

## VORRA SHORT COURSE UTV RULES

The rules and/or regulations set forth herein are designed to provide for the orderly conduct of racing events and to establish minimum acceptable requirements for such events. These rules shall govern the condition of all Valley Off Road Racing Association (VORRA) events, and, by participation in these events, all VORRA members are deemed to have acknowledged, accepted, and complied with these rules. No express or implied warranty of safety shall result from publications of, or compliance with these rules and/or regulations. The rules are intended as a guide for the conduct of the sport and are in no way a guarantee against injury or death to participants, spectators, or others.

Specifications and/or suggested standards contained in this rule book are intended for use as a guide with respect to safety and for no other purpose either expressed or implied. The use of the specifications and/or suggested contained herein by any association, organization, manufacturer, or individual is entirely voluntary and LOORRS will NOT accept any responsibility for consequences resulting from the application or said specifications and/or suggested standards.

The spirit and intent of the rules is going to be the standard by which VORRA Oil Off Road Racing Series is guided. If this rule book does not specifically say that you can do something, then you must consider that the change is illegal. It is the responsibility of each participant to ensure that his/her conduct and equipment complies with all applicable rules. These rules are subject to amendment or change by VORRA.

This rule book is intended to serve as a guide for the conduct of short course racing and is in no way a guarantee against injury or death to participants, spectators, or others.

## VORRA SHORT COURSE UTV RULES

The following rules are intended to provide a cost effective, competitive fun entry-level off-road racing class. If there is not a rule here specifically allowing a modification from stock, it cannot be modified.

Unlimited UTV: Heavily modified UTV up to 1000cc displacement.

SR1 UTV: Heavily modified Yamaha Rhino, utilizing a Yamaha R1 1000cc engine or a Kawasaki Teryx, utilizing a ZX-10, 1000 cc engine.

Production 1000: Stock 1000 cc UTV. Vehicles must be a standard manufacturer production model that is currently available to the general public in the USA. Vehicle style must have a manufacturer production volume of at least 1000. All new models/brands are subject to series pre-approval process which may include (but is not limited to) inspection, track time and data collection before being deemed legal for competition.

Production Turbo: Stock 1000 cc factory turbo UTV. Vehicles must be a standard manufacturer production model that is currently available to the general public in the USA. Vehicle style must have a manufacturer production volume of at least 1000. All new models/brands are subject to series pre-approval process which may include (but is not limited to) inspection, track time and data collection before being deemed legal for competition.

RZR 570: Stock 570 cc 2 seat UTV driven by children ages 10-16. Vehicles must be a standard manufacturer production model that is currently available to the public in the USA. Vehicle style must have a manufacturer production volume of at least 1000.

RZR 170: Stock Polaris RZR 170 UTV driven by children ages 6-12

### **GR-1 Marking and Identification**

- A. All vehicle numbering is subject to approval and is assigned by the series.
- B. Officials may require a competitor to use a different number to avoid confusion or duplication at an event.
- C. If a number is not visible from the timing and scoring area, the competitor will not be scored. It is the competitor's responsibility to make sure that the number is visible during all race conditions.
- D. Advertising on race vehicles must be in good taste.
- E. Foil or reflective numbers are not permitted.
- F. All vehicles are required to have series stickers on each side of the front of the door area, 4 inches down from the leading edge of the side window opening.
- G. The series may require the use of specific sponsor decals.
- H. Team vehicles with the same paint and colors must have distinguishing markings of some kind.

### **GR-2 Numbers**

- A. Numbers are 1-99 for the SR1 UTV class.
- B. Numbers are 600-699 for the Unlimited UTV class.
- C. Numbers are 700-799 for the Production Turbo class.
- D. Numbers are 900-999 for the Production 1000 class.
- E. Numbers are 1-99 for the RZR 570 class.
- F. Numbers are 100-199 for the RZR 170 class.
- G. Numbers must be applied side by side. No outlines, stacking or shadows allowed. Italic slant of 25 degrees or less is not allowed.
- H. Fonts must be chosen from one the below approved styles only:
  - 1. Impact
  - 2. Helvetica Black
  - 3. Mechanical Bold
- I. All number plates must be white background with solid black block style numbers including the front windshield, rear facing and roof locations.

J. Numbers must be in the following positions:

1. Sides of vehicle: One number on each side of the vehicle, on a number plate mounted high and close to the back of the roof, and parallel with the front to rear tire line. Minimum number plate size: 10 inches high by 14 inches long. Minimum number size: 8 inches by 1 ½ inches.
2. Rear of vehicle: The back of the vehicle facing the rear, on a number plate mounted directly in the center rearmost area of the vehicle above (but not attached to) the bumper. Minimum number plate size: 6 inches high by 8 inches wide. Minimum number size: 5 inches by 1 ½ inches.
3. Roof of vehicle: Minimum number plate size: 10 inches high by 14 inches long. Minimum number size: 8 inches by 1 ½ inches.
4. Upper left-hand corner of windshield area: Minimum Number plate size 5 inches high by 6 inches long. Minimum number size: 4 inches.
5. All numbers must be easily visible with no obstructions by bodywork or chassis. 3

### **GR-3 Roll Cage & Chassis**

- A. All vehicles must utilize the stock chassis and maintain stock appearance. The stock chassis (frame) is defined as the main lower rails running along the inner sides of the UTV and the front and rear tubes that connect them. The chassis may be modified for durability and strength but must retain the stock width, length, and configuration. Any modifications must be pre-approved by officials.
- B. Unnecessary tabs and brackets on the OEM chassis may be removed only if pre-approved by officials.
- C. Series approved aftermarket roll cage required.
- D. Cages may be constructed with one front vertical hoop, one rear vertical hoop, two interconnecting top bars, two rear down braces, one diagonal brace, or with one vertical hoop on each side of the vehicle with interconnecting bars at the bottom of the windshield area, the top of the windshield area (between C pillars), between the tops of the B pillars. All single tube intersections must be reinforced with gussets.
  1. On cages with side-to-side main hoops, the two top interconnecting bars must be placed as far to the outside of the top part of the front and rear hoops as possible.
  2. Rear down braces and diagonal brace must angle a minimum of 30 degrees from vertical. At the bottom of the diagonal brace there must be a cross member of the same tubing material and dimensions as the hoop.
- E. There must be a minimum of 3 inches clearance between driver's helmet and roll cage.
- F. Gussets must be installed at all intersections, including diagonal and rear down braces, where single weld fractures can affect occupant's safety.
- G. Gussets may be constructed of minimum .090-inch x 3-inch x 3-inch flat plate or tubing gussets made of same material and thickness as roll cage.
- H. Roll cage terminal ends must be attached to a frame or body member that will support maximum impact and not shear or allow more than 1 ½ inches of movement in the cage terminal end.

I. Minimum tubing diameter and thickness is 1 ½ inch diameter by .095 for main roll cage tubes not specified as requiring 1 ½ inch by .120" tubing. This includes the front to back mid rail shoulder bar. Rear cage 'X' or diagonals and windshield brace tubes may use 1 ¼ inch diameter by .095 tubing.

J. Roll cage material must be 4130 chromoly or DOM.

K. All tubing, welds, gussets, and roll cage construction must be approved.

L. Entire roof must be covered with sheet metal or .063-inch minimum aluminum. M. SR1: Yamaha vehicles must utilize the stock Rhino chassis or Weller aftermarket chassis. Kawasaki vehicles must utilize the stock Teryx chassis.

1. No bolts on connections to chassis are allowed. All joints must be welded and attached to the frame securely.

2. Top left half of roll cage above driver's head must have one 1 ½ inch x .095 inch 'X' diagonal bracing bars and/or be covered with .125-inch minimum aluminum plate. 3. If plate is used, a single diagonal bar is sufficient.

4. Plate must be attached with 2 bolts on each of the four sides.

N. Production Turbo & Production 1000:

2. 1 ½ inch 4130 chromoly or DOM tubing is required for main roll cage tubes, and 1 ¼ inch is highly recommended. Refer to drawing for required .120" tubes. 3. Driver's side only main A pillar hoop must be .120-inch minimum tubing on all new roll cages. On RS1 cages both A pillars must be .120-inch minimum tubing. This is the tube from the left front top of fender cage mount up to the A pillar back over driver's left shoulder to rear main hoop. Refer to drawing for required .120" tubes. 4. 2 seat vehicles: One front to back center bar is required in top cage. Top left half of roll main cage above driver's head must have one 1 ½ inch x .095-inch diagonal bracing bar. RS1: One 1 ½ inch x .095-inch diagonal bracing bar is required above driver's head.

5. It is recommended that stock cage mounts and seat belt mounting plates be reinforced.

6. Roll cage width must be similar in style to a stock 2 seat UTV. No narrow width cages. RS1: must also maintain stock cockpit width or wider.

7. Preferred method of race cage mounting is bolt on welded on roll cages. Welded Bolt on cages is allowed but must be approved and must utilize Grade 8 or better bolts. Secondary reinforcement of the bolt together clevises is required in the form of either two 1-inch-long welded doubled plates on each side of clevis joint or two 1-inch-long welds on each side of clevis joint.

8. Other than the original bolt-in clevis, no additional material may be removed from the original chassis for roll cage attachment.

9. Must have a 1-½ inch by .095-inch minimum size DOM or chromoly dash bar located between the A-pillar joints connecting the two sides of the car with 1 single uninterrupted tube.

O. RZR 570:

1. 1 ½ inch x .095-inch minimum tubing is required for main roll cage.

2. Top of roll cage above driver's head must have either an 'X' or a front to back center bar.

P. RZR 170:

1. 1 ¼ inch x .095-inch minimum tubing is required for main roll cage.

2. Top of roll cage above driver's head must have either an 'X' or a front to back center bar.

3. A C-pillar bar with the 1-¼ inch x .095-inch tubing is required on all vehicles. 5

## **PRODUCTION TURBO, PRODUCTION 1000, RZR 570, RZR 170 & UNLIMITED UTV BASIC ROLL CAGE & DRIVER DOOR BAR DESIGN**

### **PROD 1000 RS1 BASIC ROLL CAGE DESIGN**

#### **GR-4 Doors**

A. Door area must be covered with sheet metal or a minimum of .063-inch-thick aluminum.

Panel must be attached with bolts or dzus buttons.

B. SR1: Doors must have 'X', 'A' or Ladder design bracing designed to provide maximum protection to the driver.

1. X or A designs must use a minimum 1 ½ inch diameter by .095, 4130 chromoly or DOM.

2. Ladder design must use a minimum 1 ½ inch diameter by .095 for main rails and 1 ¼ inch by .095 for rungs.

C. Unlimited, Production Turbo, Production 1000: Door opening may have a 'U' shaped tube bent to follow the door opening. Fully integrated door bars to OEM chassis are also allowed.

Driver and passenger side tubes must be a minimum 1 ½ inch diameter by .095, 4130 chromoly or DOM. Refer to drawing for required .120 tubes.

1. U shaped tube must be attached in multiple spots to stock frame or chassis. 2. Doors must have 'X', 'A', 'V' or Ladder design bracing designed to provide maximum protection to the driver's side.

3. X, A or V designs must use a minimum 1 ¼ inch diameter by .095, 4130 chromoly or DOM.

4. Ladder design must use a minimum 1 ¼ inch diameter by .095 for main rails and 1 ¼ inch by .095 for rungs.

D. RZR 570: Door opening must have a 'U' shaped tube bent to follow the door opening. Tube must be a minimum 1 ¼ inch diameter by .095, 4130 chromoly or DOM.

1. U shaped tube must be attached in multiple spots to stock frame or chassis. 2. Doors must have 'X', 'A', 'V' or Ladder design bracing designed to provide maximum protection to the driver.

3. X, A or V designs must use a minimum 1 ¼ inch diameter by .095, 4130 chromoly or DOM.

4. Ladder design must use a minimum 1 ¼ inch diameter by .095 for main rails and 1¼ inch by .095 for rungs.

E. RZR 170: Door opening must have a 'U' shaped tube bent to follow the door opening. Tube must be a minimum 1-inch diameter by .095, 4130 chromoly or DOM.

1. U shaped tube must be attached in multiple spots to stock frame or chassis. 2. Doors must have 'X', 'A', 'V' or Ladder design bracing designed to provide maximum protection to the driver.

3. X, A or V designs must use a minimum 1-inch diameter by .095, 4130 chromoly or DOM.

4. Ladder design must use a minimum 1-inch diameter by .095 for main rails and 1 inch by .095 for rungs.

### **GR-5 Driver Compartment**

A. Driver must be able to enter and exit, unassisted and with great ease, the driving compartment with the vehicle in any position. Firewalls and/or bulkheads must separate the driving compartment from any fuels, engine fluids, and acids.

B. Production Turbo, Production 1000, RZR 570 & RZR 170:

1. Race seat is required. Driver's seat must be within 2 inches left or right of stock location and be bolted in.

2. Seat may be lowered. Stock plastic panel below seat to floor may not be cut down or trimmed except for minimal holes allowed for seat tabs or mounting of seat. Minimal trimming may be allowed in the case of full containment seats. Any interior trimming for seat installation must be pre-approved.

3. If no passenger seat is used, gas tank area must be completely covered with a .063" aluminum firewall.

C. Production 1000, Production Turbo, RZR 570:

1. Dash and all floor and interior panels in stock location are required. Stock dash is recommended; however, aluminum will be allowed. Minimal cuts or openings are allowed for roll cage and tabs. Glove box and door and center foam lined storage box may be removed.

2. Complete stock rear firewall is recommended; however, aluminum will be allowed. Rear firewall can only be replaced with complete, tightly fitting .063" aluminum and must be stock height or above to completely replace the stock plastic firewall. No holes, screens or openings allowed.

3. Driver side foot floor well must be covered or replaced with .090" aluminum from the front firewall to the rear firewall, and from the outer OEM chassis tubes to the center console (or center of the car if the center console is removed). This is not required in the RZR 570 class.

4. With pre-approval, the lower front firewall can be covered or replaced with .063" aluminum for safety.
5. Center console may be removed to allow easier relocation of the shifter handle. If the removal of the console exposes any parts of the driveline, they must be completely covered by .063" aluminum.
6. No complete aluminum interiors are allowed. Except for the panels specified above, all other floor and interior panels must remain stock.

D. RZR 170:

1. Stock dash and all floor and interior panels in stock location are required. Minimal cuts or openings are allowed for roll cage and tabs. Glove box and door and center foam lined storage box may be removed.
2. Rear firewall only can be replaced with complete, tightly fitting .063" aluminum. 3. Bed plastic may be removed or remounted for easy removal for service.
  - a. If rear bed plastic is removed, aluminum panel must extend 6" toward rear from top of firewall. This flat panel would extend from top of firewall back 6" and cover complete bed width from side to side.

**GR-6 Measurements & Weight**

- A. All measurements will be performed with series technical instruments and gauges. Series officials determine all measurements and center points.
- B. Driver will be included in race vehicle's minimum weight.
- C. Vehicles can be courtesy weighed prior to competition.
- D. Officials must approve all weight material.
- E. Added weight must be in block form. No shot filled ballast tanks.
- F. Blocks must weigh no less than 5 pounds each and cannot be made of liquid of any type, pellets, or other granulated weight.
- G. Added weight must be securely bolted in place to the chassis in a safe and strong manner using at minimum 2 3/8" Grade 8 (or better) bolts for each 10 lbs. added. For blocks of weight over 10 lbs., 2 x 1/2" Grade 8 (or better) bolts are required. Weights cannot be attached using Velcro or clamps.
- H. Dislodged weight cannot be returned to the vehicle for weighing at the end of the race.
  - I. All block ballast must be painted white and identified with vehicle number.
- J. Weight can be sealed at the discretion of officials.
- K. No weight shifting devices of any kind are allowed. This includes but is not limited to hydraulic or electronic devices.

L. All vehicles will weigh in before and/or after competition at the discretion of officials. Failure to do so will result in disqualification.

M. All weight loss on track will result in a \$5.00 per pound fee.

N. Weight may be adjusted at the discretion of officials throughout the season in the interest of competition.

O. Unlimited: The maximum overall wheelbase from spindle to spindle can be increased to 8 inches over stock dimensions. The minimum vehicle weight is 1400 pounds including driver. P. Production 1000 & Production Turbo: Must maintain OEM wheelbase +/- .500". This is measured with car sitting at ride height. Minimum ride height is 8".

Q. Production Turbo: The maximum overall width is 76". Minimum vehicle weights:

1. RZR: 1750 pounds including driver

2. Can-Am X3 & Can-Am X3 X RS: 1850 pounds including driver

R. Production 1000: The maximum overall width is 72.5". Minimum vehicle weights: 1. RZR & RS1: 1600 pounds including driver

2. Can Am: 1600 pounds including driver.

3. Yamaha: 1775 pounds including driver.

4. Textron XX: 1825 pounds including driver.

5. Any other approved vehicles will have their initial minimum weight set to be equal with the highest minimum weight of the other brands until which time we have enough data to apply a specific minimum weight to provide a level playing field among the competing brands.

S. SR1: Maximum width is not to exceed 78" wide (measured from outside of tire to outside of tire at the widest point). The maximum length is not to exceed 83" (measured from the center of front hub to center of rear hub). The minimum vehicle weight is 1600 pounds including driver.

T. RZR 570: The minimum vehicle weight is 1400 lbs. The maximum overall width is 66". The maximum wheelbase is +/- ½ inch from OEM. Minimum ride height is 8".

U. RZR 170: The minimum vehicle weight is 700 pounds including driver. The maximum overall width is 53.5 ". The maximum wheelbase is 68.5".

### **GR-7 Fenders**

A. Fenders must be securely attached to vehicle. The removal of fenders during competition during any reason other than damage incurred during the race will result in disqualification.

B. Fenders must be attached in such a fashion as not to create a pointed or sharp extrusion when removed. A loop body mounting bracket construction is mandatory.

C. Additions to the body of the race vehicle, such as fins, scoops, wings, and other extruding additions will not be permitted.

D. Vehicles must maintain an appearance similar to the stock UTV.

E. All front and rear fenders must be mounted in the OEM location and may not be tucked in. F. SR1 & Unlimited: A loop body mounting bracket construction is mandatory.

G. Production Turbo, Production 1000, RZR 570 & RZR 170: All body panels must be stock, or aftermarket stock replacement & be mounted in the stock location.

1. Two-piece rear bed plastic may be removed, or stock bed bottom and sides of bed may be cut out. The front portion of the bed plastic that also functions as the rear firewall of the driver's compartment must remain unless replaced by .063" aluminum.

2. Front headlights and rear taillights can be removed. Aluminum fill-in panels with stickers that look like lights are recommended.

3. Rear taillight body panel may be removed.

### **GR-8 Bumpers**

A. Vehicles must have front and rear bumpers. Officials must approve all bumpers. 9

B. No hazardous bumpers, nerf bars, frame heads or other protruding objects from vehicles are permitted.

C. Bumpers and nerf bars cannot be made from aluminum.

D. Rear bumper must be secured to frame using a minimum 1 ½ inch diameter .095 chromoly. E. Bumpers must be designed in such a way as to inhibit two vehicles from becoming locked together.

F. Ends must be capped and rounded with no sharp edges. All bumpers must have looped ends. Factory bumpers may be used only if they have looped ends.

G. SR1 & Unlimited: Vehicles must have front and rear bumpers. Rear bumper must be secured to frame using a minimum 1 ½ inch diameter .095 chromoly. Minimum front bumper width is 35 inches. Side nerf bars are required for the SR1 class.

H. Production Turbo, Production 1000 & RZR 570: Side nerf bars are mandatory. Nerf bars must be at least as wide as the center line of tire or wider from front to back. Length should be a maximum of 12 inches from both the front and rear tires. Nerf bars may not stick out past the front to rear tire line (outer faces of tires) and must have looped ends. Minimum tubing size for nerf bars is 1 inch by .095 inch, and must be 4130 chromoly or DOM.

I. RZR 570 & RZR 170: Side nerf bars are mandatory. Bumpers are optional currently but are highly recommended. If bumpers are used, above bumper rules must be followed.

### **GR-9 Skid Plates/Floorboards**

A. Skid plates designed to reasonably protect the front suspension, steering, and brake components are recommended on all vehicles. Plates must be made of metal or UHMW plastic and be securely attached.

B. Stock UTV floorboards are acceptable but extra protection made of metal or aluminum is highly recommended.

C. Production Turbo & Production 1000: Vehicles are required to have an .090" or thicker aluminum floor panel that covers the entire driver's side floor from the front firewall to the rear firewall, and from the center console to the door panels.

#### **GR-10 Suspension**

A. All A-arm mounting points must remain in the stock location and position as delivered from the manufacturer, however they may be reinforced for strength.

B. SR1: Stock suspension, or any suspension less than 6 inches over stock will not be allowed.

C. Production Turbo, Production 1000 & RZR 570: Aftermarket stock length replacement arms and links may be used. All aftermarket suspension pieces must be direct replacement in ALL fitments (this includes length, pivot locations, and bushings). Mono balls may be used in place of ball joints. Sway bar manufacturer and mount location is open. Limit straps are allowed.

D. RZR 170: Aftermarket front arms 3" wider than stock are allowed. Rear aftermarket replacement swing arm is allowed. A wider rear axle is allowed.

#### **GR-11 Steering**

A. All steering components must be in good condition and proper working order. Drag link and tie rod ends must be secured with a cotter pin in each one.

B. Power steering is permitted.

C. Officials must consider steering reasonably safe before vehicle is permitted to compete.

D. Production Turbo, Production 1000, RZR 570 & RZR 170: Aftermarket replacement steering rack and tie rods are allowed. Aftermarket steering rack must bolt in without chassis modifications. Aftermarket tie rods may use heim joints in place of factory ball joints.

E. RZR 170: Approved aftermarket steering quickener/knuckle may be used.

#### **GR-12 Shocks**

A. There must be at least one and only one shock absorber per wheel in working condition at the start of the race.

B. SR1 & Unlimited: Shock absorber mounting points may be moved.

C. SR1: Max shock length not to exceed 10 inches of shaft travel.

D. Production Turbo, Production 1000, RZR 570 & RZR 170: Shock mounts must remain in stock location but can be reinforced. No bolt on extensions. No external bypass shocks. Shock manufacturer is open.

E. RZR 170: Air shocks are permitted.

#### **GR-13 Bump Stops**

A. Suspension bump stops must be of the solid type.

### **GR-14 Torsion System**

A. The only torsion system that is acceptable is a coil-over shock.

### **GR-15 Wheel Spacers**

A. Wheel spacers are permitted.

### **GR-16 Brakes**

A. Brakes must be in safe working condition and be able to apply adequate force to lock up all four tires. Brakes must remain in safe working condition during entire event.

B. Turning or cutting brakes are not permitted.

C. Production Turbo, Production 1000 & RZR 570: Aftermarket brakes are allowed. All aftermarket brake components must be approved, must be available for purchase by ANY competitor, and be reasonably priced. Aftermarket brakes must bolt on using the factory mounting holes. Caliper adapters are allowed provided they are bolt on using the OEM mounting holes.

D. Production Turbo, Production 1000, RZR 570 & RZR 170: Aftermarket hubs are allowed as long as stock dimensions are maintained. No ceramic wheel bearings. Stock or steel replacement wheel bearings only.

### **GR-17 Engine**

A. All vehicles must use stock engine cases and cylinder head. The series reserves the right to mark engine blocks prior to event.

B. All vehicles must use same fuel delivery system as stock and designed by factory. Electric fuel pumps are permitted in accordance with series safety requirements for fuel pumps.

C. Unlimited UTV: Engine displacement not to exceed 1000 cc.

D. SR1:

1. Stock Yamaha R1 engine (year 2002-2014) is required.

2. Stock Kawasaki ZX-10 engine (year 2004-2010) is required for all Teryx vehicles. 3. No modifications of any kind can be made to engine.

4. No modifications to throttle bodies can be made.

5. R1 tip over sensor must be left intact and in working order all SR1s.

6. Engines must be mounted between the driver and passenger seat locations utilizing the spec mounting plate. Contact officials for details.

7. Valve spring shims are allowed for valve adjustment.

E. Production Turbo, Production 1000, RZR 570 & RZR 170: Engine year and vehicle model year may be different with prior approval only. Engines and all internal parts must remain completely stock for that model year. No internal modifications.

1. Stock throttle body must be used.
2. Air intake/air cleaner is open.
3. Flywheel must remain stock with no modifications made.

F. RZR 170: Carbureted models must use the stock carb as delivered from factory. G. Production 1000, Production Turbo & RZR 570:

1. Polaris RZR 1000 & RS1 may use RZR 900 cam buckets, lash shims and retainers. No aftermarket cam buckets, or retainers are allowed.
2. Polaris RZR 1000 All vehicles may replace OEM fuel rail with aftermarket replacement if it serves no other purpose than to supply the fuel injectors with fuel.
3. GYTR internal parts are not allowed.
4. Yamaha YXZ1000R may all use the 2019 OEM connecting rods.
5. All brands may use an aftermarket manual timing chain tensioner in place of the OEM tensioner.
6. All brands may replace the head/ cylinder bolts with direct replacement aftermarket stud kits or bolts provided that no modifications are needed to make the upgrade.
7. All Production Turbo vehicles must add/have a female 1/8" NPT port (with .125" minimum through hole) in the intake manifold plenum for measuring boost between the throttle body and the intake runners. At any time, an official may require the installation of a series specified boost measuring device. In the future we reserve the right to restrict boost to create parity of performance between multiple vehicle models.

#### **GR-18 Superchargers & Turbochargers**

A. SR1, Production 1000, RZR 570 & RZR 170: Superchargers or turbochargers are not permitted.

B. Production Turbo:

1. Only factory installed turbochargers are allowed. No modifications are allowed. Dealer installed or aftermarket supercharger or turbochargers are not allowed.
2. Any aftermarket intake and filter system are allowed. Intake must bolt to the factory turbo inlet. The aftermarket intake's only allowable function is to filter air. All OEM sensors must bolt on and function like the OEM system. Intake systems may not extend past the roll cage.
3. Aftermarket blow-off valves are allowed on all brands.
4. Aftermarket intercooler piping between the turbo and throttle body is allowed. No modifications to the turbo and throttle body are allowed. The only allowable function is for routing air. All OEM sensors must be used and attached in stock locations.
5. Polaris Turbo & Turbo S models may replace the air-water intercooler with an air-air intercooler. The heat exchanger inside the intake manifold may be removed and replaced by a single plate that bolts to the intake manifold using all the factory bolt holes.

6. Aftermarket intercoolers are allowed but may not be mounted in a position that makes them extend out past the roll cage.

C. Unlimited UTV: Factory installed turbochargers are allowed. Dealer installed or aftermarket supercharger or turbochargers are not allowed.

### **GR-19 Auxiliary Equipment**

A. All vehicles must start race with a functional generator or alternator, fan, water pump (water-cooled vehicles), and a complete functional electrical system.

### **GR-20 Ignition**

A. All vehicles must have a positive action on/off switch in good working order. Switch must be labeled "ignition on/off", have a red circle around it, be located on the left-hand side of the dash panel, and must be accessible from the outside of the race vehicle. Red circle must be at least 1 inch wide.

B. All electric fuel pumps with independent switches must be labeled "fuel on/off" and be within easy reach of the driver and accessible from the outside of the vehicle.

C. Aftermarket CDI boxes/ECUs are permitted with approval.

D. SR1: Ignition switch must be located on the left-hand side of the dash panel, and must be accessible from the outside of the race vehicle. Stock OEM ECU is required. ECU may be flashed. Traction control switches are not allowed.

E. Unlimited: Ignition switch must be located on the left-hand side of the dash panel, and must be accessible from the outside of the race vehicle.

F. Production 1000 & Production Turbo: Stock ignition switch is allowed. Stock OEM ECU is required. ECU may be flashed. Aftermarket ECUs are not allowed.

G. RZR 570 & RZR 170: Stock ignition is allowed. Power commander and Dynatek/Dynajet piggyback controllers are allowed but must be approved. Aftermarket ECUs are not allowed.

### **GR-21 Batteries**

A. Batteries must be securely mounted with metal-to-metal tie downs.

B. Wetted fiber or gel cell batteries only. Liquid lead acid batteries are not permitted. C. Batteries may only be in the driver's compartment with an adequate firewall on top and all sides or factory engine cover and vented outside the driver's compartment.

### **GR-22 Cooling**

A. Oil coolers & transmission coolers located ahead of the driver or behind cockpit must have a shroud that will prevent liquids from blowing back or leaking onto the driver in the event of a rupture or leakage. Radiators may not be in cab or cockpit area.

B. All hoses running through the driver compartment must be shielded. Steel braided hose does not constitute a shield.

C. Radiator may be relocated to back behind passenger cab area. If radiator is mounted close to driver, panels are required to keep hot coolant off driver. Radiator must have a rock screen to protect it with maximum opening size of ½ inch by ½ inch.

D. Production Turbo: The OEM intercooler may be relocated with prior approval.

1. Intercoolers must be behind the firewall with no openings in the firewall and inside the roll cage.

2. Intercoolers located between the throttle body and engine may not be relocated. 3. Air to water type intercooler systems may utilize an aftermarket heat exchanger which can be located anywhere behind the firewall with no openings in the firewall and inside the roll cage.

4. The intercooler system must remain the same style as the OEM for that vehicle (ie air to air or air to water) except air-water intercooled models which may remove the air-water intercooler and replace it with an air-air intercooler.

### **GR-23 Exhaust**

A. SR1 & Unlimited: Exhaust systems must be a minimum of 6 inches away from fuel lines and 18 inches away from fuel filler. Muffler must meet a maximum decibel of 100 as measured 50 feet from track side.

B. Production Turbo, Production 1000: Aftermarket exhaust is allowed. Titanium exhaust is allowed but must be approved. Must have functioning approved muffler.

C. RZR 570 & RZR 170: Aftermarket exhaust is allowed. Titanium is not allowed. Must have a functioning approved muffler.

### **GR-24 Starter**

A. All vehicles must be self-starting by use of an onboard electric starter.

### **GR-25 Engine Replacement**

A. All Production 1000 and Production Turbo vehicles must have 2 head bolts, studs, or nuts drilled with a .125" hole so that the engine can be sealed by officials with a cable tag. Cable tags may only be removed by series officials.

B. Engines may be replaced during an event only if competitor has the approval of officials. If an engine change is made, the removed engine must be brought to tech before being allowed to re-enter competition with the replacement engine.

C. Engine change may result in a starting position change.

### **GR-26 Fuel Cells**

A. All fuel cells must be approved.

B. Officials will reject any previously approved fuel cell, which appears to be defective, damaged, or not in proper condition.

C. No pressure systems will be allowed. Any concealed or not concealed pressure type containers, feed lines or actuating mechanisms will not be permitted, even if inoperable. D. Icing, Freon type chemicals, or refrigerants may not be used in or near the fuel system.

D. The use of a commercially manufactured fuel cell is mandatory. Aluminum cans with foam inside are not allowed.

E. Safety fuel cells shall consist of a bladder enclosed in a smooth skinned container. The container shall be constructed of 20-gauge steel, 0.060-inch aluminum or 0.125-inch Marlex. Rotary molded polymer cells are acceptable.

F. No material other than standard foam as provided by the fuel cell manufacturer is permitted. H. Fuel cell must have a chassis or body cross member of substance between the fuel cell and driver and be protected from ground obstacles.

G. Fuel cells must be dated from manufacturer. Fuel cells will become obsolete five years after date of manufacture and must be replaced.

H. All fuel cell fillers and vents must have check valves installed.

I. Fuel filler lines and positive-locking non-vented fuel filler caps must be located and secured in such a manner as to prevent them from being knocked off or opened during movement, rollover, or impact.

J. A splash shield must be in place to direct any spill away from the driver, motor, and motor exhaust. A body panel is considered a sufficient splash shield.

K. Fuel cell cannot be vented into the driver's compartment of any vehicle. N. All mountings must be approved. Fuel cell must be mounted to chassis and cannot be mounted on skid plate.

L. Any fuel cell mounted in the passenger compartment area must be fully enclosed with sheet metal or aluminum. Fuel cells must be mounted behind the rear firewall unless otherwise specified below.

M. An 8 inch by 8 inch fire access door is required on top of the fuel cell cover. This door must be painted red and labeled FIRE DOOR.

O. Any battery or electrical components mounted in the passenger compartment with the fuel cell must be separated by sheet metal or aluminum.

P. Aftermarket fuel pump and regulator are allowed.

Q. Production Turbo, Production 1000, RZR 570 & RZR 170: Stock fuel tank is allowed in stock location. Tank, lines and fuel filler may not be modified in any way. Aftermarket fuel cells must mount in the OEM location and be covered by a .063" aluminum firewall. All fuel cells and gas tanks are required to have a .125" thick aluminum panel bolted to the chassis on the passenger door side of the tank to protect it from a side impact (except for RZR 170 vehicles). Panel must be larger than the outer dimensions of the tank as viewed from the side.

#### Fuel Vent Routing

All fuel cell vents and lines must come out of the top of the fuel cell as pictured. 15

## **GR- 27 Fuel**

- A. Fuel shall be automotive gasoline only.
- B. Gasoline shall not be blended with alcohols, ethers, or other oxygenates, and it shall not be blended with aniline or its derivatives, nitrous compounds, or their nitrogen containing compounds.
- C. Cooling of any type of fuel is not permitted during competition.
- D. In the event an “official fuel” is named, officials will sample the actual fuel provided at the track by the fuel supplier and that sample will become the benchmark from which all competitors samples will be judged.
- E. The series has the right to sample a competitor’s fuel at any time. All samples will be impounded for observation and/or testing by officials or outside laboratories at series discretion.
- F. No nitrous oxide.
- G. If officials suspect maskers in the fuel, chemical testing will be conducted at possible expense to the competitor.
- H. Penalties for use of hazardous chemicals will be severe including fine, and/or reduction of points, disqualification and/or suspension.
- J. RZR 570 & RZR 170: Pump gas with a maximum of 91 octane must be used. Race fuel is not allowed. Each competitor must indicate which fuel (source) they will be using on the tech sheet and will be required to use that fuel for the entire weekend.

## **GR-28 Transmission**

- A. Unlimited, Production Turbo, Production 1000 & RZR 570:
  - 1. Every vehicle must use the stock transmission and clutch design.
  - 2. The stock front and rear differential for model must be used.
  - 3. All vehicles must have a functional high, low, and reverse gear.
  - 4. Aftermarket axles and c/v joints are allowed.
  - 5. Stock transmission and differential gear ratios and gears only. No GYTR internal parts are allowed. With prior series approval, vehicles may update/backdate gear ratios within their make/model if parts used are OEM and do not require any modification to any other parts for installation.
  - 6. Aftermarket armature plate, sprague and roll pin are allowed in Polaris RZR 1000, RS1 and Polaris Turbo vehicles only.
  - 7. No aftermarket parts are allowed on or in the transmission. No modification of stock parts is allowed. This includes polishing, coating, shot peening, heat treating, or other modification that can be visually identified. Heat treating, cryogenic freezing, polishing, lapping coating or any other modification not specifically allowed are to be considered NOT allowed.
- B. RZR 170: Wider rear axle is allowed.

1. Gearing is open.

2. Side cover added bearing and shaft gear fix is allowed. No other modifications or 16

coatings are allowed. Heat treating, cryogenic freezing, polishing, lapping coating or any other modification not specifically allowed are to be considered NOT allowed. No modification of stock parts is allowed. This includes polishing, coating, shot peening, heat treating, or other modification that can be visually identified. The

only exception to this rule is Polaris final ring gear #0454555 and Polaris output shaft gear #0454558. These 2 parts are open to modification and/or replacement with aftermarket parts.

3. Aftermarket transmission mount and brace are allowed.

C. SR1: Must use stock transmission as delivered from manufacturer. Vehicle must use direct chain drive.

### **GR-29 Clutch**

A. SR1:

1. Must use stock clutch design as delivered from manufacturer.

2. Aftermarket clutch plates and springs will be allowed.

3. Must utilize either a clutch pedal mounted on floor or mounted on shifter, as well as a stick shift style shifter.

4. Electric paddle shifters and automatic clutch systems are not allowed.

B. Production Turbo, Production 1000 & RZR 570:

1. Must use stock clutch and design as delivered from manufacturer.

2. No billet or aftermarket clutches.

3. Clutches and clutch components may not be modified in any way. All clutch components used must be run as manufactured (OEM or approved aftermarket). 4. On CVT clutch vehicles approved aftermarket springs, weights and helix are allowed. Any aftermarket springs, weight and helix must be available in sufficient quantities to supply all racers at pricing near OEM, or they will not be allowed. All springs, weights, and helix must be series approved.

5. Yamaha YXZ1000R vehicles can replace the OEM diaphragm style clutch pressure plate with a series approved coil spring pressure plate.

6. Factory paddle shifters as delivered from factory are allowed. No retrofitting to other years, makes or models.

7. Quick release fasteners on the clutch cover, cooling holes in the cover and removal of the outer clutch dirt cover are allowed on all vehicles with a CVT clutch.

8. RZR 570 vehicles may use Polaris, Team or Venom brand RZR 570 or RZR 900 clutches.

C. RZR 170:

1. Stock clutch, aftermarket Dr. Pulley, Polini, Malossi and NCY clutches are allowed.
2. Must use clutch and design as delivered from manufacturer.
3. Clutches may not be modified in any way.
4. Approved aftermarket springs, weights and helix are allowed. All springs, weights, and helix must be series approved.
5. Heat treating, cryogenic freezing, polishing, lapping coating or any other modification not specifically allowed are to be considered NOT allowed. No modification of stock parts are allowed. This includes polishing, coating, shot peening, heat treating, or other modification that can be visually identified.

**GR-30 Wheels & Tires**

- A. Production Turbo, Production 1000, Unlimited & RZR 570: Maximum tire size is 30 inches outside diameter.
- B. SR1: Maximum tire size is 26 inches outside diameter. Off road/UTV specific tires that are publicly marketed and advertised by the manufacturer as a tire created specifically for an ATV/UTV only. No race specific or specialty tires are allowed. A 6-ply minimum sidewall is required. Tires are subject to series approval.
- C. No more than 1 tire per corner is permitted.
- D. Tires will be visually checked and must be considered reasonably safe by officials prior to competing.
- E. All bead locks must have recessed bolts only that do not protrude past the face of the ring. Button head bolts may be used if bead lock bolt area cannot be recessed.

**GR-31 Fasteners**

- A. All components on the vehicle's suspension system, chassis, and running gear must be secured with S.A.E. Grade 8 or better nuts and bolts.
- B. Bolts must be secured with either lock nuts, lock washers, cotter pins, or safety wire and have at least one full thread showing through the nut.

**GR-32 Hoses**

- A. All fuel and brake line hoses including metal lines and fittings must be clamped and/or safety wired.
- B. With written approval, cooling, fuel, lubrication and hydraulic lines may be upgraded or replaced with AN hose of sufficient strength for the application.

**GR-33 Mirrors**

- A. Rear view mirror with at least 6 square inches of mirror surface and a reasonably unobstructed view of area behind vehicle is recommended on all vehicles.

**GR-34 Exotic Materials**

A. No titanium or any other exotic materials or fasteners may be used anywhere in the vehicle except for the exhaust as specified herein.

**GR-35 Transponders/Timing**

A. Remote score timing devices will not be permitted by teams, owners, or anyone associated with an entry, unless approved.

**B. For 2021, All teams will be provided remote timing transponders.**

C. Drivers are responsible for installation of all transponders. Any entry without a properly installed, functioning transponder may not be scored and may be subject to further penalty.