

Section	
	<p>General Information</p> <p>The ERX technical regulation is linked to the “Projekt E” FIA International Series regulation. Apart from the naming, which is different because of trademark reasons, the ERX technical regulation will remain an exact copy of the Projekt E regulation.</p>
1	Definitions and principles
1.1	<p>Main regulation principle</p> <p>The main principle of the ERX technical regulations is to ensure a fair competition and controlled cost. While allowing freedom for individual solutions and development they exclude exotic and expensive technical solutions which may endanger fair and equal competition.</p>
1.2	<p>ERX Technical Rights Holder (“TRH”)</p> <p>All Intellectual Property (IP) rights and copyrights of the ERX technical concept including the specific regulations and powertrain kit system are held entirely and solely by Stohl Group GmbH. In protests or appeals regarding the interpretation of the technical rules or their application Stohl Group GmbH will be the technical referent to advise the Stewards and the Parent ASN.</p>
1.3	<p>Technical rules</p> <p>The use of the supplied ERX powertrain kit in its entirety and in full accordance with the ERX -Kit technical manual is compulsory. The rules for the systems not part of the ERX powertrain kit are defined in these regulations. In addition to this regulation text, FIA appendix J Art 251 applies and certain sections of the FIA Appendix J Art. 253, 255 and 279 apply. The list of applicable articles is listed in Appendix 1 of these regulations.</p> <p>All modifications which are not explicitly allowed by the present regulations are forbidden. An authorised modification may not entail a non-authorised modification.</p> <p>No driver aids are permitted.</p>
1.4	<p>Developers of cars complying with ERX Technical Regulations</p> <p>Motor sport companies and technicians are eligible to develop and build cars, based on certain mass production road cars in accordance with the basic requirements listed in this regulation.</p> <p>In order to be eligible to take part in a competition following the ERX technical regulations, each individual car has to carry a ERX specification sheet (“Specification Sheet”), based on a standard generic technical form. Only the TRH is entitled to issue the Specification Sheet to the developer of the car. The developer has to present the first car of a type and all technical solutions no later than 2 weeks before its first competition in</p>

	<p>order to receive the first Specification Sheet. Updates to the Specification Sheet requiring additional information may be added by the TRH at any time. Developers have to follow such additional request and update their Specification Sheet information and provide such information as soon as possible.</p>
1.5	<p>ERX Technical Registered Suppliers & Components List</p> <p>In order to regulate costs and create equality of supply for all competitors, certain key components will be restricted to those listed in a Registry of Suppliers and Components. This list will be controlled by the TRH. In order for a supplier and product to be registered the registration procedure defined by the TRH must be followed. Any supplier can apply for registration as long as its component accomplishes the defined requirements and the standard application procedure.</p> <p>Main characteristics included in the registration are:</p> <ul style="list-style-type: none">- Assurance of commercial availability to all competitors for a minimum period of time without changes (except to fix reliability and safety issues)- Assurance to stay within a cost cap defined by the TRH for each component group- Supply of technical information in order to control technical compliance of components used by competitors- Limitation of certain technology level/sophistication if required case-by-case and at the sole discretion of the TRH. <p>Components requiring registration are:</p> <ul style="list-style-type: none">- Dampers- Brake Calipers- Brake Discs- Pedal Box- Steering Rack- Steering Servo (Pump, Motor)- Wheels- Driver Display- HV Safety Lights- HV Cable- Interior heating system- Charging Systems <p>The list of components requiring registration may be updated at any time.</p>
1.6	<p>Exceptions</p> <p>The TRH reserves the right to refuse to issue a Specification Sheet for cars, developers solutions or components if at its sole discretion they are deemed not to comply with the main principle of this regulation, because of safety reasons, or lack of proof of</p>

	<p>competence to develop and build a safe car. The TRH further reserves the right to issue waivers on request of the respective developers for certain solutions and systems as long as they do not infringe the main principle of this regulation, or under certain conditions.</p>
2	General Guidelines
2.1	<p>Validity The technical regulations become valid on 01.01.2020. Changes, amendments and clarifications will be approved by the Parent ASN, or Stewards of the Competition, and published by Stohl Group GmbH and communicated to all developers by numbered and dated technical bulletins.</p>
2.2	<p>ERX Powertrain Kit The supplied ERX powertrain kit has to be used in its entirety without any modification. The kit consists of:</p> <ul style="list-style-type: none"> - RESS (HV battery system) - MGUs - Motor Controllers - Transmission Fr & Rr - VCU - Power Box - Keypad - Main Switch System - Main wiring harness <p>The following components are sealed. For safety, and with the exception of assembly/service hatches designated for access by developers or teams, these components may not be disassembled, even partly, by anyone else other than the kit supplier:</p> <ul style="list-style-type: none"> - RESS (HV Battery System) - MGU - Motor Controller - VCU - Power Box <p>Any servicing or repair on those components may only be carried out by the kit supplier.</p>
2.3	<p>Compliance with the regulations Competitors are obliged to ensure the compliance of their car(s) with the ERX technical regulation at all times of the competition.</p>
2.4	<p>Operation conditions For safety reasons, the developer or competitor must not operate the powertrain kit outside of the prescribed operation conditions and limits as outlined in the ERX Kit manual. Any accidental operation of the system outside the prescribed limits must be immediately reported to the kit supplier and the system must not be operated again until the kit supplier has approved its continued use.</p>
2.5	Eligible Base Cars

	<p>Cars must be rigidly-closed non-convertible models with a minimum of three doors. Cars must be mass-produced and available on sale through a recognised commercial network.</p> <p>The primary target are hatchback and crossover cars, other body styles may be accepted upon request.</p> <p>Minimum outside dimensions (without mirrors) according to official sales brochure: L: 3945 mm W: 1694 mm H: 1409 mm</p> <p>Maximum outside dimensions (without Mirrors) according to official sales brochure: L: 4500 mm W: 1870 mm H: 1690 mm</p> <p>Base cars not matching the above criteria may be accepted by and at the sole discretion of the TRH on request if they suit the global concept of the regulation.</p>
2.6	<p>Retro Fitted Cars</p> <p>Developers may use existing rally or rallycross cars or chassis and retro fit them with the ERX powertrain kit instead of developing a new car. Such cars must comply with the ERX technical regulations. The TRH may adapt the Specification Sheet requirements for retro-fitted cars. The developer must request approval by the TRH prior to the car development. Specification Sheets are issued by the TRH at its sole discretion.</p>
3	<p>Glossary and naming conventions</p>
3.1	<p>ERX Technical Developer</p> <p>Any entity that has successfully completed the process for an official Specification Sheet for at least one car.</p>
3.2	<p>Motor Controller</p> <p>The unit fed by the RESS direct current, generating the required multi-phase alternating current output to control the MGU</p>
3.3	<p>OEM</p> <p>Original Equipment Manufacturer of the base car.</p>
3.4	<p>Front Compartment</p> <p>Volume housed inside the car's bodywork in front of and separated by the front bulkhead and below the bonnet.</p>
3.5	<p>VCU</p> <p>Vehicle Control Unit, main electronic control unit, controlling all other sub control units</p>
3.6	<p>Power Box</p> <p>Solid state low voltage power supply control device for most low voltage actuators</p>
3.7	<p>Production</p> <p>Refers to the original OEM base car's solution/component</p>
3.8	<p>ERX Kit Manual</p> <p>Powertrain Kit manual, containing technical instruction and additional information. To be strictly followed by all developers and competitors</p>
3.9	<p>HV</p> <p>High Voltage = any system with voltage above 60V</p>
3.10	<p>Retro Fitted Car</p> <p>ERX racecar which is based on an existing rallycross or rally car or chassis.</p>
4	<p>Complete car</p>

<p>4.1</p>	<p>Materials If not specifically permitted the following materials may not be used: Titanium alloy Magnesium alloy Ceramics Composite material is only allowed for: Ducts Seats Small brackets, supports and covers in the cockpit and front compartment (excluding transmission and MGU brackets) Motor controller brackets Cockpit parts must be UL94.V0 fire retardant Underbody protection Bodywork and wheel arch liners Centre console, driver interface and dashboard</p>
<p>4.2</p>	<p>Powertrain performance Maximum mechanical power delivered by all 3 MGUs at any time: 450 kW</p>
<p>4.3</p>	<p>Minimum Weight The minimum weight of the car, without the driver or their equipment is 1440 kg The minimum weight of the car including driver and their equipment is 1540 kg The weight of the car is measured with the driver on board wearing their full racing apparel, and with the fluids remaining at the moment at which the measurement is taken.</p>
<p>4.4</p>	<p>Minimum ground clearance The entire RESS protection plate, the front and rear underbody protection, the entire body shell and all other solid parts of the car which are not part of the moving suspension system or the bodywork have to respect a minimum clearance of 100mm to the ground at any time of the competition. The measurement may be checked at the starting grid, weight check area or any other designated area with tyres inflated to maximum 2.4 bars. Before the competition the various official measurement areas will be designated and the teams can verify their car's conformity. The measurement device is a solid steel cylinder with a diameter of 100mm and a length of 100mm. This cylinder has to clear all above mentioned elements at any given position.</p>
<p>4.5</p>	<p>Ballast Ballast is permitted in accordance with FIA art. 279, however it needs to be fitted in safe distance from the RESS. Installation in the front compartment, attached to the bodyshell is permitted.</p>
<p>5</p>	<p>Body</p>
<p>5.1</p>	<p>Dimensions The length of the car has to remain as the production car within a tolerance of +/- 10mm. The overhang of the production car must be respected with in a tolerance of +/- 10mm. The width of the car measured at the fenders can be increased by 150mm based on the width of the production car at the fender within a tolerance of + 5mm. If the production car has a different width at the front and rear fenders, the higher value is applicable for both axles.</p>

	Irrespective of the production car width, the maximum width of the racecar may not exceed 1950 mm.
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5.2**Bodyshell**

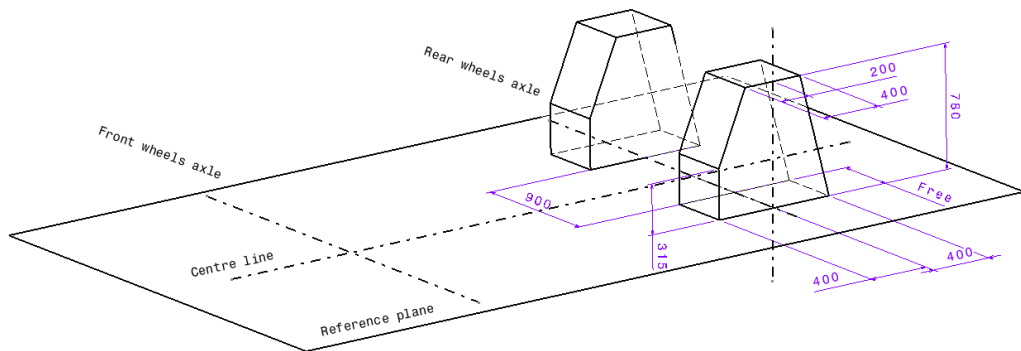
The weight of the bare unmodified unpainted production car bodyshell must be listed in the Specification Sheet. All modifications must be documented in the Specification Sheet.

Compulsory modifications:

- Installation of a safety cage complying with FIA Appendix J Article 253.
- Installation of complete ERX powertrain kit as detailed in the supplied installation manual.

Allowed additional modifications:

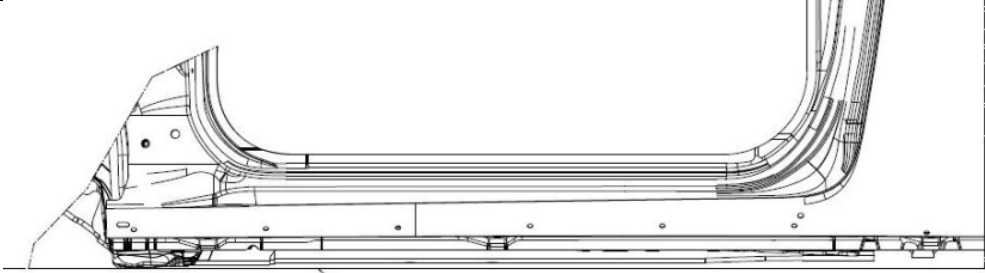
- Strengthening, in accordance with Article 255-5.7.1
- Removal of unused supports, each modification has to be listed in the Specification Sheet
- Local body modification for rear transmission/MGU installation according to the kit installation manual
- Anti-roll bar system
- Pedal box
- Driver seat and seatbelt, complying with FIA Appendix J Article 253
- Fitting of the cooling system including lines, wiring system, HV power lines, brake lines, and extinguisher lines
- Ballast fixation
- Wheel arches
- Cutouts for driveshaft clearance
- Rear suspension system in accordance with DWG 5.2-1
- Underbody protection
- Mounting of permitted additional components



DWG 5.2-1

Reference plane definition:

- The reference plane is a plane parallel to the ground, passing through the lowest point of the original bodyshell floor, so that no remaining part of the original bodyshell and the racecar bodyshell is situated below this plane according to DWG 5.2-2.

	 <p style="text-align: center;">REFERENCE PLANE</p> <p style="text-align: center;">DWG 5.2-2</p>
<p>5.3</p>	<p>Underbody and underfloor protection The fitting of underbody protections is authorised provided that these really are protections which respect the ground clearance, which are removable, and which are designed exclusively and specifically in order to protect the following parts: MGUs, RESS, radiators, suspension, transmission system, cooling system. The underbody protections listed below are compulsory and have to stay within the listed limitations, but at least have to cover and protect all HV components. (they may only protect technical components and must not be used to create a flat floor). Front: Aluminium, minimum 2 mm thick. Steel, minimum 1mm thick. Composite, minimum 2mm thick. Maximum weight of 20 kg Center/RESS: Aluminium, minimum 4mm thick. Steel, minimum 3mm thick. Maximum weight of 25 kg Position of lowest edge not lower than “Body reference plane” see DWG 5.2-2 Gap filling structure according to ERX Kit Manual between plate and RESS compulsory The entire RESS has to be covered by the center or a combination of the center, front and rear underbody protection plates. In this area (underneath the RESS) the minimum material thickness for the center/RESS protection has to be respected. Rear: Aluminium, minimum 2 mm thick. Steel, minimum 1mm thick. Composite, minimum 2mm thick. Maximum weight of 20 kg An additional underfloor protection for the driver compartment floor from composite resembling the floor shape and a maximum thickness of 4 mm is permitted. It is permitted to include parts of the front underbody protection plate to replace the center underbody protection plate. The total combined weight front & center has to remain under 45 kg. It is permitted to include parts of the rear underbody protection plate to the center underbody protection plate. The total combined weight rear & center has to remain under 45 kg. The total weight of all 3 underbody protection plates must be below 65 kg.</p>
<p>5.4</p>	<p>Bodywork The production car’s bodywork, has to remain unchanged except for parts listed below. The original split lines have to be kept except for the headlight and rear light covers.</p> <ul style="list-style-type: none"> - Front bumper, free design but respecting the production shape, requires approval, no removable elements allowed, no dive plates, canards etc.

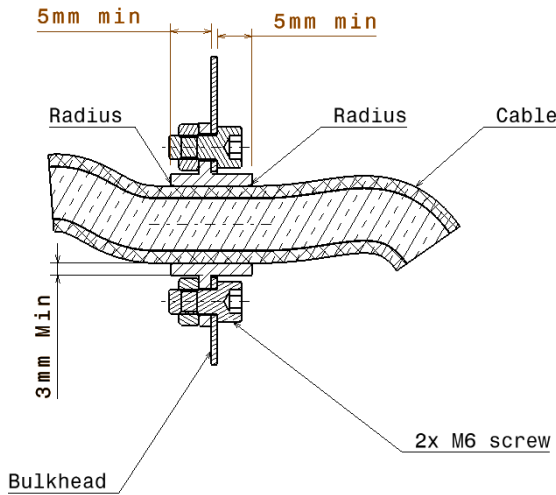
	<p>Additional openings allowed to a maximum surface of 3000cm². The production front bumper mounting bar may be replaced by a single tube with a maximum dimension of 50x2 mm. The new bumper mounting bar, in case used, must be fixed by a maximum of 2 fixation turrets. Its ends must remain unsupported.</p> <ul style="list-style-type: none"> - Bonnet Outside shape has to remain original. Inner Shape free. Openings are allowed with maximum 1100cm². Trims can be fitted to the openings with a maximum height of 50mm. Fixings can be changed to motorsport fasteners. - Front fenders Free design, no removable elements, no significant aerodynamic function allowed, no openings allowed. Upper half of the wheels must be covered when seen from the top and from behind. Mudflaps are compulsory - Side sill covers The production car parts may be removed. New covers may be added - Rear fenders Free design, no removable elements, no significant aerodynamic function allowed, no openings allowed. Upper half of the wheels must be covered when seen from the top and from behind. Mudflaps are compulsory - Rear bumper Free design based on the production shape, requires approval, no removable elements allowed, no significant aerodynamic function. May be shortened compared to the original shape by maximum 100mm measured from lowest part of the production part in positive Z-direction. Wheel to wheel contact must be avoided by covering the rear wheels sufficiently when looking from behind the car. - Tailgate Outside shape must remain original. Inner Shape free. Fixings can be changed to motorsport fasteners. - Driver's door The original part with the original side impact protection must be used - Passenger's door Outside shape must remain original. Inner Shape free. - Driver's side rear door The original part with the original side impact protection must be used Modification in wheel arch area permitted to clear the wheel (design free as per the fender). Material of the modification is free. - Passenger's side rear door Outside shape must remain original. Inner Shape free. Modification in wheel arch area permitted to clear the wheel (design free as per the fender). Material of the modification is free - Additional Rear Aerodynamic device Permitted, in accordance with FIA Art. 279, but must not be adjustable. - Windscreen lower trim The shape must be as on the production car. Material free. - Mudflaps Compulsory, 4mm thickness, not more than 10cm from ground and have to cover the complete wheel width when looked at from the back. - Wheel housing liners Free.
<p>5.5</p>	<p>Glazing</p>

	<p>The Windscreen can be made from polycarbonate or PMMA with a min thickness of 4.75mm. The production car laminated glass windscreen is also allowed. Production or aftermarket laminated road certified glass windscreens with heating function are also permitted.</p> <p>All side and rear screens must be made from polycarbonate or PMMA and resemble the shape of the original item. Minimum thickness: 4.75mm for doors. 2mm for remaining</p> <p>The screens on all side doors (two or four) must be removable without tools.</p> <p>Removal of the door window lifters is permitted. The windows may fixed in the closed position.</p>
5.6	<p>Wiper/washer system</p> <p>A functioning wiper/washer system has to be in place. The system is free, but the motor has to come from a mass-produced road car.</p> <p>Washer tank must have a maximum capacity of 2 litres. It's location is free.</p>
5.7	<p>Rear view mirrors</p> <p>There must be two external mirrors with a minimum surface area 9 square cm.</p> <p>Design free. No significant aerodynamic function.</p>
5.8	<p>External lights</p> <p>The production external lights may be replaced by covers resembling the original outer shape. These covers may be integrated into other bodywork parts.</p>
5.9	<p>Interior & safety systems</p> <p>Compulsory:</p> <ul style="list-style-type: none"> - Application of head protection padding in compliance with FIA Appendix J Article 253-8.3.5 - Installation of driver racing seat according to FIA Appendix J Article 253 - Installation of window net according to FIA Appendix J Article 253 - Driver's seat position <p>The driver's seat may not be less than 10mm from any part of the RESS casing.</p> <ul style="list-style-type: none"> - Seatbelts must be according to FIA 8853/98 standard and have six attachment points in accordance with FIA Appendix J Article 253-7.2 - An extinguisher system according to the FIA appendix J Art. 253 must be installed. This system must use 3M Novec or equivalent extinguishing agent. - All original seats must be removed. <p>Permitted modifications:</p> <ul style="list-style-type: none"> - Original dashboard can be replaced by new part with same shape. Shortening on bottom for serviceability and cluster cover for driver visibility permitted. Refer to FIA App. J Art. 279 10.1.3 Drawing 279-6 for shortening of bottom area. - Removal of all trims and covers inside the car permitted
6	Suspension
6.1	<p>General</p> <p>Double wishbone and MacPherson suspension systems are permitted.</p> <p>Production car wheelbase must be retained with a tolerance of +/- 1%</p> <p>The use of composite material is forbidden, except for protection or ducts.</p>
6.2	<p>Subframes, front and rear</p> <p>Must be made from steel. Free design.</p> <p>Complete subframe minimum weight: 12 kg; Maximum weight: 25 kg</p>
6.3	<p>Dampers & springs</p> <p>Maximum four-way adjustable. Inertial systems prohibited. Roller bearings prohibited.</p> <p>Only steel coil springs are permitted. Helper Springs are permitted. No hydraulic spring</p>

	<p>seat adjusters. No active systems. No electric adjustment systems. No adjustment from the cockpit. No interconnection of the damping systems.</p>
6.4	<p>Uprights, front and rear All four bare uprights have to be identical and interchangeable. For MacPherson: The minimum weight of a bare upright is 5kg. It must be made either from aluminium or steel. The minimum weight of the fully equipped hub carrier, excluding the brake system is 10kg. For double wishbone: The minimum weight of a bare upright is 3kg. It must be made either from aluminium or steel. The minimum weight of the fully equipped hub carrier, excluding the brake system is 8kg. The maximum diameter for wheel bearings is 100mm. Only commercially available bearings are permitted. The hub design is free, however has to contain a five-bolt wheel fixing system.</p>
6.5	<p>Suspension links Must be made from steel. For MacPherson: Minimum weight of all suspension arms per corner including tie rod ends, toe links and bearings: 3kg For double wishbone: Minimum weight of all suspension arms per corner including tie rod ends, toe links and bearings: 5kg</p>
6.6	<p>Anti-roll bars Mechanical systems only. Only simple tube style bars. No active systems or adjustability from the cockpit.</p>
6.7	<p>Wheels & tyres: Maximum diameter: 18x9" Aluminium and Magnesium material is permitted. Minimum weight: 7.5 kg Maximum tire width, measured at two bars: 260mm</p>
7	Brakes
7.1	<p>General Free. Brake disc material must be iron based. Liquid cooling prohibited. Hydraulic handbrake is permitted. Brake balance adjustment is free but may not be automated by any means and has to be purely mechanical and manually operated by the driver.</p>
8	Steering
8.1	<p>General Free. Power steering system requires certification. The steering column must retain the production car energy absorbing device. Commercially available motorsport proven quick release system for the steering wheel is compulsory.</p>

9	Drivetrain
9.1	<p>General The transmission as delivered with the ERX Kit must be used without modifications except:</p> <ul style="list-style-type: none"> - Differential ramps may be chosen from ERX Kit options catalogue - Preload and friction face quantity setup may be changed - Breather catch tank is free - Adaptor plate and adaptor shaft between MGU and transmission is free but its sole purpose is to fix and connect the MGU to the transmission. No other function is permitted. The adaptor plate must be made from Aluminium. <p>The gear ratio setup as delivered by the kit supplier must not be changed.</p>
9.2	<p>Installation Front transmission on the front axle, must be fitted in the front compartment Rear transmission on the rear axle, must be fitted in the designated area described in the ERX Kit installation manual.</p>
9.3	<p>Driveshafts Driveshafts are free excluding the inner tripod joints (from supplier kit). The shaft cross section must be circular. Only solid bars, no tubes allowed.</p>
9.4	<p>Parking Lock System At least one axle must have a parking lock mechanism fitted to the transmission. The design is free and may also be electrically activated. The driver must be able to activate the parking lock while seated in the car in racing condition. The system must have a sensor (digital switch).</p>
10	MGU
10.1	<p>General Two options are allowed: 1) ERX MGU delivered with the ERX powertrain kit 2) OEM mass production road car MGU It is not permitted to mix options one and two.</p> <p>In order to use option 2) a developer must complete following procedure:</p> <ul style="list-style-type: none"> - The developer must contact the TRH to request the use of the specific MGU including providing global technical information about the unit. - The developer must provide written permission from the OEM permitting the use of the respective MGU model. - The TRH issues a MGU specific specification sheet extension - Definition of a MGU specific mechanical integration package which has to be used without modification by the developer for the specific MGU <p>The procedure as defined by the TRH must be followed. Full details about the procedure will be supplied by TRH at the start of the application process, can vary slightly depending on the chosen MGU and may be subject to change at any time.</p>
10.2	<p>Modifications No modifications allowed to any MGU (ERX, or OEM) apart from modifications listed in the ERX Kit manual, or OEM MGU specific extension to the Specification Sheet issued by the TRH.</p>
10.2	<p>Installation One MGU on the front axle, must be fitted in the front compartment</p>

	Two MGUs on the rear Axle, must be fitted in designated area as defined in the ERX Kit Manual.
10.3	<p>Cooling system Free, but must be fluid to air heat exchanger, no chillers allowed. Instructions from the Projekt Kit manual must be followed without exception. The radiator core must have a simple rectangular shape (no complex shapes with curvatures etc.). Airducts permitted up and downstream. Fans permitted maximum distance from radiator surface facing to the fan and the last part of the fan: 300mm. The radiators must not be located in the cockpit. Only the external conditioning and cooling devices permitted in the ERX Kit manual may be used during the Competition, and only in full accordance with the ERX Kit Manual. If cooling lines pass through the cockpit they must have leak-proof covers.</p>
11	Motor controller
11.1	<p>General Only the motor controllers delivered with the ERX kit may be used. No modifications allowed. Permitted locations: <ul style="list-style-type: none"> - front compartment - behind the main roll bar </p>
11.2	<p>Cooling system Free, but must be fluid to air heat exchanger, no chillers allowed. Instructions from the Kit manual must be followed without exceptions. The radiator core must have a simple rectangular shape (no complex shapes with curvatures etc.). Airducts permitted up and downstream. The maximum distance between radiator surface facing the fan and the rearmost part of the fan (furthest away from the radiator face) is 300mm. The radiator must not be located in the cockpit. Only the external conditioning and cooling devices permitted in the E ERX Kit manual may be used during the Competition, and only in full accordance with the ERX Kit Manual. Cooling lines are not permitted in the cockpit, except very close to the Controllers in which case they must have leak-proof covers. Lines for a cockpit heater are permitted.</p>
12	HV system
12.1	<p>General Other than the components delivered with the ERX kit and listed below, no additional components can be added to the HV system: <ul style="list-style-type: none"> - RESS - Motor Controller - MGU - DC-DC Converter An optional Charging interface may be added but must be supplied by the kit supplier and installed in accordance with the ERX Kit Manual. IP55 class is the minimum requirement for all HV parts.</p>
12.2	<p>HV cabling Only ERX registered HV cable may be used. All HV cables and connections must be situated at least 200 mm above ground level and at least 100mm above any underbody protection plates at any times. They must be kept</p>

	<p>at a safe distance from any moving parts ensuring no contact even in case of minor damage to the car's structure in this area.</p> <p>The connectors and lugs supplied with the kit must be used according to the ERX Kit manual. The HV cables must be continuous and must not have any interruptions between the connectors of:</p> <ul style="list-style-type: none"> - RESS and Motor Controllers - RESS and DC-DC Converter - Motor Controllers and MGU - RESS and Charging Interface <p>DC cables must be labelled clearly, visibly and permanently according to the polarity (positive [+] and negative [-]) at both ends.</p> <p>AC cables must be labelled clearly, visibly and permanently according their function (U, V, W) at both ends.</p> <p>If the HV cables pass through a bulkhead, the use of a bulkhead passage element is compulsory and must be either commercially available industrial cable glands, or at least fulfil following requirements:</p> <ul style="list-style-type: none"> - Each cable must be surrounded by a pass-through device made from one single piece of hard plastic surrounding the cable (PVC, POM-C or similar) - The device wall thickness must not be less than 3mm - The protection area of the cable must have at least a length of 5mm on each side of the bulkhead - To avoid any damage by vibration the device must be bolted on the bulkhead by a minimum of two M6 screws. - The edges in contact with the cable sheath must have a min radius of 3mm - A maximum number of three cables can pass through one device but each cable must have its own dedicated circular passage in the device. - The cable(s) can be glued or sealed in the device. <div style="text-align: center;">  <p>DWG 12.2-1</p> </div>
<p>13</p>	<p>E/E system (Electric / Electronic)</p>
<p>13.1</p>	<p>General</p> <p>With the exception of items listed below, only the electric / electronic units which are supplied with the powertrain Kit may be used:</p> <ul style="list-style-type: none"> - Driver Display

	<ul style="list-style-type: none"> - Team Data Logger must not have integrated GPS - Driver Interface (Steering Buttons) - Sensors according to sensor list 13.2-L1 - 12V Battery - Standalone Video System; may include GPS Sensor - Rain light including switch & brake lights - Power steering system - Interior heating system - Window heating - Safety lights - Coolant pumps - Fans - Radio system - Extinguisher system - Lap beacon - Wipers - Washer pump - Horn derived from a road car <p>For safety reasons, during an event, the competitors must allow officially assigned technicians access to any electric control units on their request.</p>
13.2	<p>Permitted additional sensor and switches list (In addition to ERX kit)</p> <ul style="list-style-type: none"> - Accelerator Pedal Position (QTY 2) - Brake pedal position (QTY 1) - Coolant temperature (QTY 4) - Coolant pressure (QTY 4) - Ambient air temperature (QTY 1) - Ambient air pressure (QTY 1) - Brake pressure (QTY 3) - Handbrake switch (QTY 1) - Steering angle (QTY 1) - Accelerometer (QTY 3) - Beacon / Lap Marker (QTY 1) - Driver buttons (QTY 12) - Driver rotary switches (QTY 2) - GPS Sensor (QTY 2)
13.3	<p>12V Battery Must be commercially available. Maximum capacity of 30 Ah. Maximum voltage: 15V Must be positioned in the front compartment. If Li-Ion technology is used, the developer has to consider safety against charging a deep-discharged battery.</p>
13.4	<p>VCU Only the ERX kit supplied VCU and software is permitted. Developers have limited access in order to calibrate and adjust certain powertrain parameters solely for drivability and driver performance. Developers also have the possibility to setup their specific logging system. The firmware on all VCUs is identical, locked and can be controlled through the integral scrutineering function by scrutineers with the sole need for a communication cable and the basic software, provided by the kit supplier. Updates of the firmware will be published by the kit supplier and supplied to the developers.</p>

13.5	Wiring Harness The base wiring harness supplied as part of the kit must be used in its entirety without modification except as specifically permitted. The CAN communication and main switch system may not be modified. The additional car specific wiring harness is free.
13.6	Horn For paddock safety, all cars must be equipped with a signal horn derived from a road car. The driver must be able to activate the horn when seated in the car

Appendix 1 – List of applicable FIA regulation articles

Art. 253	18.4.4.1		Art. 255	Art. 279
1	18.4.4.2 a-f		5.7.1	8.4
3.1	18.5		5.7.2.5	8.5
3.2	18.7 a-d		5.7.3.1	9.3.1
4	18.8 a-b		5.7.3.5	10.2.17 Except adjustability
5	18.9		5.7.3.7	10.3.1
6.1.2	18.10		5.7.3.9	10.3.2
6.1.3	18.11		5.7.3.11	10.3.4
6.2	18.12		5.8.2	10.3.6
7.2.2	18.13		5.8.3	10.3.7
7.2.3	18.15			10.3.12
7.2.4	18.16			10.3.16
7.2.5	18.17 a-d			10.3.18
8	18.17 f			11.5
9	18.18			
10	18.19			
11.2	18.20 b-c			
16	18.20 e-f			
17	18.20 j			
18.1 a-e	18.22 a			
18.2	18.22 c-e			
18.4.1 d-j	18.22 i-j			
18.4.2	18.23			