

# World Racing League Rules and Procedures - EXCERPT

## APPENDIX B - VEHICLE CLASSING SYSTEM

WRL allows a wide range of cars to be raced, including cars already racing in other series. In order to be as inclusive as practical while maintaining safety and competitiveness, WRL has adopted a Classification system based on power to weight ratio. Note: OE-Originally Equipped. OEM – Original Equipment Manufacturer.

### A. CAR CLASSIFICATION SYSTEM

- 1 Class determination:** A car's Class is determined primarily by its PWR - Power to Weight Ratio - expressed here as horsepower per pounds, or HP:LBS (example: 1:15 or simply "15")
- 2 Calculating PWR:** World Racing League calculates the base power to weight ratio using a car's weight as-raced (less driver and cool shirt water) divided by the motor's rated/published net horsepower (SAE net). Base PWR values will be rounded to the nearest tenth and adjusted for modifications to arrive at the Adjusted PWR which is then used to determine the car's class
  - a.** Proof of HP: Teams must provide a printout of factory-rated SAE-net HP for their motor from one of the following online resources: automobile-catalog.com; edmunds.com; wikipedia.org, manufacturer's data sheet. Document must show correct year, model, displacement, engine code, etc. Dyno numbers, if available, may be used as backup - See Section 4.b. below
  - b.** Vehicle Weight: WRL will weigh cars at the track, no driver, empty coolers, fuel tank full
  - c.** PWR Modifiers: WRL will deduct from a car's base PWR to address modifications made to the car outside of those allowed, see Sections B and C for more details

### 3 Competition Classes

Cars are classed into one of the following groups per their PWR rating which includes any PWR modifiers assigned. Competition classes are eligible for podium and other awards, purses, and contingency awards

- a. GENERAL PRODUCTION (GP):** Any mass-produced car offered for sale in North America. GP-class cars are subject to the Basic Performance Modifications rules in Section B and C, below.
  - **GP4-Cars with a PWR of 18.0 to 22.0 (cars above 22.0 allowed at steward's discretion)**
  - **GP3-Cars with a PWR of 15.1 to 18.0**
  - **GP2- Cars with a PWR of 12.8 to 15.0**
  - **GP1- Cars with a PWR of 10.5 to 12.7**
- b. GRAND TOURING, OPEN (GTO):** Any race-prepared car, including mass-produced, tube-frame, purpose-built, factory homologated, etc. with a PWR of 1:9 or higher
  - **GT-class cars are not subject to the Basic Performance Modifications in Section B below or to the Chassis and Drivetrain Modifications in Section C.1 below**
  - **GT-class cars are subject to the Engine Modifications in Section C.2 below.**
  - **GT-class cars are required to race with a fire suppression system**
- 4 Alternative Classing Process:** Cars that are prepared beyond the BPM level in Section B (below) may provide the following data to assist officials in classifying their cars. This information will be considered in addition to the WRL Disclosure sheet and inspection by the race officials. Acceptance of this information is solely at the stewards' discretion:
  - a.** Official timing sheets from other organized competition events - must be at the same track and configuration as the upcoming WRL event where the car will race
  - b.** Dyno sheets will be accepted as supporting evidence only, but will not be considered exclusively as evidence of the car's power
- 5 Darwin Rule:** Officials may move any car to another class OR mandate ballast if it has a demonstrated history of significantly under- or over- performing in its current class. Unless an oversight or omission occurred during the classing process, a car will only be moved to another class under the Darwin Rule after review by the WRL Competition Committee. Petitioning for a class change is only allowed under section 8, below. **At-the-track petitions will not be entertained.**
- 6 Ballast:** Teams may not voluntarily add ballast for the purpose of re-classing their car into a lower class. Any ballast added to the car must be properly secured and disclosed at safety inspection. **Undisclosed ballast discovered at impound will result in disqualification.**

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- 7 Under-subscription:** For any given race, any class that has less than 4 entries may be combined with another class at race officials' discretion
- 8 Petition Process:** A team may petition World Racing League for variance or exception to the guidelines in this Appendix under the conditions below. Petition must be made in writing at least 15 days in advance of the race and must include supporting evidence justifying the request
  - a. Class Change:** A team may petition WRL for a class change if their car is not competitive in its class (not due to driver ability, strategy or reliability). Petition may be made after the car has completed its first event in its current class.
  - b. Ballast:** A team may request a ruling on ballast in order to change class. WRL will determine the amount and location of ballast used for re-classing.
  - c. Non-compliance:** A team may petition WRL to allow a non-compliant car to compete.
- 9 Enforcement:** WRL may require any team to submit their car for monitoring and testing to determine accurate horsepower numbers either before or after a race. Methods include at-the-track dyno runs and installation of a WRL-provided data acquisition system. Data will be adjusted to reflect crank horsepower.

### B. BASIC PERFORMANCE MODIFICATIONS (BPM)

- 1 Basic Performance Modifications (BPM):** All cars competing in GENERAL PRODUCTION (GP1 - GP4) are allowed to make the following Basic Performance Modifications. If your car is prepped at this level it will automatically fall into a class listed in Section 2.b. above based on its power to weight ratio alone. If your car is prepped above this level it is still legal to race but will be subject to additional scrutiny, PWR modifiers, and possible class change **including to GTO**. You are required to disclose all modification not specifically allowed in this Section.
  - a. Carburetor tuning:** Open
  - b. ECU:** Chipping, socketing and/or re-flashing of the OEM ECU is allowed. Standalone, piggyback or otherwise aftermarket engine timing/fuel control will incur a PWR Modifier
  - c. Brakes:** Stock master cylinder or OEM equivalent. Calipers, pads and rotors open. Complete aftermarket high-performance systems (6+pistons) may incur a PWR Modifier. Proportioning valves are allowed
  - d. Springs:** Metallic springs open. May heat or cut
  - e. Shocks/Struts:** Open. However, adjustable dampers, remote reservoirs, racing-specific systems, changing oil viscosity or re-valving will incur a PWR Modifier
  - f. Other Suspension:** Sway bars, panhard/Watts linkage and camber plates are open. Adjustable front, upper control arms are allowed. Bending suspension members to alter geometry is allowed. Reinforcing suspension attachment points to gain durability is allowed
  - g. Bushings:** Open
  - h. Aero:** Aero modifications that are not professionally manufactured and/or commercially sold are open
  - i. Wheels:** Open
  - j. Tires:** DOT approved with tread wear (UTQC) of 180 or higher
  - k. Air filters:** Open
  - l. Cooling:** Transmission and oil coolers allowed. Aftermarket radiator allowed
  - m. Lubrication:** Accusumps and baffles allowed
  - n. Exhaust:** Open, from collector back, must have some form of muffler and meet any sound restrictions listed in Race Information
  - o. Weight reduction:** Open, but the exterior skin, and chassis structural integrity must be retained. Fenders, hoods, trunk lids, firewalls, floors and inner wheel wells must remain intact. Alternate bodies are eligible but must be approved
  - p. Driver comfort and information:** Cooling, gauges, control devices, data and telemetry systems are open
- 2 Additional modifications:** Modifications not listed in Section 2 above are allowed, but must be fully disclosed and may require a PWR modifier based solely on the discretion of the Officials after a thorough inspection of the number and extent of the additional modifications.
- 3 Engine and Drivetrain Swaps:** Engine/drivetrain swaps are allowed under the following conditions:
  - Non-OE drivetrain must be fully disclosed (includes engine, trans, diff, clutch assy, etc)
  - Unless modified, the new motor's factory-rated HP will be used to calculate PWR

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- 4 Failure to Disclose:** Any team that does not fully disclose modifications outside of the scope of this section may be subject to disqualification. Teams that blatantly subvert the classing rules may be banned from competing in future WRL events

### C. POWER TO WEIGHT MODIFIERS

#### 1 Chassis and Drivetrain Modifications

The following values will be deducted from a car's PWR for the items listed. Any missing items or gray areas will be dealt with at the WRL Officials' discretion. Modifiers in this section do not apply to GTO-class

##### AERO

Stage 1	-0.1	Simple rear spoiler, single plane fixed wing, side skirts, splitter
Stage 2	-0.2	Diffuser, flat underbody, aftermarket nose, single plane 2D fixed wing
Stage 3	-0.3	Multi-plane 2D fixed wing, dynamically adjustable wing

##### BRAKES

Stage 1	-0.1	2-piece brake rotors
Stage 2	-0.4	Aftermarket racing or multi-master cylinder system. Racing/adjustable pedal boxes. Any non-OE caliper with >4 pistons. ABS reprogram or swap
Stage 3	-0.6	Aftermarket 6-piston+ systems with rotors made from exotic materials (carbon ceramic, etc). Aftermarket or race-developed electronic ABS/traction control systems.

##### SUSPENSION

Stage 1	-0.2	Entry level adjustable shocks - Koni, KYB AGX, etc. Re-valving or re-oiling stock or non-field adjustable shocks/struts. Minor changes in suspension members other than what is open.
Stage 2	-0.4	Multi-adjustable shocks and higher end components - Penske, Ohlin, etc. Significant changes to suspension members with adjustable or lightweight in stock locations. Non-metallic springs.
Stage 3	-0.6	Remote reservoir systems. Significantly modified suspension mounting points, components different by fundamental design than stock, fully adjustable, high end components. Components made of lighter and/or exotic materials.

##### TRANSMISSION, CLUTCH

Stage 1	-0.1	Lightened flywheel, larger diameter clutch assy.
Stage 2	-0.3	Aftermarket , heavy duty and/or redesigned gears and internal components, including straight cut
Stage 3	-0.6	Sequential, electronically controlled

##### DIFFERENTIAL

Stage 1	-0.3	Race-oriented differential: Performance clutch pack style, hybrid LSD (wavetrac, etc)
Stage 2	-0.6	Lightweight, exotic in design, materials, installation method or location. Electronically adjustable differential.

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### 2 Engine Modifications

The following values will be deducted from a car's PWR for the items listed unless a dyno sheet is accepted for classing. Any missing items or gray areas will be dealt with at the WRL Officials' discretion.

Intake manifold swap, OEM	-0.2	
Intake manifold swap, Aftermarket	-0.3	
Header swap, OEM	-0.1	
Header swap, Aftermarket	-0.2	
Injector/carb swap, OEM	-0.1	
Injector/carb swap, Aftermarket	-0.3	
Performance cam or regrind	-0.3	Any change from OE spec- aftermarket, regrind or OEM swap
Gasket matching, deburring	-0.1	Includes any cutting or grinding
Overbore (.060+)	-0.4	
Stroke, increase or decrease	-0.4	Includes any method, rod swap, piston swap, crank, etc.
Compression ratio increase	-0.4	Other than changing bore or stroke
Head swap	-0.5	
Head porting	-0.7	
Oversized valves	-0.3	
Aftermarket, programmable ECU	-1.0	Megasquirt, Hondata, etc.

