

GREENPOWER USA

FORMULA GOBLIN



**2023-2024 Technical and
Sporting Regulations**





Rule changes for the 2023-2024 Goblin Race Season will be highlighted in red.

OVERVIEW

All cars must comply with the following regulations. All cars will be subject to pre-event and possible post-event scrutineering (race day safety check) to ensure compliance.

Remember that the project is for the benefit of the young people involved. It is important to ensure that they are as involved in as much of the design and build of the vehicle as possible and that technology used is relevant and accessible to the age group of the category in which you are participating.

RULE BOOK DISCLAIMER

The rules and/or regulations set forth herein are designed to provide for the orderly conduct of racing events and to establish minimum acceptable requirements for such events. These rules shall govern the condition of all events, and by participating in these events, all participants are deemed to have complied with these rules. **NO EXPRESSED OR IMPLIED WARRANTY OF SAFETY SHALL RESULT FROM PUBLICATIONS OF OR COMPLIANCE WITH THESE RULES AND OR REGULATIONS.** They are intended as a guide for the conduct of the sport and are in no way a guarantee against injury or death to a participant, spectator, or official.

The race director shall be empowered to permit reasonable and appropriate deviation from any of the specifications herein or impose any further restrictions that in his/her opinion does not alter the minimum acceptable requirements. **NO EXPRESSED OR IMPLIED WARRANTY OF SAFETY SHALL RESULT FROM SUCH ALTERATION OF SPECIFICATIONS.** Any interpretation or deviation of these rules is left to the discretion of the officials. Their decision is final.

The Management of the Greenpower USA Foundation

TECHNICAL

T1.1. Goblin cars must, with the exception of bodywork, be built using only components as supplied by Greenpower.

NOTE: Replacing the tire is allowed as long as it matches the existing dimensions of the Greenpower-supplied tires (3.00-4 which is a 3" width and 4" inner diameter, a circumference of 32 inches, and a sidewall PSI rating of 40 PSI). Tire inflation **MUST** not exceed your tire's sidewall PSI rating.

T1.2. The motor is sealed and must not be opened or modified.

T1.3. Two 12-volt Greenpower USA-approved, unmodified batteries (Interstate Battery DCM0035 and YUASA REC36), will be used on each vehicle during each Greenpower USA race.

T1.4. Batteries must be clamped to the chassis of the car using the supplied battery clamp only.

T1.5. The floor of the car must be fitted with no large gaps to the ground.

T1.6. The top of the driver's helmet must be below the top-most part of the roll bar height at all times.

T1.7. The driver must be able to reach and operate the steering and brakes comfortably.

T1.8. Bodywork must be fitted to the front and sides of the car extending at least to the rear of the driver's seat area.

T1.9. Bodywork must not cover isolator switches, which must be freely accessible at all times.

T1.10. There must be no sharp edges on the bodywork.

T1.11. All bodywork that protrudes beyond the front of the chassis must be easily deformable.





T1.12. The addition of bodywork or other structures for the purpose of push starts is prohibited.

T1.13. The brakes must be correctly set up so that when applied, they prevent the car from being pushed.

T1.14. The safety harness, including lap and shoulder straps, must be tightly adjusted for each driver.

T1.15. Always transport and charge batteries in a safe environment where there is no danger of metal parts coming into contact with the battery terminals. Always charge in accordance with the manufacturers' instructions.

T1.16. All cars MUST display three GreenpowerUSA-issued race number stickers. These 10" diameter stickers will be placed on the left, right, and front of each car. Race number stickers are provided at no charge at each team's first event. Replacement stickers, after the first event, will be at the team's expense.

NOTE: Teams should leave space in their car designs for these stickers.

T1.17. Bodywork that protects the driver must be constructed of rigid sheet material such as corrugated plastic, aluminum, rigid plastics, carbon fiber, glass-reinforced plastic, or other composites of at least 1.5mm thickness. Plywood products must be at least 3 mm thick. The skin must form a continuous protective layer and be securely attached directly to the driver's cell so as to be unlikely to fail as a result of an impact.

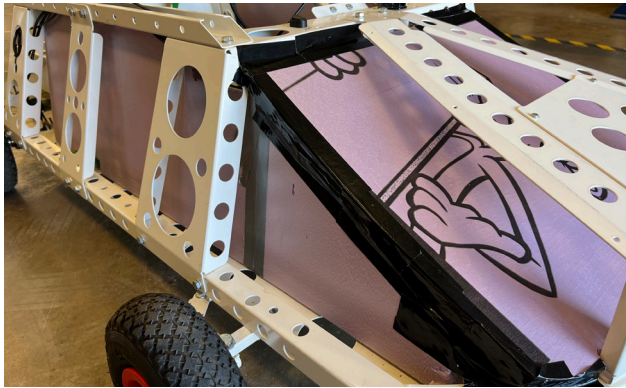
NOTE: For examples of bodywork designs, please check out the #Goblin-car-show channel in the Greenpower USA Discord server.

T1.18. The driver cell MUST be lined with a minimum of 1-inch thick closed-cell foam from the floor to the driver's cell opening to protect a substantial part of the driver's body.

NOTE: The inner foam placement should be completed as shown in the pictures on the next page.

INNER FOAM PLACEMENT

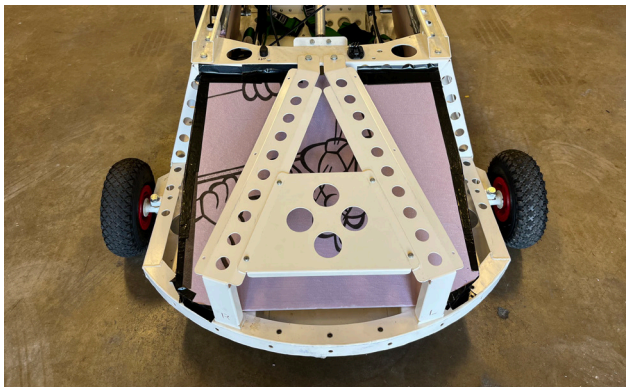
The pictures below show the bare-minimum needed for a Goblin team. The angle of the front panel of foam is dependent on the size of your students. The foam can go all the way up to the triangular frame above it in this picture. The idea is to surround the driver on three sides with a protective layer of foam.



Front Driver Right View



Front Driver Left View



Front View



Inside Driver Cell View

SPORTING REGULATIONS

S1 - SPORTING REGULATIONS

- S1.1. Drivers must wear helmets with visor or goggles at all times during practice and competition. It is the responsibility of the driver and team manager to ensure helmets fit properly and are in serviceable condition. In use helmets must be securely fastened. Helmets must be full-face style compliant with a DOT-approved sticker.
- S1.2. Full overalls or long-sleeved tops and pants and full-fingered gloves must be used while driving. Overalls must be of a suitable thickness to provide protection. Paper overalls are not acceptable.
- S1.3. All team members must wear stout closed-toe footwear, ideally with toe protection.
- S1.4. At the start of the race season, team members must be enrolled in Grades 4-6 only.
- S1.5. All drivers must know about all aspects of the car, especially how to turn off all switches to isolate power and operate the brakes.
- S1.6. It is REQUIRED that all drivers have experience in driving before arriving at an event.
- S1.7. Long hair and/or hoods must not extend into the rear deck area. Hair or hoods should be tucked into the driver's helmet or clothing.
- S1.8. Battery charging at events is prohibited. Only a single pair of batteries is permitted to be used per event day. If a battery change is needed, it must be approved by the Race Director.

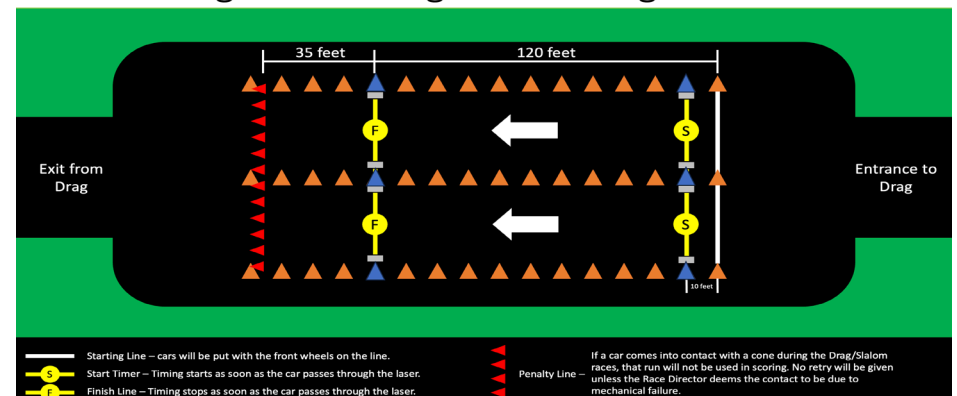
- S1.9. If at all possible, students must do repairs on the car on Race Day. If a coach/mentor is helping, the students MUST be present and involved in the repairs.

S2 - RACE FORMAT

- S2.1. A sanctioned Greenpower USA Goblin Event will have a presentation component and three defined race events - Drag Race, Slalom Race and Circuit Race.
- S2.2. Race Directors reserve the right to modify the racing surface for safety concerns.
- S2.3. Race Directors reserve the right to deny a student from driving specific events due to safety concerns.

If accommodations are needed for a student driver, the Race Director can make such accommodations to ensure safety. However, penalty guidelines will remain the same.
- S2.4. Drag Races will be set up based on the configuration in Figure 1.

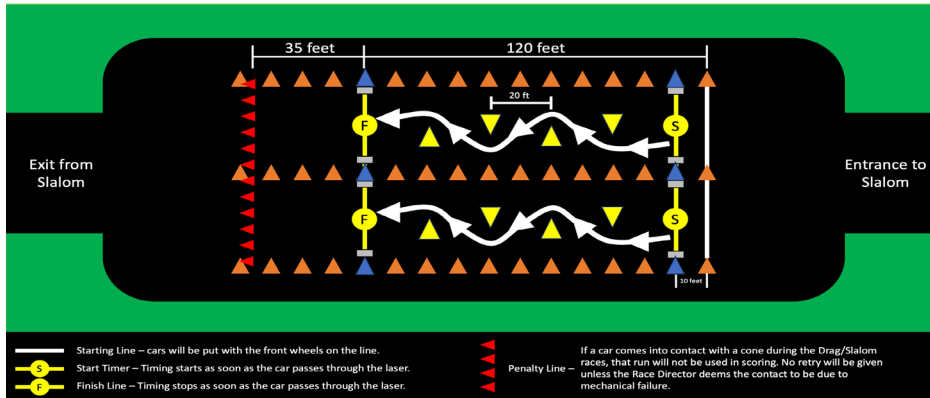
Figure 1 – Drag Race Configuration



SPORTING REGULATIONS

- S2.5. Slalom races will be set up based on the configuration in Figure 2 with four (4) cones spaced out approximately twenty (20) feet apart. Students will go to the left of the first cone, right of the second cone, and so on until crossing the Finish Line.

Figure 2 – Slalom Race Configuration



- S2.6. Circuit races will be configured by the Race Director on site at the event based on recommendations by the site layout map posted on the website for each specific event.

S3 - SCORING

- S3.1. In a sanctioned Greenpower USA Goblin event, there are four scored categories:
1. Presentation Component (not to exceed 100 points)
 2. Drag Race Score (not to exceed 100 points)
 3. Slalom Race Score (not to exceed 100 points)
 4. Circuit Race Score (not to exceed 100 points)

- S3.2. Teams will complete at most four heats per race event. The number of race heats per event is up to the Race Director.

- S3.3. Each team's best time will be used for final scoring. The breakdown in race scores will start at 100 points and decrease by 5 points per placement.
- 1st Place receives 100 pts.
 - 2nd Place receives 95 pts.
 - 3rd Place receives 90 pts.
 - This continues to a minimum race score of 55 pts.
- S3.4. The team with the highest cumulative total from the four scored categories will be declared the event winner.

S4 - CHAMPIONSHIP REGULATIONS

- S4.1. To be considered for Greenpower USA Goblin National Championship Rankings, a team must participate in at least three sanctioned Greenpower USA Goblin events.
- S4.2. The total of each team's best three (3) Overall Event Scores from sanctioned events during the Race Season will determine the National Championship Rankings.



SPORTING REGULATIONS

S5 - PENALTIES

- S5.1. A line of cones will be placed 35 feet after the Finish Line. If a car comes into contact with a cone during the Drag/Slalom races, that run will not be used in scoring. No retry will be given unless the Race Director deems the contact to be due to mechanical failure.
- S5.2. If comments from previous event Scrutineering form are not addressed, the car will not be eligible to accrue Season Points for that particular event and will be ineligible from receiving awards at the event's Awards Ceremony.
- S5.3. If a team member (student/coach/mentor) is displaying unsportsmanlike conduct (outside of their team organizational structure), the occurrence will be investigated and if found guilty, will be disqualified from awards and a 50-point event score deduction.

NOTE: Multiple offenses may result in further and more strict disciplinary action by Greenpower USA.

- S5.4. Use of unapproved batteries.
- First Time = No Event Score and no awards given for that specific event
 - After First Time = No participation in the event
- S5.5. For Circuit Races, drivers MUST bring the car to a controlled stop without coming into contact with an object outside of their vehicle's bodywork. If the driver is unable to bring the car to a controlled stop, then that run will not be counted for time and the team will not get a redo.



- S5.6. In the event that a driver/car is not in compliance with any previously-stated Technical AND Sporting Regulation when they show up for a heat, will get moved to the back of the line and be allowed time to fix the issue(s). If there have been multiple violations, this may result in losing attempts at the remaining heats.
- ## S6 - GENERAL
- S6.1. Animals, with the exception of service animals, are not permitted in Pit Road at Greenpower event venues unless specifically noted in Supplementary Regulations.
- S6.2. Ball games are not permitted in Pit Road at Greenpower events.
- S6.3. Smoking/Vaping is not permitted at Greenpower events.
- S6.4. Unauthorized vehicles are not permitted in Pit Road at Greenpower events.

TERMS OF ENTRY

By entering for any Greenpower USA Foundation organized event, the team(s) is/are agreeing to the following Terms of Entry:

- E1.1. Published regulations may be subject to change. In the event of this happening, notification will be sent to all entered teams and posted on the Greenpower website.
- E1.2. All vehicles will be subject to pre-event and possible post-event scrutineering to ensure compliance.
- E1.3. The vehicle and required drivers must be presented at scrutineering (race day safety check) in a race ready configuration.
- E1.4. Supplementary Regulations specific to each event will be published approximately two weeks beforehand and sent by email to all entrants for that event.
- E1.5. Greenpower's scrutineers and officials accept no responsibility for damage caused to cars while performing safety checks, recovery or rescue during an event.
- E1.6. While these regulations, the scrutineers and other officials endeavor to ensure vehicles are safe to participate, ultimate responsibility lies with the entrant.
- E1.7. While compliance with the Technical and Sporting Regulations should result in a compliant vehicle, race officials reserve the right to prevent a vehicle racing. A vehicle deemed unfit may, following modification and further inspection, be permitted to race.
- E1.8. It is understood that all persons participating in events under these rules are doing so at their own risk and the entrant will ensure that all competitors will have disclaimers (as provided by the Race Organizer) signed by their parents or guardians prior to competing.
- E1.9. Greenpower ensures that Public Liability and Personal Accident Insurance for participants is always in place for events under their control and accept no liability for events organized by third parties or team practice sessions.
- E1.10. As part of the communications activity, Greenpower regularly uses photography for publicity purposes. Entrants must ensure all participants are aware of this and the necessary permission is obtained. If permission is not granted, Greenpower must be notified prior to every event in which the participant takes part.



SOCIAL MEDIA

MORE INFORMATION

For Greenpower USA Social Media updates, please follow the following handles:

Facebook @gpusafoundation

Twitter @Greenpower_USA

Instagram @greenpower_usa

LinkedIn GreenpowerUSA

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If you have any questions, or need clarification, about any of the rules mentioned in this document, please send an email to rules@greenpowerusa.net

The Rules Committee is also available to vote upon specific needs/requests of teams to verify compliance of rules and regulations.

Greenpower USA Staff



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