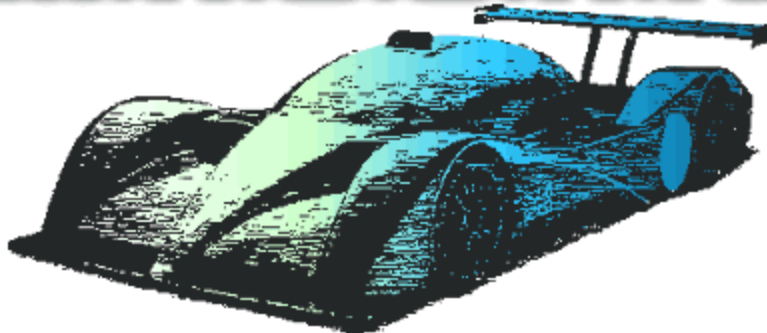


M.A.S.C.A.R.



MINIATURE AUTO SLOT CAR ASSOCIATION OF RACERS

Official Rules – Revised 9-20-16

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General Rules:

- All parts must be made available at least 15 days prior to the event and must be commercially available.
- No custom made parts allowed.
- In case of part or body failure due to race conditions, you will have to fix the car before being permitted to resume.
- One track call will be permitted per racer per heat. Two track calls for the same failure will not be permitted in the same race, even if in different heats. Repairs for duplicate failures will need to be done during race time.
- A quick track call will only be permitted to clear parts off the track. This is a risk that is taken when building on the edge.
- Any car deemed detrimental to the track (i.e. riding the bottom of the slot, cutting into the slot, or greasing/oiling the track, etc) will be removed from the track and not permitted to race.
- Any car or controller that is hazardous to the track or marshals will be declared illegal and not be allowed to run.
- Track power will remain on unless the car is not marshallable at all.
- The automated lap counter is the official record of laps. Laps may be added or subtracted from the official record if verified by more than 2 marshals and/or spectators.
- Additives are not permitted to aid in traction. This includes glues, oils, dirt, or dust. Basically anything that will hinder another cars or the track.
- Cars must pass freely and easily through the tech block. 1 5/16"
- One false start is permitted per heat and will be defined by the race host for the particular track being run.
- Push starts are permitted at any time.
- Once the body is tech'd in, it cannot be changed
- In case of a tie: the total number of points for the tying place finishers will split the total number of points given for that position. Example: 2 Racers tie for 1st occurs, 1st place points will be added to 2nd place points then divided by 2 then that point value will be given to each racer.
- All tracks shall be equipped for alligator type hookups and dynamic braking. Tracks are to be wired the same; White = Power (+), Black = Track, Red = Brake (-)

SUPER STOCK CAR CLASS RULES:

Legal chassis are: BSRT T2/G3/G3R//G3RS/G3RS-BP, Mattel/Tyco 440 X2, Micro Speedworks T+ Slottech Panther/Panther 02/Thundercat T1/T2/T3, Wizzard-Patriot P2/P3/Scorpion/Storm Life-Like Fast Tracker/Pro Tracker, Viper V1

1. The chassis must be stock, readily available, "HOPRA Approved" and cannot be machined, sanded or cut except to provide the following:
 - A. Add body mounts.
 - B. Reinforce and/or replace pickup tabs.
 - C. Add adjustable Brush tension.
 - D. Add axle retainer.
2. The guide pin can be a stock replacement part. It may be glued in place but shall remain in any one of the stock positions. The front axle may be attached to the guide pin in the Life Like chassis only.
3. All magnets used shall be stock or stock replacement ceramic "HOPRA Approved" and cannot be cut. Mattel/Tyco 440 X2 traction magnets must be of matching polarity.
5. All magnets shall remain in their stock location. No material or method may be used to restrict the movement of the magnets.
6. Any flux collectors used shall be stock and shall remain in their stock location and cannot be modified.
7. The armature must be stock or a hot stock production red wire with crimp/folded/welded tabs. The commutator may be trued, epoxied, and advanced timed. Small cuts or drill marks may be made for balancing only. No machining/cutting along the entire length or circumference of the lams/stacks. Excessive removal of material to reduce weight is not allowed. Minimum 5.8 ohms (measured pole to pole with armature removed from car and checked after a 5 minute cool down period). No dewinding, rewinding, or soldered tabs.
8. Axle bushings are not allowed unless they are stock.
9. There are no restrictions on the armature bushings, gears, axles, wheels and tires.
10. Electrical systems shall be stock or stock replacement. Adjustable brush tension is allowed. Glued in brushes on spring arms are allowed. Plated parts are allowed. Shunt wires are not allowed. Electrical parts may be lightly sanded for cleaning purposes only.
11. The use of glue shall not be allowed on the chassis or bulkheads except for the body mounts, guide pin and armature bushings.

COMPRESSION MOLDED SUPER STOCK:

- All super stock rules will apply with addition of:
 - Rear tires must be readily available solid silicon/rubber replacement tires. Rear wheels must be readily available, single or double flanged replacement wheels.
 - All magnets must be “HOPRA Approved” stock ceramic or “compression molded ceramic grade polymer” and cannot be cut.

“HOPRA Approved” Compression Molded Ceramic Grade Magnets:

| Manufacturer | Part # | Description | Chassis Type |
|---------------------|--|--|---|
| BSRT | #277 #290 #284 | G-Force C4 H-D Motor Magnets G-Force C4 Motor Magnets G-Force C4 Traction Magnets | BSRT G3/G3R |
| Slottech | #81C #86C | G6 Motor Magnets G6 Traction Magnets | Slottech Thundercat T3 |
| Wizzard | WS60 WS61 | Stock Storm Motor Magnets Stock Storm Traction Magnets | Wizzard Storm |
| Viper Scale Racing | MAG-103-MTR MAG-103-TRC | Pro 4 Motor Magnets Pro 4 Traction Magnets | BSRT G3/G3R/G3RS/G3RS-BP |
| Viper Scale Racing | MAG-100-MTR MAG-100-TRC MAG-103-MTR Mag-103-TRC | Pro 4 Motor Magnets Pro 4 Traction Magnets Pro 4 Motor Magnets for BSRT Pro 4 Traction Magnets for BSRT | Viper V1 BSRT G3/G3R/G3RS/G3RS-BP |

Brass Car rules:

- All super stock rules will apply except for:
- Traction weights only will be used and made of brass and cannot be modified from the manufactures specifications in any way.
- Brass shall be run on 12v.

Motor magnets must be “HOPRA Approved” stock ceramic or “compression molded ceramic grade polymer” and cannot be cut.

“HOPRA Approved” Compression Molded Ceramic Grade MOTOR Magnets:

| Manufacturer | Part # | Description | Chassis Type |
|--------------------|----------------------------|------------------------------|--------------------------|
| BSRT | #277 | G-Force C4 H-D Motor Magnets | BSRT G3/G3R |
| | #290 | G-Force C4 Motor Magnets | |
| Slottech | #81C | G6 Motor Magnets | Slottech Thundercat T3 |
| Wizzard | WS60 | Stock Storm Motor Magnets | Wizzard Storm |
| Viper Scale Racing | MAG-103-MTR MAG-100-MTR | Pro 4 Motor Magnets | Viper V1 and BSRT G3/G3R |

MODIFIED CAR CLASS RULES

Legal chassis are: BSRT T2/G3/G3R//G3RS/G3RS-BP, Viper V1, Mattel/Tyco 440x2, Micro Speedworks T+, Slottech Panther/Panther 02, Thundercat T1/T2/T3, Tomy AFX Super G+, Wizzard-Patriot P2/P3/Scorpion/Storm, Viper V1

1. The chassis must be stock, readily available, "HOPRA Approved" and cannot be machined, sanded or cut except to provide the following:
 - A. Add body mounts.
 - B. Reinforce and/or replace pickup tabs.
 - C. Add adjustable Brush tension.
 - D. Add axle retainer.
2. All magnets shall remain in their stock location.
 - a. Only "HOPRA Approved" compression molded polymer magnets may be used, see below for specific manufacturer part numbers. Magnets cannot be cut or sanded. See chart on page 7 for Approved parts numbers.
 - b. The gauss reading taken in the center of the traction or motor magnet shall not exceed the following criteria. This is taken after 5 min cool down period and at the lowest point on each magnet as it runs parallel to the rail. Any reading above these figures will be cause for disqualification or rejection at tech. TRACTION: 2300 gauss maximum MOTOR: 2000 gauss maximum
3. The use of glue shall not be allowed on the chassis, magnets, or bulkheads except for the body mounts, guide pin and armature bushings.
4. Other nonmagnetic materials may be employed to restrict the movement of the magnets.
5. The use of flux collector shall not be allowed.
6. The armature must be stock or a hot stock production red wire with crimp/folded/welded tabs. The commutator and laminations may be trued, epoxied, and advanced timed. Small cuts or drill marks may be made for balancing only. Minimum 2.4 ohms (measured pole to pole with armature removed from car and checked after a 5 minute cool down period). No dewinding, rewinding, or soldered tabs.
7. Electrical systems shall be stock or stock replacement. Adjustable brush tension is allowed. Plated parts are allowed. Shunt wires are not allowed. Electrical parts may be lightly sanded for cleaning purposes only.
8. Rear tires shall be readily available solid silicon, rubber, or urethane replacement tires. Rear wheels may be readily available, double or single flanged replacement wheels.
9. There are no restrictions on the armature bushings (may be glued in). Ball bearings are not allowed.
10. There are no restrictions on guide pin, gears, or axles.

"HOPRA Approved" Compression Molded Polymer Magnets for Modified Car

| Manufacturer | Part # | Description | Chassis Type |
|---------------------|---------------|------------------------------|--------------------------------|
| BSRT | #263 | G-Force P10 Motor Magnets | BSRT T2, Mattel/Tyco 440x2 |
| | #271 | G-Force P10 Traction Magnets | |
| | #61 | PolyMax Motor Magnets | |
| Slottech | #66 | PolyMax Traction Magnets | |
| BSRT | #292 | G-Force P10 Motor Magnets | BSRT G3/G3R/G3RS |
| | #286 | G-Force P10 Traction Magnets | |
| Slottech | #64 | T3 Motor Magnets | Slottech Thundercat T3 |
| | #81 | G13 Motor Magnets | |
| | #86 | G13 Traction | |
| Slottech | #62-1 | PolyMax Motor Magnets | Slottech Panther/Panther 02 |
| | #62-2 | PolyMax Motor Magnets | |
| | #67 | LW PolyMax Traction | |
| | #68 | Magnets MegaFlux | |

| Manufacturer | Part # | Description | Chassis Type |
|---------------------|---------------|---------------------------------|---------------------|
| Wizzard | MHP60 | High Level Storm Motor Magnets | Storm |
| | MHP67 | Level 10 Storm Traction Magnets | |
| Viper Scale Racing | MAG-203-MTR | Pro 10 Motor Magnets | BSRT G3/G3R/G3RS |
| | MAG-203-TRC | Pro 10 Traction Magnets | |
| Viper Scale Racing | MAG-200-MTR | Pro 10 Motor Magnets | Viper V1 |
| | MAG-200-TRC | Pro 10 Traction Magnets | |

Magnatraction CLASS RULES

Legal chassis are: Aurora Magnatraction / Auto World Johnny Lightning (AW/JL) X -Traction

- The chassis must be stock cannot be modified in any way.
- The front wheels must be stock, may be trued and glued to the axle.
- Any front tires may be used.
- The electrical system must be stock or stock replacement for the car.
- Rear tires may be solid silicon or rubber replacement tires.
- Rear wheels may be stock or double flanged replacement wheels.
- Axles must be stock and may be trued.
- Magnets must be stock ceramic. Magnets may be shimmed; however chassis cannot be cut to allow repositioning of magnets.
- Gearing must remain stock and stock condition. Gears may be soldered or glued to their respective shafts.
- Armatures will be in factory stock condition as it comes from the original manufacturer for that particular car type/model. No tampering with stock condition. The minimum ohmage allowable shall be 12.8 ohms (measured pole to pole)
- Polishing and lubricating of all components is permitted.
- Any guide pin may be used.

These body rules will apply;

- a) Body must completely cover the chassis when viewed from above except for legal stock openings (i.e. windows and vents)
- b) Bodies must be of the hard shell injection molded variety. (No vacuum formed or resin bodies)
- c) Bodies must be originally manufactured specifically for mounting to an AFX Magna-Traction.
- d) Bodies may be lightened and/or lowered. However, exaggerated cutting of the wheel wells will not be allowed (the intended appearance of the car must be retained).
- e) Wings may be removed.
- f) The stock glass is required.

BEACHJET CLASS RULES

All of these car rules state modifications that are and are not permitted. Any “modifications” performed on entered cars or controllers in violation of these rules will make the car ILLEGAL and/or the racer disqualified. If anything is not specifically stated or addressed in the following rules, it is NOT permitted.

Definitions

These following definitions apply whenever the following words appear in the rules in CAPS:

STOCK: No modifications other than those allowed in the rules are permitted.

STOCK REPLACEMENT: Aftermarket part of similar design to the same STOCK Aurora Thunderjet part.

No modifications are permitted.

Commercially Available: Being able to buy parts from the maker or a supplier.

Note: Although these definitions are self explanatory, examples of prohibited modifications may be included in certain sections. These examples, in no way infer that other modifications are permitted. Stock means Stock, etc.

General

1. The term “Car” shall refer to a chassis and body combination and does not insinuate a specific body style.
2. Motor vehicles with at least 1 wheel at the four corners like sedans, sports cars, racing cars, trucks, emergency vehicles, etc. are all legal.
3. Cars must be legal at start and during the heat.
4. In case of part or body failure due to race conditions, you will have to fix the car before being permitted to resume.
5. One track call will be permitted per racer per heat.
6. Two track calls for the same failure will not be permitted in the same race, even if in different heats.
7. Repairs for duplicate failures will need to be done during race time.
8. A quick track call will only be permitted to clear parts off the track. This is a risk that is taken when building on the edge.
9. Any car deemed detrimental to the track (i.e. riding the bottom of the slot, cutting into the slot, or greasing/oiling the track, etc.) will be removed from the track and not permitted to race.
10. The complete car must not weigh less than 19.0 grams and no more than 23.0 grams.
11. Additives are not permitted to aid in traction. This includes glues, oils, dirt, or dust. Basically anything that will hinder another cars performance in that lane.
12. The car must not leave anything on the track.

BEACHJET CLASS RULES

13. Conductive lubes are permitted in extremely moderate amounts, and only under the brushes and where the pickup shoe meets the chassis. These lubes must not deposit on the track during racing or they will be deemed illegal.
14. Weight cannot be added to the bodies or chassis except on the axles outside the chassis axle holes.
15. Handling pans are not permitted.
16. Traction magnets of any kind are not permitted.
17. Cars must pass freely and easily through the tech block.
18. All 4 tires must touch the track at the same time when at rest.
19. Only one guide pin is permitted per car and must reside in original position. They may be glued into original position.
20. Except where solder is permitted, lead is not permitted anywhere on the car.
21. Lubrication of the chassis is permitted at any point provided it does not make it to the track.
22. One false start is permitted per heat and will be defined by the race host for the particular track being run.
23. Push starts are permitted at any time.

1

BODY

Requirements

ONCE A BODY IS TECH'D IN, IT CANNOT BE CHANGED

1. Bodies must be of the hard shell variety (no vacuum formed bodies) and manufactured by either the process of casting or injection molding, and be made of resin or plastic.
2. Bodies must be originally manufactured with the intention of being mounted, with the use of 2 screws via the 2 body mounting posts, on a/an: Aurora Model Motoring (which includes Vibrator, Thunderjet, Wild Ones, Tuff Ones and Xlerators), Bachmann, Faller, Model Motoring Inc. Thunderplus, Marx, Eldon or Tyco "S" series "HO" chassis.
3. Bodies must be fitted with all the manufacturer's original bumpers, heads, rollover bars, etc. in their stock locations. Similar aftermarket replacement parts may be used.
4. On a convertible body, any replacement windscreen must be the same height and width of the body manufacturer's original windscreen.
5. No body openings other than windows and front grills are allowed.
6. Body must completely cover the back plastic of the chassis/gearplate, when viewed from overhead.
7. The front windshield must be made of plastic and fill the entire frame. They may be glued in place.
8. There is no "on market" requirements for bodies, but if a new body is introduced and has not been made publicly available to the group in its present form 2 weeks prior to the race, then it must be made available in sufficient quantity at the race. 10 is a sufficient quantity.
9. Maximum width is 1 5/16".
10. Bodies must resemble cars that exist.
11. No blobs or boxes with lids.

BEACHJET CLASS RULES

Mounting

1. Bodies must be mounted using the original two-screw mounting points of the chassis.
2. Cracked or broken body mounting posts may be repaired or replaced with the use of glue and/or plastic sleeve around, or a plastic tube in place of the broken post in the original position.
3. Bodies must be mounted using two screws.
4. ANY screws may be used and left loose, but must be tight enough to not fall out.
5. Rear screws may be glued.
6. No weight may be added to the bodies.

Modifications

1. Bodies may be lightened by removing material from the underside.
2. Any holes caused by lightening must be filled to original thickness.
3. Bodies that have a separate roof and windshield casting/molding, and have molded in “interiors” (also known as Hardtops, i.e. Aurora’s ‘65 Mustang), may have the “interior” portion of the body completely removed.
4. Front wheel wells must not be modified in such a way to allow the use of any other wheelbase than that which was originally intended by the manufacturer of that body.
5. Side windows may be removed but are not permitted to be oversized to create a small roof.
6. Lightened bodies must maintain original outside appearance.
7. No bubbles, warpage, or excessive repairs.
8. The body to chassis mounting posts may be shortened to lower the body closer to the chassis.
9. Bodies may be painted and/or decaled.
10. Once a body has been tech’d in, it cannot be changed, unless it is damaged to the extent, that it cannot be raced. In that case the body maybe changed, with the permission of the racers present.

Chassis

1. Only STOCK Aurora Thunderjet or DASH chassis with copper electrics are permitted. This includes Flamethrower chassis.
2. The chassis axle and armature holes may be slightly opened up for increased clearance.
3. Added bushings and bearings are not permitted.
4. The chassis may be trimmed slightly (no more than .010”) to allow for crown gear tooth clearance.
5. Chassis, gearing, and shafts may be polished.
6. Chassis cannot be cut, sanded, or drilled in any other way unless stated in the rules.
7. Chassis cannot be cut to allow repositioning of magnets.

BEACHJET CLASS RULES

8. Flashing due to the manufacturing process may be removed.
9. Rivets may be tightened.
10. Replacement rivets are not permitted.

Guide Pins

1. Only STOCK Aurora plastic or similar replacement plastic guide pins may be used.
2. Guide pins may be cut, trimmed or bent, and may be glued into place.
3. Guide pins may be trimmed to allow smooth operation in the slot.
4. Maximum guide pin length is ¼”.
5. Rear, swivel or metal guide pins are not permitted.

Magnets

1. Magnets may be zapped.
2. Magnet shims may consist of any material, but may not be a permanent magnet.
3. Shims must reside entirely inside the magnet cavity.
4. Permitted magnets are as follows:
ORIGINAL Aurora, ORIGINAL Thunderplus, Super Two's, ORIGINAL Johnny Lightning , Auto World, and Dash magnets designed for a pancake style armature.
5. The magnets may be sanded to fit the chassis. The distance between the magnets must be a minimum of .700"; no exaggerated sanding is allowed to close the armature gap. This will be teched using a “Plug” measuring .700” in diameter.

Tires, Rims and Axles

1. All front or rear tire/rim/hub/axle combinations are permitted.
2. Must be commercially available at a competitive price.
3. Only the crown gear and crown gear shims may reside on the axles between the chassis axle holes.
4. Shim diameter cannot be larger than the tail diameter of the gear.
5. Crown gear shims must not interfere with the rotation of the axle in any way.
6. The center front axle truck hole may not be used.
7. Overall width must not exceed 1 5/16” when rims are extended to their maximum width.

Electrical

1. Pickup shoes must be STOCK copper Aurora or any commercially available stock replacements.
2. Pickup shoes may be bent, but must retain a step at its' original location.

3. Pickup shoes cannot be weighted with permanently attached weights.
4. Shunt wires, "tiger tails" or other soldering on the bottom of the chassis is not permitted.

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5. Lighted chassis must have the light bulb, clip, and wire completely removed.
6. Pickup shoe springs must be ORIGINAL Aurora or any commercially available replacements.
7. Pickup shoe springs may be shimmed with armature spacers to increase spring pressure.
8. Shims must fit completely inside spring hole in the chassis.

Commutator Brushes

1. ORIGINAL Aurora or ORIGINAL aftermarket copper/carbon brushes of the similar style and size as the original stock T-Jet brushes must be used.
2. Brushes must be flat surfaced on top and bottom.
3. Domed or silver brushes are not permitted.
4. Cutting or drilling brushes is not permitted.
5. Scoring brushes is legal.

Brush Springs

1. Brush springs may be bent in any fashion to allow different brush tensions and/or to stop brushes from rotating.
2. No material may be added or removed from the brush springs.
3. Glue may not be used under the spring to increase tension.
4. Brush springs cannot come in contact with the commutator at any time.

Gearing

1. Only STOCK Thunderjet or STOCK REPLACEMENT 14 tooth armature gears are permitted, (comm. Available)
2. Only STOCK Thunderjet or STOCK REPLACEMENT, including Model Motoring, 24 tooth brass idler and driven gears are permitted, and any commercially available gear.
3. Only STOCK Thunderjet or STOCK REPLACEMENT 9, 10, 11, 12, or 14 tooth brass pinion gears are permitted.
4. Only STOCK Thunderjet or STOCK REPLACEMENT 15 tooth crown gears are permitted.
5. The crown gear boss may be trimmed to adjust for proper gear mesh.
6. Gear tooth friction surfaces may be de-burred by polishing, filing, or sanding.
7. Beveling or removing material from the gears is not permitted.
8. SLIGHT rounding of the edges due to polishing, filing, or sanding is acceptable.
9. Gears may be glued or soldered to the shafts.
10. Excessive glue or solder is not permitted.
11. Crown gear minimum size to be .300 plus or minus 1 percent in size, ie. 297 -.303.

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Gearplate

1. Only STOCK Aurora Thunderjet, Tuff Ones, or DASH gear plates are permitted.
2. Any amount of the vertical gear plate rails may be removed.
3. No part of the gear plate may be removed below the plane of the top.
4. Removal of gear post material is not permitted.

Gearplate Clamp

1. A STOCK copper Thunderjet or STOCK REPLACEMENT gear plate clamp must be used.
2. The clamp may be bent or dimpled.

Armatures

1. Armatures must be STOCK Aurora Thunderjet, or DASH.
2. Thunderjet armatures are one, or a combination of copper, red or green colored wire on gray colored laminations.
3. Minimum resistance across any two commutator sections cannot be lower than 16 OHMS at an average room temperature of 65 degrees to 75 degrees Fahrenheit.
4. Re-wound armatures are not permitted.
5. De-wound armatures are permitted.
6. Commutators may be straightened and trued but must remain in the stock position.
7. No timing changes.
8. Armatures may be balanced by adding epoxy, or by removing metal from the laminations only.
9. Shims between the armature and top plate are allowed.

Controllers

1. ANY controller is permitted.