

#300 to #399 MORR 1600 Single Buggy Technical Specifications

DEFINITION

- A limited four-wheeled vehicle, using a Volkswagen Type 1, 1600cc air-cooled engine.
- **Note:** In an effort to unify the rules in this class, either single or dual port heads may be used. Dual port engines will be using a 21.5mm restrictor plate and an EMPI 981293B adapter plate. Single port engines will use the following rules, but will not use a restrictor plate.
- **Technical specifications for this class supersedes CCR.**

CHASSIS

- Minimum wheelbase is 95".
- Maximum front track width, from wheel mounting surface to wheel mounting surface, at ride height, will be 56" \pm 1/2". This measurement will be taken at the widest point between the outer wheel mounting surfaces of the two hubs, while at ride height. The \pm 1/2" tolerance of this measurement is to allow for slight inconsistencies in manufactured hubs from various brands.

FRONT SUSPENSION

- Type 1 Volkswagen suspensions only are allowed.
- **Stock beam width of 34-3/16" maximum.**
- Custom manufactured parts are allowed as long as stock dimensions and measurements are maintained.
- Reinforcement of stock components is allowed.
- Front axle torsion tubes may be cut, rotated, and re-welded.
- Torsion adjusters may be installed.
- Any ball joints or kingpins are allowed.
- Any manufacturer tie rods and tie rod ends are allowed.
- Shock towers may be strengthened, replaced, or extended.
- Trailing arms can be reinforced or replaced with aftermarket arms. Stock dimensions must be maintained.
- Lower shock mounting studs may be relocated and/or enlarged.
- Spindles may be reinforced or replaced.
- Any manufacturer torsion bars allowed.
- Sway bars may be removed.
- A lay-down front shock configuration is allowed.
- Secondary suspension of any type is not allowed.
- Aluminum front axle beams are not allowed.

REAR SUSPENSION

- Volkswagen Type 1 IRS or swing axle only.
- The rear track width with drum brakes must not exceed 51" from backing plate flange to backing plate flange, while at ride height. If disk brakes are used, track width will not exceed 58.75". This measurement will be taken at the widest point between the outer wheel mounting surfaces of the two hubs, while at ride height.
- Strengthening or replacement of the IRS swing arms is allowed as long as stock dimensions are retained \pm 1". The stock dimensions from the centerline of the rear torsion housing to the center of the rear stub axle are 16.25", \pm 1". The maximum measurement will be 17.25".
- Torsion adjusters are allowed.
- ~~Out board Bus/Type 2 reduction gears are allowed.~~
- Any manufacturer rear torsion bars, axles, spring plates, and additional retainer straps are allowed as long as original type suspension is retained.
- The rear torsion tube may be strengthened or replaced, but must retain the stock maximum width of 40.5".

- Trailing arm brackets must be 13.50" ±1", measured from the inside of the spring/flex plate to the inner most flange of the trailing arm pivot point.
- Secondary suspensions of any type are not allowed.

SHOCKS & SPRINGS

- Any size or number of shocks are allowed.
- Cooling fins are allowed.
- Air or coil over shocks are not allowed.

BRAKES

- Any manufacturer drum or disk brakes are allowed.
- Inboard brakes are not allowed.

WEIGHT

- Minimum weight with driver is 1,580 pounds.
- Ballast is allowed with 3/8" minimum bolts to secure ballast to the frame.

BODY

- A roof is required. Roof must be made of .075" Aluminum or 16 gauge (.063") steel sheeting.
- Opening in the roof must have a heavy-duty hinge with a secure latching system.
- Positive latching system must be Sportsman Series approved.

ENGINE

- Stock Volkswagen Type 1, 1600cc only (US specifications, as received from the factory).
- Maximum engine displacement will be 1600cc.
- Maximum bore allowed is 85.5mm.
- Maximum stroke allowed is 2.7465".
- Polishing, knifing, and/or lighting counterweights is not allowed.
- Titanium, composite, or exotic parts or materials inside the engine are not allowed.

CASE

- Any Type 1, 2, 3, or universal case is allowed.
- Align boring is allowed.
- Drilling and/or tapping for oil pressure and/or temperature sending unit is allowed.
- Machining for push-in crank pulley seal is allowed.
- Case savers are allowed.
- Seating surfaces for cylinders may be machined.
- Oil galleries on the early cases may be enlarged to 10mm, the same as a universal case.
- All oil gallery plugs may be removed and treaded.
- Any oil bypass pistons and springs may be used.
- Oil sump windage trays are allowed.
- Internal deburring is allowed.

FLYWHEEL/CLUTCH/PRESSURE PLATE

- Only a stock diameter Volkswagen Type 1 design flywheel with four or eight dowels may be used.
- Lightening and balancing of flywheel is allowed.
- Any gland nut and washer may be used on the flywheel.
- Any stock diameter clutch and pressure plate may be used.
- Clutches may be balanced.

- An aluminum flywheel is not allowed.

CRANKSHAFT

- Stock Volkswagen Type 1, 1600cc only.
- Any gears are allowed.
- Any size power pulley is allowed.
- Sand seals are allowed.
- May be undersized up to 0.030”.
- Balancing is allowed.
- Any brand bearings are allowed as long as stock dimensions are maintained.

CONNECTING RODS

- Connecting rods must be Volkswagen #311 "B" rods only.
- 5.394” length plus or minus .010” measured C/L to C/L.
- Balancing of rods is allowed. When balancing rods, one small end and one large end must be left untouched.
- Bolts rather than the pressed studs and nuts will identify Volkswagen “A” rods.
- Polishing and profiling is not allowed.

OILING SYSTEMS

- Any manufacturer wet sump oil pump is allowed.
- Oil coolers may be used and must be mounted in a safe location.
- Deep and/or dry sumps are not allowed.
- Any sump alterations or modifications are not allowed.

PISTONS

- Any manufacturer flat top pistons are allowed, but stock dimensions must be retained. 85.5mm three ring pistons only.
- Wrist pin retainer may be of any style.
- Balancing of rods and pistons allowed.
- Minimum piston weight is 310 grams.
- Cylinders may be machined for proper deck height.
- Piston skirts may be drilled. (3) 0.125” diameter holes allowed per side, for a total of 6 holes.
- Slipper skirts, dished, or domed pistons are not allowed.
- Machined notching for valves is not allowed.
- Cutting of the piston top at an angle other than 90 degrees is not allowed.

CAMSHAFT AND CAMSHAFT GEAR

- Any manufacturer is allowed.

CYLINDER HEADS

- Must be U.S. sedan stock single port design.
- Fly cutting for compression is allowed.
- Combustion chamber volume is open.
- Only three angle valve seats (15-45-75 degrees).
- Welding for repairs only is allowed.
- Grinding, polishing, or porting in any area of the head is not allowed.
- Back cutting of the valves is not allowed.
- Angle cutting of the head is not allowed.
- Machining cylinder head for valve spring clearance is not allowed.

VALVES

- One-piece valve of any manufacturer are allowed. Stock sizes must be maintained. Intake: 35.5mm. Exhaust 32.0mm.
- Swirl polished stainless steel valves are allowed.
- Only one 45 degree angle is allowed.
- Valve guides may be bronze, cast iron or steel, of any manufacturer and length.
- Valve guide seals are allowed.
- Any manufacturer of valve springs, spring retainers and lifters are allowed.
- Stock valve spring seat diameter in the head, inner and outer, must be maintained.
- Grinding, polishing, blending, or porting of any kind is not allowed.
- Back cutting of the valves is not allowed.
- Titanium (or other exotic material) valves are not allowed.

ROCKER SHAFTS & ARMS

- Any shaft that permits the use of stock Volkswagen Type 1, 1600cc 1.1:1 rocker arms is allowed.
- Stock Volkswagen Type 1, 1600cc rocker arms only.
- Resurfacing of rocker arms to accept swivel adjusters is allowed.
- Any manufacturer push rods and tubes are allowed.
- Any manufacturer valve covers and gaskets are allowed.
- Any other modifications are not allowed.
- Needle or roller bearings are not allowed.

INTAKE MANIFOLD

- Stock single port only.
- Spacer (carburetor to intake) no more than 3/8" thick with a straight bore the same diameter as the carburetor.
- Heater tubes may be removed.
- Manifold may be shortened but not welded back together. Hose and clamps must be used to secured the manifold back together and allow inspection.
- Any other modification is not allowed.
- Chemical milling is not allowed.

CARBURETOR

- Stock Volkswagen 30 PIC 1, 2, or 3 only.
- Solex H-30-PIC.
- EMPI 30 PICT-1 Stock Replacement Carburetor (P/N: 98-1288-B) is allowed.
- Maximum venturi size is 24.10mm.
- Removing automatic choke housing, choke plate, and shaft is allowed.
- Stock float bowl vent may be removed and plugged. An external float bowl vent is allowed.
- Any fuel pump, stock or electrical, is allowed.
- Any fuel pressure regulator may be used.
- Any manufacturer air/fuel filter in any location is allowed.
- Velocity stacks are allowed.
- Brosol PIC carburetor is allowed. Brosol logo must be on carburetor body. No modifications to throttle shaft, throttle plate, or venturi.
- Carburetor listed as PIC 30 is not allowed.
- Bonding or welding of velocity stack to the carburetor is not allowed.
- Internal modifications, including polishing, filing, or chemical milling are not allowed.
- Removal of any parts from the throat area is not allowed.

FAN SHROUD

- Any manufacturer stock style fan shroud is allowed.

EXHAUST HEADERS

- Unrestricted.

MUFFLERS

- Unrestricted.

IGNITION SYSTEMS

- A distributor must be used to send current to the spark plugs.
- Only one distributor is allowed.
- Battery ignition of 6 or 12 volts is allowed.
- Stock or direct replacement coil only.
- Any manufacturer distributor is allowed.
- Magnetic pickups that directly replace the points are allowed.
- Any Volkswagen alternator or generator is allowed and must be mounted in the stock location.
- Alternator and cooling fan must use the Type 1 design and the charging system must be operational.
- Magneto, multiple coil, and direct fire ignition systems are not allowed.

TRANSMISSION

- Stock Volkswagen Type 1 or 2 transaxle housing with only four forward gears.
- Any gear combinations are allowed using only Volkswagen style gears.
- Internal modifications are allowed.
- Gears other than Volkswagen style are not allowed.

WHEELS AND TIRES

- Tires must be D.O.T. approved as stated in the Combined Class Rules.
- Wheels that mount directly to Volkswagen drum allowed.

MUD FLAPS

- All buggy classes are exempt from using mud flaps.