Trident parts list
Updated 7-7-17 Updated 1-7-18
79.95

V 3.0

Main===
1 BT-22-18
1 BT-22-9
9 BT-11-12
1 BT-11-8
6 CT-11-9-2
2 BNC-22-AJ
1 PNC-22-O5
3 PNC-11-O4
3 BNC-11-O3
3 Trident fins (3 6" x 12" x ¼" balsa sheets)

Setup===
6 CR-22-11
1 SCM-2
1 SC-9
1 SE-1
1 SA-1
1 LL-1/4-2

Paper===
1 PAR-30
1 Instructions
1 Fin Pattern
1 Decal
1 Report 1

1 8x24 bag

U.S. Rockets
Estes Trident Upscale to 2.25" OD (2.25x)
Read all instructions first before beginning as there are optional assembly steps.
Copyright Estes Industries. The original design shape and decals are their IP solely.
No original Tridents were harmed in the making of this kit!
The instructions and modified version is Copyright Jerry Irvine 2017-2018
Created 7-17 Modified 1-18
We recommend yellow wood glue for construction, add epoxy for heat reinforcement, some even add microbaloons. Use a sharp x-acto knife. Have a pen and a Q-tip handy. Fin marking guide is in AIR-10 or at: http://v-serv.com/usr/pubs/air10.htm

Specifications:
Length: 68.5"
Diameter: 3.47"
Motor size: 29mm
Parachute: 30"
Estimated weight: 2 pounds
Estimated CDa: 0.8
Estimated CP: overstable
Launch Lug: 0.25"
MSRP: $79.95
Series: Retro

1. Using the fin pattern sheet cut out each fin from the balsa stock with the leading edge alone one edge so the grain direction is correct. Due to the

curvy shape, cut in thin layers. Use a sharp X-acto knife. Sand the edges flat or sand an airfoil on the leading and trailing edges for higher performance and longer motor delays.

2. Using 3 BT-11-12 and 2 CT-9-11-1/2 glue each set of three outer tubes together with 3 tubes each. Set aside to dry
3. The smaller nose cones are glued into the three now 36" long tubes and these are ejection baffle tubes. Be sure to put glue on the base of the nose cones as a heat shield. The shorter BNC-11-O3 nose cones go on the top end and the shorter BNC-11-O4 go on the bottom end.
4. Glue a CR-22-11 ring ½" from one end of the BT-11-8 motor tube. Glue another CR-22-11 ring 4" from the other end. On that same 4" end glue 4 more CR-22-11 rings every ½". When inserting the motor mount into the BT-22-9 lower airframe tube only the first two rings go inside the tube and the 4 spare rings and tube extension stick out the rear. This gives the model a fantasy spacecraft appearance we have all come to love.
5. Glue a BNC-22-AJ (shorter cone) into the top of this assembly but be sure to coat the base of the nose cone with glue as a heat shield.
6. Glue the PNC-22-O5 nose cone to one end of the BT-22-9 upper main tube. This nose cone also needs to be coated with glue as a heat shield.
7. Assemble the shock cord mount SCM-1 with the SC-9 shock cord using our usual method. Glue it inside the open end of the BT-22-18 main upper tube at least 2" down inside so the nose cone can slide on. Glue the SA-1 Screw eye Anchor to the base of the BNC-22-AJ. Glue the SE-1 screw eye into that disc. Tie the shock cord to the eye.
8. Tie the parachute to the shock cord 24" from the nose cone. Put the slide ring on the parachute first.
9. Ejection ducting cutting. The lower ducts cut into the outside of the BT-22-9 tube should be about 1" long and about ¾" wide. Mark the tube for 3 fins to establish placement of the ducts. The top of the duct should be at the base of the nose cone or close to it or about 1" from the top of the BT-22-9 lower main airframe assembly.
10. Ejection ducting cutting. The upper ducts cut into the outside of the BT-22-18 tube should be about 1" long and about ¾" wide. Mark the tube for 3 fins to establish placement of the ducts. The bottom of the duct should be above the base of the nose cone a bit more since it is plastic or close to it or about 2" from the bottom of the BT-22-18 upper main airframe assembly.
11. Ejection ducting cutting. The upper ducts cut into the outside of the 3x BT-11-12 tube assembly should be about 1" long and about ¾" wide. The bottom of the duct should be above the base of the longer BNC-11-O4 nose cone or close to it or about 1" from the top of the BT-11-12 pod baffle airframe assembly.
12. Ejection ducting cutting. The lower ducts cut into the outside of the 3x BT-11-12 tube assembly should be about 1" long and about ¾" wide. The bottom of the duct should be below the base of the shorter BNC-11-O3 nose cone or close to it or about 1" from the bottom of the 3x BT-11-12 pod baffle airframe assembly.
13. When gluing the ducts to the main tubes ducts should be carefully aligned with each other. Lay the assembly on a long table to carefully align the two

larger tubes to the smaller tube. Repeat with remaining tubes. Be sure you glue them centered to the fin lines you drew on the larger diameter tubes. Most people prefer to put a layer of glue all around the ducting tube ID if the rocket will be flown frequently to reduce charring. This can be done with a Q-tip or before the nose cones are attached if you cut the slots first.

14. Once all ducts are on, reinforce the outside joints with glue using your finger and a Q-tip.
15. The fin root edges have to be sanded to conform to the nose cone and tube shape. Make sure most of the edge is touching either tube or nose cone. Small gaps can be filled with glue just fine. We recommend putting the rear of the fin right at the tip of the rear nose cone. Make sure the fin is sticking straight out. Let dry then add glue fillets with your finger to get a smooth shape.
16. Most people cut the launch in half at an angle for a more aerodynamic shape and glue one near the base of the lower tube, in the pod and main tube interface area. Glue the second lug above it in alignment at the base of the upper airframe tube.
17. Sand and seal all wood parts with laquer sanding sealer. Sand with 320 grit sandpaper, seal and sand again. Paint the entire model gloss white with enamel spray paint.
18. We do not include Trident decals in the kit. Online resources have preprinted decals that can be scaled to 2.25x or other resources have the scans you can apply to your favorite material. We use “drafting labels”, your printer can get from their paper vendors. See many available online images for decal placement.
19. Even though there is ejection ducting we still recommend a small amount of wadding since the parachute is plastic. The slide ring should be put all the way to the canopy during folding. On deployment the parachute is initially constrained in size so the rocket can decelerate somewhat before the parachute fully opens. As the canopy fills with air it forces the ring down the shroud lines and the canopy does not “explosively deploy”.
20. To prep the rocket for flight with a motor without an included thrust ring, just put a band of ¾” masking tape around the nozzle end of the motor smoothly to the diameter of the BT-11 OD. Insert the motor, and apply a band of tape all around the motor, centered on the thrust ring and tube joint. Insert igniter as instructed, and place on pad. We recommend a small standoff so the nozzle is not touching the blast deflector place as the rear of the rocket has fantasy paint details.
21. For display we recommend making a stand using an expended motor case and base plate or hanging it from the ceiling. You might as well put some effort into making the base plate look nice and labeling the rocket.

Fly big, fly fast, fly high, but above all, fly safely!

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