

# HERCULES

## FLYING MODEL ROCKET

*Easy to  
Assemble*

*33.5" Long*

Designed to Carry Heavy  
Payloads

Durable Aircraft Plywood Fins

Specifications:

Length—33.5"

Body Dia.—2.25"

Takeoff weight without  
engine: 3 oz. (28 g)\*

Recommended F.S.I. Engines:  
E60-6, F100-8

### Skill Level 2

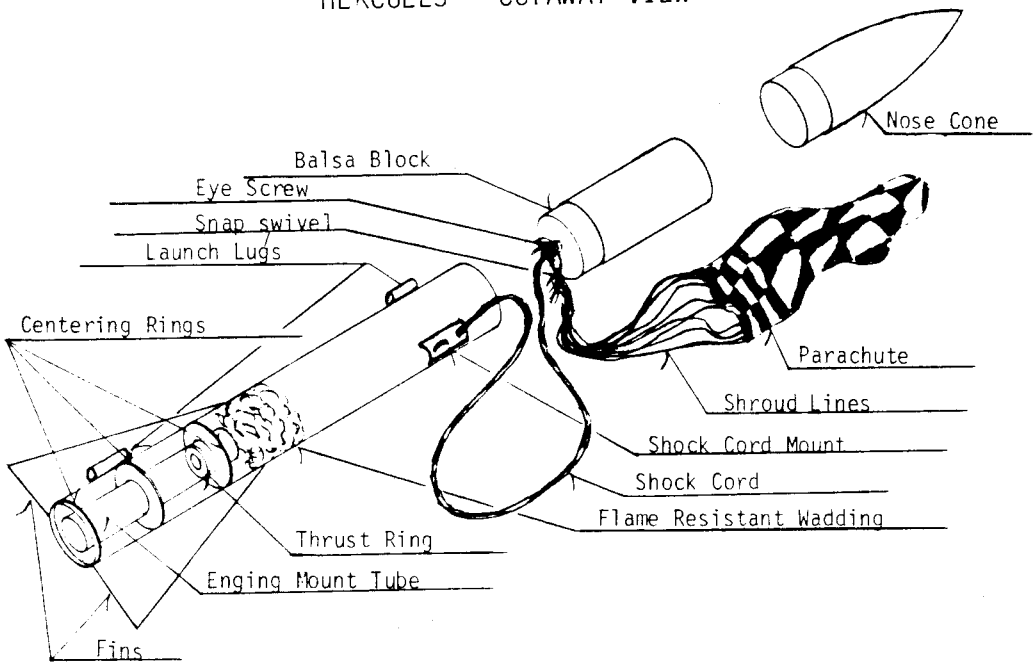
This kit requires assembly. Launch systems, engines, glue, and finishing supplies are not included.

ADULT SUPERVISION RECOMMENDED

**1020**



# HERCULES - CUTAWAY VIEW

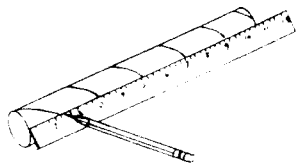
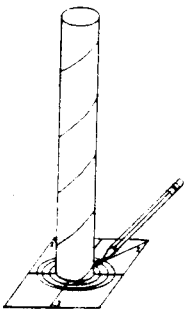


## Parts List:

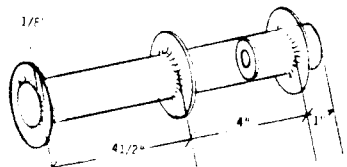
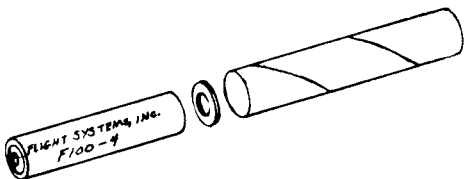
- |                                     |                                |
|-------------------------------------|--------------------------------|
| 1- 18" x 2.25" Body Tube            | 1- Eye Screw                   |
| 1- 9" x 2.25" Body Tube             | 1- Snap Swivel                 |
| 1- Nose Cone ( NP- 24 )             | 1- Nylon Parachute ( NP- 24 )  |
| 1- Balsa Block ( BB-22 )            | 1- Shock Cord ( 26" )          |
| 1- Engine Mount Tube ( 9" x 1.13" ) | 1- Shock Cord Mount            |
| 3- Centering Rings ( CR- 22 )       | 1- Decal Sheet                 |
| 3- Fins                             | 2- Launch Lugs ( 1/8" & 1/4" ) |
| 1- Thrust Ring ( TR- 22 )           | 1- Flame Resistant Wadding     |

## IMPORTANT:

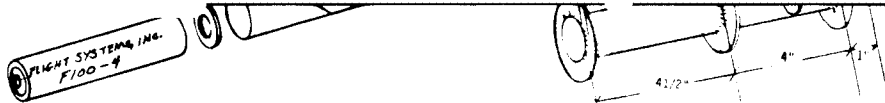
Read through entire instructions before starting assembly. Check to be sure all parts are present. Familiarize yourself with the parts. Test fit the parts together before applying any glue. If a part doesn't fit properly, sand or build up for a precision fit. Please read each step before starting that step. Check off each completed step.



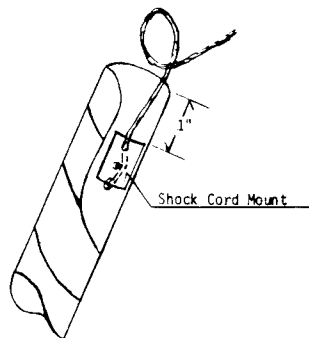
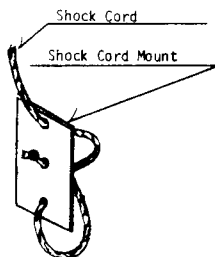
- Using the fin alignment guide mark lines on the long body tube for fin alignment as shown.



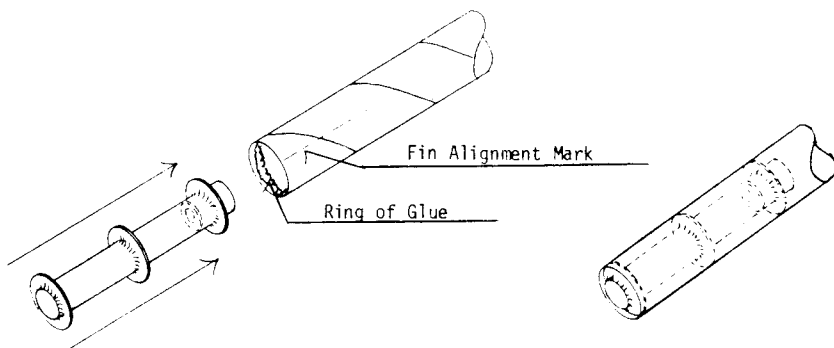
- Determine which size F.S.I. engine you intend to use in your Hercules rocket. Either the E60 or the F100 is recommended. Locate the TR-2 thrust ring ( 1.13 OD cardboard ring ) and the 9" x 1.13 ID engine holder tube. put a ring of glue inside of one end of the engine holding tube. Now using a F.S.I. 27mm engine push the thrust ring into the tube until the engine projects out of the end of the tube 1/2". Remove the engine. Now install the centering rings as shown and glue in place. Apply a glue fillet on each side of the rings as shown. Set the assembly aside to dry.



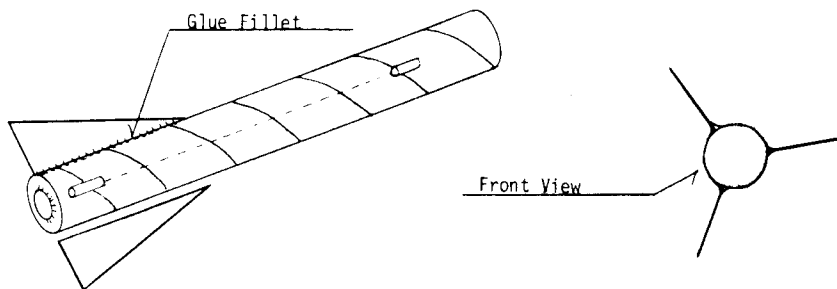
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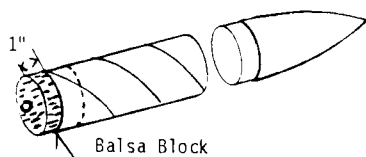
3. Install the shock cord mount as shown. Spread a heavy layer of glue over the shock cord mount on the side opposite the shock cord knot. Curve the shock cord mount and insert into the nose cone end of the body tube. Press firmly in place. Be sure the mount is at least 1" inside or the nose cone will not go in the body tube. The drawing shows the proper position inside the body tube.



4. Install the engine mount unit. Be sure the engine mount will slide easily into the body tube. If it is too tight sand the rings until a precision fit is obtained. Apply a ring of glue inside the body tube. Insert the engine mount unit using one smooth motion until it is flush with the back of the body tube. Do not stop pushing the engine mount until it is in the correct position or it will stick in the position in which you stopped. Be careful to insert the engine mount in the end of the body tube that you previously marked for fin alignment.



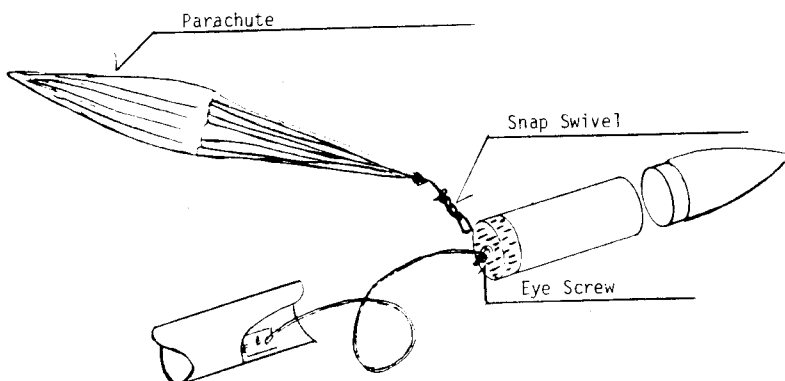
5. Lightly sand and round the edges of all of the fins. DO NOT sand the root (red colored) edge of the fins. Attach the red edge of the fins to the body tube and carefully align with the lines you marked on the body tube. Be sure the fins stick straight out from the body tube. Stand the assembly on its forward end and allow to dry. When dry, run two or three heavy glue fillets on both sides of the fins for added strength. Next draw a straight line half way between two fins and parallel with the body tube about 12" up the tube. Now glue the launch lugs on this line be sure they align with each other.



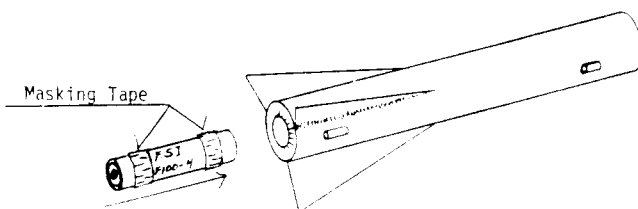
6. Glue the balsa block in the 9" payload section (2.25"x 9" ) as shown. Twist the eye screw into the center of the block and attach the end of the shock cord. A small amount of glue may be applied to the eye screw to prevent it from coming loose.
7. The rocket is now ready to paint and add decals. It is recommended that a light coat of paint be sprayed on and let dry. Add a couple more mist coats lightly sanding between them. Now apply a wet coat (gloss just appears) and set aside to dry. After the model is completely dry apply the decals. Cut one decal at a time from the sheet and submerge in lukewarm water until the decal will slide off of the decal paper (usually about 20 seconds). Gently slide the decal onto the rocket and carefully smooth out any wrinkles.

## FLIGHT PREPARATION

1. Install the flame resistant wadding as shown in the cutaway view.



2. Gather the shroud lines of the nylon parachute and tie in a knot about one inch from the ends of the lines. Leave one shroud line intact and cut the others off 1/4" below the knot. Now put a couple of drops of glue on the knot to be sure it doesn't come loose during ejection. Tie the snap swivel to the shroud line that you left 1" long. Attach the snap swivel to the eye screw. Fold the parachute as shown. Insert the shock cord first and then the parachute into the lower body tube. Join the payload section to the lower body tube.

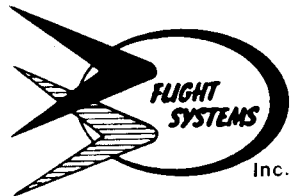
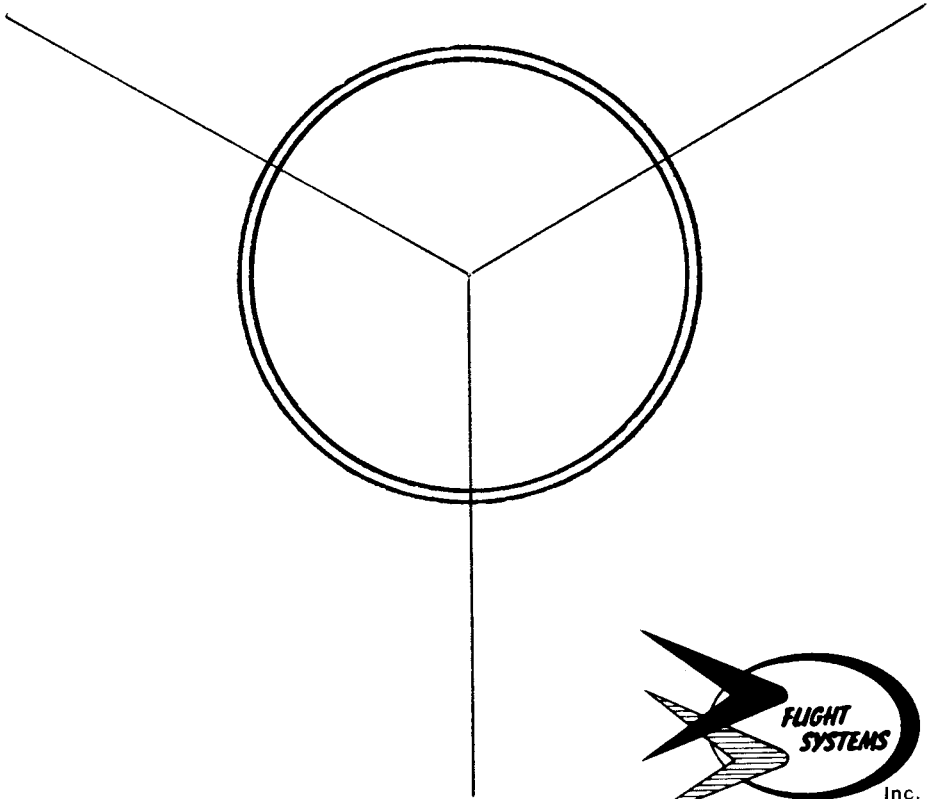


3. Install the engine using a friction fit. Several wraps of masking tape are placed around the engine as shown to hold the engine in place. Insert the F.S.I. engine until contact is made with the thrust ring. Be sure that the engine fits tight enough that it will not come out of the engine holding tube during the ejection phase of the flight.
4. Place the rocket on the launcher and insert the F.S.I. ignitor. Attach the firing clips as shown in the engine instructions.
5. Go back to launch control and clear the area. Arm the launch control by inserting the phone jack attached to the firing line. Check the arming light for continuity.
6. Give a count down 5-4-3-2-1 ignition.

Be sure to follow the \* HIA- NAR model rocket safety code when carrying out your model rocket activities.

\* HIA- Hobby Industry of America  
 NAR- National Association of Rocketry

# FIN PLACEMENT GUIDE



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**HERCULES US ARMY**

***Flight Systems USA***

