

## SPARTRONICS

### CLIMBER & ROPE - INSPECTION & GENERAL KNOWLEDGE LIST

#### Climber

- CIM Motor
- 35:1 gear ratio
- 1" drum diameter
- Brake incorporated for safer lowering
- Ratchet incorporate to allow motor to be stopped at the top of the climb
- Approach for climber to catch rope: Hook side of Velcro on climber drum + polypropylene segment of rope at the bottom that acts as the loop side of Velcro

#### Rope

- Rope is ~77 inches long pre-climb and ~82 inches long once the slip knot loop (see below) is closed at the start of the climb. These lengths fall within the required range of 63-96 inches.
- Majority of rope is paracord.
- There is a ~1 foot segment of polypropylene rope at bottom.
- This soft rope segment has been frayed in order to catch on the Velcro-covered drum better, but the diameter of the frayed rope is less than 10 inches, in accordance with the rules. Q&A question 137 confirms the frayed end is allowed.

##### **Question 137:** Frayed rope

- **Question:** If the end of an otherwise legal rope becomes frayed, is it still a legal rope?
- **Answer:** There is no rule that prohibits a ROPE from being frayed, either intentionally or accidentally. If the fraying (accidental or deliberate) occurs after the ROPE has passed Inspection and it's extensive enough that it could be considered a modification to the ROPE, it must be reinspected per I06.
- The original cotton core of the poly. rope was removed & replaced with paracord for increased strength.
- Small resettable slip knot loop in paracord to allow no-load spooling of rope onto drum. The loop is more than 29 inches below the retaining feature and less than 10 inches in diameter, in accordance with the rules. The loop slips closed (effectively lengthening the rope) when the climber drum first catches the rope. Q&A question 152 clearly confirms this is allowed.

##### **Question 152:** Variable Length Rope

- **Question:** Would a rope with a knot which allowed the overall length of the rope to change during the match (e.g. an adjustable bend) be allowed, provided that both the minimum and maximum length of the rope remains in the allowable range of 63" to 96", and that it meets the other criteria?
- **Answer:** There are no rules that prohibit a ROPE changing lengths during the MATCH provided it remains compliant with all specifications.
- Multiple ropes will be created & should be inspected so that if a rope fails the team can just grab a back up rope and go

## CLIMBER & ROPE - DRIVE TEAM PRE-MATCH CHECKLIST

### Climber

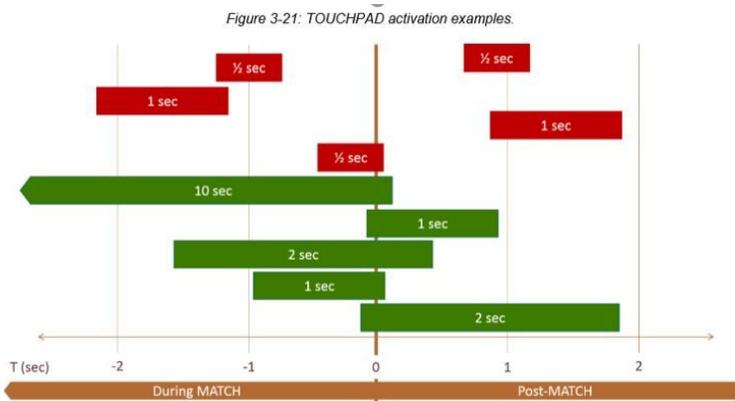
- Make sure climber is pivoted up at the start of the match to avoid foul.
- Make sure the climber drum brake is tightened.

### Rope

- Make sure the slip knot is reset (meaning there is a loop that lines up with the marking on the rope). We'll show you what we mean.
- Place the top knot above the davit fingers & lock the pin in place
- **IMPORTANT!!!** Suspend the rope using the Velcro loop to the airship railing BY THE YELLOW PARACORD, NOT BY THE BOTTOM SMALL SEGMENT OF SOFT ROPE to avoid the rope sticking to the Velcro loop and failing to drop.

### Field and Match

- **IMPORTANT - FROM RULES SECTION 4.2:** If order placement of ROBOTS or ROPES matters to either or both ALLIANCES, the ALLIANCE must notify the Head REFEREE during setup for that MATCH. Upon notification, the Head REFEREE will require ALLIANCES alternate placement of all ROBOTS and then all ROPES, starting with the Red ALLIANCE and in order of PLAYER STATION assigned (i.e. Red Station 1 ROBOT, Blue Station 1 ROBOT, Red Station 2 ROBOT, Blue Station 2 ROBOT...Red Station 1 ROPE, Blue Station 1 ROPE, Red Station 2 ROPE...).
- Rope may be dropped by pilot 30 seconds before the end of the match.
- **IMPORTANT - FROM RULES SECTION 5:** Keep your hands "inside" the vehicle at all times. **During the MATCH, the PILOT may neither** A. contact ROTORS, B. contact DAVITS, C. reach outside any PORT, nor D. contact any part of a deployed (i.e. any part of the ROPE is below the deck of the AIRSHIP) ROPE.
- The above means if a rope gets stuck on the Velcro loop, the pilot may unstick it as long as the rope is above the deck.
- The touchplate at the top of the climb must be lit up before the end of the match, it must still be lit up at the end of the match, and it must be lit for at least 1 second. See reference.



## CLIMBER & ROPE - DRIVE TEAM POST-MATCH CHECKLIST

### Climber

- Lower the robot using the brake
- Retighten the brake

### Rope

- Reset the slip knot
- Inspect the rope for any damage. If damaged, get back up rope

