

# UKRoC Approved Motor List

Only motors from this list, or their equivalents, may be used in the UKRoC competition.

Manufacturer	Designation	Diameter	Type	Total Impulse	Burn Time	Delay (s)	Total Weight (g)	Notes/Comments
Klima	A6	18mm	Single-use	2.5 Ns	0.6s	4	14.5g	Potassium Perchlorate
Estes	A8	18mm	Single-use	2.5 Ns	0.5s	3,5	16g	Black Powder
Estes	B4	18mm	Single-use	5 Ns	1.1s	2,4	20-21g	Black Powder
Klima	B4	18mm	Single-use	5 Ns	1.3s	0,4	16-17g	Potassium Perchlorate
Estes	B6	18mm	Single-use	5 Ns	0.8s	0,2,4,6	16-22g	Black Powder
Estes	C11	24mm	Single-use	10 Ns	0.8s	0,3	32g	Black Powder
Klima	C2	18mm	Single-use	10 Ns	5.0s	0,P	22-23g	Potassium Perchlorate
Estes	C6	18mm	Single-use	10 Ns	1.6s	0,3,5,7	23-27g	Black Powder
Klima	C6	18mm	Single-use	10 Ns	1.6s	0,3,5,7,P	19-22g	Potassium Perchlorate
Klima	D3	18mm	Single-use	19 Ns	6.0s	0,P	28g	Potassium Perchlorate
Estes	D12	24mm	Single-use	20 Ns	1.6s	0,3,5,7	41-44g	Black Powder
Aerotech	D13	18mm	Reloadable	20 Ns	1.5s	2,4,6,8,10	33g	"White Lightning" propellant
Aerotech	D24	18mm	Reloadable	20 Ns	1.2s	2,4,6,8,10	31g	"Blue Thunder" propellant
Klima	D9	18mm	Single-use	20 Ns	2.1s	0,3,5,7,P	26-28g	Potassium Perchlorate
Cesaroni	E22 (24E22)	24mm	Reloadable	24 Ns	1.0s	4,6,8,10,13	56.5g	"Smoky Sam" propellant
Cesaroni	E31 (26E31)	24mm	Reloadable	26 Ns	0.9s	6,8,10,12,15	52g	"White Thunder" propellant
Aerotech	E30	24mm	Single-use	34 Ns	1.0s	4,7	47g	"Blue Thunder" propellant
Aerotech	E18	24mm	Reloadable	37 Ns	2.1s	1,2,3,4,5,7	59g	"White Lightning" propellant
Aerotech	E16	29mm	Reloadable	38 Ns	2.0s	1,2,3,4,5,7	108g	"White Lightning" propellant
Aerotech	E6	24mm	Reloadable	38 Ns	7.1s	Plugged	53g	"Blue Thunder" propellant
Aerotech	E28	24mm	Reloadable	40 Ns	1.2s	1,2,3,4,5,7	55g	"Blue Thunder" propellant
Cesaroni	F36 (41F36)	29mm	Reloadable	41 Ns	1.1s	2,4,6,8,11	104g	"Smoky Sam" propellant
Aerotech	F12	24mm	Reloadable	43 Ns	2.9s	1,3,5	66g	"Black Jack" propellant
Aerotech	F24	24mm	Reloadable	47 Ns	2.1s	1,2,3,4,5,7	63g	"White Lightning" propellant
Aerotech	F39	24mm	Reloadable	50 Ns	1.3s	1,2,3,4,5,6,7,9	61g	"Blue Thunder" propellant
Cesaroni	F51 (50F51)	24mm	Reloadable	50 Ns	1.0s	4,6,8,10,13	73g	"Blue Streak" propellant
Cesaroni	F36 (51F36)	29mm	Reloadable	51 Ns	1.4s	5,7,9,11,14	101g	"Blue Streak" propellant

Manufacturer	Designation	Diameter	Type	Total Impulse	Burn Time	Delay (s)	Total Weight (g)	Notes/Comments
Cesaroni	F32 (53F32)	29mm	Reloadable	53 Ns	1.7s	3,5,7,9,12	107g	"White" propellant
Cesaroni	F70 (53F70)	24mm	Reloadable	53 Ns	0.8s	5,7,9,11,14	73g	"White Thunder" propellant
Cesaroni	F31 (56F31)	29mm	Reloadable	56 Ns	1.8s	3,5,7,9,12	102g	"Classic" propellant
Cesaroni	F59 (57F59)	29mm	Reloadable	57 Ns	1.0s	3,5,7,9,12	99g	"White Thunder" propellant
Aerotech	F22	29mm	Reloadable	65 Ns	3.3s	1,3,5,7	133g	"White Lightning" propellant
Cesaroni	F79 (68F79)	24mm	Reloadable	68 Ns	0.9s	4,6,8,10,13	107.5g	"Smoky Sam" propellant
Cesaroni	F30 (73F30)	24mm	Reloadable	73 Ns	2.4s	2,4,7	102.2g	"White Longburn" propellant
Cesaroni	F85 (74F85)	24mm	Reloadable	74 Ns	0.9s	6,8,10,12,15	96g	"White Thunder" propellant
Cesaroni	F51 (75F51)	24mm	Reloadable	75 Ns	1.5s	3,5,7,9,12	95g	"Classic" propellant
Aerotech	F50	29mm	Reloadable	77 Ns	1.4s	4,6,9	85g	"Blue Thunder" propellant
Aerotech	F25	29mm	Reloadable	78 Ns	3.1s	4,6,9	90g	"White Lightning" propellant
Aerotech	F40	29mm	Reloadable	78 Ns	2.1s	2,4,6,8,10	126g	"White Lightning" propellant

Notes:

- Designation: The number after the letter indicates the average thrust in Newtons. Fliers should aim to have a thrust at least five times the weight of the rocket. For example, a rocket weighing 2N (approximately 200g) should have an average thrust of 10N or higher.
- Diameter: Standard motor diameters are 18mm, 24mm and 29mm. Please check your design/kit to see which motor diameter is suitable. A smaller motor may be installed in a larger motor mount (e.g. 24mm in a 29mm) if a suitable adapter is used.
- Type: Single-use motors are a fully self-contained motor where the entire purchased motor is disposable. A reloadable motor has a separate reusable casing and the 'reload' is a separately purchased propellant. Typically a single-use motor is more expensive than the 'reload' of an equivalent reloadable, however the entire motor is disposable and there is no need to purchase, rent or borrow the reloadable motor casing.
- Total Impulse: The total impulse listed above has been rounded to the nearest Newton-second.
- Delay: Most reloadable motors have adjustable delays, the delays listed here are illustrative rather than limited. A zero delay means that the motor will immediately burn through to ignite an upper stage motor after the propellant has burned through. A plugged (or P) delay means that the motor has no ejection charge or delay grain. Ejection delays may vary by up to one second from the advertised delay.
- Total Weight: The total weight is the full weight of the motor at lift-off.