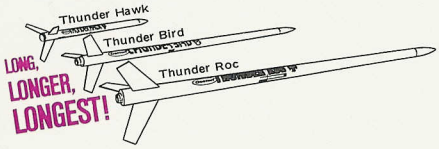
THUNDER

FROM CENTURI'S LONG'N LEAN LINE

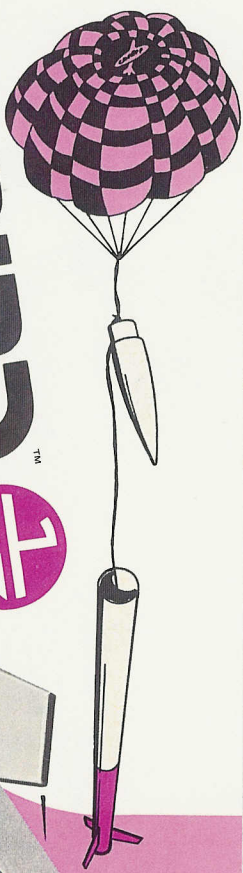


LONG, LONGER, LONGEST!

- FAST & EASY ASSEMBLY
- BIG & IMPRESSIVE Ideal for demo flights
- HUGE 20" CHUTE for gentle recovery
- LARGE DECAL SHEET Over 17 square inches
- PRE-CUT BALSA FINS
- ENGINE LOCK

THUNDER BIRD™

A FULL 3½ FEET LONG!



RECOMMENDED ENGINES:
(Not included)
A8-3 B4-4 B6-4 C6-5

SPECIFICATIONS:

Length	41.75" 106 cm)
Body Diam.	1.0" (2.5 cm)
Net Weight	2.7 oz (77 gm)

SKILL LEVEL

1	2	3	4	5
Beginner		Intermediate		Advanced

ASSEMBLED LENGTH 41.75" (106 cm)

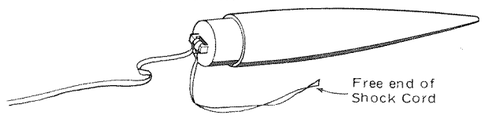
RECOMMENDED FOR AGES 10 THRU ADULT

5339

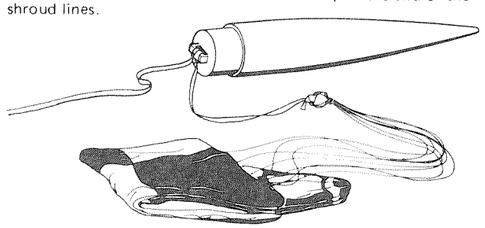
Centuri

FLYING MODEL ROCKET KIT

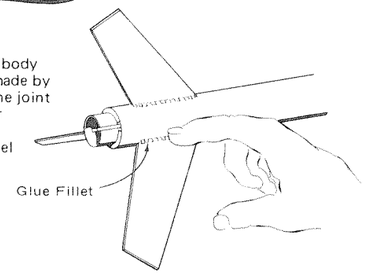
13 Tie the free end of the shock cord to the nose cone insert, leaving approximately two inches of shock cord beyond the insert. This will be used to attach the parachute.



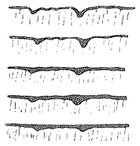
14 Assemble the parachute according to the instructions printed on it. Tie the free end of the shock cord to the loop at the end of the shroud lines.



15 Apply a fillet of glue to all body tube/fin joints. A fillet is made by applying a line of glue to the joint and smoothing it with your finger as shown. This adds extra strength to your model and is very important.

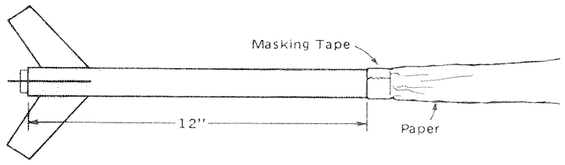


16 Using sanding sealer or balsa filler coat, fill the wood surfaces of your model to obtain a smooth finish. Use several coats and sand between each coat to get a good finish.

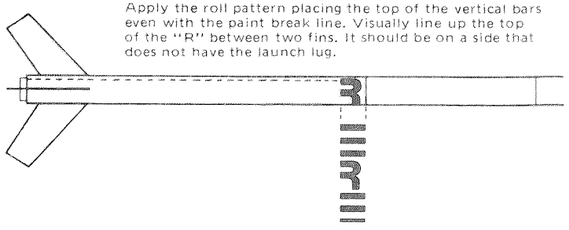


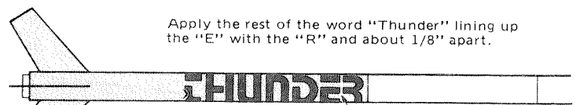
17 Painting your model will make it look more attractive and last longer. Use spray enamel paint for best results. Do not try to paint your model in one coat, but use several light coats and one finish coat.

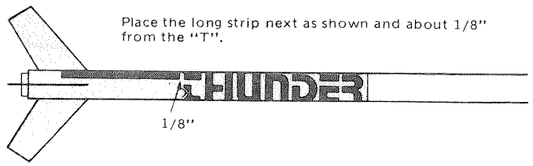
The standard paint scheme for the Thunder Bird is white for the upper body and orange for the lower body. Paint the white first and allow it to dry. Then applying masking tape to the body 12" above the end of the lower body tube. Mask off the entire upper body with paper and paint the lower body orange. When paint is dry remove the masking.

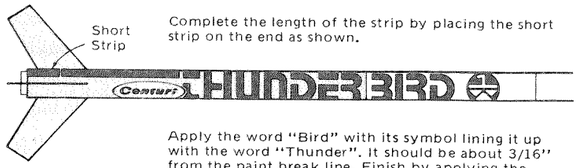


18 The decals provided in your kit will give it a professional touch. Follow the directions printed on the back of the decals for best results.









FLYING INSTRUCTIONS

ENGINES

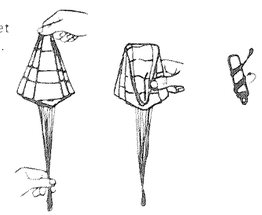
Igniters and complete engine installation instructions are included in "Engine Operating Instructions" which accompany all Centuri engines.

Your THUNDER BIRD can be launched with the following engines:

ENGINE	APPROXIMATE ALTITUDE	PURPOSE
A8-3	150–300 feet	LOW ALTITUDE–for first test flight and small fields.
B4-4 B6-4	300–500 feet	MEDIUM ALTITUDES–for general flying and medium sized fields.
C6-5	500–800 feet	HIGH ALTITUDES–for extremely high altitudes and large launch fields.

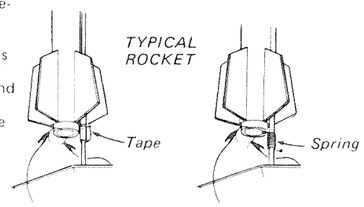
FLIGHT PREPPING

1. Inspect entire recovery system for good condition before each flight. If the recovery system is tangled from the last flight, cut it apart to untangle and repair.
2. Insert flameproof chute wadding to protect your parachute from being melted by the engine's ejection charge. We recommend using 3 sheets of Centuri crepe wadding (#5846/SPW-19).
3. Fold parachutes as shown and tuck neatly into rocket . . . trying to avoid tangles. Chutes should be packed just before flight to avoid them possibly sticking together.

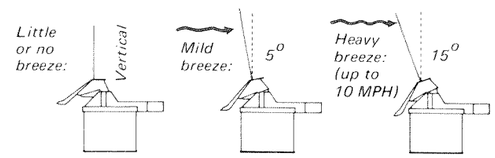


4. Tuck in shock cord and insert nose cone. The cone should fit snugly, yet be loose enough to eject.
5. Install igniter into engine, following instructions enclosed with engines.
6. Insert engine into its mount, securing with engine lock.

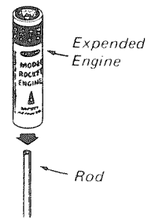
7. Mount the rocket on launcher and prepare for ignition. The rocket must be raised slightly off the launcher's deflector to avoid a short-circuit which might prevent ignition. If your launcher has a "positioning spring" use it as shown. Otherwise just wrap a little tape around the launch rod to support the rocket and the launch lug.



8. If your launcher has a rod-tilting feature, use it only for launching in breezes . . . normally model rockets are launched straight up. For reliable, impressive flights, never tilt the rod more that 15 degrees when flying your rocket kit . . . do not tilt the rod to its maximum angle.



Avoid eye injury by capping the exposed tip of the launch rod when not actually launching. Follow the instructions and the Safety Code, and have many happy hours with model rocketry.



Centuri

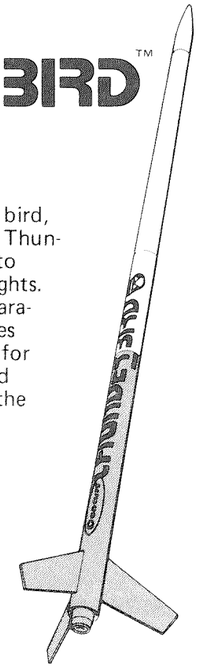
Box 1988, Phoenix, AZ 85001

Centuri

THUNDER BIRD™

Prod. No. 5339

A great demo bird, the long, thin Thunder bird flies to incredible heights. Recovery is by a colorful 20" parachute. Two piece body assembles quickly and easily. A great bird for easily demonstrating the fun and excitement of model rocketry, the Thunder Bird is a fine addition to any model rocket fleet.



MODEL ROCKETEER'S SAFETY CODE

CONSTRUCTION
My model rockets will be made of only lightweight materials such as paper, wood, plastic, and thin metallic foils, with the exception of payloads and engine holders made of wirelike material.

ENGINES
I will use only pre-loaded factory made model rocket engines in the manner recommended by the manufacturer. I will not change in any way nor attempt to reload these engines.

RECOVERY
I will always use a recovery system in my model rockets that will return them safely to the ground so that they may be flown again.

WEIGHT LIMITS
My model rocket will weigh no more than 453 grams (16 oz.) at liftoff, and the engines will contain no more than 113 (4 oz.) of propellant, as prescribed by Federal Regulations.

STABILITY
I will check the stability of my model rockets before their first flight except when launching models of already proven stability.

LAUNCHING SYSTEM
The system I use to launch my rockets will be remotely controlled and electrically operated, and will contain a switch that will return to "off" when released. I will remain at least 15 feet away from any rocket that is being launched.

LAUNCH SAFETY
I will not let anyone approach a model rocket on a launcher until I have made sure that either the safety interlock key has been removed or the battery has been disconnected from my launcher.

LAUNCH AREA
My model rockets will always be launched from a cleared area, free of any easy-to-burn materials, and I will only use non-flammable recovery wadding in my rockets.

BLAST DEFLECTOR
My launcher will have a blast deflector device to prevent the engine exhaust from hitting the ground directly.

LAUNCH ROD
To prevent accidental eye injury I will always place the launcher so the end of the rod is above eye level or cap the end of the rod with my hand when approaching it. I will never place my head or body over the launching rod. When my launcher is not in use I will always store it so that the launch rod is not in an upright position.

POWER LINES
I will never attempt to recover my rocket from a power line or other dangerous places.

LAUNCH TARGETS AND ANGLE
I will not launch rockets so their flight path will carry them against targets on the ground, and will never use an explosive warhead nor a payload that is intended to be flammable. My launching device will always be pointed within 30 degrees of vertical.

PRE-LAUNCH TEST
When conducting research activities with unproven designs or methods, I will when possible, determine their reliability through pre-launch tests. I will conduct launchings of unproven designs in complete isolation from persons not participating in the actual launching.

FLYING CONDITIONS
I will not launch my model rocket in high winds, near buildings, power lines, tall trees, low flying aircraft or under any conditions which might be dangerous to people or property.

CENTURI Engineering Co., Inc., Phoenix, AZ 85001
Printed in U.S.A. 9/79 #81634

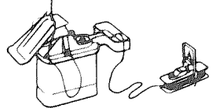
HOW IT WORKS

Your Thunder Bird model rocket is designed to fly in the same manner as other model rocket kits. The electrically ignited engine provides the power to boost the rocket to peak altitude. The rocket is guided off the launcher by a launch rod. At peak altitude the engine's ejection charge is activated to eject the recovery system. The Thunder Bird returns to earth, slowed by the recovery system, ready for another flight.

WHAT IT TAKES TO FLY

You will need engines, igniters, an electrical launch system and parachute wadding to fly your rocket. These supplies are NOT included in individual rocket kits, but are available separately and ARE included in every Centuri Starter Set or Rocket Outfit.

We recommend using Centuri Enerjet engines; each package includes the famous "Sure-Shot" igniters, acclaimed as the world's most reliable model rocket igniter.



The popular Centuri "Powr-Pad" is an ideal basic launch system; compact, highly portable, reliable, and offering features not found in any other launch system.

Always use standard remote-control electrical ignition and follow the engine recommendations. Be sure to comply with any laws that may apply in your area, for the good of Model Rocketry and your own enjoyment.

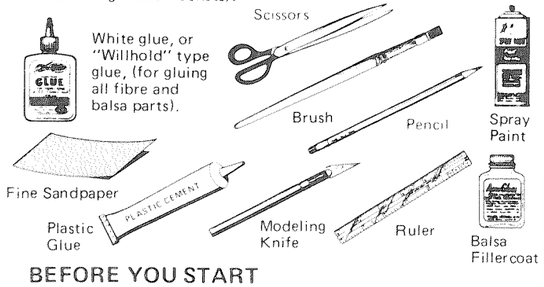
RIGHT MATERIALS FOR THE JOB

Different model rocket kits are made out of a variety of materials, depending on the needs of each kit. The chart below explains why this particular kit is designed using certain materials.

PART	REQUIREMENTS	MATERIAL
Body & Fins	• Light Weight • Strength	Balsa & Paper
Nose Cone	• No finishing • Strength	Plastic

TOOLS YOU WILL NEED

In addition to the parts supplied, you will need the following tools to assemble and finish this kit (DO NOT use model airplane glue for building model rockets).

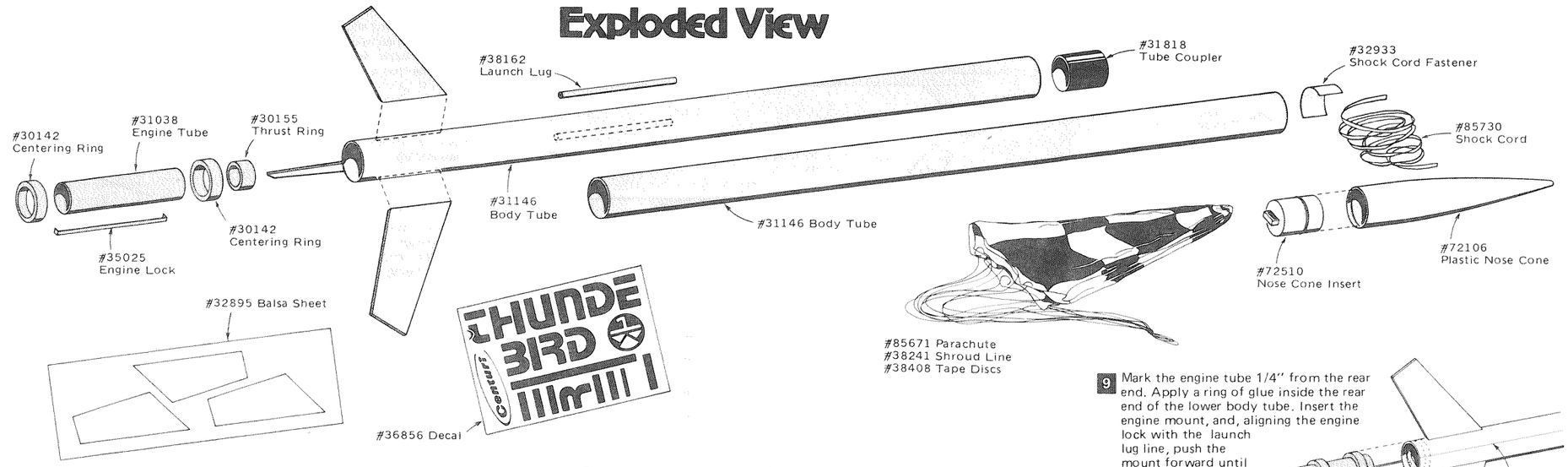


BEFORE YOU START

If you are new to model rocketry, here are some general tips to get you off to a good start.

- Choose a practical assembly area: well lighted, big enough to work in, and out of the way of relatives or pets who might accidentally mess up your work.
- Cover your worktable with plywood or heavy cardboard to protect the table from glue, paint, cuts, etc.
- Remove the entire contents of your kit package carefully to avoid losing or damaging small parts. Lay them out neatly and identify each by referring to the "exploded view" drawing on this instruction.
- NOTE: Sometimes certain parts are packed INSIDE of other parts, such as tape discs inside parachutes, decals or couplers inside body tubes, etc.

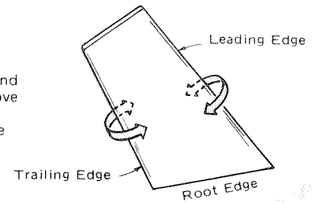
Exploded View



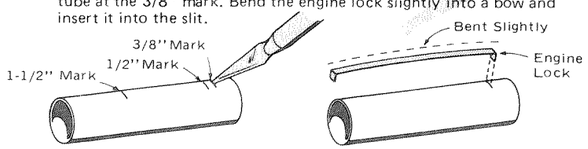
ASSEMBLY INSTRUCTIONS

You MUST follow these instructions for satisfactory flights. The shape and placement of the model's parts has been carefully engineered for safe flights. DO NOT try to change the design, "customize" it, or leave off any parts.

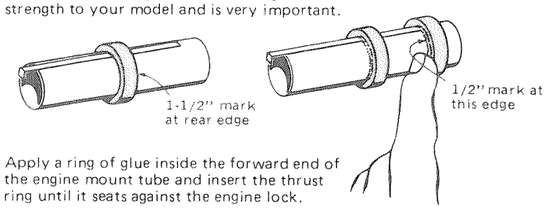
1 Carefully remove the fins from the die-cut balsa sheet using a modeling knife if necessary. Sand the surfaces of the fins to remove any rough edges. Round the leading and trailing edges of the fins as shown.



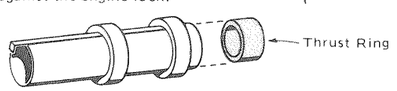
2 Locate the engine lock, engine mount tube, thrust ring and the two centering rings. Mark the engine tube at 3/8", 1/2" and 1-1/2" from one end. Use a modeling knife, make a 1/8" slit in the engine mount tube at the 3/8" mark. Bend the engine lock slightly into a bow and insert it into the slit.



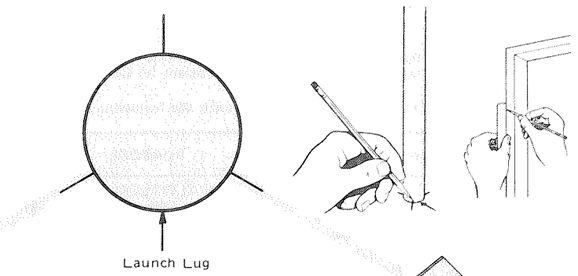
3 Glue one centering ring to the engine mount tube so the rear edge of the ring is even with the mark at 1-1/2". Slide the other centering ring over the front end of the engine mount tube so it holds the engine lock in place and the forward edge of the ring is even with the mark at 1/2". Apply a glue fillet to each side of the rings and allow to dry. A fillet is made by applying a line of glue to the joint and smoothing it with your finger as shown. This adds extra strength to your model and is very important.



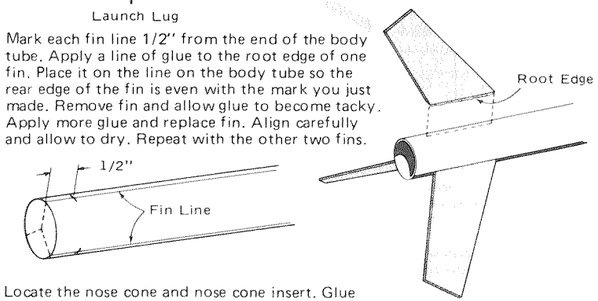
4 Apply a ring of glue inside the forward end of the engine mount tube and insert the thrust ring until it seats against the engine lock.



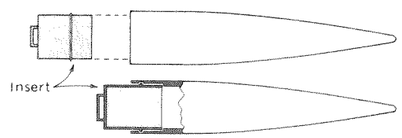
5 Place one body tube over the fin guide below. Mark the body tube with a pencil at each location of the fins and launch lug. Find a convenient groove or channel such as a door jamb or partially open drawer and extend the marks 8 inches forward on the body tube.



6 Mark each fin line 1/2" from the end of the body tube. Apply a line of glue to the root edge of one fin. Place it on the line on the body tube so the rear edge of the fin is even with the mark you just made. Remove fin and allow glue to become tacky. Apply more glue and replace fin. Align carefully and allow to dry. Repeat with the other two fins.

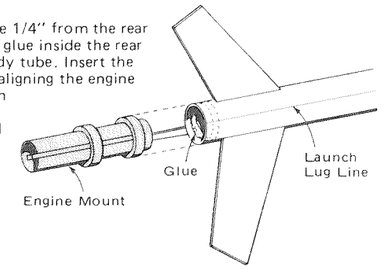


7 Locate the nose cone and nose cone insert. Glue the insert into the nose cone using plastic glue.

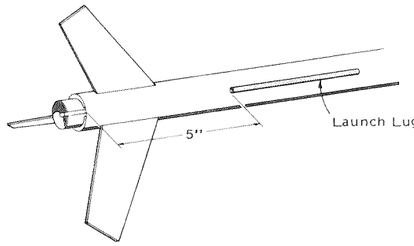


8 Locate the other body tube and tube coupler. Mark the tube coupler at 1/2". Apply a ring of glue inside one end of the upper body tube. Glue the tube coupler into the end of the body tube so that the mark on the coupler is even with the end of the body tube. Be certain the coupler is properly aligned.

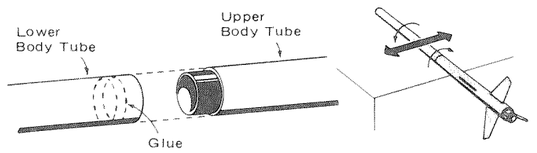
9 Mark the engine tube 1/4" from the rear end. Apply a ring of glue inside the rear end of the lower body tube. Insert the engine mount, and, aligning the engine lock with the launch lug line, push the mount forward until the mark on the engine tube is even with the end of the body tube.



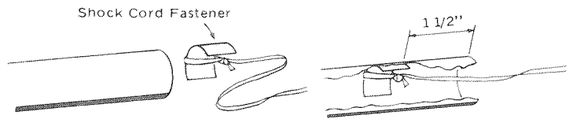
10 Locate the launch lug. Mark the launch lug line 5 inches from the rear end of the lower body tube. Place a line of glue on the launch lug and glue it in place so the rear of the launch lug is even with the mark you just made. Align carefully so launch lug is straight in relation to the body tube and allow to dry.

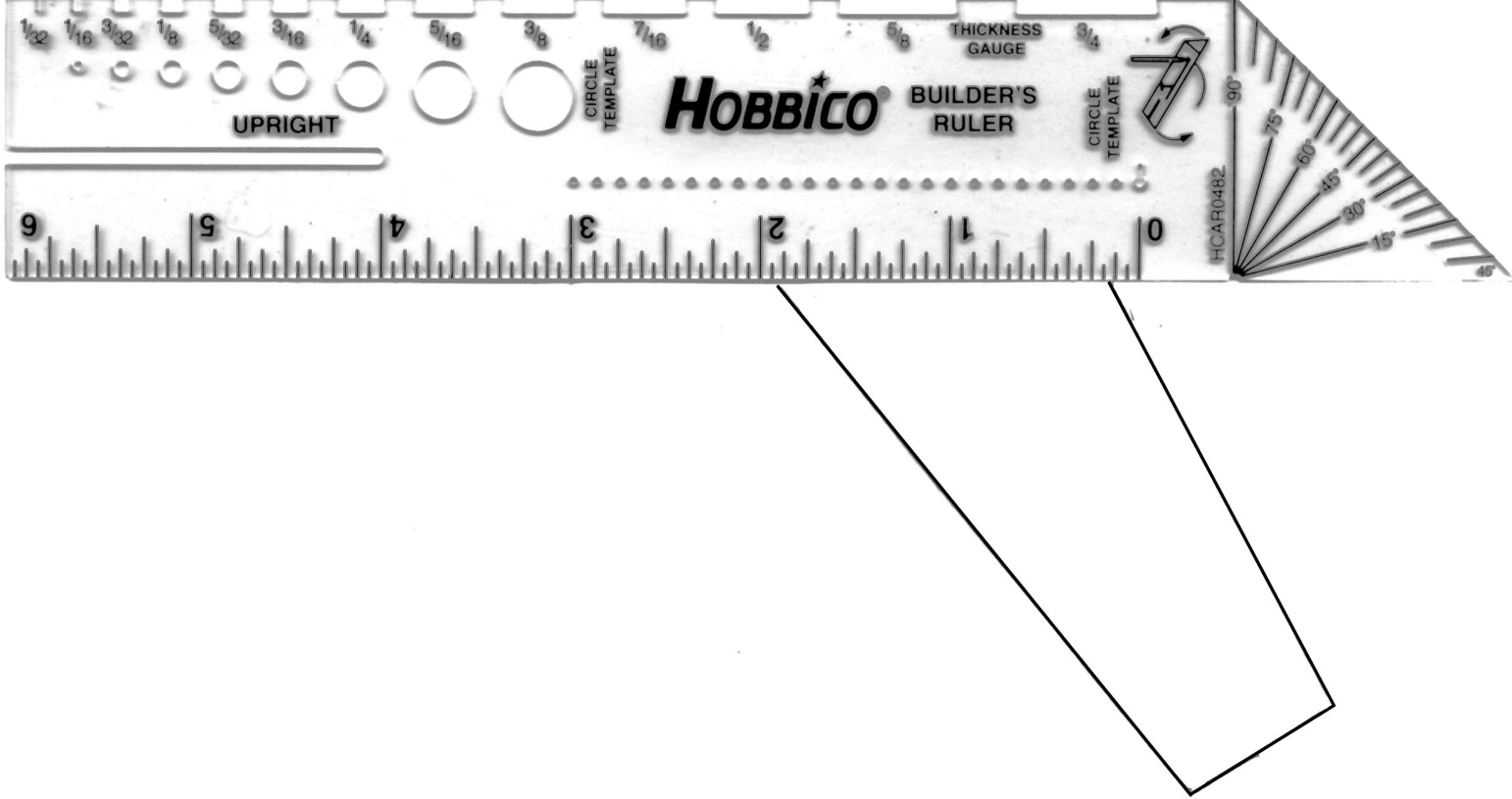


11 Apply glue to the inside of the forward end of the lower body tube. Connect the lower and upper body tubes, making sure they are properly aligned. Roll on a flat surface as shown to assure proper alignment.



12 Locate the shock cord and shock cord fastener. Bend the shock cord fastener slightly so it can be glued to the inside wall of the body tube. Tie the shock cord around the fastener and apply glue to the fastener. Glue it in place, making sure it is at least 1 1/2" from the front end of the body tube. Use the eraser end of a pencil to tamp the fastener in place against the wall of the body tube.

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THICKNESS GAUGE
3/4
UPRIGHT
CIRCLE TEMPLATE
HOBBICO
BUILDER'S RULER
CIRCLE TEMPLATE
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75°
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45°
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THUNDERBIRD™

Centuri

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