# EVX
# Electrical Vehicle Experimental (EVX)
## Rationale
The purpose of EVX is to provide an alternative class specifically targeted towards production electric powered vehicles. This ruleset draws from Street and Street Touring with the intention of choosing common-sense allowances to balance streetability and autocross preparation. Example:In many cases cars come from the factory with narrow wheels to improve real-world range. Wider wheels/tires will diminish range slightly, but still work well for street use while improving autocross performance.

## Eligible Vehicles
Audi
- *e*-tron (Incl Sportback)(2019-*23*)
- A3 Sportback e-tron (2017-*23*)

BMW
- i3 (2014-21)

Chevrolet
- Bolt (2017-*23*)

Fisker
- Karma (2011-2012)

Ford
- Mustang Mach-E (2021-*23*)

Hyundai
- IONIQ *5* EV (2020-*23*)
- Kona EV (2020-*23*)

Jaguar
- I-*PACE* (2019-*23*)

Kia
- Niro EV (2020-*23*)

Mini
- SE Hardtop (2020-*23*)

Nissan
- Leaf (2011-*23*)

Polestar
- 2 (2021-*23*)

Porsche
- Taycan (2020-*23*)

Tesla Motors
- Model S (2012-*23*)
- Model 3 (All, incl. Performance) (2018-*23*)
- Model X (2016-*23*)
- Model Y (2020-*23*)
- Roadster (all) (2008-13)

Volkswagen

**EVX (continued)**

e-Golf (2015-18)
ID.4 (2021-*23*)
Volvo
XC40 Recharge (2021-*23*)

**ALLOWANCES**
**BODYWORK**

A. Accessories, gauges, indicators, lights and other appearance, comfort and convenience modifications which have no effect on performance and/or handling and do not materially reduce the weight of the car are permitted.
B. Data acquisition systems (including video cameras) and the accompanying sensors are allowed but may serve no other purpose during a run other than real-time display and data recording.
C. Spare tires, tools, and jacks may be removed. Any fastening hardware and/or other pieces that can no longer be firmly secured in the absence of the spare tire may be removed if necessary to ensure compliance with Section 3.3.3.B.1, Safety Inspection Requirements.
D. Roll Bars and Roll Cages
1. Roll bars may be added. Roll bars may be welded in. Standard roll- over hoops and covers may be removed if the resulting installation meets Appendix C.A, Basic Design Considerations. The total weight of components added must not be less than that of components removed.
2. Roll cages may be added. It is strongly recommended that roll cages be constructed according to the Club Racing GCR, though they must be bolted (not welded) into the automobile and be contained within the driver/passenger compartment. A roll cage has more than four attachment points to the body or frame or has bracing both fore and aft of the main hoop.
E. Driver restraints as outlined in Section 3.3.1 are allowed. Seats may not be cut to allow for the installation of alternate seat belts or harnesses. Passive restraint systems may disabled but may not be removed. Removable seat headrests may be repositioned using the original mounting hardware only if the OE components permit it with no modifications. This includes removing a headrest and reinstalling it backwards. A horizontal “harness bar” may be used as part of the installation hardware for allowed driver restraints provided it has no more than 2 attachment points to the chassis and is bolted at those locations. A C-type harness bar may also be used. It may have 4 bolted attachment points to the chassis (2 primary and 2 supporting connections to resist rotation). Truss-type harness bars with more than two (2) attachment points are not allowed.
F. Cars may add one rear trailer hitch. The resulting weight addition is allowed. The hitch may serve no other purpose. Factory tie downs and

**EVX (continued)**

cosmetic pieces (e.g., diffusers) may be modified or removed to facilitate hitch installation. Complete or partial removal of the hitch is allowed for competition, provided it does not result in a reduction in weight compared to the unmodified standard configuration.

G. Tow bar brackets may be installed but may serve no other purpose.

H. Any item that cannot be held permanently in place by factory-installed fasteners may be removed.

I. Factory rub strips, emblems, mud flaps, bolt-on front valance lips/spoilers, and fog lights (except those integral to a headlight or turn signal) may be removed. Rear wings may be removed so long as the vehicle retains any federally-mandated third brake light.

J. Fenders may not be cut or flared but the inside lip may be rolled to gain additional tire clearance. (The outer fender contour may not be changed.) Plastic and rubber wheel well splash shields may be modified for tire clearance and to accommodate a rolled inside fender lip. The modifications may serve no other purpose (e.g., air intake, brake ducts, etc). No other changes to the standard fenders or wheel wells are permitted.

K. Strut bars per Section 12 are permitted with all types of suspension, subject to the following constraints:

1. A 2-point strut bar may be added, removed, modified, or substituted, but only with another 2-point strut bar.

2. A triangulated (3-point) strut bar may be removed, modified, or substituted; substitution may be with either a triangulated or a 2-point strut bar. The connection to the chassis (e.g., firewall, bulkhead) must be in the standard location.

3. Lower suspension braces must be attached to the lower suspension pickup point locations on the chassis within 2" (50.8mm) in any direction of the actual suspension attachment to the chassis.

4. Except for standard parts, no connections to other components are permitted. Additional holes may be drilled for mounting bolts. Only "bolt-on" attachment is permitted. Interior trim panels may be modified to allow installation of strut bars. Holes or slots may be no larger than necessary and may serve no other purpose. This does not permit any modifications to the frame or unibody beyond the allowed mounting holes.

**BRAKES**

A. The make and material of brake linings may be changed.

B. Non-standard brake rotors may be used provided they are of equal or larger dimensions (diameter and overall thickness) and made of ferrous material (e.g., iron). The diameter for replacement rotors is measured at the minimum outside dimension. Aluminum rotor hats are allowed. Cars originally equipped with solid (non-vented) rotors may utilize vented rotors. Cross-drilled and/or slotted brake rotors may be fitted

**EVX (continued)**

provided all such voids are within the disc area and comprise no more than 10% of that area.

C. Brake lines may be substituted with alternate DOT-approved flexible brake lines.

D. Alternate brake bleeder fittings (e.g., Speedbleeders®) are permitted. They may serve no other purpose.

E. Air ducts may be fitted to the brakes provided the air directed to the brake rotor originates forward of the wheel well. Modifications to fender liners, undertrays, and splash guards for routing of ducts is permitted. No new holes may be made in the bumper cover. Backing plates and dust shields may be substituted, modified, or removed. Deflectors that mount to components within the wheel well and serve to direct air towards the rotors are permitted. Modifications for brake ducting may serve no other purpose.

**TIRES**

Tires must meet section 13.3 requirements except as noted: Any tire size may be used, provided it doesn't require exterior and/or mechanical modifications outside of what is allowed elsewhere in these rules.

**WHEELS**

Wheels may be replaced with wheels of any diameter and width. Replacement wheel material must be metal.

**SHOCK ABSORBERS/STRUTS**

A. Shock absorbers may be modified or replaced. Shock absorber mounting brackets and bushings may be modified or replaced provided they attach to the original locations on the chassis, subframe, or suspension component.

B. Struts may be replaced. Replacement struts may only utilize the same mounting points on the chassis, subframe, or suspension component as the factory struts. Strut mounting brackets and bushings may be modified or replaced provided they attach to the original locations on the chassis, subframe, or suspension component. This includes upper strut mounts which may also function as an upper spring perch. On struts with an attached steering arm the position of the steering arm on an aftermarket strut must remain the same as stock.

C. Upper and lower spring perches may be modified or replaced provided they attach to the original locations on the chassis, subframe, or suspension component. This allowance does not permit relocation of a spring (e.g. moving from a divorced shock/spring to a coilover).

D. Shock absorber and strut bumpstops are unrestricted

E. When replacing factory electronically controlled shocks or struts, devices may be added to satisfy the ECU that the OEM shocks or struts are still installed; such devices shall perform no other function.

F. Vehicles equipped with an adaptive ride control system (MSRC, MRC, PASM, etc.) may alter the calibration using an OEM-provided reflash

**EVX (continued)**

or replace the entire controller. When utilizing this allowance the OEM shocks/struts must be utilized without modification.

G. A hole may be added through bodywork and strut bars to permit access to the adjustment mechanism on a shock absorber or strut. The hole may serve no other purpose and may not be added through the exterior body panels.

H. For remote reservoir shocks a hole may be added through bodywork to route the reservoir to a remote mounting location. Such holes may serve no other purpose.

**ANTI-ROLL (SWAY) BARS**

A. Substitution, addition, or removal of front and rear anti-roll bar(s) is permitted. Bushing material, method of attachment, and locating points are unrestricted. This does not authorize the cutting of holes to route the bar(s) or links. Components such as anti-roll bars and strut housings that serve dual purposes by also functioning as suspension locators may not be modified in ways that change the suspension geometry or steering geometry.

B. No modification to the body, frame, or other components to accommodate anti-roll bar addition or substitution is allowed except for the drilling of holes for mounting bolts.

**SUSPENSION**

A. Ride height may only be altered by suspension adjustments, the use of spacing blocks, leaf spring shackles, torsion bar levers, or change or modification of springs or coil spring perches. This does not allow the use of spacers that alter suspension geometry, such as those between the hub carrier and lower suspension arm. Springs must be of the same type as the original (e.g., coil, leaf, torsion bar, bellows) and except as noted herein, must use the original spring attachment points. This permits multiple springs, as long as they use the original mount locations. Coil spring perches may be changed or altered and their position may be adjustable. Spacers are allowed above or below the spring. Coil springs may incorporate spring rubbers.

B. Alternate suspension springs are permitted but must remain the same type as the factory springs (e.g. coil, leaf, torsion bar).

C. Suspension bushings may be replaced with bushings of any materials

D. If ordered by the manufacturer for a particular model and year, the use of shims, special bolts, removal of material to enlarge mounting holes, and similar methods are allowed and the resulting alignment settings are permitted even if outside the normal specification or range of specifications recommended by the manufacturer. If enlarging mounting holes is specifically authorized but no material removal limits are specified, material removal is restricted to the amount necessary to achieve the maximum factory alignment specifications.

E. Camber bolts may be installed providing these parts use the original,

## EVX (continued)

unmodified mounting points. Caster changes resulting from the use of camber bolts are permitted.

F. Camber kits (also known as camber compensators) may be installed. These kits consist of either adjustable length arms or arm mounts (including ball joints) that provide a lateral adjustment to the effective length of a control arm. Alignment outside the factory specifications is allowed. The following restrictions apply:

1. On double/unequal arm (e.g., wishbone, multi-link) suspensions, only the upper arms OR lower arms may be modified or replaced, but not both. Non-integral longitudinal arms that primarily control fore/aft wheel movement (e.g., trailing arm(s) or link(s) of a multi-link suspension) may not be replaced, changed, or modified.
2. On arm-and-strut (MacPherson/Chapman) suspensions, the lower arms may be modified/replaced OR other methods of camber adjustment allowed by the EV rules can be utilized, but NOT both.
3. The replacement arms or mounts must attach to the original standard mounting points. Intermediate mounting points (e.g., shock/spring mounts) may not be moved or relocated on the arm, except as incidental to the camber adjustment. The knuckle/bearing housing/spindle assembly cannot be modified or replaced.
4. Changes in suspension geometry are not allowed except as incidental to the effective arm length change.

H. Changes in alignment parameters that result directly from the use of the allowed components are permitted.

**ELECTRICAL SYSTEM AND DRIVETRAIN**

No changes are permitted to electronic management systems or their programming. Batteries, the computers and/or hardware controlling battery systems, and all mechanical drivetrain components must remain stock. Including but not limited to electric motors, transmissions, differentials, battery packs, powertrain control modules/computers and sensors, etc.