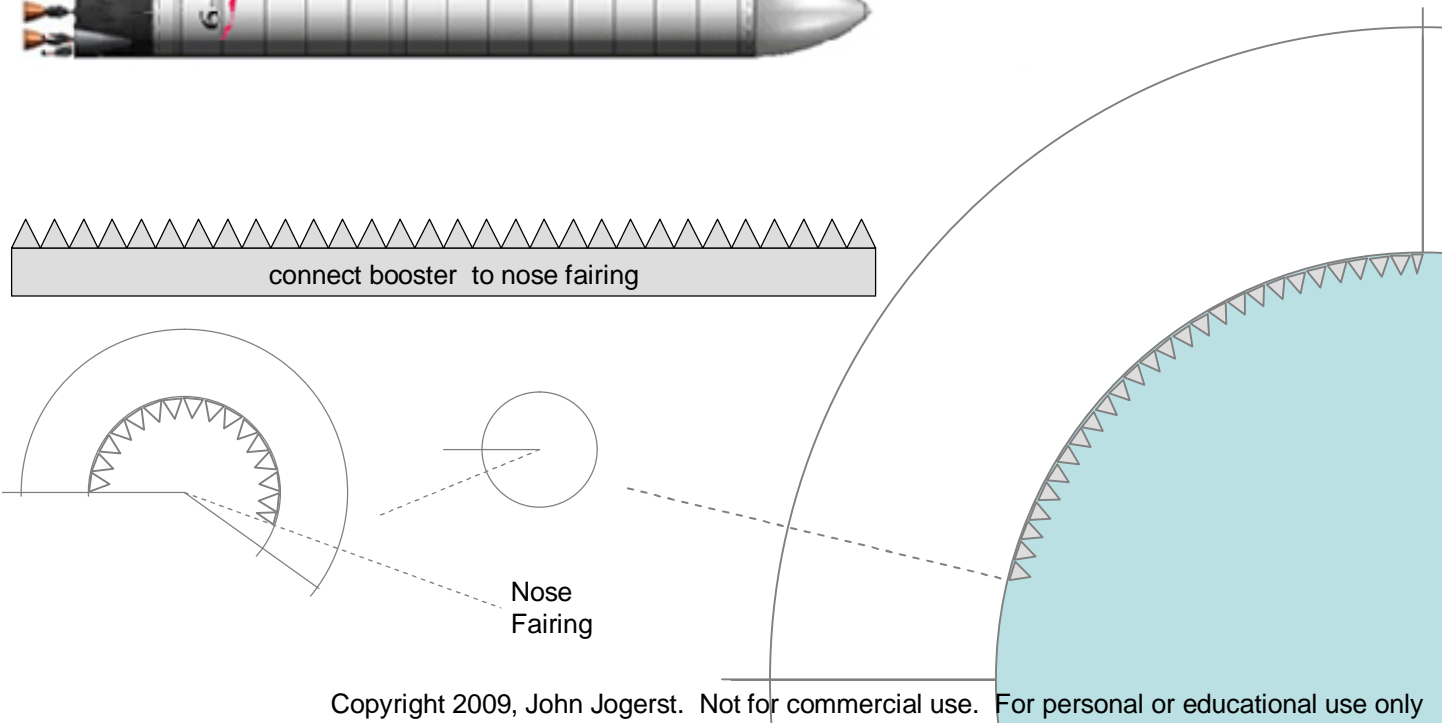


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SpaceX Falcon 9 – 1:100 scale Parts for F9-Heavy



Print parts to make two more first stage boosters.
First stage, engine section motors, & booster connections.
Cap outer boosters with these nose fairings and glue to core first stage using the connections. Line up all seams facing the back of the model.

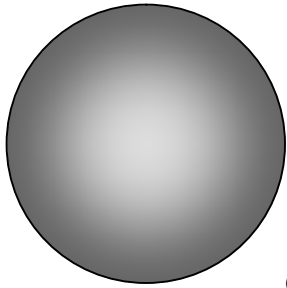


SpaceX Falcon 9 1:100 scale

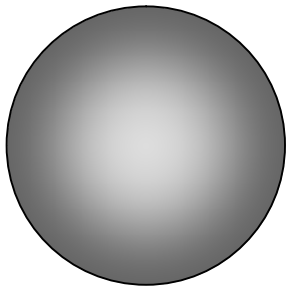
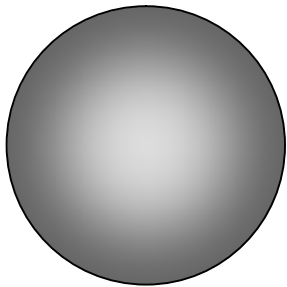
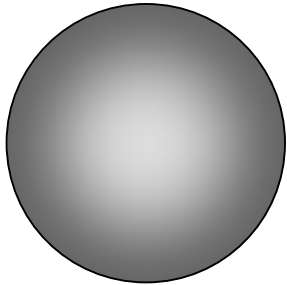
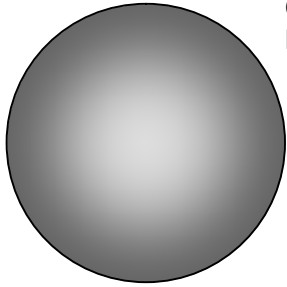
Upper booster connections
locate to these.

use as connector
or tab

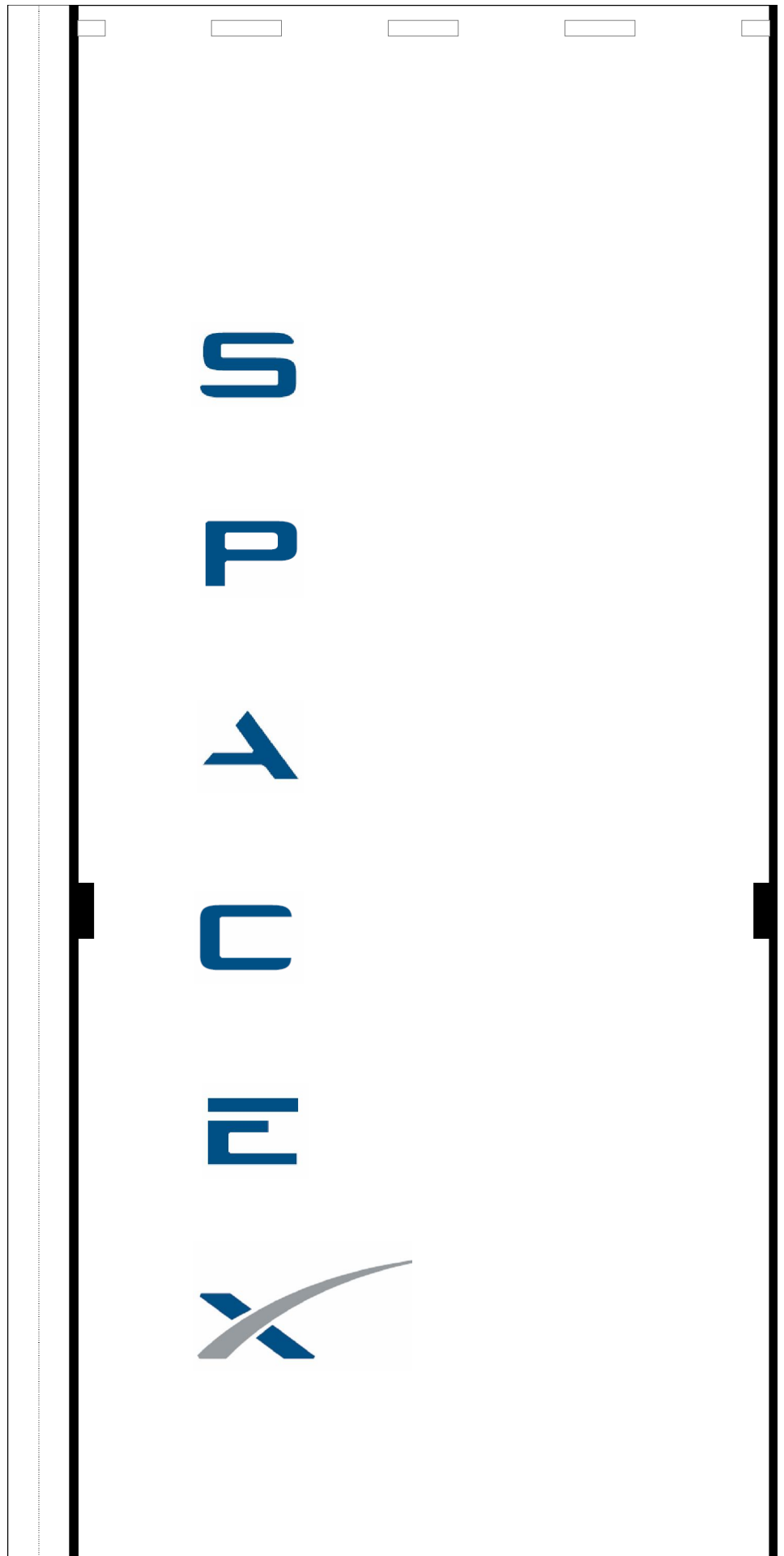
Internal support disks, position
as needed.



First stage
OUTER
CORE
BOOSTER



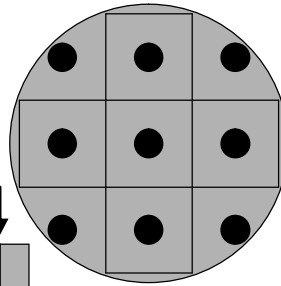
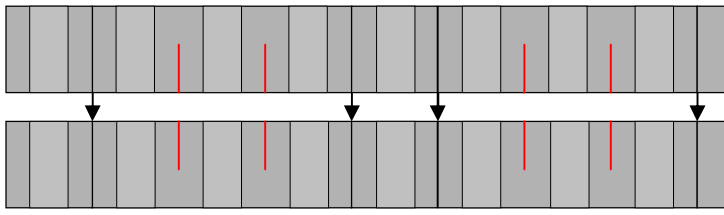
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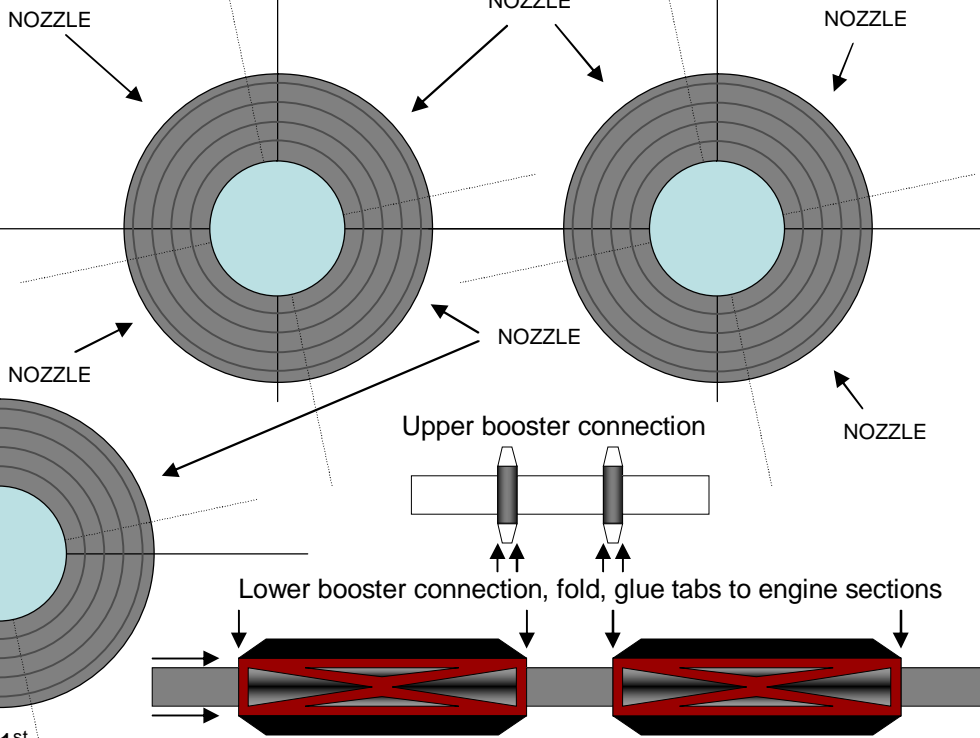
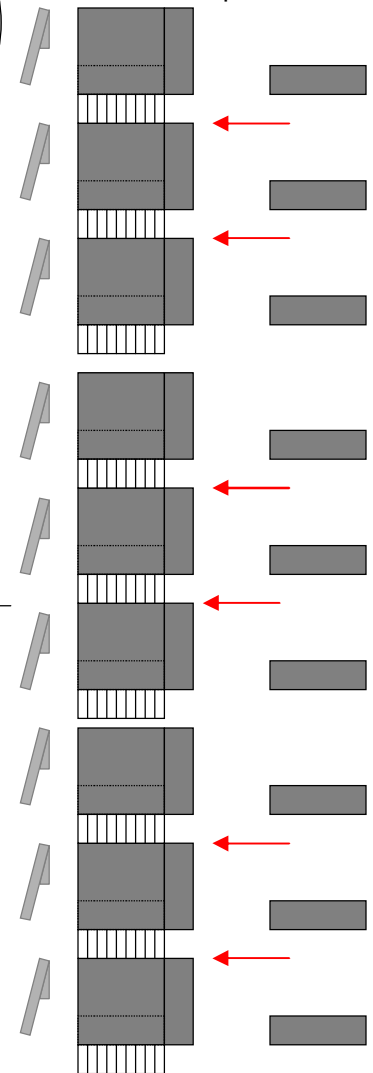
SpaceX Falcon 9 – 1:100 scale

Rocket Motor Mounting: Form crossed boxes and interlock, egg-crate style, by slitting along red lines

FOLDS

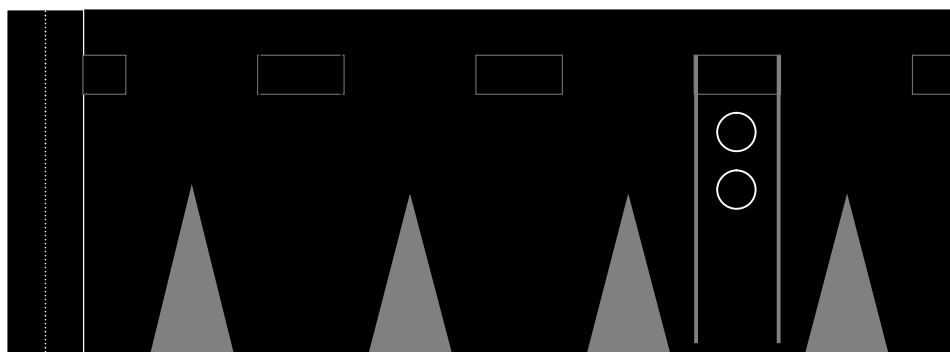


Rocket Motors
Roll into cylinders then cut into thirds to make individual parts.



1st stage Bottom

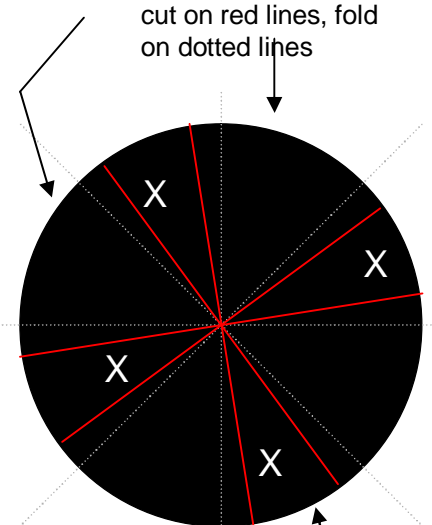
connect bottom section to first stage



Rocket Motor Mounting Support Ring
(position bottom edge .25" up inside body bottom)

inner support ring for first stage rocket motor mounting

Fairings – "Corner" Rocket Nozzles.
cut on red lines, fold on dotted lines



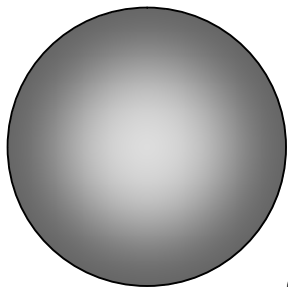
DISCARD

SpaceX Falcon 9 1:100 scale

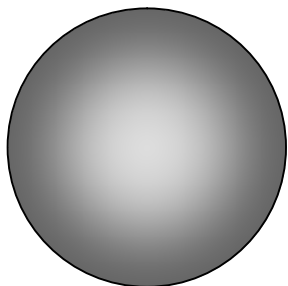
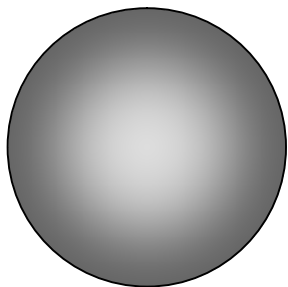
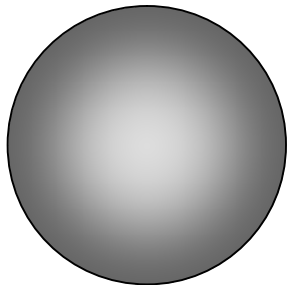
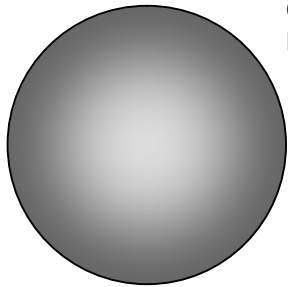
Upper booster connections
locate to these.

use as connector
or tab

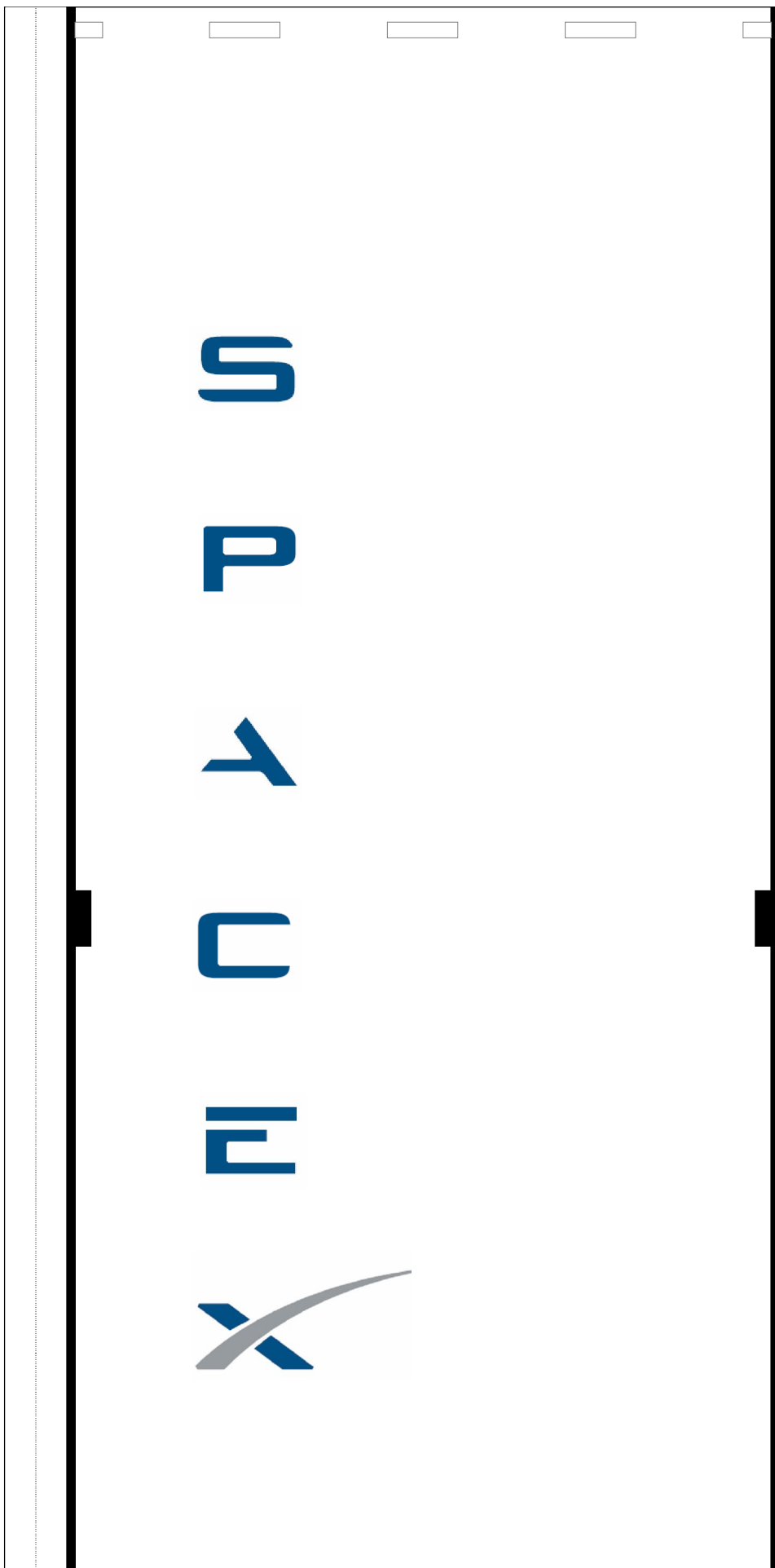
Internal support disks, position
as needed.



First stage
OUTER
CORE
BOOSTER



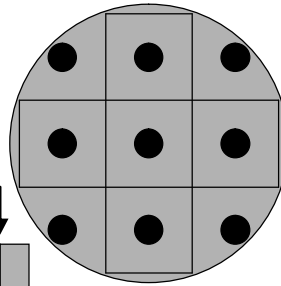
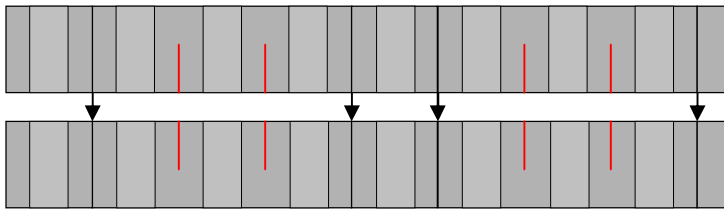
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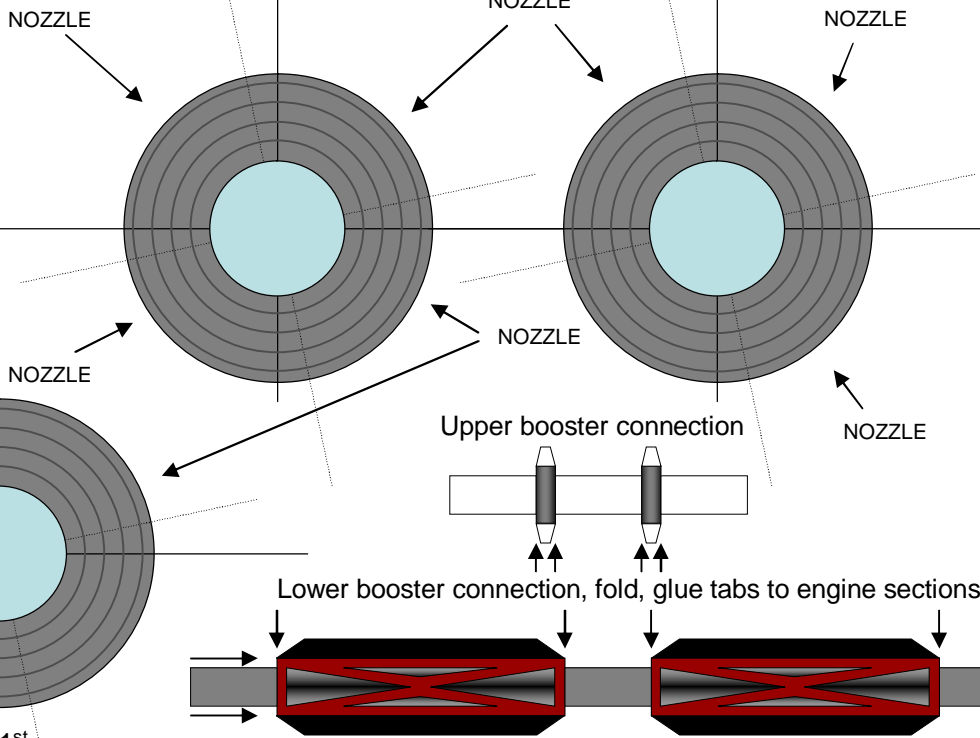
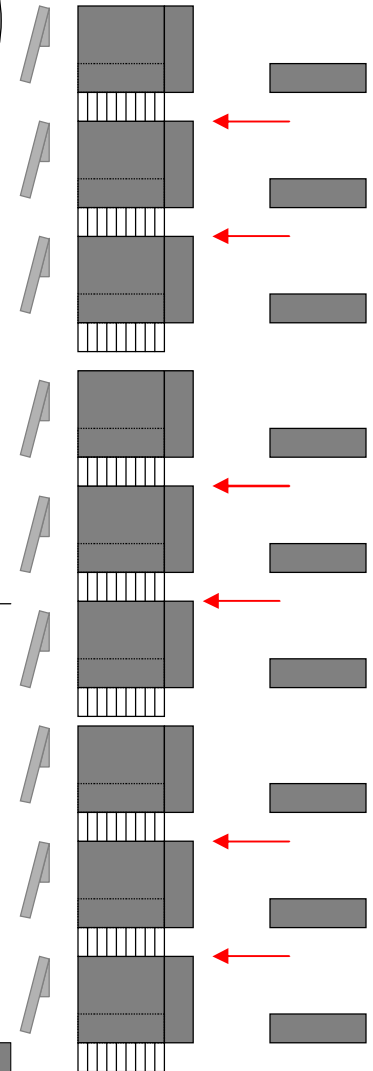
SpaceX Falcon 9 – 1:100 scale

Rocket Motor Mounting: Form crossed boxes and interlock, egg-crate style, by slitting along red lines

FOLDS



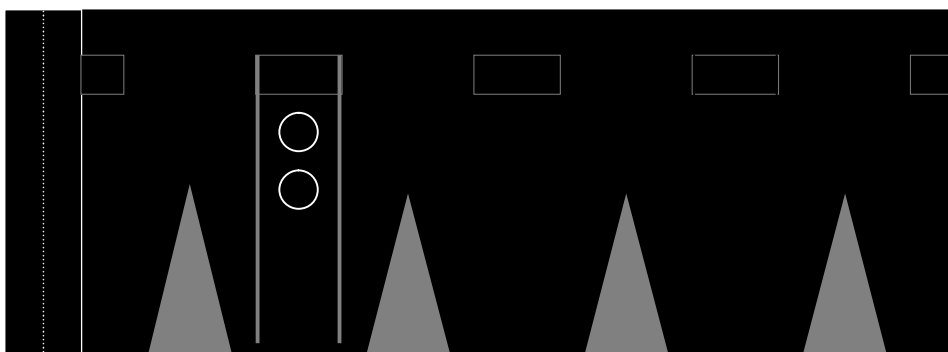
Rocket Motors
Roll into cylinders then
cut into thirds to make
individual parts.



1st
stage
Bottom

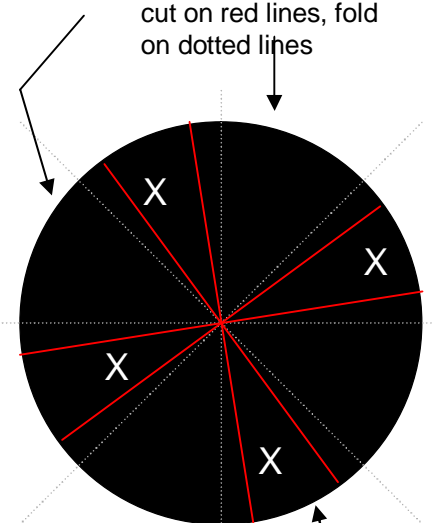
connect bottom section to first stage

Fairings – “Corner”
Rocket Nozzles.
cut on red lines, fold
on dotted lines

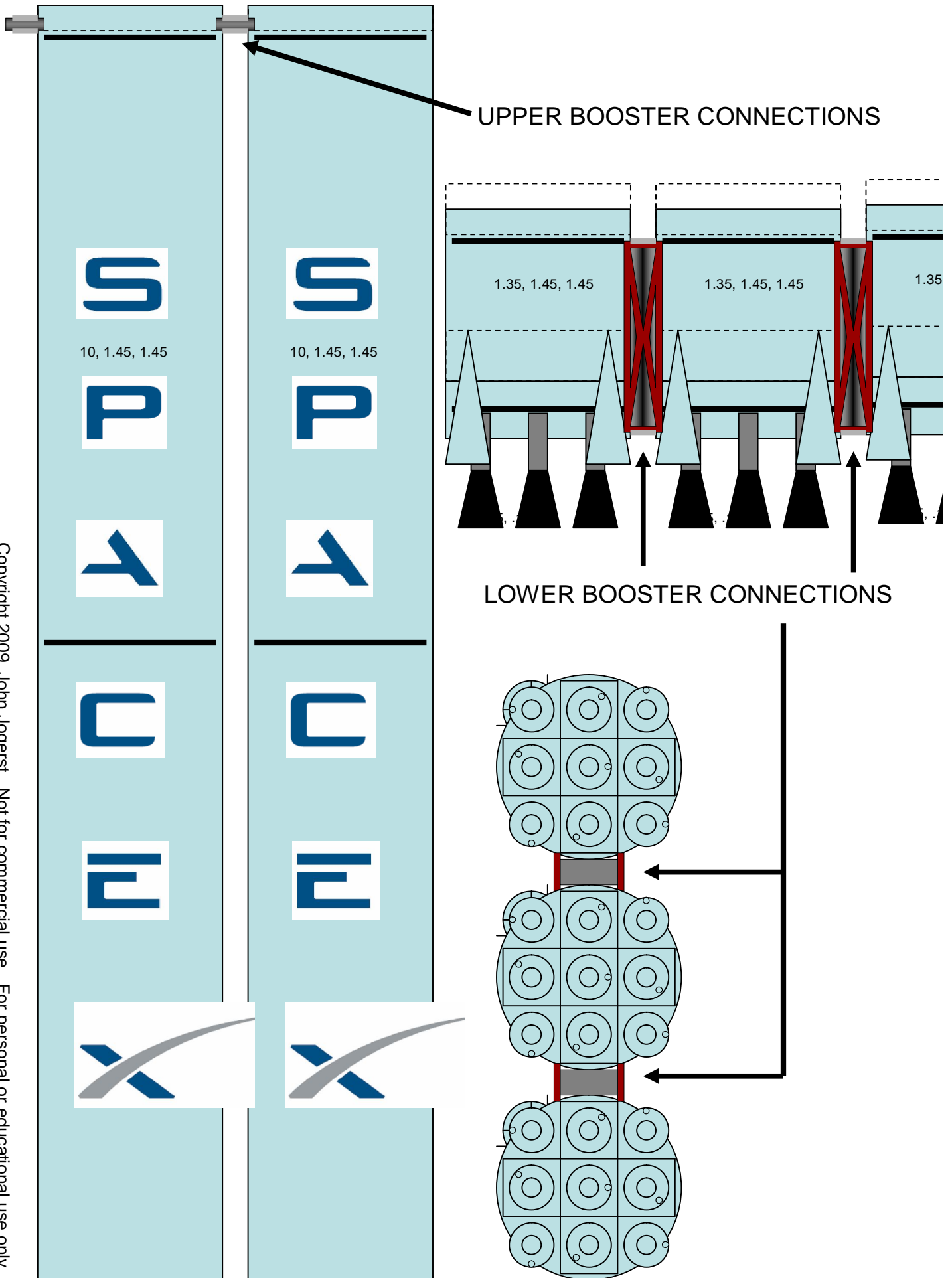


Rocket Motor Mounting Support Ring
(position bottom edge .25" up inside body bottom)

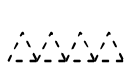
inner support ring for first stage rocket motor mounting



DISCARD

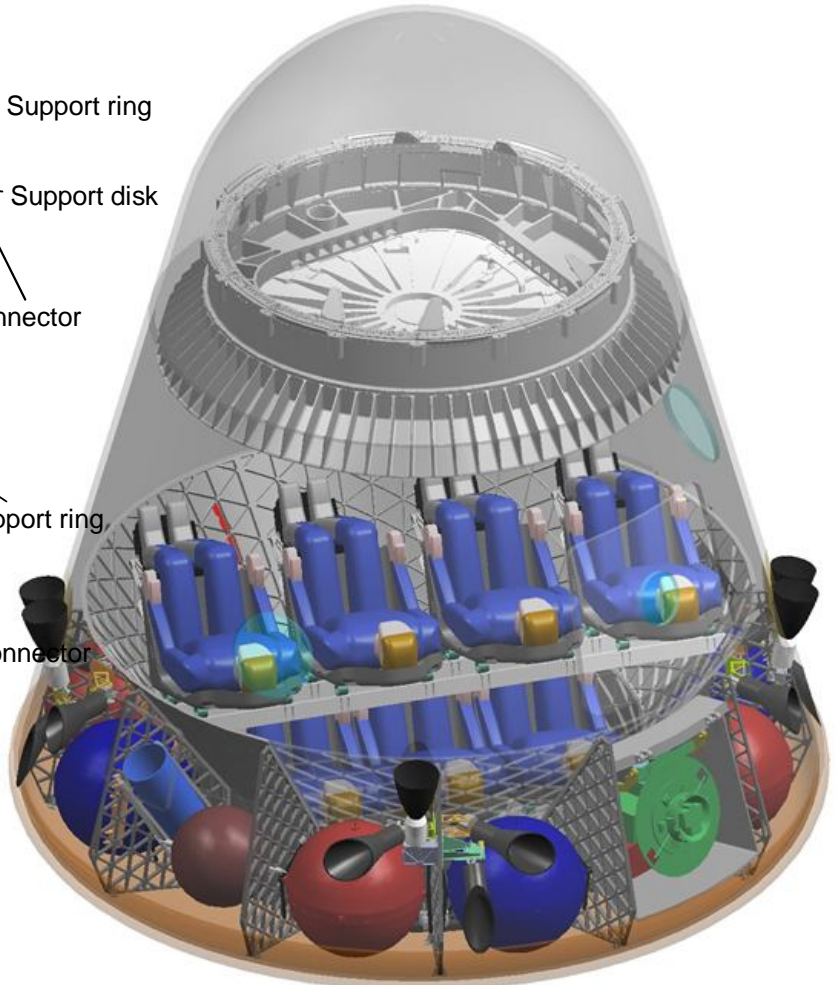
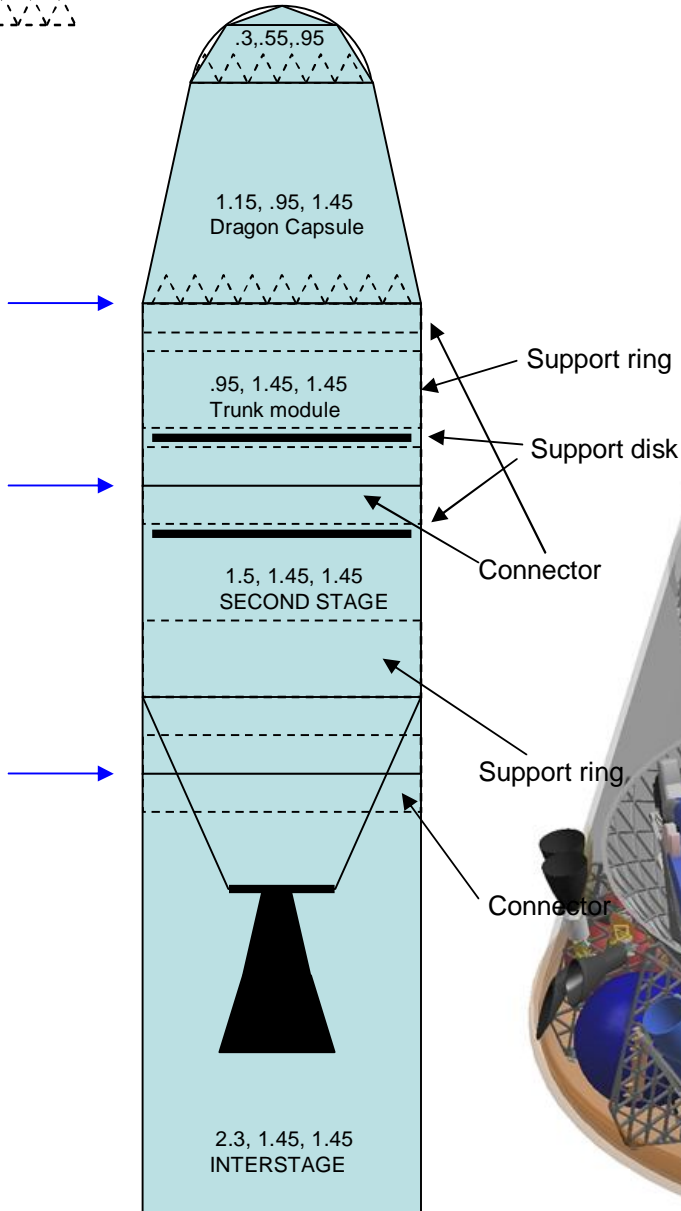


height top bottom

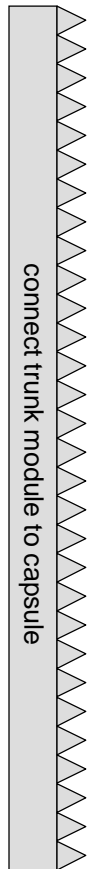
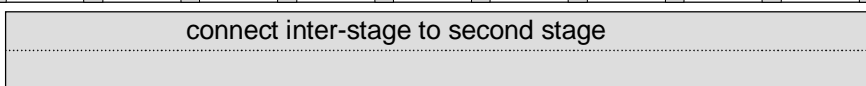
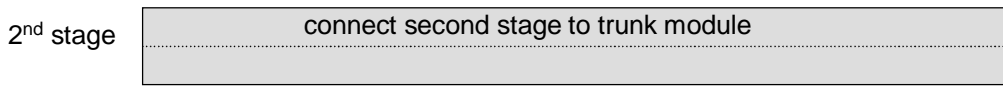
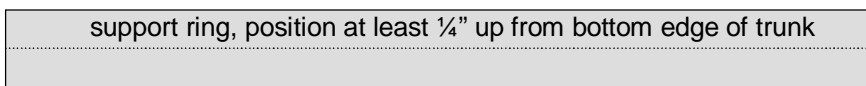
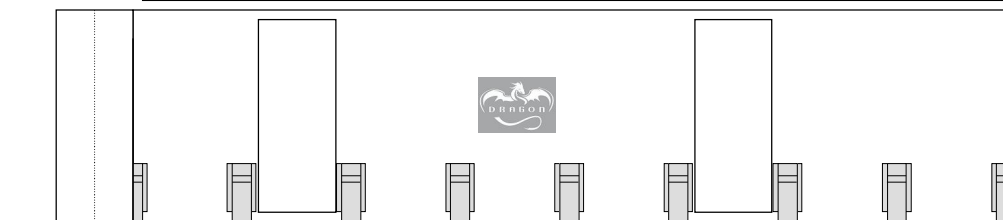
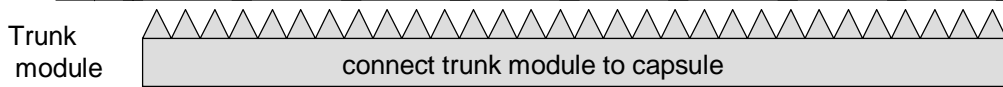
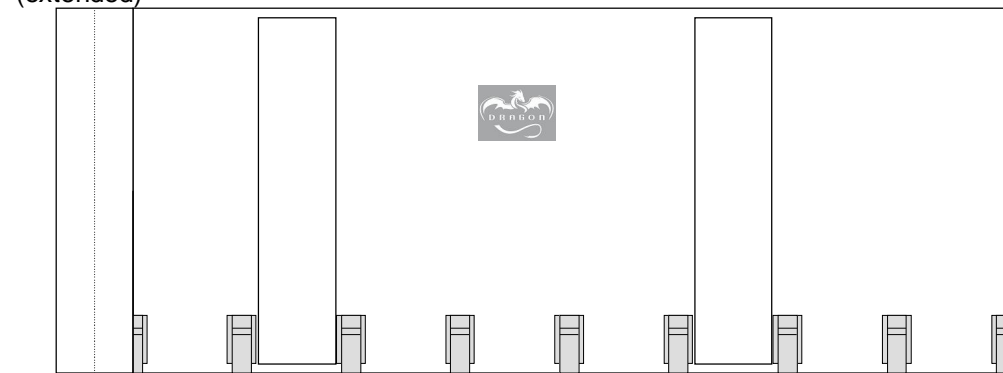
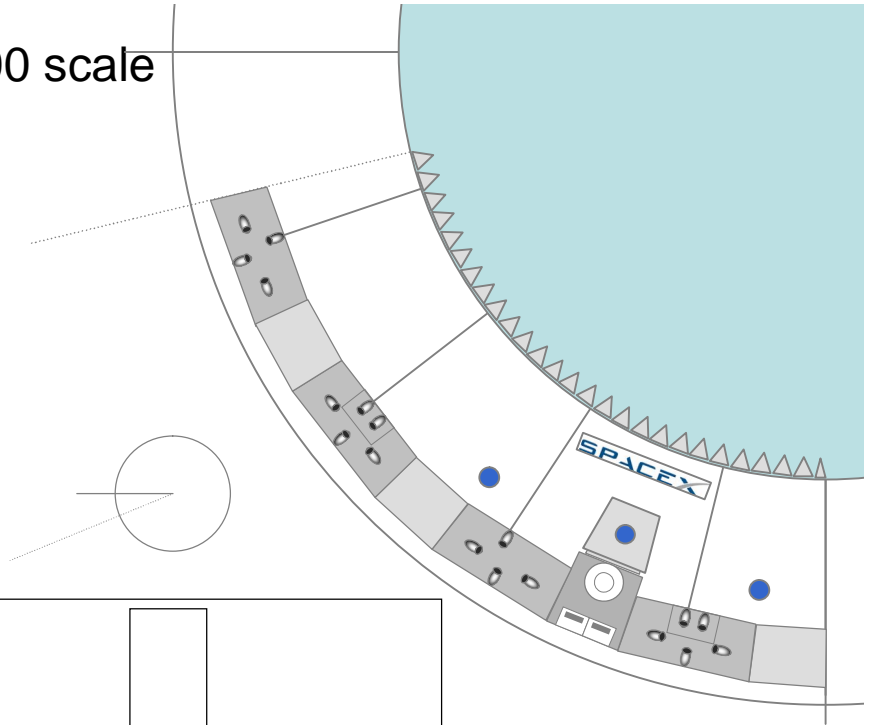
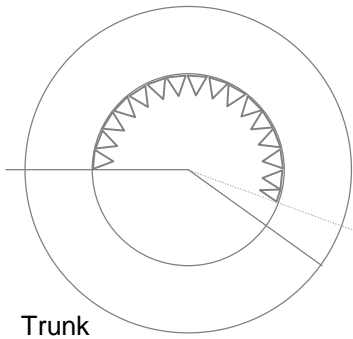


.1, x, .55

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SpaceX Falcon 9 – 1:100 scale



Option – use one or the other

