



NEW  
from  
**ESTES**

mini-

**BRUTES**

flying Model Rockets

# mini- BRUTES

- super performance
- bantam-weight
- mini-priced

New from Estes, world-leader in Model Rocketry! MINI-BRUTES have super-powered, mini-engines to send them soaring high, wide and happy into space—to open up a whole new world of mini-rocketry fun and excitement! Mini-priced, too. Away they go!

## The Fleet Pack

Get all three Mini-Brutes—Mosquito, Screamer, and Mini Bertha—at a special low price! Launch them all and have the fun of comparing high-flying super-performance! Order No. TK-123 \$2.49

*Or, you can order them separately.*

### MOSQUITO

Fantastic performance. Featherweight tumble recovery. Balsa and paper construction. Simple spray paint decor.

Body Dia. 0.541 in. (13.73 mm)  
Length 3.9 in. (9.9 cm)  
Weight 0.1 oz. (2.83 gr)

Recommended Engines  
1/4 A3-2T, 1/4 A3-4T,  
1/2 A3-4T, A3-6T

Order No. TK-1 \$ .49



### SCREAMER

Spectacular streamer recovery. Balsa and paper construction with simple paint pattern and decals.

Body Dia. 0.541 in. (13.73 mm)  
Length 7.8 in. (19.81 cm)  
Weight 0.225 oz. (6.37 gr)

Recommended Engines  
1/4 A3-2T, 1/4 A3-4T,  
1/2 A3-4T, A3-6T

Order No. TK-2 \$ .99



### MINI BERTHA

The really tough Mini-Brute. Parachute recovery with colorful 8" plastic 'chute. Two color decal sheets. Balsa and paper construction.

Body Dia. 0.736 in. (18.68 mm)  
Length 11.25 in. (28.58 cm)  
Weight 0.484 oz. (13.71 gr)

Recommended Engines  
1/2 A3-2T, A3-4T

Order No. TK-3 \$1.29



## MINI-ENGINE SELECTION CHART

Cat. No. and Engine Type	Prices	Total Impulse		Time Delay (± 15%)	Maximum Lift-off Weight	Maximum Thrust	Thrust Duration	Initial Weight		Propellant Weight		
		lb-sec	n-sec					Oz.	Gr.	Oz.	Gr.	
<b>SINGLE STAGE ENGINES</b>												
1/4 A3-2T	4 for \$ .99	0.14	0.625	2 sec	1 oz.	23 oz.	0.18 sec	0.173	4.9	0.031	0.88	
1/2 A3-2T	4 for \$1.09	0.28	1.25	2 sec	2 oz.	28 oz.	0.36 sec	0.198	5.6	0.062	1.75	
A3-2T	4 for \$1.19	0.56	2.50	2 sec	3 oz.	28 oz.	0.86 sec	0.254	7.2	0.124	3.50	
A3-4T	4 for \$1.19	0.56	2.50	4 sec	2 oz.	28 oz.	0.86 sec	0.268	7.6	0.124	3.50	
<b>UPPER STAGE ENGINES *</b>												
1/4 A3-4T	4 for \$ .99	0.14	0.625	4 sec	0.75 oz.	23 oz.	0.18 sec	0.187	5.3	0.031	0.88	
1/2 A3-4T	4 for \$1.09	0.28	1.25	4 sec	1.00 oz.	28 oz.	0.36 sec	0.212	6.0	0.062	1.75	
A3-6T	4 for \$1.19	0.56	2.50	6 sec	1.25 oz.	28 oz.	0.86 sec	0.282	8.0	0.124	3.50	
<b>BOOSTER ENGINES</b>												
1/2 A3-0T	4 for \$1.09	0.28	1.25	none	3.50 oz.	28 oz.	0.36 sec	0.166	4.7	0.062	1.75	
A3-0T	4 for \$1.19	0.56	2.50	none	3.50 oz.	28 oz.	0.86 sec	0.226	6.4	0.124	3.50	

Each pack of 4 engines includes 5 ignitors and 5 streamers. Designed for specific launch and flight functions, rocket engines are expendable—not reusable. Average thrust: 3 newtons.

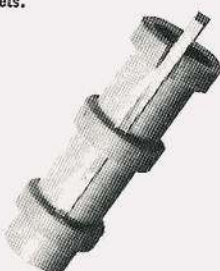
\*Or, single stage engines if used in very light rockets.

### MINI-ENGINE ADAPTER

Fly your short engine (Series III) bird with a mini-engine—reduce weight and get higher performance. Heavy duty construction, yet weighs only 0.09 oz.

Cat. No. 713-EM-520

35¢



A SUBSIDIARY OF DAMON  
**ESTES INDUSTRIES**  
BOX 227, PENROSE, COLO. 81240