TRUE-SCALE

FLYING

# ARCON

# MODEL MISSILE KIT

- Safe-Scientific
- Easy to build
- Beautiful to fly

INCLUDES 3

**ROCK-A-CHUTE**

SAFETY-PROVED

ROCKET MOTORS

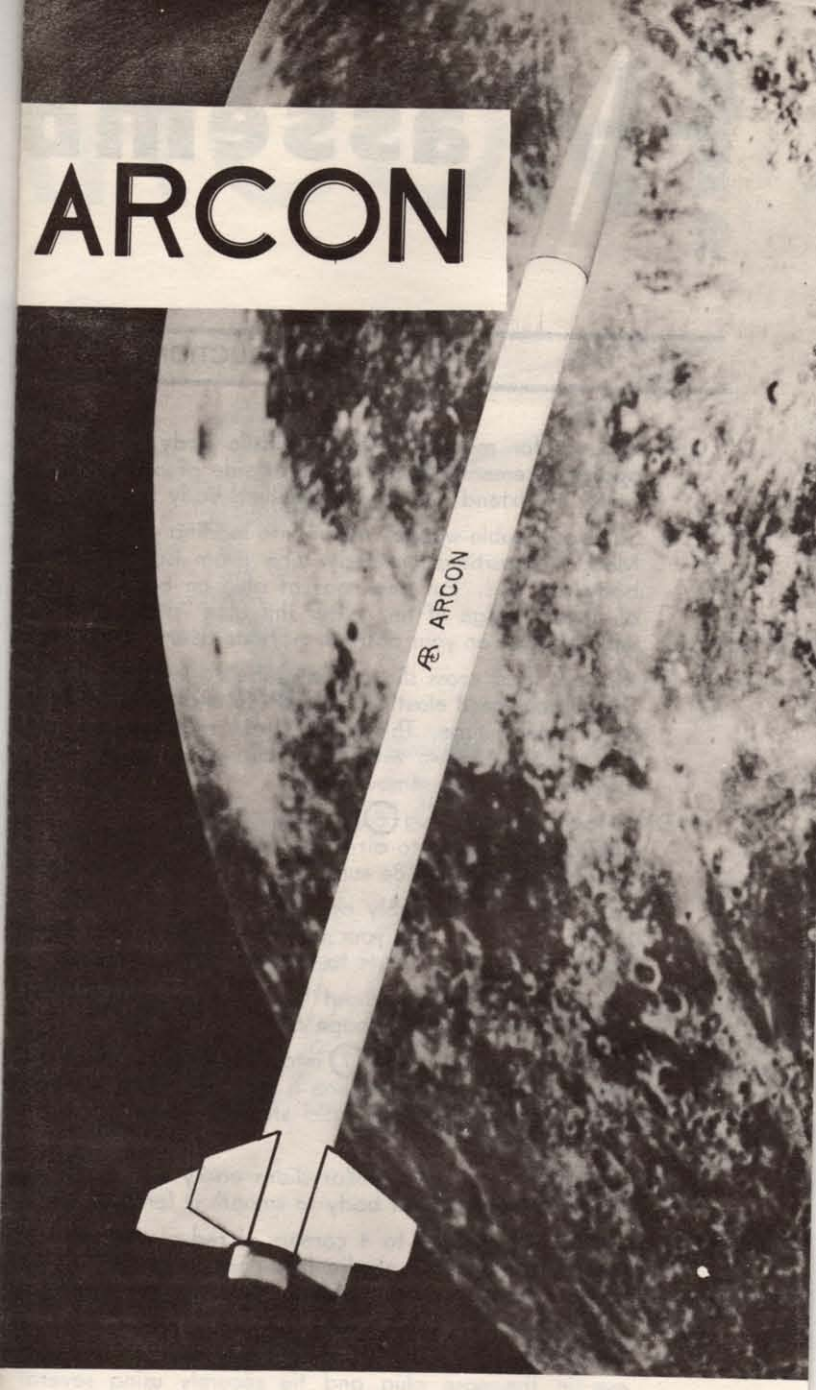
Designed by Rocket Engineer G. Harry Stine

MANUFACTURED BY MM INC

**MODEL MISSILES, INC.**

DENVER, COLORADO

# ARCON




## CONSTRUCTION INFORMATION

### FACTS ABOUT THE ARCON SOUNDING ROCKET

The **ARCON** Sounding Rocket is one of an entirely new family of small high-altitude sounding Rockets now being used by the armed services and the National Aeronautic and Space Agency for probing the Upper atmosphere on the fringes of space.

Because of its small size (6 inches diameter and 11 feet 2 inches long) it is easily launched from almost any location.

It is capable of carrying 10 pounds of instrumentation to an altitude of 114 miles.

The **ARCON** is built by the Atlantic Research Corp. of Alexandria, Virginia.

# ...flying your ARC

## LAUNCHING INSTRUCTIONS
## Read and FOLLOW CAREFULLY

Materials required:

1. **Push button switch** with spring return.
2. Fifteen feet of **lamp cord.**
3. **Electrical clips** (Mueller 85 or equivalent). (Can be obtained at local radio parts store.)
4. Powerful 6 or 12 volt **battery.** (Auto battery, "Hot-Shot", "Radar-Lite" battery, Lantern battery, Willard NT6 wet cell, etc.)

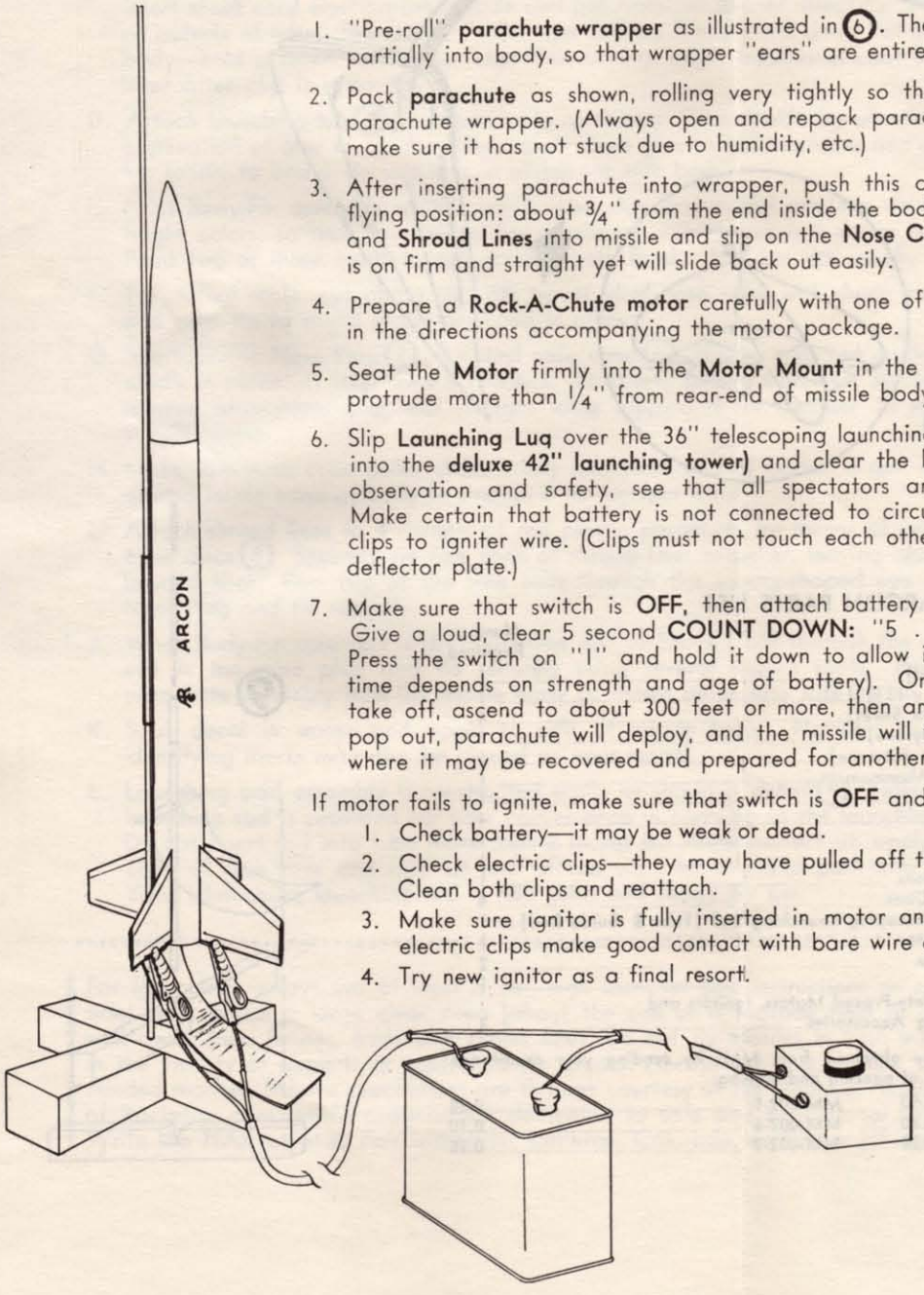
For additional realism and improved performance, the MMI 42" all steel **launching tower** is recommended. Order kit from your local dealer, or direct from Model Missiles, Inc., 1165 South Cherokee St., Denver 23, Colorado. (Price $9.95)

### LAUNCHING PROCEDURE

1. "Pre-roll" **parachute wrapper** as illustrated in (6). Then, fold up ends and insert partially into body, so that wrapper "ears" are entirely inside body.
2. Pack **parachute** as shown, rolling very tightly so that it can slide easily into parachute wrapper. (Always open and repack parachute before any flight to make sure it has not stuck due to humidity, etc.)
3. After inserting parachute into wrapper, push this combination gently into its flying position: about 3/4" from the end inside the body. Tuck excess **Shock Cord** and **Shroud Lines** into missile and slip on the **Nose Cone,** making sure that nose is on firm and straight yet will slide back out easily.
4. Prepare a **Rock-A-Chute motor** carefully with one of the ignitor wires as shown in the directions accompanying the motor package.
5. Seat the **Motor** firmly into the **Motor Mount** in the missile so that it does not protrude more than 1/4" from rear-end of missile body.
6. Slip **Launching Lug** over the 36" telescoping launching rail (or slide missile down into the **deluxe 42" launching tower)** and clear the launching area. For better observation and safety, see that all spectators are back at least 20 feet. Make certain that battery is not connected to circuit, then attach lamp cord clips to igniter wire. (Clips must not touch each other or short out through the deflector plate.)
7. Make sure that switch is **OFF,** then attach battery and move everyone back. Give a loud, clear 5 second **COUNT DOWN:** "5 . . 4 . . 3 . . 2 . . 1". Press the switch on "1" and hold it down to allow ignitor to operate (ignition time depends on strength and age of battery). On count of "0", model will take off, ascend to about 300 feet or more, then arc over. The nose cone will pop out, parachute will deploy, and the missile will float gently back to earth, where it may be recovered and prepared for another flight.

If motor fails to ignite, make sure that switch is **OFF** and disconnect battery.

1. Check battery—it may be weak or dead.
2. Check electric clips—they may have pulled off the ignitor or become dirty. Clean both clips and reattach.
3. Make sure ignitor is fully inserted in motor and taped securely. Be sure electric clips make good contact with bare wire ends of ignitor.
4. Try new ignitor as a final resort.

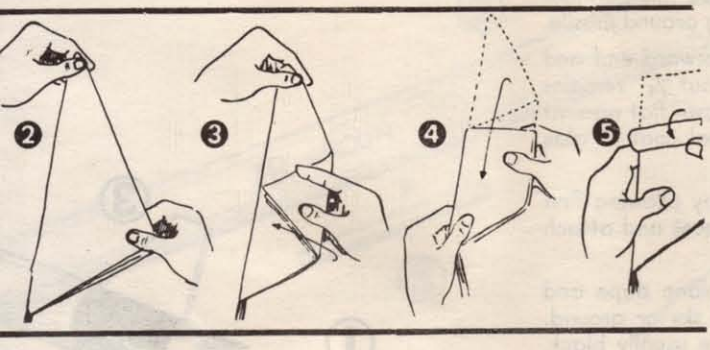


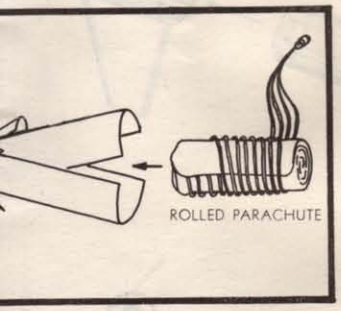



Manufact

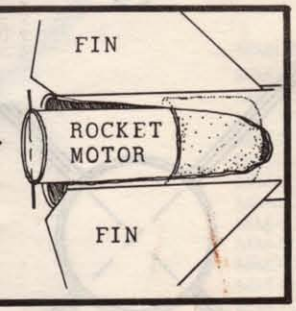
# CON :


ur dealer for
dditional Standard **Type A-4** Rocket Motors—**3 for $1.25**
Super **Type B-6** Hi-performance Motors—**3 for $1.50**









**DO NOT launch in high winds, or your missile may end up a long way from home.**

d by

**Model Missiles INC.**
1165 SO. CHEROKEE ST. • DENVER 23, COLO.

# ARCON


## CONSTRUCTION INFORMATION

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# --- assembling your TR

**SCIENTIFIC**

**EASY TO BU**

## INSTRUCTIONS

A. Glue **motor mount** (1) inside **Missile Body** (2) with a "twisting" motion (after applying cement "bead" around inside of body-tube) far enough for an inserted motor to extend out only 1/4" behind body (to line printed around motor).

B. Sand a "double-wedge" airfoil into leading and trailing edges of **fins** as shown (3). Mark fin positions on body tube (from body end-view (4)) and **"double-glue"** body and fins. Put one coat of glue on body where fin will be, and one coat of glue on edge of fin. After this glue "priming" coat is dry, glue fins permanently to body on your position-marks to assure correct equal spacing around missile.

C. Make a small cross slit in body tube no less than 1" back from forward end and insert **shock cord** elastic from outside and pull from inside until about 1/4" remains on outside of tube. This rubber "tab" must now be firmly glued down flat against body—hold it down with paper clip while drying; apply additional coat of glue later after clip is removed.

D. Attach **launching lug** (5) to missile body as shown. Glue double by allowing first application of glue to air-dry—then apply more glue to both surfaces and attach lug solidly to body. Be sure it is in alignment with body.

E. Paint **Body-Fin assembly** at this point. Use standard model airplane dope and bright colors, so that your model has maximum visibility against sky or ground. Paint two or three coats to get good smooth finish. Two fins are usually black.

F. For actual scale, cut about 1/8" off tip of **vinyl nose cone** with sharp knife (6) and sand tip to round shape as shown in plans.

G. Insert plastic **Nose Plug** (7) into **vinyl nose cone** (6). If plug pulls out easily, glue solidly in place. If vinyl cone is crooked, dip it into boiling water for 30 seconds, remove, straighten, and hold straight while dipping it for another 30 seconds in cold water.

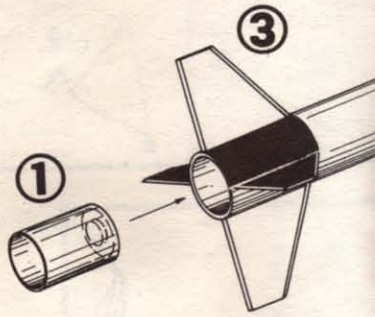
H. Make sure nose cone collar slides easily into front end of body. If not, scrape around inside edge of body to smooth it for perfect fit.

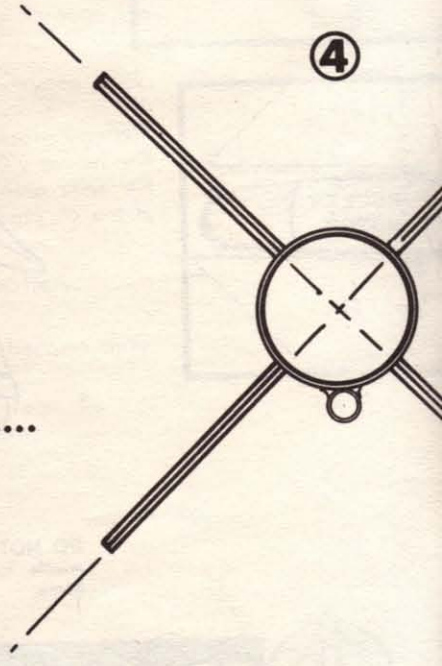
I. Attach **shroud lines** to 4 corners of red plastic **parachute** by means of adhesive **tape discs** (8). Securely tie free ends of shroud lines together, leaving about 1" beyond knot. Pass two of the free ends through the square-shaped eye of the Nose Plug and tie securely.

J. When Body-Fin assembly is dry, pass free end of Shock Cord through the square eye in the nose plug and tie securely using several square knots. Pack the parachute assembly into the missile body as shown on reverse side of this sheet.

K. Soak **decal** in water and apply to side of missile body. Numbers or other identifying marks may also be placed on your model.

L. **Launching pad assembly** is constructed easily as shown in detail (9). Telescoping **launching rod** is provided for your convenience in carrying to the launching site. Do not insert rod into tube more than 2 inches (to insure perfect fit, apply thick coat of glue over one inch at end of rod . . . let dry and push into tube.) Your telescoping launching rod is now solid and ready for use.



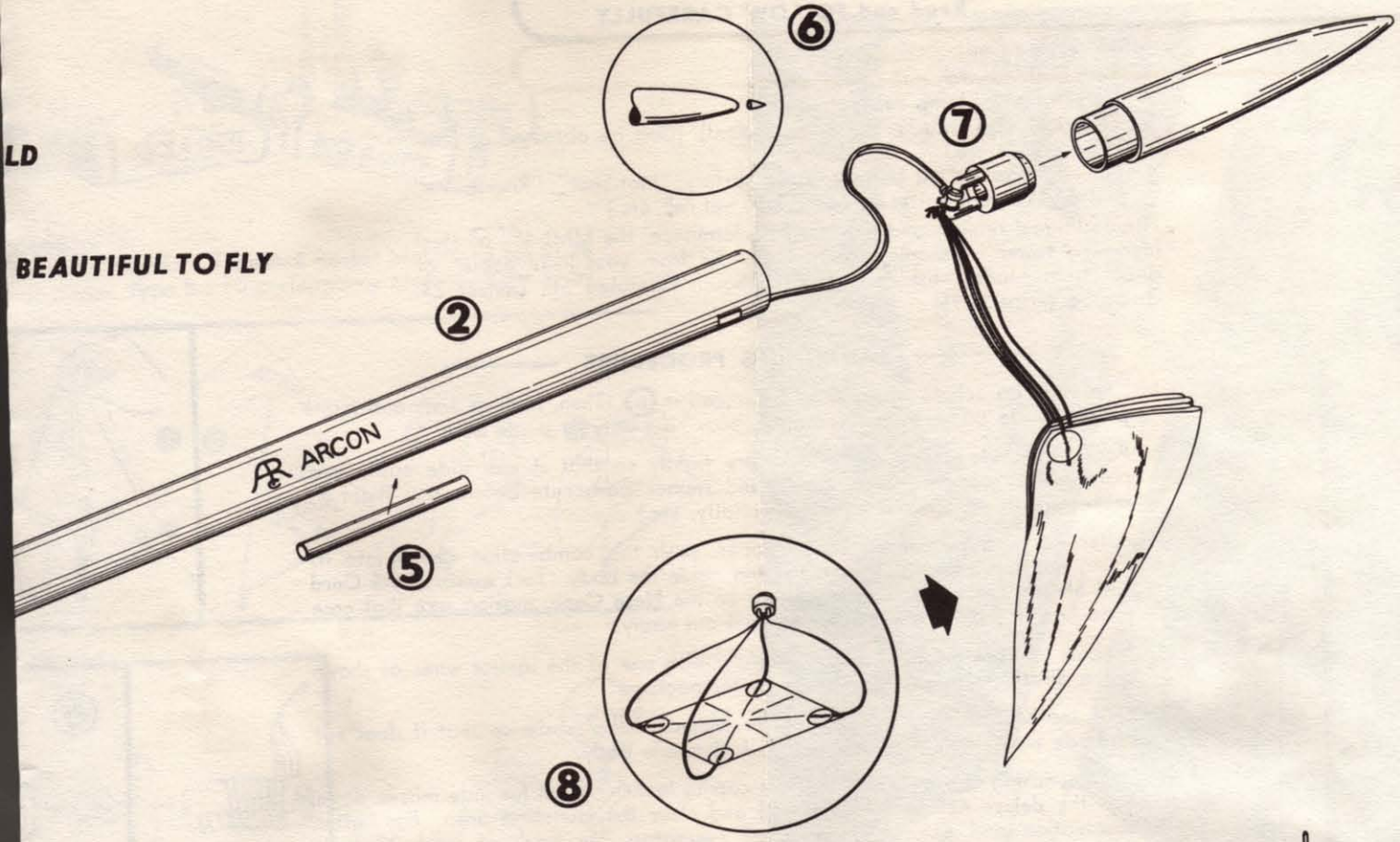

For launching, always use at least a 36" high launcher (see instructions on reverse side) and choose a large clear area (about the size of a football field or larger) well away from houses, trees and power lines. Do not fly missiles in high winds or in the vicinity of airports or controlled air spaces. Always act in a mature, safety-minded manner. (Above precautions are through courtesy of the National Association of Rocketry, a nonprofit organization dedicated to safe and educational rocketry. Write the NAR at 6180 Fairfield Drive, Littleton, Colorado, for further information.)

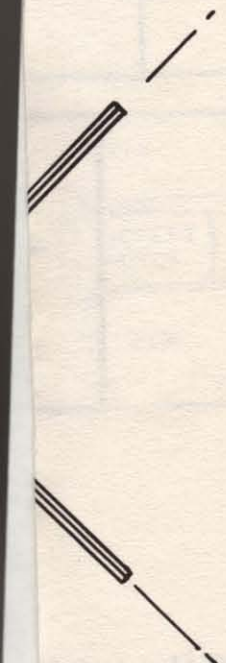
**Manufactured by MODE**

# UE-SCALE ARCON!

LD

**BEAUTIFUL TO FLY**



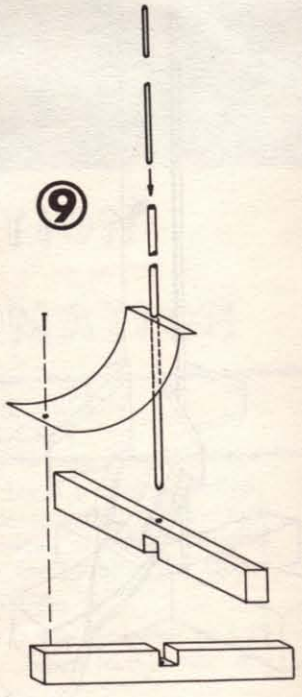



## KIT 002 ARCON PARTS LIST

| MMI Part No. | Description | Number Required |
|---|---|---|
| MM-002-1 | Nose Cone (Vinyl) | 1 |
| MM-002-2 | Body Tube (13/16" x 13 3/4") | 1 |
| MM-002-3 | Fin (Die-Cut Balsa Sheet) | 4 |
| MM-002-4 | Motor Mount (Styrene) | 1 |
| MM-002-5 | Nose Cone Insert (Styrene) | 1 |
| MM-002-6 | Launching Lug, Aluminum | 1 |
| MM-002-7 | Parachute | 1 |
| MM-002-8 | Shroud Line | 4 |
| MM-002-9 | Shock Cord | 1 |
| MM-002-10 | Decal, "ARCON" | 1 |
| MM-002-INST | ARCON Instructions | 1 |
| MM-TD-01 | Parachute Tape Discs | 4 |
| MM-LRA-1 | 36" Two-Piece Telescoping Launching Rail (Tube & Guide Rod) | 1 |
| MM-L3-2 | Jet Deflector Plate | 1 |
| MM-L3-3 | Wood Base Piece | 2 |
| MM-L3-4 | Nail | 1 |
| MM-RAC | Rock-A-Chute Safety-Proved Motors, Ignitors and Parachute Packing Accessories | 3 |

The following replacement parts may be obtained from MMI by sending your remittance for parts and 10c additional to cover cost of packing and mailing:

| | | | |
|---|---|---|---|
| MM-002-1 | 0.50 | MM-002-5 | 0.25 |
| MM-002-2 | 0.50 | MM-002-6 | 0.10 |
| MM-002-4 | 0.25 | MM-002-7 | 0.35 |



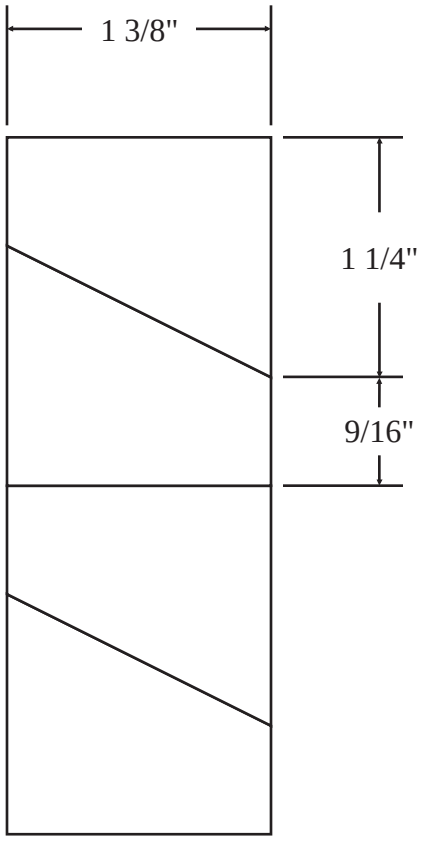

ISSILES, INC., Denver, Colorado

I just measured the fins in the ARCON box here. They are:

Leading edge: 1 9/16"
Adjacent edge: 9/16"
Trailing edge: 1 3/8"
Root edge: 1 1/4"

The red chute is 10 1/8" square, but as I told Fred in my note, I imagine MMI intended it to be 10" square. It's just that mine measures a full 10 1/8" when stretched on the table.

# Model Missiles, Inc.
# ARCON




When printing with Adobe Reader; set Page Scaling: to "None"

# ARCON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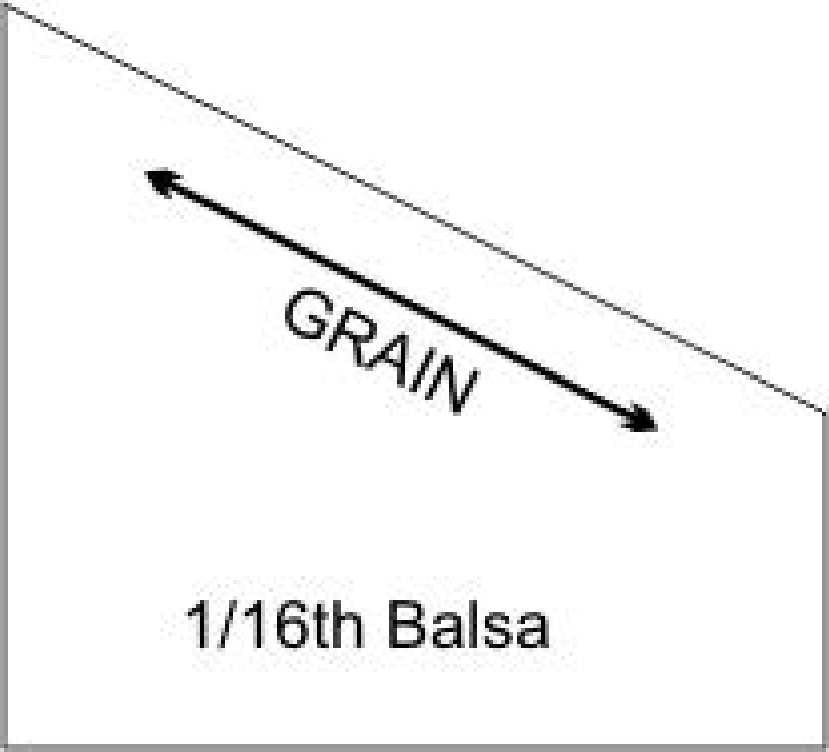
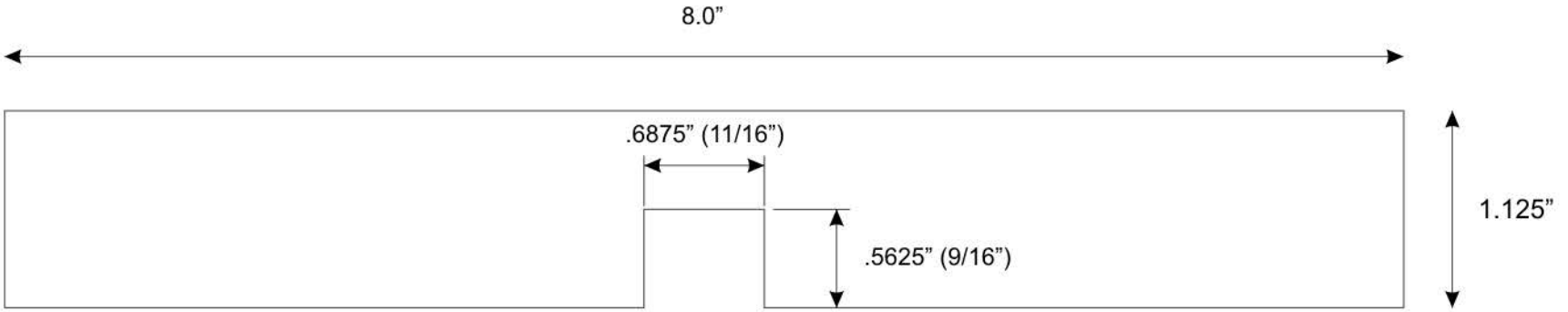
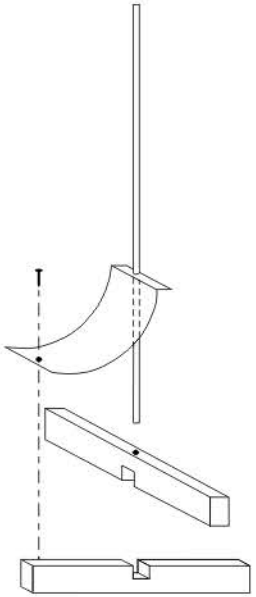
ARCON


GRAIN
1/16th Balsa



Launch pad cross pieces:

Make 2 from 11/16” x 1 1/8” plank

Assemble pieces at 90 degrees as per drawing to left

Drill 1/8” hole down center for 36” launch rod

Jet deflector is 3” x 8” with a ½” bend and 1/8” hole for launch rod

# Model Missiles Launch Pad

all measurements from an original

4.875”

1.875”

ROLL UP

NEW STYLE

# PARACHUTE WRAPPER

MM-PW-02

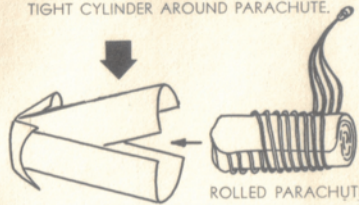
ROLL UP

FOLD UP

FOLD UP OUTSIDE OF WRAPPER

INTO MISSILE BODY

ROLL AND CUP SIDES TOGETHER TO FORM TIGHT CYLINDER AROUND PARACHUTE.



ROLLED PARACHUTE

INSERT WRAPPER HALFWAY INTO MISSILE BODY. PLACE ROLLED PARACHUTE WITHIN AND SLIDE ENTIRE PACKAGE COMPLETELY INTO MISSILE BODY. COIL SHOCK CORD ON TOP NEXT TO NOSE CONE.

# Model Missiles ARCON

Parts list:

OEM parts
1) Vinyl (rubber) nosecone with plastic plug: (old ESTES # PNC 40G)
2) Body tube BT40: 13.375" l.
3) 1/16" balsa fin stock
4) 1/8" elastic shock chord
5) Parachute (10" square red plastic wrap)
6) shroud lines: thin cotton string
7) launch lug (aluminum)

Cloning parts (available from SEMROC)

1) Nosecone BNC 40G
2) Body tube BT40: 13.375" l.
3) 1/16" balsa fin stock
4) 1/8" elastic shock chord
5) Parachute (10" square red plastic wrap)
6) shroud lines: thin cotton string
7) launch lug

NOTE: The original instructions state to wrap rubber bands around the motor casing. It is advised to