



ASCC DESERT LIMITED BUGGY 1/2 - 1600 CLASS RULES

A Desert Buggy is an open wheel – restricted 1600CC single and two-seat buggy limited to 1600CC VW engine and VW type 1 suspension system.

1. Roof:

- a) Roof must have a positive latch no Velcro.
- b) Roof must be properly attached at all times during the event

2. Wheels and Tires:

- a) Any tire and wheel are allowed that will mount directly on VW drums
- b) No wheel adapters allowed

3. Front Suspension:

- a) Front suspension is based on VW type 1 ball joint or king and link pin style.
- b) Any beam of two steel torsion tubes may be used but must retain stock width.
- c) Front axle torsion tube centers may be cut, rotated and rewelded to increase ground clearance.
- d) Uses of torsion adjusters are optional.
- e) Tube center spacing is open .
- f) Any manufactures' s torsion bars are allowed.
- g) Front trailing arms may be reinforced or replaced as long as stock VW width and length are retained.
- h) Suspension limiters are allowed
- i) Spindles, link pins, ball joints, and shock mounting locations are open.
- j) Front suspension track width will be measured from wheel mounting face to wheel mounting face.
- k) The maximum width is 55.75 inches.

4. Rear Suspension:

- a) Rear suspension is based on VW type 1 IRS or swing axle
- b) Rear trailing arms may be of any manufacturer
- c) Tubular arms are allowed as long as stock VW IRS swing arm length is retained plus or minus 1 inch
- d) The stock VW dimension between the center line of the rear axle to the center line of the rear torsion housing is 16.250" plus or minus 1 inch must be retained.
- e) Outboard bus reduction gears are allowed
- f) Any axel assemblies are allowed as long as original VW type suspension is retained. This includes the use of "micro stub hubs"



- g) Rear torsion tubes may be supported or replaced but must remain steel and retain stock VW width
 - h) Torsion adjusters are allowed
 - i) A single torsion per wheel of any manufacturer is allowed.
 - j) Torsion bars must remain inside the torsion housing.
 - k) Torsion bars must be connected to the trailing arm with steel spring plates of any manufacturer
 - l) Rear suspension track width must not exceed a maximum of 58.25" as measured from wheel mounting face to wheel mounting face.
 - m) Cv joint mounting face to Cv joint mounting face must not exceed 47.375" as measured at ride height.
 - n) The entire outer Cv must remain inboard of the trailing arm inner bearing.
5. **Secondary Suspension:**
- a) No secondary suspension allowed
6. **Steering:** Steering system open. Any tie rod and tie rod end allowed.
7. **Shock absorber and Bump Stops:**
- a) No limit on the number of shocks and the sizes of shocks
 - b) Cooling fins allowed
 - c) No air or coilover shocks allowed
8. **Brakes:** Any type of brake may be used as long as all other rules are adhered to.
9. **Weight:** Weight shall be considered dry weight for long course and wet weight for short course (dry weight is with all fuel tanks drained) Tools, spare tires and parts must be removed. But otherwise weight shown on official scales:
- a) Single seat = 1550 lbs
 - b) Double seat = 1550 lbs
10. **Engine:** Engine must utilize VW series type 1, 1600cc, U.S. model sedan components and dimensions. The maximum allowable engine displacement is 1600cc as delivered from the factory.



11. **Engine Case:** Any VW type 1,2,3, or “universal” case is allowed. The following modifications may be made to the stock case.

- a) The case may be lined bored
- b) The case may be drilled and tapped for oil and temp sending units
- c) The case may be machined for crank pulley seal
- d) Case savers may be installed
- e) Cylinder seating surface may be machined
- f) Oil galleries may be enlarged to 10mm
- g) Threaded oil gallery plugs allowed.

12. **Crankshaft:**

- a) Crankshaft must be stock VW
- b) Crankshaft may be balanced
- c) Maximum journal size is limited to .030” undersize.
- d) No polishing or lightening
- e) Any gear is allowed
- f) Any engine bearing is allowed as long as stock dimensions are maintained
- g) Pulley may be balanced
- h) Sand seals ok.
- i) Any VW flywheel may be lightened and balanced
- j) No aluminum flywheel.
- k) Any clutch disk and pressure plate but must retain stock VW diameter

13. **Camshaft, Lifters, Valves, Rocker Arms.**

- a) Any camshaft, gear, valve springs, valve spring retainers, lifters are allowed
- b) Valve spring seat diameter in head must remain stock
- c) Valves must be stock 45 degrees.
- d) One piece valve ok.
- e) Valve guide may be steel, bronze, or cast iron
- f) No grinding or polishing in the port including valve guide
- g) Must use stock 1600 rocker arms
- h) The rocker arms may be resurfaced to permit the use of swivel feet
- i) No other grinding or changes may be made to the rocker arms.
- j) No roller or needle bearings will be allowed as part of the camshaft or as an interface between the rocker arms and the camshaft
- k) Any push rods and push rod tubes
- l) Any valve adjustment screws
- m) Valve covers may be of any manufacturer



14. Fan Shroud:

- a) After market fan shrouds are allowed

15. Carburetors:

- a) Stock VW carburetor 30 pict 1,2,3, or the solex h-30-pic replacement must be used
- b) Maximum venturi size is 24.10mm.
- c) Velocity stacks may be used as long as they are not bonded to the carburetor.
- d) No internal modifications are allowed. This includes no removing of parts, no grinding, polishing, or filing.
- e) Intake manifolds must be stock.
- f) No chemical milling of manifold or carburetor
- g) Choke housing may be removed.
- h) The stock float bowl vent may be plugged and relocated
- i) Any air and main jet may be used.

16. Heads:

- a) Heads must be U.S. sedan stock single port or dual port or their equivalent. Only dual port heads with the following numbers will be allowed.
- b) 040101375 2, 040101375 13, 0401013375 19 or stock OEM heads will be allowed.
- c) Heads may be fly cut for clean up.
- d) No porting or polishing.
- e) Stock intake 34mm original equipment center section or its replacement.
- f) A 1"x 1.5" long by 1/2 inch tube may be welded 2" below the carb flange.
- g) A minimum of material may be removed from the end of the tube for clearance.
- h) A 1 5/8" X 2" long slip tube may be welded to the end of the runners for use of better hose connection.
- i) End castings must be original equipment VW, with the VW logo and part numbers.
- j) Blance slot may be welded closed.
- k) Vacuum hole may be plugged.
- l) A 34mm to 30mm carb adapter must be used

17. Oil/pump system:

- a) Any oil pump is allowed.
- b) No deep sumps, dry sumps, or sump alterations.
- c) Windage trays allowed.
- d) Any oil bypass piston and spring allowed



18. Fuel Pump:

- a) Any combination of stock fuel pump or electric pump may be used.
- b) Any fuel filter and pressure regulator may be used

19. Fuel Cells:

- a) Fuel cells are mandatory
- b) All fuel cells must be securely mounted
- c) Filled from and vented to the outside of the vehicle
- d) No G.I. cans are allowed
- e) Safety fuel cell shall consist of a bladder enclosed in a smooth skinned container
- f) All fittings shall be built into the skin of the cell and bonded as an integral part of the tank
- g) The bladder shall be fully enclosed in a smooth skinned casing
- h) The container shall be made of 20 ga. Still, .060 aluminum or .125 marlex

20. Fuel Lines, Vents and Caps:

- a) Fuel filler lines and caps must be mounted in a location where they cannot be knocked open or off during a race
- b) Fuel breather must have a check valve
- c) All fuel fillers must be surrounded at the outer extremity with a splash shield
- d) A body panel is acceptable as a splash shield
- e) All fuel lines must have hose clamps

21. Fuel: Any of the following commercially available gasoline, LPG, or diesel fuels may be used:

- a) Service station type pump fuel
- b) Racing gasoline as manufactured
- c) Commercial aviation gas
- d) Natural or propane gas
- e) No alcohol or nitro methane is allowed.
- f) Fuel additives may be used

22. Pistons:

- a) Pistons must be stock 3 ring only
- b) Any piston and cyl as long as original stock dimensions are maintained.
- c) Any type wrist pin keepers
- d) Piston assemblies may be balanced to the weight in grams of the lightest original non balanced piston



23. Connecting Rods:

- a) Any VW aftermarket connecting rod is allowed as long as the rods are stock VW length (5.393) and stock weight with a 500 gram minimum with one (1) Rod untouched.
- b) No Polishing or profiling of rods

24. Electrical System:

- a) Battery ignition only, no magnetos.
- b) Six or twelve volt systems may be used
- c) Any distributor may be used
- d) Any VW type alternator or generator in the stock location may be used

25. **Exhaust:** must have a forestry approved spark arrestor

26. Restrictor Plate:

Single seat restrictor plates are 21.5mm
Two Seat restrictor plates are 24.0mm

27. Throttles:

- a) Each vehicle must have a foot throttle with two return springs attached to the carburetor throttle arm
- b) A stop or over ride system must be used to keep linkage from passing over center and sticking in an open position

28. Fluid Coolers:

- a) Any oil cooler allowed with the location optional
- b) Full flow systems are allowed
- c) No deep sumps or dry sumps will be allowed

29. Transmission:

- a) Must be stock VW type 1 or 2 transaxle housing with internal modifications only
- b) No more than four (4) forward speeds are allowed.
- c) Any internal modifications allowed
- d) Any gear ratio combinations allowed but only VW type gears (helical cut gears) may be used.
- e) After market side cover ok

30. **Wheel base** is open



31. Roll Cage Design:

- a) Minimum design and tubing size based on seamless mild steel or 4130 chromoly for roll cage structures are as follows for up to 2000 lbs: 1.5" x .095" CDN/4130/seamless or ASTM
- b) All roll cages must be constructed with one front hoop, one rear hoop, two interconnecting topbars, two rear down braces and one diagonal brace and necessary gussets.
- c) Single seat open wheel vehicles must have a diagonal brace

32. Roll Cage Construction Procedures:

- a) Cages must be securely mounted to the body or frame, braced and gusseted at all connections.
- b) Body or cab mounted cages must not be attached by direct welding but must be attached by and bolted through the use of doubler plates on each side with a min. thickness of .187".
- c) Bolts that are used shall be at least .375" dia. SAE Grade 8 or equivalent.
- d) Ends must be located to a body or frame supporting maximum impact.
- e) Minimum material dimensions apply to the following:
 - 1. Rear and front hoop
 - 2. Rear and front interconnection bars
 - 3. Rear down braces
 - 4. Lateral bracing and diagonals must be the same size tubing as the roll cage
 - 5. Elbow and door bars
 - 6. Lower A- and B-pillar tubes
- d) Any vehicle that is not provided with stock steel doors for its driver and co-driver must be equipped with side bars at least one on each side.