

## **Class 11 / STOCK BUG** (Updated February 2023)

### **OPEN WHEEL – STOCK VW SEDANS**

**MUST BE A STOCK VW SEDAN AS DELIVERED IN THE U.S.A.**

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#### **COMPETITION REGULATIONS**

Any questions concerning chassis combinations will be decided by referring to VW factory parts manuals and /or VW of America booklet. This is a stock production class and all components must remain stock except for those modifications allowed herein.

#### **SUSPENSION COMPONENTS**

##### **FRONT SUSPENSION**

Front axle torsion tube centers may be cut, rotated, rewelded to increase ground clearance or front adjusters may be used. Original seams may be welded on the front beam. A single tube may be welded from one shock tower to the other shock tower as a reinforcement member. Half tubes or plating may be used to reinforce beam tubes. Stock front spindles and trailing arms must be used no additional material may be used. Sway bars may be removed. Filling of speedometer hole is permitted. Steering arm on spindle may be reinforced by welding a .25 gusset from the top of the spindle to the end of the steering arm. Suspension limiters allowed.

##### **REAR SUSPENSION**

Rear suspension torsion bars may be of any origin. Rear suspension spring plates may be of any origin and may be notched for down travel. Aftermarket caps allowed. Torsion bar adjusters are allowed. Rear torsion bars may be additionally supported only by the attachment of a terminal end (support member) of the roll cage. Rear shock tower may be removed to body mounting bolt hole. Lower rear shock mounts may be removed or replaced, but must bolt directly to rear trailing arm or swing axle. No remote mounted shocks. Rear trailing arms must remain stock, shape, size and configuration, but may be reinforced by adding material.

##### **Shock Absorbers and Bump Stops**

Only one shock per wheel is allowed. Stock front shock mounts must be utilized. Shock mounting bolts may be changed to a maximum of 1/2 in diameter. Any manufacture shock allowed with 2.0" maximum outside diameter. Rear shock must not have an extended length longer than 18", center of mounting hole to center of mounting hole. Cooling fins and/or reservoirs allowed. No air shocks or coil over shocks allowed. No hydraulic bump stops allowed. No bypass shocks allowed.

##### **Secondary Suspension**

No secondary suspension allowed.

##### **Wheels and Tires**

Any steel 4" x 15" or 4.5" x 15" wheel that bolts on a stock VW brake drum may be used. Aluminum non-beadlock wheels that are manufactured as OEM replacement are allowed. Must resemble a VW factory style wheel and be able to mount a factory VW hub cap

(Example: Mobelwagen 430 or 520 series wheels). Wheel studs allowed. Any manufacturers tire and size allowed up to 31" tall and 10" wide as mounted and inflated on a 4" wide rim with 18 lbs of air.

## **STEERING AND BRAKE COMPONENTS**

### **Steering**

Any manufacturer's steering wheel may be used. Any steering shaft allowed. Pillow blocks allowed. Quick coupler is allowed. Steering box must be stock but shims may be used between pitman arm and box. Steering components such as ball joints, steering arms, and tie rods must remain stock.

### **Brakes**

Original VW type 1 drum brakes only on all wheels. Front and rear drums may not be interchanged. Any combination of brake linings allowed as long as stock dimensions are maintained. Any combination of VW master and wheel cylinders are allowed. Emergency brake is optional but if removed the opening must be covered. Aluminum center drums allowed. Steel spline center is allowed with the aluminum hub that attaches to a vw drum.

## **ELECTRICAL SYSTEM**

### **Ignition**

Battery ignition only, no magnetos. Six or twelve volt systems may be used regardless of year model. Any manufacturer's distributor may be used. Any VW type alternator or generator system in the stock location may be used.

### **Batteries**

Battery must be relocated. If in the drivers compartment it must be covered or sealed to prevent acid from leaking in case of roll over.

### **Lights**

Additional lighting is permitted. Headlights are optional.

### **Fuel Tanks**

Safety fuel cells are required and may be mounted any where and have any capacity. Any type of fuel shut off valve allowed. Electric fuel pump may be used. Stock fuel pump can be deleted.

### **Fuel Lines, Vents, Caps**

Fuel fillers may penetrate and extend through hood but must have a drain/catch boot in case of spillage in front compartment. Fuel cell filler may be located in center of tank and have a maximum of a 2.25" internal diameter neck.

## **ENGINE, TRANSMISSION AND DRIVELINE**

### **Engine and Engine Displacement**

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

## **ENGINE CASE**

Any VW type 1, 2, 3 or "universal" case is allowed. The following modifications may be made to the stock case:

- The case may be line bored
- The case may be drilled and tapped for oil and temp sending units
- The case may be machined for crank pulley seal
- Case savers may be installed
- Cylinder seating surface may be machined
- Oil galleries may be enlarged to 10mm
- Threaded oil gallery plugs allowed
- Oil squirters ok
- Case may be full flowed

## **OIL PUMP**

Any oil pump is allowed. No deep sumps, dry sumps, or sump alterations. Windage trays allowed. Any oil bypass piston and spring allowed. No accusump systems allowed.

## **FUEL PUMP**

Stock fuel pump must be used. Electric fuel pump may be used but must be used as a backup and routed thru the stock system. Any fuel filter and pressure regulators may be used.

## **PISTONS**

Pistons must be stock 3 ring only. Any piston and cyl as long as original stock dimensions are maintained. Any type wrist pin keepers. Piston assemblies may be balanced to the weight in grams of the lightest original non balanced piston, wrist pin, ect. Total seal rings are ok.

## **CONNECTING RODS**

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. No polishing or profiling of rods.

## **CRANKSHAFT**

Crankshaft must be stock VW. Crankshaft may be balanced. Maximum journal size is limited to .030" undersize. No polishing or lightening. No offset grinding allowed. Any gear is allowed. Any engine bearing is allowed as long as stock dimensions are maintained. Power pulleys are allowed. Pulley may be balanced. Sand seals ok. Any VW flywheel may be lightened and balanced. No aluminum flywheels. Any clutch disk and pressure plate but must retain stock VW diameter.

## **HEADS**

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. 040101375 2, 040101375 13, 040101375 19 or stock OEM heads will be allowed. Heads may be

fly cut for clean up. No porting or polishing. Stock intake 34mm original equipment center section or its replacement. A 1" by 1.5" long by 1/2 inch tube may be welded 2 inches below the carb flange. A minimum of material may be removed from the end of the tube for clearance. A 1 5/8 X 2" long slip tube may be welded to the end of the runners for use of better hose connection. End castings must be original equipment VW, with the VW logo and part numbers. Balance slot may be welded closed. Vacuum hole may be plugged. A 34mm to 30mm carb adapter must be used.

### **CAMSHAFT, LIFTERS, VALVES, ROCKER ARMS**

Any camshaft, gear, valve springs, valve spring retainers, and lifters are allowed. Valve guide may be steel, bronze, or cast iron. No grinding or polishing in the port. Any camshaft, gear, valve spring retainers, lifters are allowed. Beehive springs allowed, Valve spring seat diameter in head must remain stock. May use any valve but must be stock 45 degrees and stock dimensions and 8mm stem size. **no titanium valves allowed.** including valve guide must use stock VW 1600 rocker arms. The rocker arms may be resurfaced to permit the use of swivel feet. No other grinding or changes may be made to the rocker arms. No roller or needle bearings will be allowed as part of the camshaft or as an interface between the rocker arms and the camshaft. Any push rods and push rod tubes. Any valve adj screws. Clips on rocker arms may be wire tied. Rocker assemblies may be subject to post race inspection.

### **FAN SHROUD**

Must use type 1 original or aftermarket fan shroud, heater tubes optional. No center mount or 911 shrouds.

### **CARBURETOR**

Air cleaner location is optional and may be of any manufacturer. Stock VW carb 30 pict 1, 2, 3 or the solex h-30-pic replacement must be used. Maximum venturi size is 24.10mm. Velocity stacks may be used as long as they are not bonded to the carburetor. No internal modifications are allowed. This includes no removing of parts, no grinding, polishing, or filing. Intake manifolds must be stock. The cutting of manifolds to compensate for head milling is allowed but rewelding will not be allowed. No chemical milling of manifold or carburetor. Choke housing may be removed. The stock float bowl vent may be plugged and relocated. Any air and main jet may be used

### **LOW COMPRESSION ENGINE OPTION**

1600cc maximum displacement and 8 to 1 compression ratio, must use same heads as high compression engine with same valve size and no porting at all. Stock VW end castings with VW part numbers must be used, no polishing allowed. An EMPI or WEBER 40 or 44 idf carb may be used and tube style intake manifold, No Plenum Manifolds allowed. Must use a maximum 26mm venturi This is a pump gas only engine option with a maximum of 91 octane.

### **Transmission**

Type 1 bug 4 speed transaxle only. Heavy duty side plate and differential allowed. 8.33 (4.12) ring and pinion only. **Stock VW 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup> gears only, no close ratio gears allowed. Stock ratio aftermarket gears allowed but only VW type gears (helical cut gears) may be used.** Axle over tubes are not allowed. Other internal modifications are optional (mid-mount plate allowed). Rear transaxle mounts may be supported by a maximum of two vertical straps of .025" x 1" dimension. Adjustable straps are optional. Any gearshift lever allowed. Shift tube must be inside tunnel. Any type 1, 2 or 181 stub axle and any **VW** cv joint. Oversize bolts ok.

### **Throttles**

Stock pedals with no other modifications are allowed.

### **Fluid Coolers**

Any manufacturer's oil cooler is allowed with the location optional. Full flow systems ok. No deep sumps or dry sump will be allowed. Late model housing approved.

## **GENERAL VEHICLE COMPONENTS**

### **Drivers Compartment**

Rear seat, upholstered panels, headliner and carpets may be removed. Dash may be covered with metal to install gauges.

### **Doors and Latches**

Doors must remain functional and in original stock location. Doors may have original hinges with workable latch. Secondary positive latching devices are mandatory.

### **Floorboards**

Serial numbers are required on floor pan. No alterations to floor pan are allowed. Original seams may be rewelded. Undercoating may be removed. 1965 and older belly pans may be interchanged. 1966 to 1968 belly pans may be interchanged. 1969 or later belly pans may be interchanged. All must maintain original suspension type.

### **Bumpers**

Original stock bumpers and over riders must be used. Stock VW bumper stiffeners are allowed. Brush guards may be added to stock bumpers.

### **Skid Plates**

Any type front and rear skid plate may be used. Front skid plate may be attached to front beam using 2 "u" bolts with a maximum width of 1.5" attached to the skid plate. Skid plate may be extended forward and upward to but not above the top of the front bumper.

### **Fenders**

Fender lips on the underside may be flattened to prevent cutting of tires. A rod of .025" maximum diameter may be welded under the outside edge for additional

strength.

### **Chassis and Body**

The vehicle must retain full chassis and body with no modifications allowed. Rear apron may be removable to aid in removing engine. But must retain stock external appearance. Body must be VW type one bug or sun roof bug. No convertibles, ghias, 181 things, variants or super beetles.

Running boards may be removed. Front and rear hood latches may be modified or replaced. Hinges must remain stock. Front rear and side glass optional. Chrome strips, outside mirrors, antennas may be removed. A hole no larger than 1 inch in diameter larger than the shock OD may be cut in the rear fender well to allow for the rear shock



