

Purdue evGrandPrix High School

Technical Inspection 2022-23

Version: RevB (released 2023-Mar-23)

Process:

- (1) Teacher and Crew Chief complete the technical inspection of their kart and correct all non-compliances.
- (2) Crew Chief presents the kart and completed technical inspection form to the evGP Technical Inspector. Please print on 2 separate pages.
- (3) evGP Technical Inspector performs a technical inspection to verify conformity. All non-compliances must be remedied by the team.
- (4) Once all criteria is satisfied, Technical Inspector provides inspection sticker, band, or other indicator

School	
Teacher	
Crew Chief	

Kart #	
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	Item	Rule	Description	Pass (P) / Fail (F)		Tech. Inspector Comments
				School	evGP	
1 - Mechanical	CHASSIS					
	M1	6.1.1	Frame: Top Kart EV-1 chassis			
	M2	6.1.2	Wheelbase: 43" maximum; 39.75" minimum			
	M3	6.1.3	Tread width: 55.125" maximum; 28" minimum			
	M4	6.1.4	Tires: Hoosier R60B Front - 4.5/10.0/5 Rear - 7.1/11.0/5			
	BUMPERS & BODYWORK					
	M5	6.2.1	Front bumper: Crushable CIK nose w/ push back bumper brackets			
	M6	6.2.2	Rear bumper: Plastic CIK-style bumper			
	M7	6.2.3	Side bars: - "C" type, side impact transferred to frame - Bottoms bars < 7" above the ground. - Top bars at least 6" above bottom bars - Extend to at least the middle of the rear tires and not beyond outer edge of rear tires			
	M8	6.2.4	Driver Fairing: A CIK-style driver fairing is attached and has at least a 3" clearance to any part of the steering wheel. It does not exceed the level plane of the top of the steering wheel measured with the wheels in a straight line.			
	MISC. MECHANICAL					
	M9	6.13	Brakes: The kart is with pedal-operated hydraulic brakes as supplied by the manufacturer, operating in such a manner as to stop both rear wheels equally. A cotter pin or c-clip is placed through the pivot pin, which connects the brake linkage lever to the master cylinder. The brakes are able to lock both rear wheels at maximum speed.			
	M10	6.17	Guards: Open mechanical drivelines including chain, belt, or gears are guarded to reduce the possibility of personal injury and contact with the racing surface.			
	M11	6.21	Floor pan: The floor pan fills 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.			
	M12	6.21	Seat: The Seat is in good condition with no cracks or holes and is 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 are present. The seatback does not exceed a 135-degree angle from the floor pan. The seat bottom is higher than the lower edge of the frame tubing.			
	M13	6.2.42	Weight ballast: Weight ballast is securely mounted to the kart by a bolt(s) of at least 5/16" in diameter. Weights over 7 pounds use at least two 5/16" bolts. All bolts are cotter-keyed, safety wired or double nutted. All weight is white in color for visibility. Weight is not mounted to the nerf bars, front bumper or rear bumper.			
FASTENERS						
M14	6.26.1	Grade five (5) fasteners, at a minimum, are used for all non-metric screw/bolt-type fasteners of 0.250-inch diameter and larger. Class 8.8 is used for metric fasteners of 6mm and larger.				
M15	6.26.2	Kingpins, pedal attachment points, steering wheel bolts, and all parts of the brake throttle, and steering linkages are c-clipped, cotter pinned or safety wired. (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.)				
M16	6.26.5	Nylon-fiber locknuts are used to secure seat mounting bolts, chain guards, motor and controller mounts, and floor pans.				
2 - Team Equipment	DRIVER/ SAFETY EQUIPMENT					
	T1	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.			
	T2	8.4.3	Suit: The driver's suit is manufactured for racing. The suit is constructed of heavyweight, abrasion-resistant nylon. The suit covers the ankles and wrists while seated in the kart.			
	T3	8.4.4	Gloves: The driver has gloves of Kevlar, leather, or vinyl material			
	T4	8.4.5	The driver has an approved neck brace, socks covering the ankles, and full coverage sturdy shoes, boots or racing shoes.			
	T5	8.4.6	The driver has a rib protector under his or her suit.			
	T6	8.6.1	The driver has completed the Driver Safety Training and is registered with the Director of Race Operations.			
	T7	8.6.2	If the driver is a rookie (this is their first on-track event), the technical inspector will place fluorescent tape on the rear of the kart to designate rookie status.			
	T8	8.2.3	Fire Extinguisher: The team has at least one CO2 type Underwriters Laboratory approved fire extinguisher with a minimum capacity of 2 1/2 pounds. The fire extinguisher must stay with the vehicle at all times.			
	NUMBERS AND DECALS					
	T9	8.9.5.1	The kart number is at least 5" tall and is displayed on the front, both sides, and rear of the kart. No other decals are placed within 2" of the numbers.			
T10	8.9.5.2	The school's name is displayed on the front and both sides of the kart and is legible from 15 feet away.				
T11	8.9.5.3	The evGrandPrix logo is displayed on the front bumper of the kart.				

			Pass (P) / Fail (F)		
Item	Rule	Description	School	evGP	Tech. Inspector Comments
BATTERIES					
E1	6.3	Batteries: The kart is equipped with no more than four (4) Interstate SLA1155 or SLA1156 batteries and manufacturers labels are present.			
E2	6.3.1	All batteries are securely attached to the vehicle in such a manner to protect them from direct impact and withstand the forces of impact or roll-over.			
E3	6.3.3	Battery Enclosure – Batteries are enclosed in a solid, shatterproof enclosure. Battery cells inside the enclosure are isolated by an insulating material and mounted to maintain electrical isolation. The top of the battery pack is covered by a polycarbonate sheet.			
E4	6.3.4	Batteries have appropriate quick disconnects such as Anderson Multipole.			
WIRING, FUSING, SWITCHES					
E5	6.4	All wires are rated to handle the voltage and current load applied through the circuit.			
E6	6.4	All wires are well insulated (insulation is not compromised in any form) and the wires are securely attached to the vehicle.			
E7	6.4	All wiring is kept free from moving parts and protected from chafing and wires that pass through a hole with sharp edges or sheet metal are protected by an insulating grommet or another suitable device.			
E8	6.4	Terminals are secured and protected so they will not come loose or short out during competition. AND no electrical terminals are exposed.			
E9	6.4	No part of the electrical system uses the vehicle frame as a conductor, and the frame is ungrounded.			
E10	6.5	Fusing: A fuse or circuit breaker is installed in electrical circuit between the battery and any electrical load. All fuses or circuit breakers are mounted in electrically rated enclosures as close as practically possible to the source of power. All fuses or circuit breakers are sized to protect the wiring to which they are connected. Fuses sized to carry no more than 85% of the maximum allowable current for the wiring.			
E11	6.6	Emergency Switches: An emergency stop circuit is employed on the vehicle. The circuit consists of a kill switch located near the steering wheel and a mushroom-style emergency stop switch located on the rear of the vehicle in a location that is easily recognizable, labeled, and accessible to emergency personnel. The kill switch and the emergency stop switch are wired in series with the solenoid coil of the main contactor. The power circuit contains a contactor (also known as a solenoid relay) and isolates the battery pack when not in use and during an emergency. This contactor has a current rating that exceeds the maximum peak current draw of the vehicle.			
MOTOR, MOTOR CONTROLLER, THROTTLE					
E12	6.7	Motor: The motor is a Motenergy ME0708 PMDC brushed DC motor and the seal is present.			
E13	6.8	Throttle: The kart is equipped with a foot-operated throttle potentiometer with two return springs. The potentiometer produces a zero speed signal when the pedal is released. One spring is located between the throttle pedal and the vehicle frame. The second spring, the throttle return spring, is located on the potentiometer throttle box.			
E14	6.9	Motor Controller: The motor controller is Alltrax SPM 48300 or SR 48300. The power limit does not exceed 220 Amps.			
VEHICLE WEIGHT					
4 - WEIGHT	W1	6.24.1	Weight: The weight of the vehicle with fully equipped driver is at least 420 pounds.		