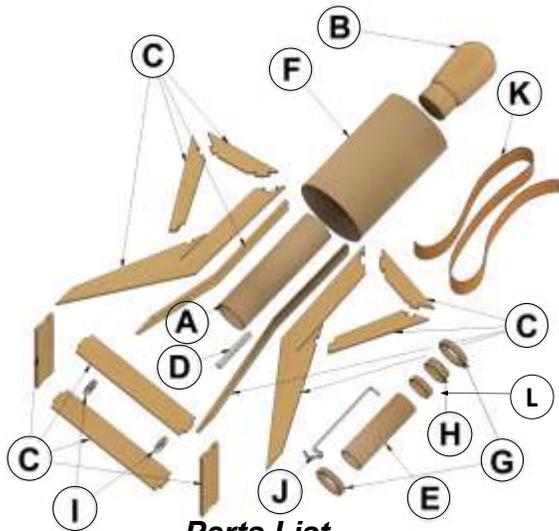


## EXPLODED VIEW



### Parts List

A	1	Body Tube	BT 20-J
B	1	Balsa Nose Cone	BNC-20P
C	1	Laser Cut Fins	FV-10
D	1	Launch Lug	LL-110
E	1	Motor Tube	BT 5-0225
F	1	Body Tube	BT-60-0225
G	2	Centering Rings	CR-5-20-1/8
H	1	Thrust Block	TB-5
I	4	Washer Weights	WW-5
J	1	Engine Hook	EH-18
K	1	Streamer	SP-112
L	1	Thrust Block	CR 3-5
Not Shown	1	Fiber Fin Alignment Jig TKV-10	

### TOOLS

In addition to the parts supplied, you will need the following tools to assemble and finish this kit.

White or Wood Glue	Balsa Fillercoat or Sanding Sealer
320 to 600 Sandpaper	Spray Paint
Pencil	

## ASSEMBLY

1. Cut out the tube marking guide and wrap it around the BT-20J body tube. Mark the tube at each end of the four lines on the edge of the guide.



Continued on other side

## About Estes Industries, Inc.

In July 1958, G. Harry Stine of Model Missiles, Inc. in Denver, Colorado approached Vern Estes about making model rocket engines for them. On January 15, 1959, Vern's automated model rocket engine fabricating machine, "Mabel", produced the first of many millions of Estes model rocket engines. In 1960, Estes was producing more engines than Model Missiles could sell. Vern and his wife Gleda opened a mail order rocket company and introduced the Astron Scout and Astron Mark.

In 1961, a catalog was mimeographed and hand stitched on Gleda's sewing machine. Later that year, Estes Industries had outgrown the confined space in Denver. In December 1961, the entire operation was moved to an old farm in Penrose, Colorado quickly establishing the small town as the "Model Rocket Capital of the World."

Estes Industries was sold to Damon in September 1969. The name Estes is synonymous with model rocketry. Almost everyone remembers growing up launching Estes rockets or knowing someone that did. Estes Industries has introduced millions of youngsters of all ages to model rocketry for over half a century.

### About the Spaceman™

The Spaceman first appeared in 1963 in the Estes Model Rocket News as the "Man in Space". It entered in the catalog in 1964 as the "Astron Spaceman" and stayed there until 1971. Instead of using a parachute, it uses tumble recovery. It was originally designed by Vern Estes. The Retro-Repro Spaceman™ is updated by using laser-cut fins, and the original 18mm motors have been replaced by a recoverable 13mm motor pod that returns via streamer. This kit was re-engineered by Brian Guzek.

### What is a Retro-Repro™?

A Retro-Repro™ is a retro reproduction of an out-of-production model rocket kit. It is a close approximation of a full scale model of an early historically significant model rocket kit from one of the many companies that pioneered the hobby over the past half century. A Retro-Repro is not a true clone or identical copy of the original. It incorporates improvements using modern technology, while keeping the flavor and build appeal of the early kits.

Released: December 2017

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# SEMROC

# SPACEMAN™

## 1965 Retro Reproduction

Precision Turned  
Balsa Nose Cone

Laser Cut  
Balsa  
Fins

Feather-  
weight  
Recovery



FLYING MODEL  
ROCKET KIT

Made in the U.S.A by Semroc - Dayton, Ohio

## Spaceman™ KV-10

	Specifications	Engine	Altitude
Body Diameter	1.64"(4.1cm)	1/2A3-2T	125'
Length	6.5"(16.5cm)	A10-3T	300'
Fin Span	4.0" (10.16cm)		
Net Weight	0.52oz.(14.7g)		

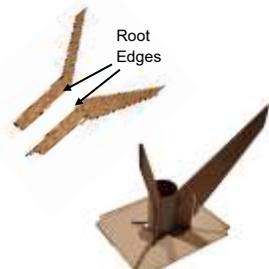
## Skill Level 2

❑ 1. See other side.

❑ 2. After the tube has been marked, remove the guide and connect the marks along the length of the tube. Use a piece of angle or a door jamb to assist you in keeping a straight line.



❑ 3. Remove the fins from the fin stock and glue the main fins to the BT-20J Body tube. Make sure that you glue the fins that have a slot in them across from each other. Use the Fin Alignment Jig to keep the fins perpendicular to the body tube. Keep the angled portion of the fins even with the end of the body tube.



❑ 4. After the fins have dried, remove the alignment jig and add glue fillets to the fin/body tube joints. Set aside and allow to dry.



❑ 5. Find the parts to make the box that goes around the bottom of the fins. Using the Fin Alignment Jig, assemble these into a square. Set aside to dry.



❑ 6. Use one of the 1/8" wide centering rings and make a notch approx. 1/8" wide and 1/2 the thickness of the ring on the inside of the ring as shown.



❑ 7. Locate the BT-5 Motor tube and place a mark 1/4" from each end of the tube.



❑ 8. Insert the Motor Hook into the slot in the tube with the hook overhanging the long end. Glue the centering ring that you notched onto the tube with the notch sliding over the motor hook and the ring lining up with the mark on the tube. Glue the other centering ring on the opposite end of the motor tube. Apply a glue fillet to both sides of the rings. Try and keep the glue off of the outside of the centering rings. Glue both of the Thrust Blocks in the end opposite the motor hook. Set aside to dry.



❑ 9. After the glue has dried attach the end of the streamer to the middle of the motor tube between the centering rings with masking tape.



❑ 10. Glue the arm pieces together. **Caution:** These pieces will fit together correctly only one way. Make sure you have them turned correctly or you will break off the locking tabs if you try to force them to fit. Make sure they are flat, and set them aside to dry.



❑ 11. Remove the Square box from the Fin Alignment Jig. Apply glue to the ends of the fins where they meet up to the corners of the square box. Slide the box over the top of the fins and down onto the ends of the fins until the bottom of the fins and the bottom of the box are even.



❑ 12. Test fit the Large Body Tube over the outside of the fins, making sure it fits in the slot in the fins. Sand the sides of the fins if necessary. Once you have the fins so the tube fits over them, apply glue and re-install the body tube. It should now look like the picture.



❑ 13. Using a scrap piece of balsa, or a small dowel, add a glue fillet to the inside of the body tube/fin joints.



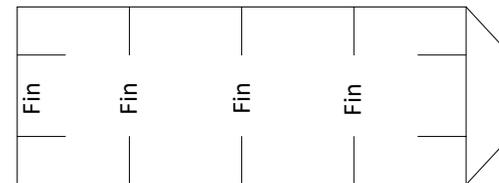
❑ 14. Glue the launch lug to the inside of the outer body tube against one of the fins, even with the bottom of the body tube.



❑ 15. Glue the nose cone into the forward end of the body tube.

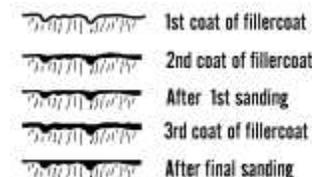
❑ 16. Glue the arms onto the fins, watching the orientation so the tabs fit correctly. Make sure that the arms are in line with the fins and are interlocked completely.

❑ 17. Glue the washer weights to the inside sides of the square box. These weights are to help keep the Spaceman from coming down head first during recovery.

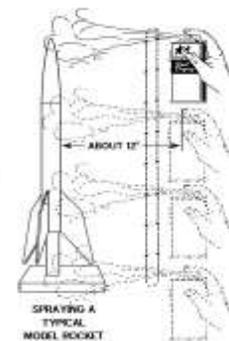


## FINISHING

❑ 18. When all the glue has dried, prepare balsa surfaces for a smooth professional looking finish. Fill the wood grain with balsa fillercoat or sanding sealer. When dry, sand with fine sandpaper. Repeat until smooth.



❑ 19. After all balsa surfaces have been prepared, wipe off all balsa dust with a dry cloth. First spray the model with an enamel primer. Spray painting your model with a fast-drying enamel will produce the best results. **PATIENCE...is the most important ingredient.** Use several thin coats, allowing each coat to completely dry before the next coat. Start each spray a few inches above the model and end a few inches below the model. Keep the can about 12" away and use quick light coats. The final coat can be a little heavier to give the model a glossy wet-looking finish.



❑ 20. Decorate your Spaceman however you wish.

## FLIGHT PREPPING

❑ 21. To Prepare your Spaceman for flight, begin by preparing the engine of your choice and inserting it into the motor tube making sure the motor hook locks the engine in the motor tube.

❑ 22. Carefully wrap the streamer around the motor tube and then insert the motor assembly into the body tube of the Spaceman, making sure the streamer stays coiled around the motor tube and between the centering rings. Make sure the motor tube is pushed completely into the body tube.

❑ 23. Launch the Spaceman from a 1/8" diameter by 36" long launch rod.

❑ 24. Carefully check all parts of your rocket before each flight as a part of your pre-flight checklist.

This completes the assembly of your  
*Spaceman*