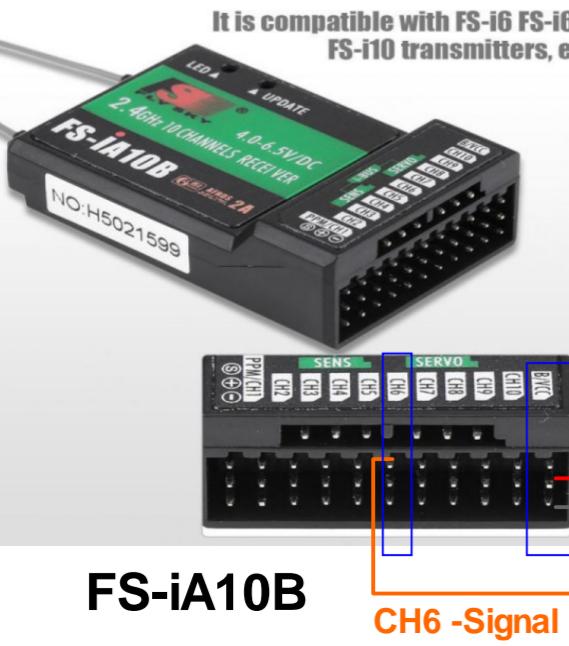




4500LBS Winch

MARUT
- DRONES -

Circuit Details :- Ver1
Developed On :- 02-02-2026
Developed By :- K Madhu Mohan Chary
Contact :- madhu@matudrones.com

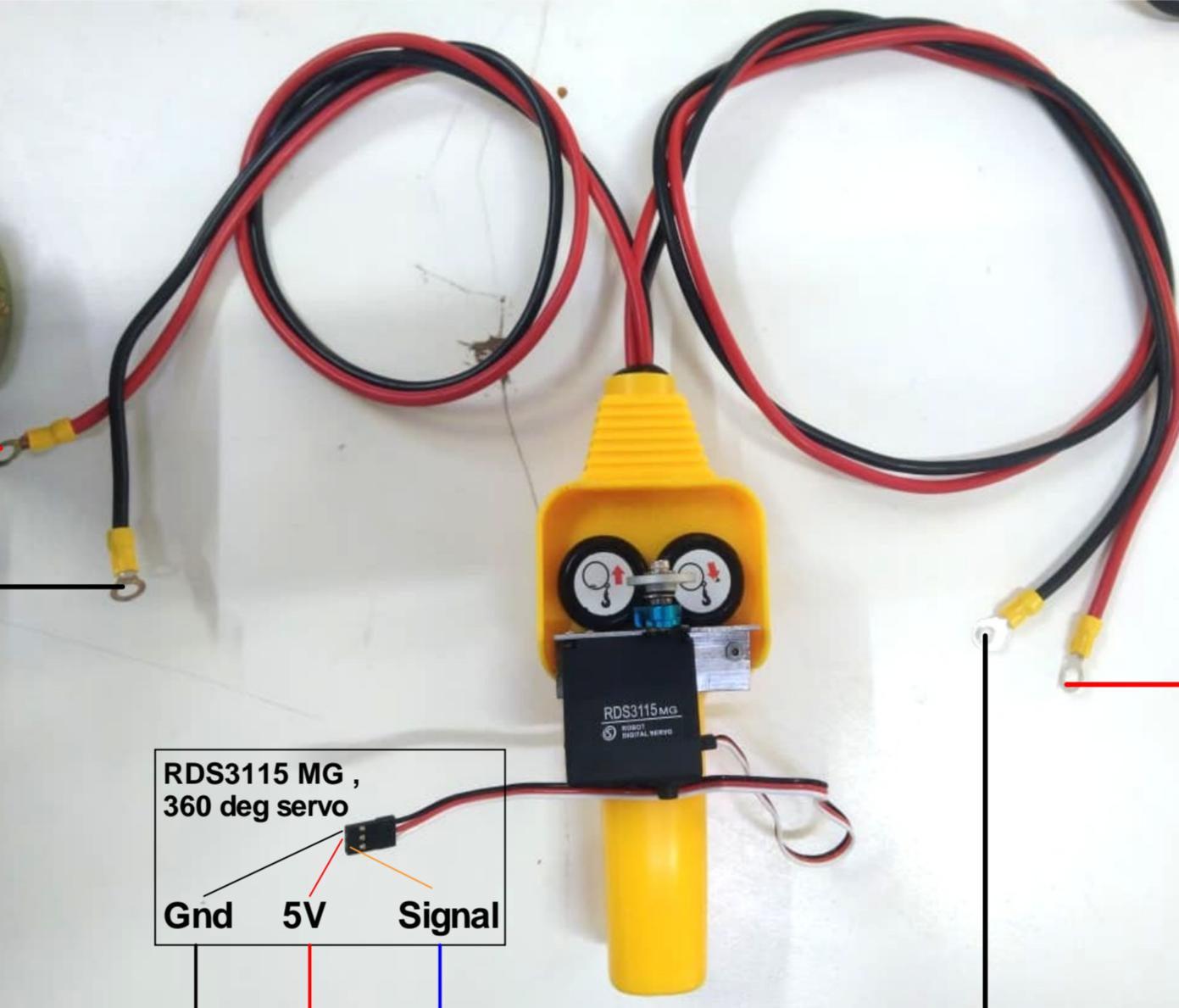


FS-iA10B

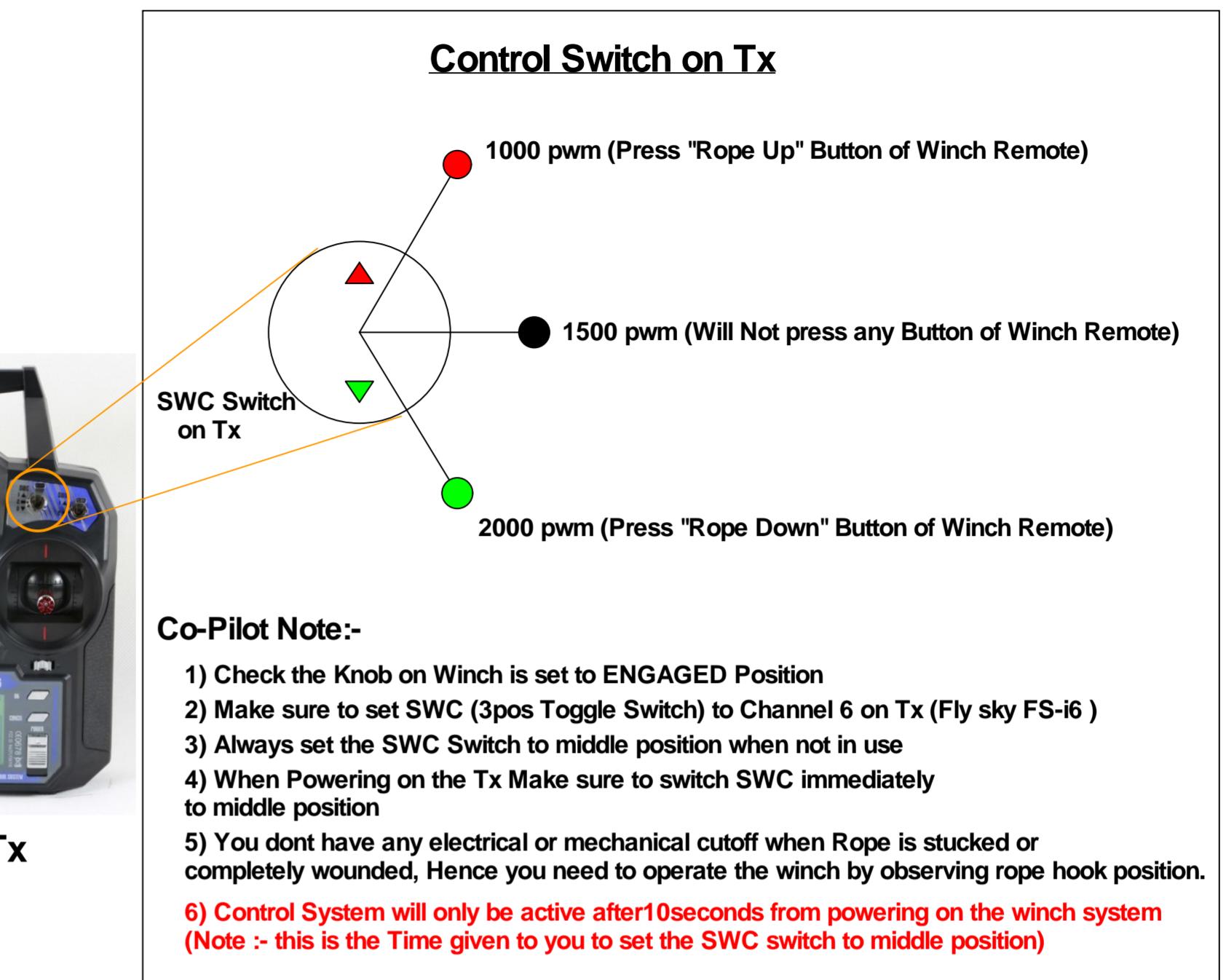
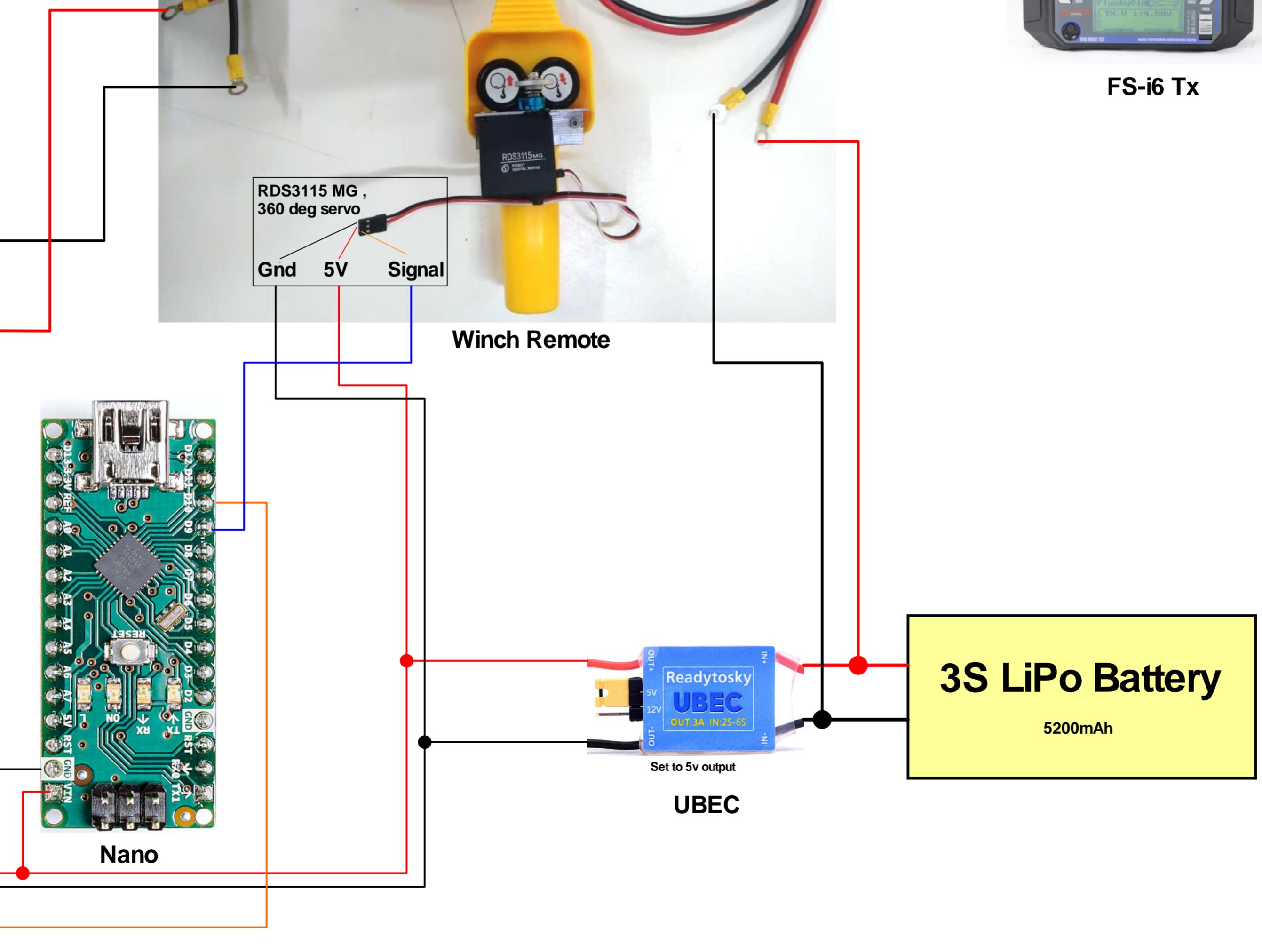
Make Sure to this Knob is ENGAGED

Winch Control System

Short Wire To Motor Side



Long Wire To Battery Side



Co-Pilot Note:-

- 1) Check the Knob on Winch is set to ENGAGED Position
- 2) Make sure to set SWC (3pos Toggle Switch) to Channel 6 on Tx (Fly sky FS-i6)
- 3) Always set the SWC Switch to middle position when not in use
- 4) When Powering on the Tx Make sure to switch SWC immediately to middle position
- 5) You dont have any electrical or mechanical cutoff when Rope is stucked or completely wounded, Hence you need to operate the winch by observing rope hook position.
- 6) Control System will only be active after 10seconds from powering on the winch system (Note :- this is the Time given to you to set the SWC switch to middle position)

3s Battery Selection Based on Weight Need to be Lifted

4500LBS WINCH SPECIFICATIONS		
Rated line pull	4500lbs(2041kgs) single line	
Motor	Permanent magnet,1.4kw/1.9hp	
Gear reduction ratio	135:1	
Gear train	3 Stage Planetary	
Cable (Dia x L)	Diameter0.21"(5.4mm)Length41.3'(10.5m)	
Control	Remote switch	
Drum size (Dia x L)	Diameter2.0"(51mm)Length2.9'(74mm)	
Clutch	Sliding Ring Gear	
Braking action	Automatic In-The-Drum	
Overall dimensions(L X W X H)	340mmx110mmx122mm	
Mounting bolt pattern	120mm*76mm,Φ9	
Weight	N.W. 11 kg G.W. 12 kg	
Packing size	410mmx340mmx210mm 1PC/CTN	

PULL, SPEED, AMPERES, VOLTS		
Line pull lbs(kgs)	Line speed ft/min(m/min)	Current A
0	24(7.3)	28
1500(680)	22.5(6.9)	78
2500(1134)	15.6(4.8)	115
3500(1588)	9.5(2.9)	147
4500(2041)	7.2(2.2)	176

LINE PULL AND ROPE CAPACITY IN LAYER		
Layer	Rated Line Pull lbs(kgs)	Total Rope on Drum ft(m)
1	4500(2041)	4.9(1.5)
2	3520(1597)	14.4(4.4)
3	2600(1179)	19(5.8)
4	2050(930)	26.6(8.1)
5	1630(739)	34.4(10.5)

- 1) Battery Selecting For 680kg Lift
- 2) Current Draw at 680kg is 78 Amp
- 3) So Battery need to Handle two times more $2 \times 78 = 156$ Amp
- 4) Selecting 5.2Ah , 35C rate, 3S Bonka Battery
- 5) $5.2\text{Ah} \times 35\text{C} = 182\text{A}$ ($182\text{A} > 156\text{Amp}$)