



COMPETITORS GUIDE & RULEBOOK

SUBJECT TO CHANGE WITHOUT NOTICE

V1.1 – SEPTEMBER 2023

CONTENTS

1	Intent	3
2	General Understanding	3
3	Eligible Makes and Models	4
4	Car Configuration & Weights.....	5
5	Safety	8
6	Event Format	10
7	Timing / Scoring + Points	13
8	Driver Eligibility + Expectations	14
9	Technical Compliance	15
	Appendix A – Base Vehicle Weights & Max SOC	16
	Appendix B – Cost Analysis	17
	Appendix C – Supercharger Proximity Analysis	18



1 INTENT

- 1.1 The Model 3 Challenge is a series intended to make EV racing accessible and viable within the grassroots motorsport community. This series utilizes a highly capable chassis using a regulated car configuration to emphasize driver skill and reduce costs. In our experience, most drivers who want to race competitively want to know that they have similar equipment as everyone else and leave the racing down to the drivers. Additionally, this series is focused on the advancement of electric vehicles and their penetration into Motorsports; on that note we emphasize safety and respect between all competitors. These are the goals of this series.
- 1.2 The series will utilize a unique approach to timing and scoring which will ensure exciting and close competition between drivers while keeping the vehicles viable for street use and ensure a safe on-track environment. In addition, vehicles will be run with limited power to ensure that all Model 3 configurations are competitive and that extended duration races can be done without significant power reduction.

2 GENERAL UNDERSTANDING

- 2.1 Anyone competing in the Model 3 Challenge agrees to do so with the best interests of the series, promotion of electric vehicles, and professionalism in mind.

Competitors or crew that do not fit in with the spirit of the series may be asked to leave the series without notice or financial reimbursement.
- 2.2 This rule book is not comprehensive or static, and it may be up for interpretation. The series reserves the right to make changes to the rulebook at any time, and to make decisions in the interest of the spirit of competition to address any disputes that may arise. As a general rule of thumb, if a competitor finds an advantage by exploiting a “grey area” in the rulebook, this will be quickly dealt with as being against the spirit of the competition and be disallowed.
- 2.3 This series is primarily about having fun and promoting electric vehicles. The series will always act in the interest of fun and enjoyment for the **majority** of competitors.

3 ELIGIBLE MAKES AND MODELS

3.1 Dual Motor and Performance Model 3's are both allowed in the series. RWD Variants are allowed, however please note that due to voltage drop and motor limitations they will not be as competitive as an AWD variant. All vehicles will be limited to roughly 220kW of peak power.

3.2 Eligible Vehicles:

- 2018 - 2023 Tesla Model 3 Performance (Dual Motor, 78-82kWh Battery Pack)
- 2018 – 2023 Tesla Model 3 Dual Motor (Dual Motor, 78k-82Wh Battery Pack)
- 2017 – 2019 Tesla Model 3 Long Range RWD (Single Motor, 78kWh Battery Pack)*
- 2018 – 2019 Tesla Model 3 Mid Range RWD (Single Motor, 62kWh Battery Pack)*
- 2019 – 2023 Tesla Model 3 Standard Range/+ RWD (Single Motor, 54kWh NCA or 60kWh LFP Battery Pack)*

NOTE: Eligible Vehicles subject to change. It should also be noted that the series will most likely move in the direction of AWD vehicles in the future, so we do not suggest RWD ground-up builds as there is a possibility these may not be eligible in future seasons.

NOTE: Vehicles equipped with LFP cell battery packs (2022+ Model 3 SR+, etc) may not have the same thermal capacity as NCM cell battery packs. Please be aware of this possible limitation.

4 CAR CONFIGURATION & WEIGHTS

- 4.1 Cars are all modified to similar specifications, and a fully finished car can be purchased from Electric Vehicle Racing Specialists, or you can build your own vehicle. If building your own vehicle, the components below can be purchased with a participation rebate available as part of a “Model 3 Challenge” kit from MPP or any MPP preferred dealer who is participating in the challenge. Dealers who supply the kit must provide any support required.
- 4.2 In order to keep the cost down, the minimum modification list has been kept to the basics which allow the Model 3 to perform as it should on track. Please see the table below to see a comprehensive list of all modifications, ranging from the minimum to optional.

Model 3 Challenge Build Requirements

Part	Minimum	Recommended	Optional
DAMPERS + SPRINGS	OE	MPP Super Sport Coilovers	MPP.R EXR Coilovers
FRONT BRAKES	OE	MPP Replacement Rotors/365mm BBK	Open
REAR BRAKES	OE	MPP Replacement Rotors	Open
BRAKE PADS	Race Pads	MPP/Pagid Pads	Race Pads
BRAKE LINES	OE	MPP Stainless Lines	Open
FUCA	OE	MPP Front Upper Control Arms	MPP Front Upper Control Arms
REAR CAMBER ARM	OE	MPP Rear Camber Arms	Open
REAR TOE ARM	OE	MPP Rear Toe Arms	Open
FLCA BEARINGS	OE	MPP FLCA Bearings	Open
COMP BEARINGS	OE	MPP Compression Rod Bearings	Open
OIL COOLERS	OE	MPP Rear Drive Unit Oil Cooler	Open
DATA LOGGING	OE	MPP MoTeC C125 w/ Logging	Open
DYNAMICS CONTROL	OE	MPP Partybox	MPP Partybox
COOLING CONTROL	Series Control Part	MPP Cooling Controller	Series Control Part
BRAKE MC BRACE	OE	MPP Brake MC Brace	Open
REAR SUBFRAME INSERTS	OE	MPP Rear Subframe Inserts	Open
REAR TRAILING ARMS	OE	MPP Rear Trailing Arms	Open
REAR TRACTION ARMS	OE	MPP Rear Traction Arms	Open
12V BATTERY	OE	MPP Lithium 12V Battery	Open
ANTI ROLL BARS	OE	MPP Sway Bars	Open
COOLERS	OE	OE	See Coolers Section
AERODYNAMICS	OE	OE	See Aero Section

MODEL 3 CHALLENGE

- 4.3 The only components required to participate in the Challenge on an otherwise stock car are Racing Brake Pads, DOT-4 Brake Fluid, and the MPP Cooling Party Controller. Any damper/spring upgrade, or front upper control arm upgrade must be an MPP product. Other than those components, any brand may be used as long as the upgrade is listed in the table.
- 4.4 All factory headlights, tail lamps, glass, hood, trunks, mirrors, and doors must remain intact and functional. Interiors must be mostly complete, with the exception that interior panels may be trimmed for safety equipment or roll cages. Rear seats may be removed as long as the vehicle is not under the weight minimum.
- 4.5 **Tires:** Allowed tires are any 200TW+ UTQG tire that is 285mm in width or narrower.
- 4.6 Tow hooks will be required on the front bumper. The factory threaded tow hook hole must be used on the front. We strongly recommend adding a tow point to the rear. A kit is available from Electric Vehicle Racing Specialists that requires minimal modification. If there is no rear tow point, you accept the potential damage to your suspension if a tow from the rear is required.
- 4.7 MyLaps TR2 Transponders are required. These are available to rent for \$35 per weekend or can be purchased by competitors.
- 4.8 **Aerodynamics:** Front Splitters are allowed. The front splitter must not have integrated diffusers and may not be wider than the width of the outer edge of the tires. Rear wings are allowed but must not exceed the width of the body. The wing must be a single element foil. **NOTE: Vehicles running a front splitter WILL be subject to a 5% starting SOC penalty.**
- 4.9 **Coolers:** Thermal cooling parts, such as battery radiators or drive unit oil coolers are allowed as long as they do not interfere with, change, or alter the factory firmware/power levels.
- 4.10 Maximum Starting Battery Voltage:

In addition to a minimum starting weight, there will also be a maximum starting battery voltage or SoC for competitors listed in Appendix A. The purpose of this is to prevent excessive battery wear by having competitors start each event at 100% SoC, and to ease the charging burden on competitors, allowing some battery percentage for transit back from charging.

It is up to the competitors to make sure their battery voltage is at or below the specified value when lined up on grid prior to the start of the challenge. Failure to comply will result in a time

MODEL 3 CHALLENGE

penalty.

4.11 Ballast Weight:

All ballast weight must be placed in the frunk or trunk of the vehicle. A mounting solution is available for purchase from Electric Vehicle Racing Specialists. Ballast will be provided by the series as needed with a required deposit.

4.12 Rewards Weight:

In the interest of keeping competition close and exciting, a rewards weight system will be utilized to encourage close racing and give many drivers the chance at winning. Rewards weight carries forward from session to session but resets at the end of an event.

4.12.1 Maximum Rewards weight is 250lbs. There is no negative rewards weight. You cannot ever go below your base minimum weight.

4.12.2 Rewards weight change based on race finishing position:

- 1st: +50lbs
- 2nd: +25lbs
- 3rd: No Change
- 4th: No Change
- 5th: No Change
- 6th and under: -25lbs

4.13 Ballast Weight Supply:

4.13.1 A deposit will be charged for competitors who require ballast. This deposit will be refunded at any time when weight is returned. This can be at the end of an event, or at any time a competitor wishes in a season.

Missing weight will be charged at \$3/lb. All ballast must be returned at the end of the season.

4.14 Vehicle Appearance:

4.14.1 General appearance – Unique livery is encouraged and recommended. Vehicles must display all sponsor decals in the required sections, but beyond this the drivers are free

to design whatever livery they see fit to make the vehicle stand out.

- 4.14.2 Conflict Of Interest / Spirit Of The Series – Liveries which feature a pronounced conflict of interest with series sponsors must be approved beforehand by the series. In addition, any liveries found to be outside the spirit of the rules (I.E. offensive, inciting division with ICE vehicles), will not be permitted.
- 4.14.3 Damage – The vehicles do not need to be perfect, but any major bodywork damage must be repaired. Any damage that is sustained during the course of an event must be repaired to the best ability of the competitors prior to the next session. The series reserves the right to disallow a vehicle if the repairs made to the vehicle are deemed unsafe or questionable.
- 4.14.4 Numbers – Racing numbers are required on both sides of the vehicle. The numbers must be 8” tall, and contrast well with the car color/livery. Additionally, 6” tall numbers are required on the front and rear of the vehicle.

5 SAFETY

5.1 Roll Cage:

At this time, a cage is NOT required but is recommended. If a cage is installed, it must conform to FIA specifications. Cages that are not built to the outlined specification may require modification to be eligible.

5.2 Driver Seat:

As the intent of this series is to keep the vehicle street-legal and without a cage, the driver’s seat safety systems must remain completely intact if no cage is installed (besides removal of the driver’s seat airbag). An FIA-Approved Seat MAY be used in place of the factory seat without a cage; however, it is important to note that you are assuming your own risk. If a cage is installed, an FIA approved seat compatible with a HANS Device and side impact head protection is required.

5.3 Driver Harness Belts:

6-Point harnesses are not allowed unless the vehicle is equipped with an aftermarket FIA-Approved seat AND a rollcage.

MODEL 3 CHALLENGE

Caged cars must have an FIA approved 6-point racing harness installed.

- 5.3.1 Harness must be anchored using appropriate eyelets threaded into OEM seatbelt anchor locations or to a roll bar/cage.
- 5.3.2 Harness ends must be secured with safety wire or cotter pin.
- 5.3.3 Expired harnesses will be allowed for ONE race weekend as an exception (must be within 2 years and without visible damage).

5.4 Driver Protection:

Drivers must use racing safety gear.

- 5.4.1 Helmets Snell SA2015 or newer are **required**
- 5.4.2 Gloves FIA or SFI approved are highly recommended
- 5.4.3 Suits FIA 8856-2000 or SFI 3.2A certified are highly recommended
- 5.4.4 Racing shoes FIA or SFI approved are highly recommended
- 5.4.5 NOMEX socks and balaclavas are highly recommended
- 5.4.6 Hybrid head and neck restraint systems are strongly recommended for cars without a cage. Cars with a cage **must** use a HANS or HANS style system with proper anchor points installed in the helmet, along with the appropriate harness belts.

5.5 Airbags must remain fully functional (apart from racing seats) unless cars have a full roll cage.

5.6 Safety Inspection - the series reserves the right to inspect the cars and driver gear at any time. Safety is a paramount concern for the series as we all have friends and families that will grow tired of taking care of us in a vegetative state, and we don't want to be a burden.

The series reserves the right to require changes either to the vehicle or safety gear prior to allowing entry into the event. Depending on the severity, compliance may be required on the same day, or a grace period may be allowed.

5.7 Thermal Event On Track - In the highly unlikely event of a thermal concern, the vehicle will be moved off the track to a safe location by the organizers emergency vehicle(s) and allowed to extinguish in a secure way. HVIL Disconnects are required to force the high voltage contactors open and can be purchased from Electric Vehicle Racing Specialists.

6 EVENT FORMAT

- 6.1 The events are structured into multiple short races over the course of the event (typically a multi-day event), with one qualifying session and one practice session.
- 6.2 Meetings - Driver's meeting will be held at the beginning of each event and are mandatory. Failure to arrive at the meeting will result in disqualification from the event. The timing and location of the drivers meeting will be announced prior to the event start. There is no excuse for not attending.

6.3 **Qualifying:**

The qualifying session will be the second session of the event. All laps will count, and the fastest lap in that session will set the grid position for the first challenge. Qualifying results are also worth the same number of points as finishing results in the following race.

- 6.3.1 Typically, a 20-minute qualifying run. Race 1 Grid will be based upon the fastest single lap time achieved during the qualifying round.
- 6.3.2 Qualifying results count for the same number of points as the race finishing position. Do not miss qualifying!
- 6.3.3 When a corner worker calls in a pass under yellow flag, or 4 wheels off situation, the previous laps in the session for the offending car will be deleted from timing and scoring for that session. Cars must self-report to grid if these issues happen, regardless of being black flagged. The driver will be talked to, the car checked over, and re-released if possible; timed laps will then restart for the session. In the spirit of competition and clarity, only calls from corner workers or self-reporting will be utilized for these disqualifications, and this is not a protestable offense.
- 6.3.4 Any advantage gained by driving off track will be evaluated on a case-by-case basis.
- 6.3.5 Impeding another car during qualifying may result in your fastest lap being deleted PER incident. I.E. if you have impeded 3 drivers for two laps, your six fastest laps may be discarded. **ENSURE THOSE AROUND YOU HAVE ACCESS TO A CLEAR TRACK.**

6.4 **Track Challenge Format:**

The track challenge is a unique model which combines lapping / HPDE with time attack. This is not a wheel-to-wheel race, and at no point are two cars to put themselves in a high-risk situation such as contesting braking zones, blocking, crowding, etc.

MODEL 3 CHALLENGE

The intent is to allow cars to have the feeling of a close battle without engaging in any side-by-side, door to door passing without the lead drivers consent and point-by.

6.4.1 Challenge Grid And Release:

Competitors will be gridded based on qualifying (Challenge 1), or the finishing position in the previous race (For Challenge 2+). **In a race with more than eight competitors, the top five competitors will be reverse-gridded.** Competitors will follow a pace car on their out lap while maintaining between a five to ten car-length gap between vehicles.

Once the pace car pulls in to the pits, there will be a speed limit of 50mph. The lead car is allowed to set the pace as long as it is below this speed but must maintain a consistent speed.

To ensure appropriate spacing between cars, a cone or flag will be used on the straight to indicate the minimum required gap between cars. Closing the gap prior to the start-finish line may result in a penalty and loss of finishing position. Once the start-finish line is crossed by the lead car, the race is on, and competitors may engage to competition speed as long as they do not reach the indicator cone before the car in front of them reaches the start/finish line.

6.4.2 Proximity To Other Cars:

If a competitor is able to stay within ~4 car lengths (20 meters) of the car ahead entering a detection zone, the lead car is obligated to issue a point-by after that detection zone. This will be validated by a Blue Flag. **Do not pass without a Blue Flag OR a point-by.**

At no point should the following car get closer than 1 car length unless actively passing. It is very important to anticipate the leading cars braking points and give yourself a buffer zone to avoid causing a risky situation. Always have enough room to control your vehicle and avoid the lead car if it loses control.

6.4.3 Passing And Point-By Procedure:

Upon two cars being inside of the detection zone at the same time, the lead car that is being passed must point to indicate which side the following car shall pass on at the beginning of the passing zone straightaway.

The lead car should know based on awareness when the car behind is inside the

detection zone, however flaggers will also be used to give a confirmation that a pass was required.

The lead car must reduce power and allow the car to pass on the same straightaway and leave ample room for the pass to be completed. This includes giving up the racing line to the car ahead.

Once the pass has been completed, the lead car needs to establish a gap of 1 car lengths (5 meters) prior to re-engaging the car ahead.

When done properly, the car that has allowed the pass should aim to position itself at 1 car lengths back at the apex of the corner, allowing for full acceleration out of that corner, and minimizing the time lost in the pass.

6.4.4 Multi-Car Train Procedure:

If multiple cars have been held up and formed a train of cars, there is a very specific procedure that must be followed to emphasize safety, while also considering the fact that making passing quick and effective will lead to a more enjoyable challenge. A **maximum** of three vehicles may make a pass at a time.

If after the first point by, there is another car that is also within 3 car lengths (15 meters), the initial lead car must initiate multiple point-bys:

- First, a point-by is given and a reduction of acceleration allows the first car to pass.
- Once the first car has passed, another point-by is given to signal to the next car in the train to pass. The reduction of acceleration continues.
- This continues until there are no more cars within a 3 car gap behind the original lead car, OR there is not enough room left on the straight to safely point cars through.
- **At no point should a car pass unless it has received its OWN point-by indication and blue flag. On board camera footage will be reviewed to ensure compliance.**
- The faster the passing process is allowed to occur, the less time will be lost and the lower the likelihood cars further back will catch and be able to join onto the back of the train. So make the passing quick and efficient or find yourself at the back of the field!

MODEL 3 CHALLENGE

- 6.4.5 A checkered flag will indicate the finish of the challenge. All cars are to do a cool down lap and return to the pits.
- 6.4.6 Lapped Cars - Cars being lapped will be given a blue flag and must issue a point by at the first available safe opportunity, and NOT impede the cars behind. You should not be waiting until the front straight to pass.

The cars being lapped shall stay on the racing line, but smoothly and predictably reduce power to easily allow the cars to pass.

Lapping cars may flash their high beams to indicate that they are passing outside of the normal scope.

- 6.4.7 Disabled / Spun Cars – cars that spin must rejoin safely and only when it is clear that there are no cars within close proximity. Rejoining the track in a dangerous manner is one of the most significant safety risks and will be dealt with extremely forcefully. It could mean being banned from the series.

Cars that are not able to rejoin the race must pull off in a safe spot if possible, otherwise a safety car will be required and most likely the race will be cut short to allow time to recover the car.

- 6.4.8 **Rain** – In the event of substantial rain/wet track where there is a safety concern, organizers may opt out of the Track Challenge Format and instead run a normal/typical Time Trial format as would occur in qualifying.
- 6.4.9 **Full-Course Yellow** – In the event of a full-course yellow, where (for example) a disabled car must be removed from the track, a safety car will be brought out to bunch up the running order and the race will restart once the yellows are cleared using the same starting strategy as defined in 6.4.1. Under no circumstances may you pass under yellow.

7 TIMING / SCORING + POINTS

- 7.1 There will be one event champion, and one winner per challenge. On a weekend with multiple challenge sessions, there can be multiple winners.

MODEL 3 CHALLENGE

- 7.2 Standings will be determined by the finishing position of the competitors in each session **including** qualifying. These points will be added together to determine the finishing positions for the event.
- 7.3 Points allocation for challenges 8 minutes long or longer, and for qualifying:
- 1st: 50 Points
 - 2nd: 38 Points
 - 3rd: 30 Points
 - 4th: 24 Points
 - 5th: 20 Points
 - 6th: 16 Points
 - 7th: 12 Points
 - 8th: 8 Points
 - 9th: 4 Points
 - 10th: 2 Points
 - 11th and below: 0 points
- 7.4 Points allocation for races which run less than 8 minutes; if races do not exceed 8 minutes running under green flag conditions, points will be awarded at 50% of the above allocation.

8 DRIVER ELIGIBILITY + EXPECTATIONS

- 8.1 Expectations - the primary goal of this series is for all competitors to have an enjoyable driving experience. We not only expect, but require, that all participants drive safely and respectfully. Car-to-car contact is the last thing any participant or organizer wants to experience, as it can lead to potentially expensive repairs and driver injuries. Any car-to-car contact that is deemed intentional or avoidable by the Model 3 Challenge organizers will result in disqualification and potential barring from future events.
- 8.2 Experience - Drivers must have driving experience on a racetrack. Previous Time Attack or Wheel to Wheel racing experience is not required but recommended. A racing license with a recognized sanctioning body is recommended. A minimum of eight documented HPDE events is required. The culture and clean driving goals of the Model 3 Challenge will always be the ultimate goal of the staff.
- 8.3 New Racers - If new to Model 3 Challenge, drivers must submit driver experience via email to hello@model3challenge.racing and chatch@model3challenge.racing at least two weeks prior to

the event for verification, review, and approval.

- 8.4 All drivers must adhere to all safety and conduct regulations for drivers outlined in the Rule Book.

Model 3 Challenge has the right to reject and remove drivers in cases of driver misconduct. Drivers may be reconsidered after more experience is gained.

9 TECHNICAL COMPLIANCE

- 9.1 Weight Checks - All competitors are required to calculate their competition weight. Competition weight includes driver and fluids. This may be measured immediately after a race. Scales will be provided to competitors free of charge during the event.

- The top 3 finishers, or more at race director's choice, may be sent directly to the scales immediately after a race where the weight will be measured. Tampering with weight and attempting to cheat scales will result in penalties.
- Scales will have zero tolerance at all events unless specified otherwise. It is recommended to scale the car before a challenge to ensure there is a small buffer (5lbs or so), to avoid disqualification.

- 9.2 Video - In car video is required. All competitors must be recording in-car video of the sessions at all times while on track using a GoPro or similar device. The built-in Dashcam feature is NOT an acceptable alternative! Video may be requested to evaluate any incidents.

The excuse that "the battery died" or "the SD card was corrupted" will result in the evidence being assumed that the competitor in question is guilty.

- 9.3 Any car that receives a Blue flag who then fails to give a point-by on that straightaway will be given a 2-position penalty per incident. If the flagger indicates that you must let the car behind you pass, you must comply.



APPENDIX A – BASE VEHICLE WEIGHTS & MAX VOLTAGE

Weight listed below is the minimum allowed weight. Weight will be checked randomly after a challenge, including driver. Any vehicles found under the weight listed below will be disqualified.

SOC listed below will be inspected on the Touchscreen on grid. Be sure your voltage is at or below the maximum to avoid a time penalty.

<i>Vehicle</i>	<i>Minimum Weight (Inc Driver + Gear)</i>	<i>Max SOC</i>
Model 3 LR RWD	3950	100%
Model 3 MR RWD	3900	100%
Model 3 SR/+ RWD	3800	100%
Model 3 AWD or Performance	4200	90%

APPENDIX B – COST ANALYSIS

An average cost to run a weekend is comparably low to an ICE vehicle, due to savings on electricity costs vs fuel, and consumables from shorter races (12 to 15 minutes long). As the vehicles can also serve double-duty as a daily driver/commuter, we feel that the series affords racers the opportunity to reduce their carbon footprint and transportation expenses while competing for the podium.

In the future as the series grows, there may be a shift to caged cars and full wheel-to-wheel racing, but the intention would be to keep the cars road legal to reduce the costs for competitors and to allow the vehicles to continue to use Tesla's supercharger network.

Cost Outline:

Prices for the specific models range between about \$25,000 and \$55,000. Several hundred thousand of these sold in North America, thus making them easy to source as well as repair.

Costs listed below are a rough estimate and based on the minimum expected cost. Expect more if you're planning a larger crew, spares, etc.

Initial Costs (Rough Estimate):

Car:	\$25,000-\$55,000
Build List (Min Spec):	\$1,500+
Racing Helmet:	\$250+
Total:	\$26,750+

Event Costs:

Entry:	\$750 (<i>tbd, varies by track</i>)
Tires (0.25 set):	\$250
Pads (0.25 set):	\$150
Other Consumables:	\$150
Charging Including Travel:	\$150
Hotel (2 nights, 1 room):	\$250
Total:	\$1700

APPENDIX C – SUPERCHARGER PROXIMITY ANALYSIS

Model 3 Challenge Fast Charging Analysis

Track Name	Supercharger Location	# of Stalls	Drive Time	Version
Watkins Glen	42.170919, -77.107728	10	26 Minutes	V2
Mid-Ohio Sports Car Course	40.494024, -82.712896	8	23 Minutes	V2
Lime Rock Park	42.024331, -73.322684	8	16 Minutes	V3
Willow Springs	35.056876, -118.174706	12	20 Minutes	V3
Laguna Seca Raceway	36.586463, -121.756108	8	0 Minutes	V3
