



# COMPETITORS GUIDE & RULEBOOK

**DRAFT**

SUBJECT TO CHANGE WITHOUT NOTICE

V0.3.4 – JANUARY 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 .....	9
7	Timing / Scoring + Points .....	12
8	Driver Eligibility + Expectations .....	13
9	Technical Compliance .....	14
	Appendix A – Base Vehicle Weights & Max SOC .....	15
	Appendix B – Cost Analysis .....	16
	Appendix C – Supercharger Proximity Analysis .....	17



## 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.

## 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 may not be as competitive as an AWD variant.

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 – 2021 Tesla Model 3 Standard Range RWD (Single Motor, 54kWh NCA Battery Pack ONLY)\*

**NOTE:** A small amount of additional power will be allowed for AWD cars to compensate for their additional weight. Ballast will be implemented in the SR+ and MR models to ensure that weight is equal to the Long Range RWD.

**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.

## 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
<b>DAMPERS + SPRINGS</b>	MPP Sport Coilovers	MPP Super Sport Coilovers	MPP Super Sport Coilovers
<b>FRONT BRAKES</b>	Rotor Upgrade (Base Brakes Only)	MPP Replacement Rotors/365mm BBK	Open, Iron Rotors Only
<b>REAR BRAKES</b>	OE	MPP Replacement Rotors	Open, Iron Rotors Only
<b>BRAKE PADS</b>	Race Pads (1,300f+ Max Temp)	MPP/Pagid Pads	Open (1,300f+ Max Temp)
<b>BRAKE LINES</b>	OE	MPP Stainless Lines	Open
<b>FUCA</b>	Series Control Part	MPP Front Upper Control Arms	Series Control Part
<b>REAR CAMBER ARM</b>	OE	MPP Rear Camber Arms	Open
<b>REAR TOE ARM</b>	OE	MPP Rear Toe Arms	Open
<b>FLCA BEARINGS</b>	OE	MPP FLCA Bearings	Open
<b>COMP BEARINGS</b>	OE	MPP Compression Rod Bearings	Open
<b>OIL COOLERS</b>	OE	MPP Rear Drive Unit Oil Cooler	Open
<b>DATA LOGGING</b>	OE	MPP MoTeC C125 w/ Logging	Series Control Part
<b>DYNAMICS CONTROL</b>	MPP Partybox (Non-Performance Only)	MPP Partybox	MPP Partybox
<b>COOLING CONTROL</b>	Series Control Part	MPP Cooling Controller	Series Control Part
<b>BRAKE MC BRACE</b>	OE	MPP Brake MC Brace	Open
<b>REAR SUBFRAME INSERTS</b>	OE	OE	Open (10lb Weight Penalty)
<b>REAR TRAILING ARMS</b>	OE	OE	Open (10lb Weight Penalty)
<b>REAR TRACTION ARMS</b>	OE	OE	Open (10lb Weight Penalty)
<b>12V BATTERY</b>	OE	OE	Open (25lb Weight Penalty)
<b>ANTI ROLL BARS</b>	OE	OE	Open (20lb Weight Penalty)
<b>AERODYNAMICS</b>	OE	-	OE Performance Spoiler

# **MODEL 3 CHALLENGE**

4.3 Other than the modifications listed above – any other changes to the vehicle are not permitted. Specifically, no aerodynamic changes are allowed (rear wing, front splitter, etc). No body work changes are allowed. All factory headlights, tail lamps, glass, hood, trunks, mirrors, doors, and fenders 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 to accommodate roll bars / cages.

4.4 **Tires:** Allowed tires are any 200 UTQG tire that is 285mm or narrower.

4.5 Tow hooks will be required on both the front and rear bumper impact beams. The factory threaded tow hook hole must be used on the front. A towing point must be added to the rear – a kit will be offered that will require minimal modification to the vehicle.

4.6 MyLaps TR2 Transponders are required. These are available to rent for \$35 per weekend or can be purchased by competitors.

4.7 **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 penalty.

4.8 **Ballast Weight:**

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

4.9 **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 event to event.

# **MODEL 3 CHALLENGE**

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

4.9.2 Rewards weight change based on race finishing position:

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

4.10 Ballast Weight Supply:

4.10.1 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.

4.11 Vehicle Appearance:

4.11.1 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.

4.11.2 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.

4.11.3 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.

- 4.11.4 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” 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.

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.

### 5.4 Driver Protection:

Drivers must use complete wheel to wheel racing safety gear.

5.4.1 Helmets must be FIA certified

# **MODEL 3 CHALLENGE**

- 5.4.2 Gloves must be FIA or SFI approved
  - 5.4.3 Suits must be FIA 8856-2000 or SFI 3.2A certified
  - 5.4.4 Racing shoes must be FIA or SFI approved
  - 5.4.5 NOMEX socks and balaclavas are required
  - 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 organizer emergency vehicle(s) and allowed to extinguish in a secure way.

## **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.
- 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 first 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 15-minute qualifying run. Race 1 Grid will be based upon the fastest single lap time achieved during the qualifying round, in reverse order. Competitors will be gridded from slowest to fastest.
- 6.3.2 Qualifying results count for the same number of points as the race finishing position. Do not miss qualifying!
- 6.3.3 Any cars that are deemed to have gone four wheels off will have that lap deleted.
- 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 will 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.

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 wave-by.

##### 6.4.1 Challenge Grid And Release:

Competitors will be gridded based on qualifying (Challenge 1), or fastest lap in the previous race (For Challenge 2+). Competitors will be released one by one via standing start. There will be approximately 5 seconds between each car. Do not proceed until you specifically are given a green flag.

##### 6.4.2 Proximity To Other Cars:

If a competitor is able to stay within 3 car lengths (15 meters) of the car ahead for half a lap, the lead car is obligated to issue a wave-by.

At no point should the following car get closer than 1 car length. 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 Wave Around Procedure:

After having a car in its mirrors for half a lap, the lead car that is being passed must signal to indicate which side the following car shall pass on at the middle of a straightaway.

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:

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

- First the turn signal is activated and a reduction of acceleration allows the first car to pass. The turn signal should be switched off once the following car has pulled out to initiate the pass.
- Once the first car has passed, the turn signal activates again 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.
- **At no point should a car pass unless it has received its OWN turn signal indication. 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!

- 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.

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

- 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.

## 7 TIMING / SCORING + POINTS

- 7.1 There will be one series champion, and one winner per challenge. On a weekend with multiple challenge events, there can be multiple winners for the challenge.
- 7.2 Standings will be determined by the finishing position of the competitors **and** the fastest lap time from the previous challenge starting with qualifying. These points will be added together to determine the finishing position per challenge.
- 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
- 11<sup>th</sup> 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 significant 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 twenty 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](mailto:hello@model3challenge.racing) and [chatch@model3challenge.racing](mailto: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 is usually 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.



## 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.

Voltage 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>
<b>Model 3 LR RWD</b>	3950	90%
<b>Model 3 MR RWD</b>	3900	100%
<b>Model 3 SR+ RWD</b>	3800	100%
<b>Model 3 AWD or Performance</b>	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 (generally 12-15 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 \$30,000 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, hookers, drugs etc.

### Initial Costs (Rough Estimate):

Car:	\$30,000-\$55,000
Build List (Min Spec):	\$5,000+
Racing Suit/Shoes/Gloves:	\$1,000+
<b>Total:</b>	<b>\$36,000+</b>

### Event Costs:

Entry:	\$650 ( <i>tbd, varies by track</i> )
Tires (0.25 set):	\$400
Pads (0.25 set):	\$150
Other Consumables:	\$150
Charging Including Travel:	\$150
Hotel (2 nights, 1 room):	\$250
<b>Total:</b>	<b>\$1750</b>

## 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