



**High School Series
2023-2024 Season Rules
Rev. A**

Released: November 6th, 2023

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Summary of key changes in this revision (all changes in red text):

7.4: “Max Motor Amps” must not exceed 220 (amps).

Process to revise this ruleset:

- At his/her discretion, the Director of Event Operations (DEO) may request feedback and input from other stakeholders and subject matter experts.
- The DEO will draft the revised rules document.
- The DEO will circulate the draft rules document to and gain approval from the Race Operations Director, Purdue Risk Management, and Purdue Legal.
- The DEO will publish the final approved rules document to the evGrandPrix website and notify all participants.

1.0 INTRODUCTION

- 1.1 **The mission of the program is to inspire High School students to engage in STEM education and motivate them to pursue advanced STEM education by providing an exciting platform in which the students experience STEM principles first-hand.**
- 1.2 This integrated STEM program is learning by doing within a Motorsports environment. Using electrically powered go-karts as the focus, the program inspires students to commit their creative energies to learning about, developing, and showcasing the future of electric vehicle technologies.
- 1.3 Teams compete across several categories that integrate STEM learning and application, community outreach and promotion of EV technology, and race performance into a comprehensive program that awards the teams that perform the best across all categories.
- 1.4 To compete in the evGrandPrix, students organize a team at their school and partner with industry, government agencies, and community outreach programs that help to fund the program.
- 1.5 The High School evGrandPrix is an educational program that has a Motorsports theme. The primary objective is to ensure that an effective ruleset has been put in place to give the students the opportunity to immerse themselves in applying STEM principles while making sure risks are minimized. Safety is the top priority, and the goal is to maintain a safe environment that enables a fun and rewarding educational experience for all participants.
- 1.6 A new ruleset is released around August each year and applies to the academic year in which it is released (approximately August through May). For the 2023-24 Season, the evGrandPrix High School Program will consist of those listed below. Specific dates and information will be posted on the evGrandPrix website once it is set (<https://engineering.purdue.edu/evGrandPrix/>).
 - Fall Events
 - Fall Test & Tunes
 - The “Fall Classic” Race
 - Spring Events
 - Spring Test & Tunes
 - The **evGrandPrix Season Championship** - The evGrandPrix Season Champion is determined by points earned as described in Section 6.0.

2.0 RISK AND SAFETY

2.1 Assumption of Risk, Liability Release, Medical Insurance, Acknowledgement, and Indemnity

ASSUMPTION OF RISK - EVERY MEMBER AGREES TO BE BOUND BY THE RULES AND ASSUMES ALL OF THE RISK OF SUCH MEMBER'S INVOLVEMENT AND/OR PARTICIPATION IN AN EVENT.

LIABILITY RELEASE – RECOGNIZING THAT KART RACING AND ALL OF THE ACTIVITY ASSOCIATED WITH IT (“ACTIVITY”) CAN BE A HAZARDOUS UNDERTAKING, MEMBERS FOR THEMSELVES, THEIR HEIRS, EXECUTORS, REPRESENTATIVES, SUCCESSORS AND ASSIGNS, AGREE, BY THEIR MEMBERSHIP, THAT THEY RELEASE AND DISCHARGE EVGRANDPRIX, PURDUE UNIVERSITY, THE TRUSTEES OF PURDUE UNIVERSITY, AND ANY OF ITS OR THEIR DEPARTMENTS, TRUSTEES, AFFILIATED, EMPLOYEES, OFFICERS, AGENTS, AND INSURERS (“THE RELEASED PARTIES”) FROM ANY AND ALL LIABILITY FOR DAMAGES TO PROPERTY, PERSONAL INJURY, AND/OR DEATH, IN ANY WAY RELATING TO ANY EVENT OR THE MEMBERS' INVOLVEMENT AND/OR PARTICIPATION IN THE ACTIVITY, REGARDLESS OF HOW THE INJURY OR EVENT MIGHT ARISE INCLUDING WITHOUT LIMITATION RACE OFFICATING, RULE INTERPRETATION AND VIOLATIONS, PHYSICAL CONDITION OF THE TRACK, AND/OR EMERGENCY TREATMENT OR RESCUE.

ACKNOWLEDGEMENT - MEMBERS RECOGNIZE THIS RELEASE APPLIES REGARDLESS OF WHETHER OR NOT INJURY OR EVENT MIGHT BE CAUSED IN WHOLE OR IN PART BY THE NEGLIGENCE OR OTHER FAULT OF THE RELEASED PARTIES. MEMBERS MAY BE ASKED TO ACKNOWLEDGE THIS ASSUMPTION OF RISK AND RELEASE BY OTHER AGREEMENTS THEY MIGHT SIGN AS A PREREQUISITE TO PARTICIPATE IN THE ACTIVITY.

INDEMNITY – EACH MEMBER ACKNOWLEDGES THAT MEMBER IS RESPONSIBLE FOR VIOLATION OF MEMBER'S AGREEMENTS BY MEMBER, MEMBERS'S REPRESENTATIVES INCLUDING LOVED ONES AFFECTED BY MEMBER'S INVOLVEMENT PARTICIPATION, AND MEMBER'S PARTICIPANTS AND GUESTS. THIS RESPONSIBILITY APPLIES TO ALL VIOLATIONS OF MEMBER'S AGREEMENTS WITH EVGRANDPRIX. THIS INCLUDES THE MISUSE OF CREDENTIALS AND THE FAILURE TO ACCEPT THE ASSUMPTION OF RISK, THE WAIVER AND RELEASE OF LIABILITY, THE BINDING NATURE OF THE RULES, EVGRANDPRIX'S INTERPRETATION OF THE RULES, AND THE FINALITY OF THE APPEAL PROCEDURE. MEMBER UNDERSTANDS THAT THIS RESPONSIBILITY INCLUDES THE DUTY TO INDEMNIFY AND HOLD THE RELEASED PARTIES HARMLESS FROM AND AGAINST ANY AND ALL LOSSES, LIABILITIES, DAMAGES, COSTS OR EXPENSES (INCLUDING BUT NOT LIMITED TO REASONABLE ATTORNEYS' FEES AND OTHER LITIGATION COSTS AND EXPENSES) INCURRED BY ANY OF THE RELEASED PARTIES AS A RESULT OF ANY CLAIMS OR SUITS THAT I (OR ANYONE CLAIMING BY, UNDER OR THROUGH ME) MAY BRING AGAINST ANY OF THE RELEASED

PARTIES TO RECOVER ANY LOSSES, LIABILITIES, COSTS, DAMAGES, OR EXPENSES THAT ARISE DURING OR RESULTING FROM MY PARTICIPATION IN THE ACTIVITY, REGARDLESS OF WHETHER OR NOT CAUSED IN WHOLE OR PART BY THE NEGLIGENCE OR OTHER FAULT OF ANY OF THE RELEASED PARTIES.

2.2 Safety

- 2.2.1 Safety Policy – While the evGrandPrix seeks to maintain safe conditions for competitors and others, members recognize that conditions may not be safe and can be affected by human error. At any event, each member acknowledges and agrees that racing is a hazardous activity and each member’s involvement and/or participation is with expressed assumption of this risk.
- 2.2.2 While acknowledging the inherent risk of racing to competitors and other members involved and/or participating in an event, members are personally responsible for their own safety, for the safety of each member of their team, and for the safety of their racing equipment.
- 2.2.3 evGrandPrix may take any action including canceling, postponing, temporarily stopping or delaying an Event, if evGrandPrix determines that basic safety requires such action. evGrandPrix may order off the track any member or kart that evGrandPrix determines constitutes a hazard. evGrandPrix may prohibit any member or member’s equipment from entering or continuing in an Event.

3.0 GOVERNING AUTHORITY

- 3.1 This document presents the vehicle specifications to be followed for the building of a racing go-kart and the team equipment needed to compete in the High School evGrandPrix Program. The specifications contained herein will be always enforced.
- 3.2 The specifications and requirements herein are to be interpreted and penalties applied and enforced by the evGrandPrix Director or a committee he/she establishes for that purpose.
- 3.3 Race Events are sanctioned by Purdue University and/or a qualified organization of its choosing.
- 3.4 This document is a living document that is continually edited and updated. All updates will be communicated and published to all participants. If an item is not specifically listed as authorized, it is assumed to be prohibited until addressed. Participants may request a rules clarification or deviation by completing and submitting the *Rules Request form* to the evGrandPrix Director. The request must be submitted no later than 30 days before the event to which it pertains. The evGrandPrix Director or a committee he/she establishes will review the request and respond as soon as reasonably possible.

4.0 PARTICIPATION & ELIGIBILITY REQUIREMENTS

- 4.1 Each participating High School must be represented by a School Liaison.
- 4.2 All students on a team must be in grades 9 through 12 and enrolled full-time in good standing at their school.
 - 4.2.1 Students from multiple schools may form a team so long as one school is identified as the lead school (for communication and accountability to the evGrandPrix) and the school liaison accepts responsibility for the other schools' students.
 - 4.2.2 Students that graduate mid-way through the traditional school year may continue to participate until the end of that school year.
- 4.3 A school may enter up to three (3) karts in evGrandPrix events. Each kart entry is considered a separate team.
 - 4.3.1 Grandfather clause: Any school that owned more than 3 karts prior to July 2023 may compete with those karts (up to 5 karts), until those karts are retired. Once the karts purchased before July 2023 are retired, this grandfather clause no longer applies.
- 4.4 Each kart (team) must have a designated race crew for all evGrandPrix events.
 - 4.4.1 The race crew must consist of no less than three (3) and must include one (1) driver and one (1) crew chief. No student may be a member of more than one crew (team). The School Liaison and mentors are not included as crew (team) members.
 - 4.4.2 Each school must have a designated track worker for all events. If a school cannot provide a track worker, they may not be allowed to participate in the event. Track workers must pass required training.
- 4.4 Only students are allowed to make modifications and repairs to the karts. This applies before, during, and after evGrandPrix events. Work performed on a kart by any individual that is not a student subjects that kart to a penalty at the DEO's discretion.
- 4.5 All drivers and crew chiefs must complete Drivers Safety training before participating in any evGrandPrix event.
- 4.6 The evGrandPrix encourages teams to find sponsors and hopes they establish many great relationships, but no team may be sponsored by any organization or business associated with alcohol or tobacco or anything else not in compliance with High Schools policies.
- 4.7 Required Forms & Memberships

- 4.7.1 Participants: All participants are required to sign a *Waiver, Release, and Hold Harmless Agreement* and *Photo Release Form* (Appendix A). Each participant must provide hard copies of their forms to the evGrandPrix event staff at on-site registration (prior to participation) at every event they attend. Participants under 18 must have the agreement signed by their parent or legal guardian. This form must be submitted to the Director of Event Operations prior to participation in evGrandPrix events.
 - 4.7.2 Schools: Each High School must complete and sign the *Series Commitment/Participation form* (Appendix A). A hard copy must be provided by the School Liaison to the evGrandPrix event staff at on-site registration (prior to participation) during the first event of each season.
- 4.8 Conduct – Good sportsmanship and honorable conduct are an essential aspect of the evGrandPrix Program and therefore always expected of participants.
- 4.8.1 If a team fails to comply with any rules within this document (including deliberately cheating) during an evGrandPrix event, all teams from that school are subject to penalty at the DEO's discretion, up to and including, expulsion from the evGrandPrix Program.
 - 4.8.2 Everyone associated with the evGrandPrix is expected to behave in a respectful and orderly manner. This policy includes but is not limited to teams, drivers, family members, crew, spectators, sponsors, and guests. Physical violence, verbal abuse, threats, or intimidation directed at anyone during or outside an event will be subject to immediate disciplinary action, including disqualification and ejection from the event.

5.0 FALL SEASON

5.1 Test & Tune Events

5.1.1 Test & Tunes organized by the evGrandPrix are designed to provide structured learning experiences for students. During Test & Tunes, teams can conduct design experiments to determine the effect of changes on their kart's performance and gain driver experience. The data collected is very helpful for improving kart performance and for preparing the STEM report for the Series Championship.

5.1.2 Two or three Test & Tune events will be scheduled at various locations around the state of Indiana.

5.2 **Fall Classic Race** – The Fall Classic Race will take place at the Purdue Grand Prix Track around early October. It provides a fun opportunity to assess the competitiveness of the karts in preparation for the Series Championship in the Spring.

6.0 SPRING SEASON – SERIES CHAMPIONSHIP

The evGrandPrix Series Championship creates a comprehensive learning experience for the students by combining non-race academic events along with the race results. The evGrandPrix Series Championship takes place annually during the Spring.

6.1 evGrandPrix Season Championship Scoring

Spring Race Final Placement = 50 points

STEM Report = 30 points

Outreach Video = 20 points

CHAMPIONSHIP TOTAL = 100 Points

6.2 Spring Race Final Placement (50 points)

Race Placement – Each team will be ranked in the order they finish the evGrandPrix Spring race. Points will be allocated as follows:

1st place = 50 points

2nd place = 48 points

3rd place = 46 points

All other karts that finish on the lead lap will receive two (2) points fewer than the kart finishing in front of them. For example, if 4th and 5th place finish on the lead lap, they would receive 44 points and 42 points, respectively.

For each lap behind the lead lap, the points awarded will be five (5) fewer than the last kart on the previous lap. Continuing the above example, if 6th and 7th place finish one lap behind the leader, they would be awarded 37 points and 35 points,

respectively. And if 8th and 9th place finish two laps behind the leader, they would be awarded 30 points and 28 points, respectively.

This scoring would continue until a kart receives 0 points and all karts finishing behind that kart would also receive 0 points.

6.3 STEM Report (30 points)

- 6.3.1 Prior to the Spring Race, each school will submit a written report to document the ways in which they applied STEM principles to improve the performance of their kart(s).
- 6.3.2 The school will be graded using the “STEM Report” rubric posted on the evGrandPrix website. The rubric is out of 100 percent. All participating schools’ scores will be ordered from highest to lowest and assigned a point value from 30 to 0. All karts within a participating school will be assigned the same STEM Report score.
- 6.3.3 The report must not exceed 2,000 words (no page limit). If a report exceeds 2,000 words, it will be judged solely on the first 2,000 words and everything thereafter will be ignored and not considered in the judging. Charts, graphs, and images that clearly communicate the changes that were made to the kart(s), the predicted improvement, the actual results, and explanation of differences between predicted and actual results are encouraged. All sources must be properly cited.
- 6.3.4 Reports not submitted by the published deadline will have points deducted as follows: 1 day late = 5-point deduction, 2 days late = 10-point deduction, more than 2 days late = no score.
- 6.3.5 Teachers may guide and mentor the students, but **the content of the STEM Report must be created solely by students on the team.**

6.4 Outreach Video (20 points)

- 6.4.1 Prior to the Spring Race, each school will submit a recorded video to show the ways in which they marketed or outreached to the community about the program.
- 6.4.2 The school will be graded using the “Community Outreach” rubric posted on the evGrandPrix website. The rubric is out of 100 percent. All participating schools’ scores will be ordered from highest to lowest and assigned a point value from 20 to 0. All karts within a participating school will be assigned the same Outreach Video score.
- 6.4.3 The video must not exceed five (5) minutes in length. If a video exceeds 5 minutes, it will be judged solely on the first 5 minutes, and everything thereafter will be ignored and not considered in the judging. Pictures, videos, charts,

graphs, etc. that clearly communicate your team's Outreach efforts and results are encouraged.

- 6.4.4 Videos not submitted by the published deadline will have points deducted as follows: 1 day late = 5-point deduction, 2 days late = 10-point deduction, more than 2 days late = no score.
- 6.4.5 Teachers may guide and mentor the students, but **the content of the Outreach Video must be created solely by students on the team.**

7.0 VEHICLE SPECIFICATIONS AND REQUIREMENTS

7.1 Chassis

- 7.1.1 Frame – Teams must race with a commercially available “sprint kart” chassis provided by Top Kart USA. Nerf bars are a required part of the race vehicle frame. All parts of the race vehicle must clear the ground by one (1) inch at all times. The clearance rule will be enforced if parts of the race vehicle are seen by an official to be dragging or as a hazard during technical inspection, practice, qualifications, or race. Penalties will consist of lap penalties, banning from practice sessions, and restricting the race vehicle from participating in an event or session. All frames must have a series chassis seal before competing. **DO NOT REMOVE THIS SEAL.**
- 7.1.2 Wheelbase – Distance must be 43” maximum and 39.75” minimum. Wheelbase measurement is taken on a line beginning at a point perpendicular to the rear axle centerline forward to the point on the horizontal spindle front axle centerline on which the hub rides nearest the kingpin bolt. Both sides must meet this max and min rule.
- 7.1.3 Track Width – Minimum track width is 28” and maximum track width and maximum kart width is 55 and 1/8”. Track width is measured from the outside of one tire to the outside of the opposite tire. Kart width is measured at the widest part of the kart.
- 7.1.4 Tires – The approved tire for the series is Hoosier racing tire compound R60B. The sizes are 4.5/10.0/5 fronts and 7.1/11.0/5 rears. Tires must be run as supplied by the manufacturer, no alterations or additives are allowed. Those found to have altered a tire(s) will be subject to disciplinary action. Tires must be mounted for the proper rotation as prescribed by the manufacturer arrows on the tires.
- 7.1.5 Wheels – All wheels shall be of racing quality and void of any defects. Wheel bearings shall be of a ground ball or roller type only.

7.2 Bumpers and Bodywork

- 7.2.1 Front Impact Bumper – All karts must be equipped with a commercially available front crushable, which is attached to the front bumper to minimize shock in the event of a front impact. The front crushable must be a CIK nose.
 - 7.2.3.1 Impact Bumper Push Back Brackets – All CIK front nose/bumpers must use the push back bumper brackets as supplied from Top Kart with no modifications to the brackets, bumper bars, or the front nose/bumper. A time or position penalty will be assessed should the front nose/bumper become dislodged during an event. Driver must be able to latch and unlatch the mount by hand with no tools.
- 7.2.2 Rear Bumper – All karts must have rear protection that extends from the outside of the rear tire/wheel assembly. This must be a CIK-style plastic rear bumper.
- 7.2.3 Sidebars – Sidebars, commonly referred to as “nerf” bars, must be of a “C” type as viewed from above and surround the mainframe in such a manner that any side impact will be transferred to the mainframe directly. Bottom bars must be two (2) inches or less above the ground, and top bars must be four (4) inches or more above the bottom bar. Distances shall be measured from the centerlines of the bars.
 - 7.2.3.1 Sidebars are to be used to mount batteries on the vehicle. Proper protection should be in place to protect battery packs and other components that are mounted on the side.
 - 7.2.3.2 Sidebars must extend to the middle of the rear tires at a minimum. They are not to extend beyond the outer edge of the rear tires.
- 7.2.4 Driver Fairing – A CIK-style driver fairing must be attached to all karts. The driver fairing must have a 2” clearance to any part of the steering wheel. Driver’s fairings may not exceed the level plane of the top of the steering wheel measured with the wheels in a straight line.

- 7.3 **Motor** – The Motenergy ME0708 PMDC brushed DC motor is the spec motor for the high school series. This motor is commercially available and can be purchased from Top Kart by itself, or as part of an available electronics component kit. The SPEC Motor is required for HS Series.

- 7.3.1 All Motors must be sealed by the series. New Motors purchased from Top Kart will be supplied with a seal. This seal is required to keep parity within the series. Should you need, repair work done to your engine. Please contact Top Kart to be directed to an approved repair shop, once repaired, they will reseal your motor. Should your motor not come from Top Kart the seal is available for purchase. **DO NOT REMOVE THIS SEAL.**

7.3.2 No water-cooled motors are allowed.

7.4 **Motor Controller** – The Alltrax SPM 48300 or SR 48300 are the only acceptable motor controllers allowed. When the controller is on, the forward power command to the motor must return to zero when the driver releases the accelerator pedal. There are no restrictions on energy management throttle control. The “Max Motor Amps” and the “Max Battery Amps” settings on controller must not exceed 220 (amps).

7.5 **Batteries** – All vehicles must be powered from electricity supplied by no more than four (4) Interstate SLA1155 or SLA1156 (12v, 35Ah) lead-acid batteries and these batteries must display all original manufacturers’ labels.

7.5.1 Batteries must be securely attached to the vehicle in such a manner to protect them from direct impact and withstand the forces of impact or roll-over. The final judgment of mounting integrity is reserved for technical inspection.

7.5.2 Battery packs are limited to a nominal 48 volts.

7.5.3 **Battery Enclosure** – Batteries must be enclosed in a solid, shatterproof enclosure, which must meet the approval of the race safety officials. The top of a battery pack must be covered by a polycarbonate sheet that is at least 1/4” thick. The polycarbonate must be held in place by a metal bracket attached to the battery enclosure. The enclosure may contain holes for running cables, and/or for heat dissipation. The purpose of the enclosure is not to create an airtight package, but to protect the batteries from damage in collisions, and to prevent objects and personnel from contacting the battery terminals. Acrylic is strictly prohibited for use in the battery enclosure.

7.5.4 **Battery Pack Fastening** – Batteries must be enclosed and adhere to battery specifications. Batteries will be safely removable, with proper terminal connections and covers. Elasticized fasteners will not be allowed to secure the batteries to the vehicle. Proper quick disconnects are required and must be properly rated for the expected current draw of the race vehicle. An acceptable quick disconnect is one of the Anderson Multipole family. Race officials will inspect all battery attachment systems to determine that the batteries will remain securely attached to the kart during the race and any foreseeable accident scenario.

7.5.5 **Removal Process** – Removal systems must be designed to be safely operated and take into consideration ergonomically acceptable standards for weight and size.

7.5.6 **Auxiliary Batteries** – Auxiliary batteries are allowed but must not provide any power to the motor or drive system of the vehicle in any way. The auxiliary battery wiring harness must be completely separate from any other wiring on the kart, and it must be easily inspected to be separate and stand-alone from

the main batteries and drive system. The maximum allowed energy of auxiliary batteries is 40 watt-hours (watt-hours = nominal voltage x amp-hours).

- 7.6 **Wiring** – It is recommended that only the wires provided with the kart kit be used, but in the event, wires must be replaced, they must be rated to handle the voltage and current load that can be applied through the circuit. For clarification, please consult the wire size chart located in the National Electrical Code Article 400 Table 400.5(B). In all cases, manufacturer data will supersede the general information from the NEC.
- 7.6.1 Wiring must be well insulated and securely attached to the vehicle. All wiring must be kept free from moving parts and protected from chafing. Wires that pass through a hole with sharp edges or sheet metal must be protected by an insulating grommet or another suitable device.
 - 7.6.2 Terminals must be secured and protected so they will not come loose or short out during competition.
 - 7.6.3 No electrical terminals may be exposed.
 - 7.6.4 No part of the electrical system may use the vehicle frame as a conductor, and the frame must remain ungrounded.
 - 7.6.5 See Appendix B for wiring diagram.
- 7.7 **Fusing** – A fuse or circuit breaker is required for the electrical circuit between the battery and any electrical load. All fuses or circuit breakers will be mounted in electrically rated enclosures as close as practically possible to the source of power. All fuses or circuit breakers will be sized to protect the wiring to which they are connected. Fuses will be sized to carry no more than 85% of the maximum allowable current for the wiring. This means the peak current of the fuse has to be less than the peak current of the wire being used at all times. The main traction drive fuse will be inspected for appropriate type, voltage, and current rating. If the fuse must be replaced, the kart will need to be re-inspected before allowing the vehicle to operate in the event.
- 7.8 **Emergency Switches** – An emergency stop circuit must be employed on the vehicle. The circuit will consist of a kill switch located near the steering wheel (easily accessible by the driver) and a mushroom-style emergency stop switch located
- 7.9 above the top plane of the batteries on the left side of the vehicle or in the rear of the vehicle. The location must be easily recognizable, labeled, and accessible to emergency personnel. The recommended kill switch mounting position is between the steering wheel uprights to eliminate wire failure from the movement of the steering wheel. The recommended mounting position for the emergency stop is on the side of the kart near the battery pack. The kill switch and the emergency stop switch will be wired in series with the solenoid coil of the main contactor. Interrupting the current to the solenoid coil will turn off the main contactor and isolate the battery pack

- 7.8.1 The power circuit will contain a contactor (also known as a solenoid relay) for the purpose of isolating the battery pack when not in use and during an emergency. This contactor must have a current rating that exceeds the maximum peak current draw of the vehicle
- 7.8.2 The “high current” or “power circuit” begins at the battery pack (positive terminal) and proceeds through your main power cable, through a high-current fuse, through a main contactor, to the motor controller (which has its own cables to the motor) before reaching the negative terminal of the battery pack. Therefore, the low-current E-stop circuit that is in-line with the contactor’s activation solenoid has the ability to interrupt the high-current circuit.
- 7.9 **Throttle** – Race vehicles shall be equipped with a foot-operated throttle potentiometer with two return springs, which will return the potentiometer to produce zero speed signals when the pedal is released. One spring must be located between the throttle pedal and the vehicle frame. A throttle return spring must also be located on the potentiometer throttle box to assure the potentiometer returns to zero signal when the pedal is released or in case a throttle cable is broken to prevent undesired actions.
- 7.10 **Data Acquisition** – Instruments and systems on or off the vehicle are legal for data acquisition purposes. Personal computers or laptops are not allowed to be mounted to a kart at any time. Students must utilize data acquisition instruments rather than full-size laptops.
- 7.11 **Remote Control** – Remote control of a vehicle is prohibited. No control signal can be transmitted back to the race vehicle for “on the fly” adjustments.
- 7.12 No karts with the ability for reverse direction are permitted.
- 7.13 **Brakes** – All race vehicles shall be equipped with pedal-operated hydraulic brakes as supplied by the manufacturer, operating in such a manner as to stop both rear wheels equally. Brake linkages must have at least two (2) inches of clearance off the ground. A cotter pin must be placed through the pivot pin, which connects the brake linkage lever to the master cylinder. Brake discs must be at least 1/8” thick. Brakes must be able to lock both rear wheels at maximum speed. Dual brake systems used to control all four wheels are prohibited, no hand brakes are allowed.
- 7.14 **Chain oilers** – No chain oilers are allowed.
- 7.15 **Chain size** - #35 chain is the only allowable chain. Belt drive systems all allowable provided they are commercially available karting equipment.
- 7.16 **Gear Ratio** - A single drive sprocket and a single axle sprocket only. No type of a gearbox or any method of changing a gear ratio on the fly is allowed. No use of a jack-shaft is allowed.

- 7.17 **Mechanical Driveline Guards** – Open mechanical drivelines including chain, belt, or gears must be guarded to reduce the possibility of personal injury and contact with the racing surface. All open mechanical components must be guarded to prevent whipping if chain or belt breaks, prevent incidental contact with moving parts, and to prevent injury from rotating parts and pinch points. The guard is to be securely mounted.
- 7.18 **Steering Control** – The steering control must be unaltered and as supplied from the manufacturer.
- 7.18.1 All steering assembly fasteners shall be c-clipped or castellated and cotter pinned. All steering assembly fasteners shall be of grade five (5) or better and a minimum of 3/8 inch in diameter. All rod ends shall be protected from collision. Nylon lock nuts are not permitted in the steering assembly. No plastic steering components allowed.
- 7.19 **Steering Wheel** – The steering wheel shall be of a circular or enclosed wing design. No post or handlebar steering wheels are allowed. The steering wheel shall be attached to the hub by at least three c-clipped or cotter pin bolts with cotter pinned nuts or by bolts with safety wired heads where a threaded hub is used. Any sharp protrusions shall be covered. All nuts and bolts must be available for inspection. All bolts require safety wire, pints are not acceptable.
- 7.20 **Front Spindle and Rear Axle** – The front spindle and rear axle shall not extend beyond the wheel widths. Rear-axle size is a 50mm commercially available tubular axle. The axle must be made of steel only. No filler such as carbon fiber is permitted.
- 7.21 **Seat and Floor Pan** – The floor pan must fill the space inside of the frame extending from the front frame member to the seat and made of a material that meets specification 6.25. Seats may be made of resin-impregnated fiberglass fabric. The fiberglass seat must be in good condition with no cracks or holes and be fastened to the metallic seat supports using fender-type washers and spacer grommets. No holes large enough for any part of the driver's body to inadvertently pass through shall be permitted. The seatback must not exceed a 135- degree angle from the floor pan. The seat bottom must be higher than the lower edge of the frame tubing.
- 7.22 **Seat Belts** – Seat belts or any type of driver restraint system that holds a driver into the seat is prohibited. Drivers must not be held in the seat in any fashion that would pin them underneath the kart should it become inverted or become airborne.
- 7.23 **Rain/Wet/Damp Conditions** – It is prohibited to operate, test, inspect, power-up, or handle any kart or component of a kart when rain or wet conditions exist.

- 7.23.1 No race preparation, maintenance, testing, practicing, or racing is allowed should a scheduled event be called off for inclement weather. At this time the EV Race Series does not compete in wet weather conditions.

7.24 Combined Vehicle Weight

- 7.24.1 High school karts have a minimum weight as raced and including driver and all safety equipment at 420 lbs.
- 7.24.2 Weight ballast to achieve the minimum weight must be mounted securely to the kart by grade 5 or better bolt(s) of at least 5/16" in diameter. Weights over 7 pounds must use at least two 5/16" bolts. All bolts must be cotter-keyed, safety wired or double nutted. All weight must be white in color for visibility. Mounting of weight to the nerf bars, front bumper or rear bumper is prohibited. No weight may be added to the driver.

- 7.25 Karts must have their number (assigned at registration), school's name, and the evGrandPrix decal displayed on their kart for all events.

- 7.25.1 The number must be 1 or 2 digits and must be at least 5" tall. The number must be displayed on the driver fairing, both side pods, and the rear bumper of the kart. The number must contrast the body panel color, so it is easily read from a distance of 20 feet. No other decals may be placed within 1" of the numbers.
- 7.25.2 The school's name must be displayed on the front and both sides of the kart and must be legible from 15 feet away.
- 7.25.3 The evGrandPrix logo must be displayed on the front bumper of the kart. A decal will be provided to all participants at check-in for the evGrandPrix race.

- 7.26 **Materials** – NO MODIFICATIONS ARE ALLOWED to supplied kart or components.

7.27 Fasteners

- 7.27.1 Grade five (5) fasteners, at a minimum, are required for all non-metric screw/bolt-type fasteners of 0.250-inch diameter and larger. Class 8.8 is required for metric fasteners of 6mm and larger. A grade five (5) fastener is indicated by three- lines on the head of the cap screw where the lines will be at a 120-degree angle. A class 8.8 fastener is marked as 8.8.
- 7.27.2 Kingpins, pedal attachment points, steering wheel bolts, and all parts of the brake throttle, and steering linkages shall be c-clipped, cotter pinned, or safety wired. If using cotter pins, they shall fit snugly in the holes and pass through the nuts or a serrated section of a castellated nut.

- 7.27.3 A distorted thread or expansion type steel lock nut may be used instead of cotter pins where the nut or bolt is not subjected to excessive rotation. These nuts may not be reused more than five (5) times as recorded in the team's safety log.
- 7.27.4 C-Clips or safety wire is to be used on bolts installed in threaded components. The safety wire must pass through the bolt head.
- 7.27.5 Nylon- fiber locknuts are required to secure seat mounting bolts, chain guards, motor and controller mounts, and floor pans. They may also be utilized on fasteners that are #10 or smaller in size. Nylon nuts must be snug and unable to be loosened by hand during an inspection.
- 7.27.6 The front axle nuts must be nylon as supplied, and E-clips or snap rings installed.
- 7.28 Plastics and Composites** – The only plastic or composite materials allowed on the vehicle are the seat, number panels, nylon ties, data information display monitor, casing for the batteries, front impact crushable, rear crushable, side-impact bumpers, fairings, and chain guard.
- 7.28.1 All polycarbonate plastic sheets must be at least 0.0625 inch (1/16") thick or greater.
- 7.28.2 Composite Fiberglass reinforced resin can only be used for molded seats.
- 7.28.3 Polyethylene may be used to make crushable body components
- 7.28.4 Acrylic-based plastics are not allowed on the racing vehicle.
- 7.29 Welds** – Only TIG welds of high quality, as determined by the technical inspectors, shall be accepted for any welds other than the original factory welds. Butt welds must be reinforced by an inner sleeve at least twice the tubing diameter in length. One 1/8" hole per weld must be drilled into the sleeve area to indicate the presence of the sleeve. ANY NON-FACTORY WELDS MUST BE CLEAN AND UNPAINTED FOR INSPECTION. No plastic body filler or load will be allowed in seams. Any broken or poor-quality welds observed on a race vehicle by the inspectors shall disqualify the race vehicle from further participation until the welds can be made to pass inspection.
- 7.30 Cameras** - Cameras may be mounted on the drivers fairing or the seat post provided it does not interfere with driver's vision or ability to drive the kart. All cameras must be marked with a team name and kart number. Cameras cannot be larger than 2" x 2" x 2", must be mounted with an approved mounting bracket from the cameras manufacturer and must pass tech inspection. No cameras are allowed to be mounted to a helmet.

8.0 EVENT REQUIREMENTS

The requirements in this section apply to all evGrandPrix events that involve the karts driving.

8.1 Pre-event

- 8.1.1 Motorsports Safety Operations training – DRO, Safety Director, Pit Steward, Pit Crew members, and track workers must complete this training annually.

8.2 Technical Inspection

- 8.2.1 All karts must pass a technical inspection before participation in any track event. Passing technical inspection does not guarantee rules compliance. Following technical inspection approval, teams may make adjustments to improve their kart's performance (e.g. track width, caster/camber, Ackermann, seat position, sprocket size, etc.), but the kart must always comply with the rules. A kart may be protested and/or disqualified because of noncompliance with any rule. The Technical Inspection team has the right to inspect any kart at any time for any reason.
- 8.2.2 All teams are required to perform their own technical inspection on their kart and ensure compliance to the *technical inspection sheet* prior to presenting their kart to the Technical Inspector at the event. The Technical Inspector's role is to verify compliance.
- 8.2.3 Fire Extinguishers – Each kart must have at least one ABC fire extinguisher with a minimum capacity of 2 1/2 pounds. This must be brought to technical inspection, practice, qualifications, and the race. The fire extinguisher must remain by the kart at all times except when the kart is actively driving on the track, at which point it is in the hand of a team member in pit lane. The fire extinguisher must have been inspected within the last twelve months, tagged, and sealed are required. All fire extinguishers within the pit area must display the inspection sticker provided at the technical inspection. A fire extinguisher must be on hand when the race vehicle is being energized.
- 8.2.4 Upon approval of the Technical Inspector, an inspection sticker, band, or other indicator will be placed on the kart to show that it has been approved to enter the track for the event.
- 8.2.5 Workmanship – The Technical Director, has the right to question poor workmanship and the resulting safety hazard it presents and require the team to repair the deficiency.

8.3 Battery Charging

- 8.3.1 Chargers – Charger voltage must be matched to the battery voltage. For example, if all 4 batteries are charged while connected in series, the charger must not exceed 48 volts. If the batteries are charged separately, the charger must not exceed 12 volts.
- 8.3.2 The battery charger must conform to manufacturers recommended use and have no defects that could lead to damage of battery pack, electrical circuits, and/or personnel. Proper care must be used to ensure safety for all when charging is occurring.
- 8.3.3 If event staff have safety concerns, the DEO or Safety Director may ask the team to modify their charging process or location.

8.4 Team Equipment

- 8.4.1 Required Safety Equipment – All team-required safety equipment is the responsibility of the individual race team and shall be brought to technical inspection and shall also be available for re-inspection at any time.
- 8.4.2 Helmet: Is closed face with an integral, immovable chin guard. Contains an integrated visor/face shield supplied with the helmet. Meets an approved standard (Snell K2010, K2015, K2020, M2010, M2015, M2020, SA2010, SAH2010, SA2015, SA2020; SFI Specs 31.1/2010, 31.1/2015, 41.1/2010, 41.1/2015; FIA Standards FIA 8860-2004, FIA 8860-2010, FIA 8860-2018, FIA 8859-2015). Is properly labeled with its standard.
- 8.4.3 Driver's suit must be manufactured for racing. The suit must be constructed of heavyweight, abrasion-resistant nylon. The driver's suit must cover the ankles and wrists while seated in the kart. Exposed skin will result in a black flag penalty.
- 8.4.4 To prevent or minimize abrasions, all drivers shall wear gloves of Kevlar, leather, or vinyl material.
- 8.4.5 The driver shall wear an approved neck brace, socks covering the ankles, and full coverage sturdy shoes, boots or racing shoes.
- 8.4.6 The driver shall wear an approved rib protector under his or her suit.
- 8.4.7 Long hair -- No hair may be outside of the driver's helmet. A head sock or other method must be used to restrain hair. This is a black flag offense.
- 8.4.8 Crew Clothing – At all times in the pit and paddock area, all crew members must wear long pants, shirts that cover the shoulder, and closed-toe shoes. If power tools are used or the electrical system is being serviced, the user and those in

proximity must wear safety glasses. All graphics on clothing must be in good taste.

- 8.4.9 Appearance – It is essential that every effort is made to present the most professional racing appearance possible. To this end, certain minimum requirements shall be imposed on all competitors.

8.5 Pits Requirements

- 8.5.1 Pit Passes – A pit pass is required to enter the pits. All crew members will be issued a pit pass at check-in and must always keep it visible. Each pit pass is for the individual in which it has been issued and may not be transferred to another person. Persons without a pit pass are not allowed in the pits at any time and will be asked to leave by the event staff. The DRO shall have complete discretion regarding personnel in the pits and on the grid.
- 8.5.2 Leaving Pit Area – Once a go-kart enters the pits for a race event, it may not leave until the race is complete. Doing so disqualifies the go-kart from the event.

8.6 Driving Requirements

- 8.6.1 All drivers must complete the *Driver Safety Training* and be registered with event staff. The DRO or their designee will provide registered drivers with a method to designate them as a driver (bracelet or similar) and they must display this to the DRO or their designee each time they wish to enter the track. A photo ID may also be requested to verify identity.
- 8.6.2 All rookie drivers will have fluorescent tape on the rear of the kart to designate rookie status for the first on-track event attended. The Technical Inspector will apply the tape at technical inspection. A Driver will be considered a rookie until they finish their first race and get a satisfactory rating from the DRO.
- 8.6.3 No electronic communication of any type is allowed between anyone and the driver this includes but not limited to radios, phones, and walkie talkies. Any driver found to be receiving communication will be disqualified from the event. The series may elect to use a race command to driver device which would be allowed.
- 8.6.4 Any foul driving, unnecessary bumping, crowding, chopping, blocking, or unsportsmanlike conduct on the track or pits is grounds for penalization or disqualification.
- 8.6.5 All drivers must constantly be aware of the traffic in his/her area and be prepared to yield to a faster competitor. A kart being passed is obliged to yield

at the earliest chance. A blue flag will be shown, and that driver receiving the flag must follow the procedures of the Blue Flag. Failure to follow the Blue Flag will result in a Black Flag.

- 8.6.6 Any kart, which is driving extremely slowly—such as tuning the drive system during practice—must place highly visible tape to the rear of the go-kart to warn others approaching that the go-kart is moving slowly. A slow go-kart must also stay out of the fast groove of the track.
- 8.6.7 A go-kart may not improve its position with all four wheels off the track unless the kart(s) it passes are directly involved in an accident.
- 8.6.8 All go-karts must enter and exit the pits at a reasonable and safe speed.
- 8.6.9 Drivers must signal by raising one hand so that go-karts behind them can see if they are driving out of the ordinary pattern, such as exiting to the pits, yellow flag, accidents, etc.
- 8.6.10 If their kart has shut down or spun out, drivers must signal by raising both hands high in the air to indicate they will not make any move until the field passes. If the kart is still drivable, the driver may continue driving once a track worker signals that the track is clear. If the go-kart is not able to continue, but can be rolled, the driver should remain in the go-kart to steer as the track workers move the go-kart into a safe location until the end of the event. If the go-kart cannot roll, when it is safe, the driver should exit the kart and help the track workers move the kart to a safe location until the end of the event. The DRO will communicate to the teams when they may retrieve their damaged karts following the end of the event.
- 8.6.11 All hand signals should be made in such a manner so as not to confuse officials or other drivers on the track.

8.7 Flags

- 8.7.1 Green Flag – The green flag signifies the start of the session. The green flag and/or light will be displayed at the start of the race or practice session and kept visible as long as the track is clear for racing.
- 8.7.2 Yellow Flag – The yellow flag and/or yellow light will be displayed if the track is partially blocked for any reason. Drivers should raise one hand, slow down, hold their position, and be prepared to stop. Passing under the yellow will result in a penalty.
- 8.7.3 Blue Flag – The blue flag, with or without the diagonal yellow stripe, will be given to any kart that is being overtaken by the leaders. The kart receiving the

flag must immediately signal the direction they wish to be passed on, move over, and let the other kart pass.

- 8.7.4 Red Flag – When given to an individual kart, the red flag means to stop as quickly and safely as possible, pull inside the infield, and shut down the drive. This means there is something dangerously wrong with the kart, and the driver should stop promptly. When given to the entire field, the red flag and/or red light means the track is hazardous for racing, and all karts must stop immediately where they are on the course. Karts cannot be worked on during a red flag. If and when the race is restarted, the karts will be positioned in order of the last completed lap, except for stoppage due to rain.
- 8.7.5 Rolled Black Flag – The rolled black flag will be given to any competitor whose driving conduct is bordering on penalization. This is only a warning and does not require the kart to leave the track.
- 8.7.6 Black Flag – The black flag means the driver must enter and stop inside their pit immediately for consultation by a race official.
- 8.7.7 White Flag – The white flag will be given to the leading kart one (1) lap before the end of the race.
- 8.7.8 Checkered Flag – The checkered flag signals the end of the race and all competitors should finish the lap at reduced speed and exit to the pits. After the checkered flag is displayed, the top five (5) placing karts are allowed to stay in the infield for post-race ceremonies.

8.8 Practice and Test & Tunes

- 8.8.1 Eligibility - All karts must pass technical inspection before entering the track.
- 8.8.2 For Test & Tunes and at designated periods during race day, the track will be opened for a practice session. If a large number of vehicles are in attendance, the DRO may break the practice time into groups. Any racer participating in the wrong warm-up group will be subject to penalization. When warm-up is completed, all racers will proceed to the pits to await further instructions.

8.9 Qualifying

- 8.9.1 The Fall Classic and Spring races starting grids will be determined via sprint races. The number of karts in each sprint race will be determined by the DRO based on the number of entrants. For the Fall Classic, each kart will be assigned to a sprint race and given a starting position via a random draw. For the Spring race, karts will be assigned based on STEM Report scores. Sprint races will be conducted in similar fashion to the main race with all karts lining up in race

order, performing at least one parade lap, and then conducting a 12-lap race. Placement for the main race will be determined as follows:

Position 1: The winner of heat race #1

Position 2: The winner of heat race #2

Position 3: The winner of heat race #3

Position 4: 2nd place of heat race #1

Position 5: 2nd place of heat race #2

Position 6: 2nd place of heat race #3

And so on until all karts are gridded for the main race.

If any or all heat races must be cancelled, Fall Classic race gridding will be done by random draw. If there is a tie in Academic Challenge points, a random draw will break the tie.

- 8.9.2 Post-qualifying inspection - Each kart will undergo a post-qualifying inspection as determined by the Technical Inspector. This will include, but not limited to, weighing the kart and driver, inspecting push-back bumpers, checking motor controller settings, and verifying battery compliance. Karts found to be non-conforming to any rule may be penalized or disqualified, at the DRO's discretion. **Penalty protests must be issued to the DEO within 15 minutes.** Only the driver and crew chief are allowed to be present during post-qualifying inspection.
- 8.9.3 One individual driver can qualify only one kart and must drive that kart in the main race. If for some unforeseen reason the qualifying driver is unable to drive the kart in the main race, the DRO must be notified. If the DRO approves the use of an alternate driver, the kart will be allowed to start at the rear of the starting field. If an alternate driver attempts to drive the kart in the race without prior approval, that kart will be disqualified.
- 8.9.4 If a kart is not able to participate in a sprint race qualifier, it may be permitted to start at the rear of the field at the discretion of the DRO.

8.10 Race

- 8.10.1 Race Length – The length of a Fall Classic and Spring races shall be 18 laps. Race placement will be determined based on position at the finish line on the lap in which the leader completes their 18th lap.
- 8.10.2 **Crew members are the only authorized persons to service the vehicle during a race event.** One crew member must be designated as the team spotter/scorer but is not allowed over the wall for pit stops.

- 8.10.3 Post-race inspection - Each kart will undergo a post-race inspection as determined by the Technical Inspector. This will include, but not limited to, weighing the kart and driver, inspecting push-back bumpers, checking motor controller settings, and verifying battery compliance. Karts found to be non-conforming to any rule may be penalized or disqualified, at the DRO's discretion. Penalty protests must be issued to the DEO within 30 minutes. Only the driver and crew chief are allowed to be present during post-qualifying inspection. Karts below the minimum weight requirement will be penalized as follows:
- 418.0 – 419.9 pounds: No penalty
 - 410.0 – 417.9 pounds: final race place reduced by 5 places
 - 400.0 – 409.9 pounds: final race place reduced by 10 places
 - 399.9 or lower: Disqualification
- 8.10.4 Race Starting Format – The evGrandPrix will use a rolling start format. On the starter's call, the karts will start and follow the pace kart, if applicable, for at least one lap. When the pace kart reaches the pits, it will exit, and the field will continue to the start line at which time the starter will wave the green flag to start the race.
- 8.10.5 A predetermined controller limit will be required. This set limit is 220 amps and is subject to post-race inspection. Failure to adhere to this limit will result in disqualification.
- 8.10.6 Rain Contingency – If foul weather interrupts a race before completion of 50% of the required laps, all karts will be red-flagged and will stop on the track at the start-finish line in single file order to await further instructions. Unless otherwise directed by the DRO, no work is to be done on the karts. The karts may be covered if desired. The DRO will determine if the event is to be postponed. If a race is to be restarted, the karts will restart in single file, in the order, they were scored on the lap before when the weather forced the delay. If 50% or more laps have been completed, the race will be deemed officially complete. Finish position will be based on the position of the lap before when the weather forced the delay.
- 8.10.7 Dislodged or Missing Bumpers – If a bumper, side pod, or driver fairing falls off, dislodged or dragging, at the head flagman's discretion the kart will be shown a mechanical flag and be required to return to the pits.
- 8.10.8 Grid vs. Pit– The Grid area is defined by the Event Director as a place where karts will be placed before entering the track surface. Only team members and

officials will be allowed in this area. The Pit area is defined as the area where the team plus support group can work on the kart.

8.10.9 Protest – All teams wishing to protest an action on track or a call made by an official must fill out the official race day protest form available at tech within 30 minutes of the end of the session in question.

8.10.9.1 This form must be filled out correctly listing the rule in question, the reason for the protest and be signed by both the driver and crew chief/principle.

8.10.9.2 The evGrandPrix has the right to claim any, and all equipment for testing should those items be called into question during a protest.

9.0 ROLES & POSITIONS

9.1 evGrandPrix Director – The evGrandPrix Director is assigned by Purdue University to oversee and manage the evGrandPrix Program.

9.2 Director of Event Operations (DEO) – The Director of Event Operations is designated by the evGrandPrix Director to manage evGrandPrix events including, but not limited to, Test & Tunes and the evGrandPrix race. The DEO is the final authority on rules interpretations and enforces proper and appropriate conduct of all Program staff, volunteers, participants, and spectators. The DEO may appoint personnel and organize subcommittees as deemed necessary to help carry out their duties. These duties include, but are not limited to, Safety Director, Technical Inspector, Chief Scorer, and Director of Race Operations.

9.2.1 Safety Director – The Safety Director is designated by the DEO and ensures all aspects of safety adhere to the rules and commonly known safe practices during evGrandPrix events. The Safety Director reports all concerns and recommendations to the DEO and the DEO determines and enforces the course of action.

9.2.2 Technical Inspector – The Technical Inspector is designated by the DEO for a technical inspection of each kart. Each kart must receive approval from the Technical Inspector before it is allowed to participate in an evGrandPrix event.

9.3 Director of Race Operations – The Director of Race Operations (DRO) is designated by the DEO. The DRO is responsible for all decisions during the race and oversees the race from start to end. The DRO is also responsible for driver training and track worker training.

9.3.1 Chief Scorer – The Chief Scorer is designated by the Director of Race Operations and is responsible for establishing qualifying times and counting race laps to determine race finishing position.

- 9.3.2 Pit Steward – The Pit Steward is designated by the DRO and reports directly to the DRO. During the race, the Pit Steward has final authority in the pit area. When a kart suffers a penalty flag (black flag), the Pit Steward will enforce the penalty. The Pit Steward may designate Pit Workers to help with his/her responsibilities.
- 9.3.3 Gate Attendant – The Gate Attendant is designated by the DRO and is responsible for ensuring everyone entering the track area has the proper credentials and is wearing the appropriate PPE.
- 9.4 School Liaison – Each school must be represented by a single School Liaison. The Liaison must be a school-recognized representative (non-student) who is responsible for the welfare of the student team(s) and authority to represent the institution. The Liaison is the primary contact for evGrandPrix.
- 9.5 Each team must have a designated Crew Chief. The Crew Chief is the official spokesman for the crew. No one other than the Crew Chief may handle a situation with the Director of Race Operations, Director of Safety, or Director of Event Operations. The Crew Chief is responsible for ensuring their team and vehicle adhere to all rules.



APPENDIX A – PARTICIPATION FORMS



Waiver, Release and Agreement on Indemnity

I desire to participate in the evGrandPrix High School Series (the “Activity”) organized and conducted by Purdue University (“Purdue”). In consideration of permission granted by Purdue to allow me to participate in the Activity, I (together with my parent or guardian, if I am under the age of eighteen or under a legal disability) (sometimes referred to collectively as “Participant” below) represent, covenant and agree, on behalf of myself and my heirs, assigns, and any other person claiming by, under or through me, as follows:

1. I acknowledge that the Activity involves certain risks (some of which I may not fully appreciate) and that injuries, death, property damage or other harm could occur to me or others. I accept and voluntarily incur and assume all risks of any injuries, damages, or harm which arise during or result from my participation in the Activity, regardless of whether or not caused in whole or in part by the negligence or other fault of evGrandPrix, Purdue, The Trustees of Purdue University, and/or any of its or their departments, trustees, affiliates, employees, officers, agents or insurers ("Released Parties"). I further acknowledge and agree that Purdue has exercised reasonable care in (a) warning me that the Activity involves certain risks and dangers and (b) providing me with the disclaimers and the other cautionary statements set forth in this document.

2. I waive all claims against any of the Released Parties for any injuries, damages, losses or expenses, whether known and unknown, which arise during or result from my participation in the Activity, regardless of whether or not caused in whole or part by the negligence or other fault of any of the Released Parties. I release and forever discharge the Released Parties from all such claims.

3. I agree to indemnify and hold the Released Parties harmless from and against any and all losses, liabilities, damages, costs or expenses (including but not limited to reasonable attorneys' fees and other litigation costs and expenses) incurred by any of the Released Parties as a result of any claims or suits that I (or anyone claiming by, under or through me) or any third-party may bring against any of the Released Parties to recover any losses, liabilities, costs, damages, or expenses that arise during or result from my participation in the Activity, regardless of whether or not caused in whole or part by the negligence or other fault of any of the Released Parties.

4. I give permission for Workshop instructors, volunteers and emergency personnel to make necessary first aid decisions in the event of an accident, injury, or illness I may suffer during my participation in the Activity. If I need medical treatment, I shall be financially responsible for any costs incurred as a result of such treatment.

5. I have carefully read and reviewed this Waiver, Release and Agreement on Indemnity. **I execute it voluntarily, and I understand it and the legal consequences of signing it, including (a) releasing the Released Parties from all liability, (b) promising not to sue the Released Parties, and (c) assuming all risks of participating in the Activity.** I understand that this document is to be governed by and construed as broadly as possible under the laws of the State of Indiana. I agree that if any portion is held invalid or unenforceable, I will continue to be bound by the remaining terms.

EXECUTED this _____ day of _____, 20_____.

Participant Signature

Participant’s Printed Name



PARENTAL CONSENT (only if participant is under the age of 18)

I, the parent and/or legal guardian of the minor signing above, understand the nature of the Activity, as well as the minor's experience and capabilities, and I believe the minor to be qualified to participate in the Activity. I allow the minor to participate in the Activity.

I hereby acknowledge and agree to each of the provisions set forth in the above document and, on behalf of myself, the above-referenced minor, and any other person(s) claiming by, under or through either one of us, I agree to comply with and be bound by its terms. I understand that I am responsible for the obligations and acts of the minor as described in this document. **I execute it voluntarily, and I understand it and the legal consequences of signing it, including (a) releasing the Released Parties from all liability on my and the minor's behalf, (b) promising not to sue the Released Parties on my and the minor's behalf, and (c) assuming all risks of the minor's participation in the Activity.** I understand that this document is to be governed by and construed as broadly as possible under the laws of the State of Indiana. I agree that if any portion is held invalid or unenforceable, I and the minor will continue to be bound by the remaining terms.

Parent or Guardian Signature (if applicable)

Parent/Guardian Printed Name

Date: _____

Minor's Name: _____



Annual Series Commitment / Participation Agreement

I agree to follow all the rules, regulations, and stipulations within the current official evGrandPrix rules. This agreement bonds not only myself but the school or corporation I represent as well.

I have read the evGrandPrix rules. I understand that it is a living document, and it is my responsibility to keep the latest copy available for review.

By signing this agreement, I agree to the terms herein.

Team Liaison:

Signature

Printed Name

Date

Official School Name

Photo/Video Release Form

I, _____ (please print),

grant permission to Purdue University and its agents and employees the irrevocable and unrestricted right to reproduce the photographs and/or video images taken of me, or members of my family, for the purpose of publication, promotion, illustration, advertising, or trade, in any manner or in any medium. I hereby release Purdue University and its legal representatives for all claims and liability relating to said images or video. Furthermore, I grant permission to use my statements that were given during an interview or guest lecture, with or without my name, for the purpose of advertising and publicity without restriction. I waive my right to any compensation.

I acknowledge that I am

over the age of 18

the legal guardian of the following

If legal guarding of model(s), please list name(s) here:

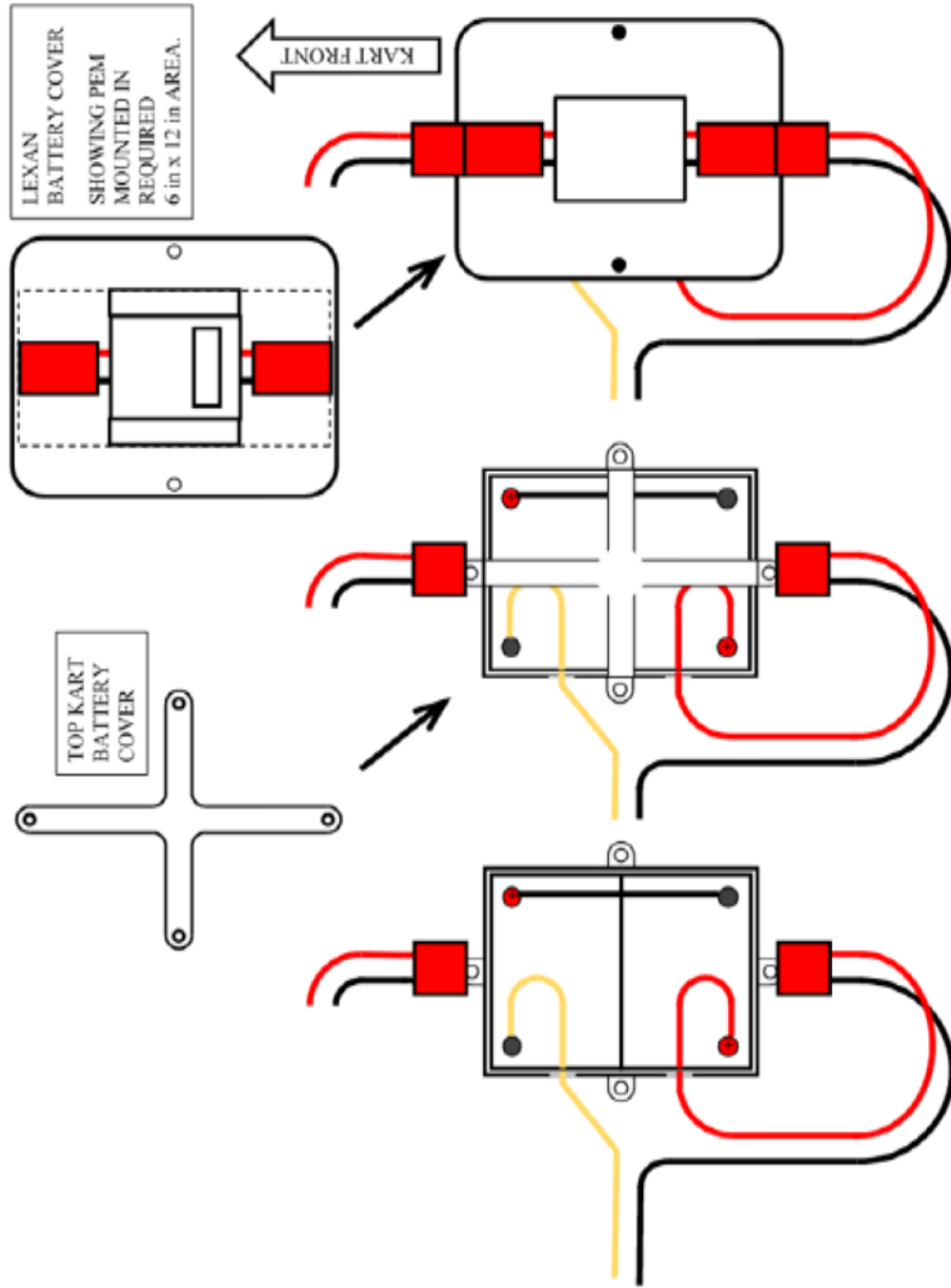
Signature _____

Date _____

Address _____

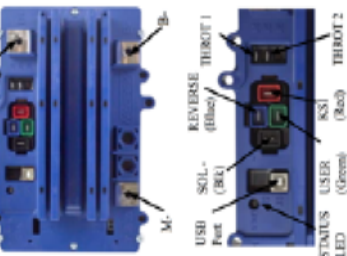
APPENDIX B – TECHNICAL INFORMATION

Top Kart Battery Box Enclosure Installation



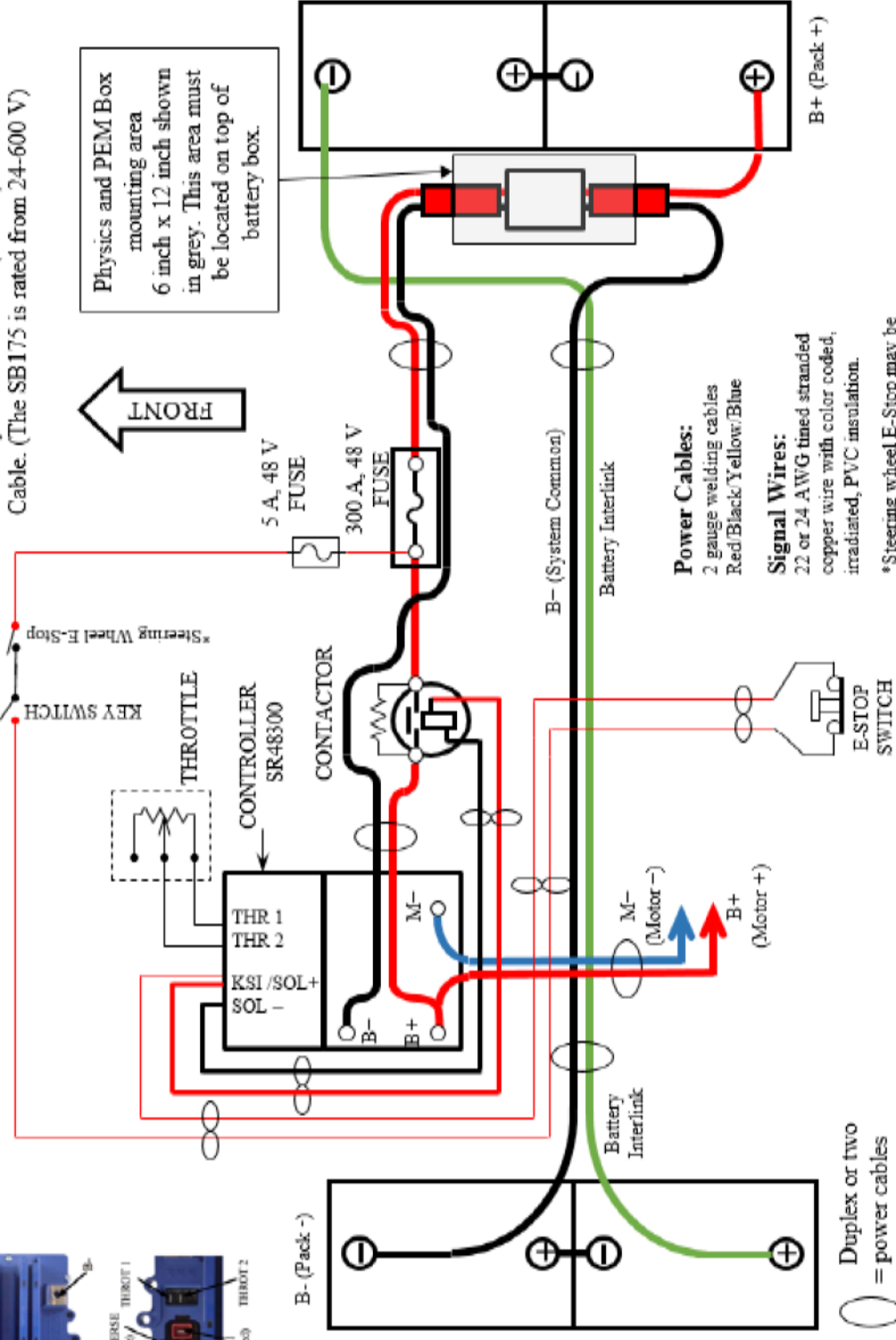
Electrical Components High School Karts
TopKart Wiring Harness

SKW+BFR_01/15/2019
 Text revised 06/04/18



Connectors to Physics Box and PEM Box
 Use only RED Anderson (SB175) for 2 Ga Cable. (The SB175 is rated from 24-600 V)

Physics and PEM Box mounting area 6 inch x 12 inch shown in grey. This area must be located on top of battery box.

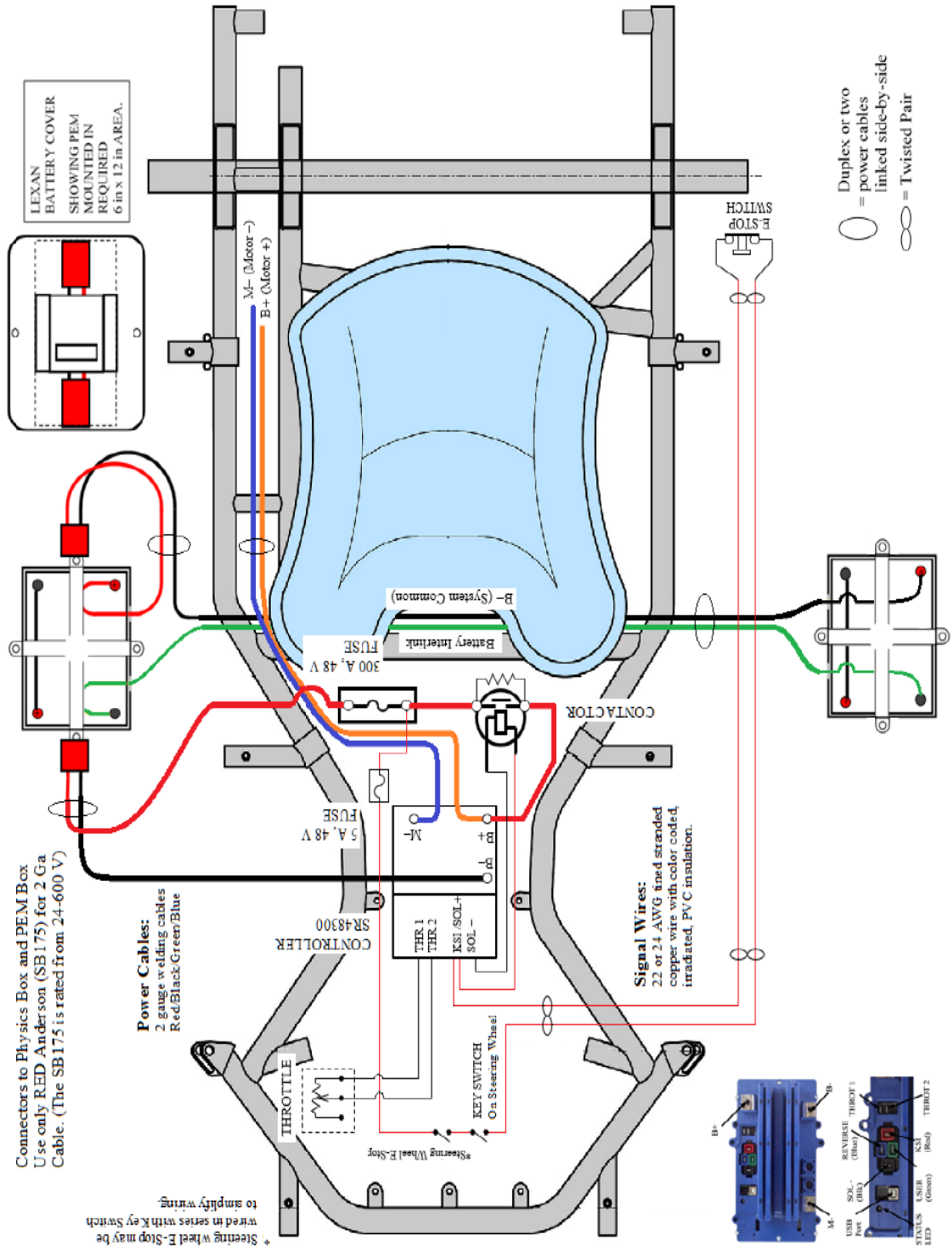


Power Cables:
 2 gauge welding cables
 Red/Black/ Yellow/Blue

Signal Wires:
 22 or 24 AWG tinned stranded copper wire with color coded, irradiated, PVC insulation.

*Steering wheel E-Stop may be wired in series with Key Switch to simplify wiring.

○ = Duplex or two power cables
 ○ = linked side-by-side
 ○ = Twisted Pair

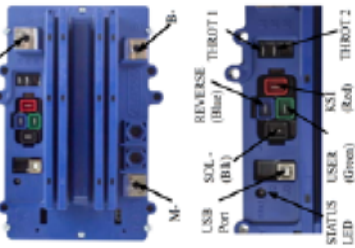


* Steering wheel E-Stop may be wired in series with Key Switch to amplify wiring.

Electrical Components High School Karts

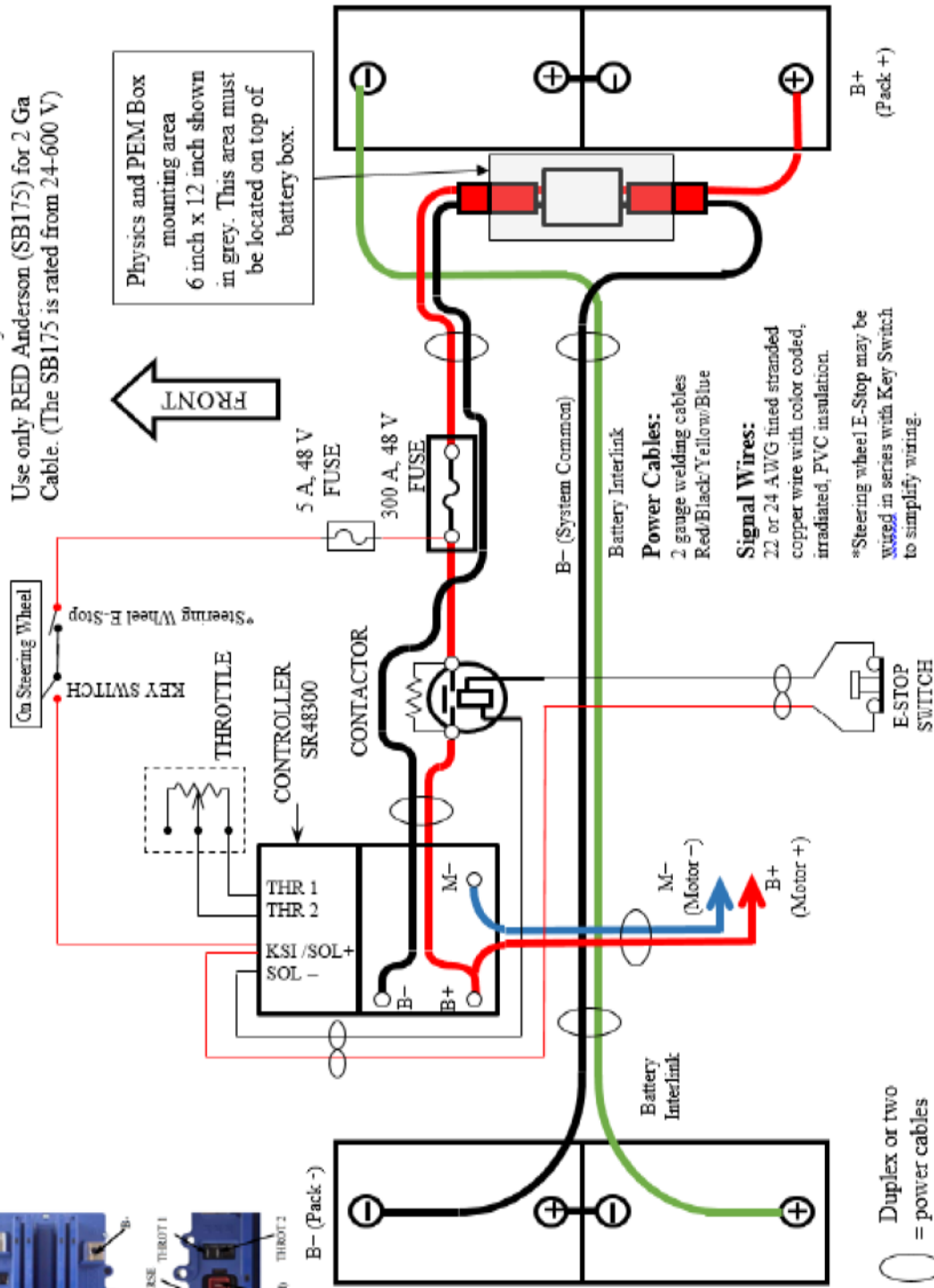
Purdue Suggested Wiring

SKW+BFR 01/15/2019
Text revised 06/04/18



Connectors to Physics Box and PEM Box
Use only RED Anderson (SBI75) for 2 Gauge Cable. (The SBI75 is rated from 24-600 V)

Physics and PEM Box mounting area 6 inch x 12 inch shown in grey. This area must be located on top of battery box.



- = Duplex or two power cables
- = linked side-by-side
- = Twisted Pair

Power Cables:
2 gauge welding cables
Red/Black/Yellow/Blue

Signal Wires:
22 or 24 AWG tinned stranded copper wire with color coded, irradiated, PVC insulation.

*Steering wheel E-Stop may be wired in series with Key Switch to simplify wiring.

