

# Street Stock 305 / 302 Engine Rules

**GEAR RULE** – The 305 / 302 engine package must use a numerical gear ratio of 3.23 in a GM 7.5" or a 3.25 in a Ford 9" rear end housing.

## **20F- 4 GENERAL ENGINE REQUIREMENTS-**

**OPTIONAL GM 305 OR FORD 302 ENGINES-** Engine must be Stock OEM cast iron production block, heads, intake, and exhaust manifolds. Approved Engines: GM 305 and FORD 302. Stock stroke must be maintained. Maximum overbore .030" from stock. No deflashing, abrasive cleaning, grinding, welding, Teflon coating or deburring of engine parts. Engine must be in stock location in the chassis. No block may have more than two (2) cylinder sleeves installed and the sleeves must be made of cast iron material. Stock type dowel pins must be used in all engines. The dowel pins must be the same diameter and length as stock OEM pins, with no offset allowed. Dowel pin holes may not exceed .315" dia. and must remain unaltered. Head bolts and holes must remain unaltered.

**20F- 5 DETAILED ENGINE REQUIREMENTS-** Block, crankshaft, connecting rods, pistons, heads, valves, valve springs, retainers, rocker arms, camshaft, timing chain, water pump and pulleys must be Stock OEM for year/make/model. A Stock OEM replacement harmonic balancer may be used. Solid one-piece type harmonic balancers are not permitted. The maximum compression ratio allowed is 11:1, as checked by the SMS "Whistler" tool.

## **20F- 5.5 PISTONS/RODS**

**A.** Only Stock OEM or Stock OEM Type, flat top, three (3) ring aluminum pistons with three (3) working stock thickness rings in place are permitted. Minimum ring thickness permitted is as follows:

Compression ring 1/16"

Oil ring assy. 3/16"

All three rings must be stock type of magnetic steel. Valve reliefs for valve clearance only may be cut into the pistons. All three rings must be of magnetic steel. No portion of piston may protrude above the top of the block.

**B.** Only Stock OEM magnetic steel piston pins maintaining Stock OEM diameter are permitted.

**C.** Piston pin holes must be in Stock OEM location in the piston and connecting rods.

**D.** Only two-piece insert style connecting rod bearings are permitted.

**E.** Only Stock OEM, or OEM replacements from Scat or Eagle, solid magnetic steel connecting rods are permitted. Only normal engine balancing and the use of after-market bolts and nuts are permitted. No deburring, deflashing, polishing, grinding or lightening. Billet connecting rods are not permitted. All rods must be Stock OEM length.

**F.** Minimum weight for piston, pin, rings, bearing, and rod assembly is 1185 grams.

**20F- 5.5.4 OIL PAN-** Stock for year, make, and model. Baffles may be installed. A one (1) inch inspection plug may be installed in the front of the pan, Moroso P/N MOR23970. This is to allow SMS Officials access to inspect connecting rods and crank shaft. This is optional but highly recommended.

**20F- 5.5.5 OIL PUMP-** Stock type oil pumps only. NO dry sumps, external oil pumps or tanks or accu-sump systems allowed. Only OEM type in the pan oil pumps. No pumps of any type may be used in the evacuation system.

**20F- 5.6 CYLINDER HEADS-** Chevrolet may use aftermarket "World Products S/R" (stock replacement) series heads, bare casting part #042650 and part #042650-1 or 042750-1, or a Stock OEM Cast iron cylinder head. Vortec heads are not permitted. Ford Cleveland must use Stock OEM cast iron 2 BBL heads only. Ford Windsor may use the cast iron "World Products Windsor Jr." cylinder head, bare casting part #053030 and casting part #053030-1 with 1.94" intake valve and 1.60" exhaust valve. Head studs are not allowed. All Chevrolet heads must be factory listed for 58CC's or greater. Heads may not be angled milled. The only

modifications allowed will be the installation of valve guide sleeves and milling of the gasket surfaces. Angle milling or changing the angle of the head gasket surface in relationship to the rest of the head is not permitted. Altering the position or angle of the valve guide is not permitted. The addition of screw-in studs, guide plates, valve spring seats optional valve seals, Poly-Locks or jam-nut devices are permitted. Machining of valve guide bosses for seals is permitted. Any cylinder head measuring less than the 56CC Stock OEM spec. may be deemed legal if a full thickness head gasket measuring a minimum of .025" at the time of inspection is present between the head and block. Head gasket surface milling tolerance for DARE Stock is 0.00" to 0.015" from true 23.00 degree of stock valve position. Any cylinder head measuring less than 54CCs is illegal. When heads are checked at the track you will be responsible for cleaning and carbon removal to make the minimum CCs. Coolant lines are not permitted on the any part of the head. All other head modifications are not permitted, including but not limited to: Porting, polishing, any grinding in ports or combustion chambers, chemical milling, welding, sectioning, glass beading or removal of any flashing or casting marks. No internal modifications of any kind including painting or Teflon coating is permitted. No more than two intake-mounting holes may have HeliCoils. Intake or exhaust manifold mounting holes may not be added or relocated. Holes must take Stock OEM diameter intake manifold bolts.

Gasket Compressed Gasket CCs Manufacturer Thickness Bore Added

CARQUEST 5745 .027" 3.839" 5.12CCs

Felpro 8510PT .041" 3.900" 8.0CCs

Corteco 55061HG .028" 3.870" 5.1CCs

Victor 5745 .027" 3.839" 5.12CCs

Minimum Head Gasket Thickness Spec .025" If CCs Are 55.9 to 54.0 Min.

**VALVES-** The Manley OEM stock replacement valve or the Liberty TX-194, TX-160, or TX-150 valve must be used. The valves must be stainless steel, 11/32" stem, identical in appearance, size and construction as the OEM GM 305 valve. No air directional devices are permitted on any of the valve surfaces. Max valve sizes allowed Intake/ Exhaust: G/M 1.940" 1.600" Ford Windsor 1.940" 1.600" Ford Cleveland 2.090" 1.710"

**VALVE SPRINGS & RETAINERS-** Stock OEM type single steel valve spring with damper and steel retainers only. Valve springs must retain all Stock OEM replacement passenger car dimensions. Barrel wound or conical wound springs are not permitted. All windings must be parallel. Stock diameter spring must be used. Valve spring retainers must be Stock OEM steel or stock replacement steel only, with a minimum outside diameter of 1.55".

**VALVE JOB-** Three (3) angle valve jobs are permitted. When cutting the valve seat angles, no stone or grinding marks are permitted above the bottom of the valve guide. All cutting in reference to the valve job must be centered off the centerline of the valve guide. Upon completion of the valve job, the bowl area under the valve seat down to the bottom of the valve guide must be the same configuration as far as shape and finish as it was from the manufacturer. Surfaces and/or edges where the cutter or stone has touched must not be polished. No hand grinding or polishing is permitted on any part of the head. Un-shrouding of valves is not permitted.

## **20F- 5.7 CRANKSHAFT**

**A.** Only stock production OEM, or Scat OEM replacement crankshafts are permitted. The main and rod journal size must be stock for the block being used. Original bore and stroke combination must be maintained. The maximum allowable stroke tolerance for Chevrolet and Ford is +/- .015". Minimum main journal size .020" under stock. Minimum rod journal size .030" under stock.

**B.** After-market crankshafts, knife-edge crankshafts, small journal crankshafts are not permitted.

**C.** Machining or polishing of the crankshaft counterweights is not permitted. Normal engine balancing is the only acceptable modification that can be performed on this component. Coating, finishings, or paint is not permitted. Journals may not be drilled.

**D.** Minimum crankshaft weights: Chevrolet engines 50 lbs., Ford 54 lbs.

**E.** OEM style magnetic steel elastomer type harmonic balancers must be used.

### **20F- 5.8.1 CAMSHAFT**

- A.** Any type chain is permitted. Belt-drive and gear-drive systems are not permitted.
- B.** Hydraulic cam and hydraulic lifters must be used.
- C.** Camshaft lift may be measured at the valve rocker arm, or directly on the camshaft. Cam lift cannot exceed gross valve lift divided by listed rocker arm ratio. The maximum valve lift allowed is .500". Tolerance for the valve lift is + .005"

### **20F – 5.8.2 VALVE LIFTERS**

- A.** Stock OEM size and style magnetic steel hydraulic valve lifters must be used. Roller tappets, ceramic valve lifters, mushroom valve lifters and any type of mechanical assistance exerting a force to assist in closing the valve and/or push rod commonly known as rev-kits are not permitted.
- E.** Lifter must be operative and pass a leak-down test as well as removal and inspection.

**20F- 5.8.3 ROCKER ARMS-** Stock OEM type magnetic steel rocker arms must be used. Comp Cam Roller Tip Rocker P/N 1412-16 or exact equivalent is permitted. Any steel OEM pushrod is permitted. Chevrolet and Mopar must run 1.5 ratio rocker arms. Ford must run 1.7 ratio rocker arms. Aftermarket shaft rocker systems are not permitted.

**20F- 5.9 INTAKE MANIFOLD-** A Stock OEM passenger car steel 2 barrel intake manifold must be used. Throttle body/injection manifolds are not permitted. Modifications of any type are not permitted to the intake manifold. You are required to have an unaltered stock OEM manifold. Porting, polishing, acid dipping, deburring, de-flashing, abrasive cleaning, internal painting, milling, cutting, drilling holes, enlarging bolt holes, matching of ports or welding, etc... is not permitted. An SMS supplied stock OEM intake manifold must fit your engine complete with stock gaskets. All bolt holes must be in alignment and same size as stock. Coolant lines / fittings are not permitted in the intake manifold or cylinder heads. The maximum throttle bore diameter permitted is 1.730".

**20F- 5.10.2 CARBURETOR SPACER-** Only one solid spacer made of aluminum or phenolic plastic with a maximum height of 1" is permitted. Only one .075" max. thickness gasket per side may be used. The top and bottom surfaces must be parallel. Spacer can be no larger than base of carburetor. Portholes or hole must be vertical to the surface with no beveling, tapering, or flaring. No additional openings for the induction of air allowed. All spacers must be approved by SMS Officials.

**20F- 6.1 IGNITION SYSTEM-** Must be Stock OEM of the make/model/year.

**L.** The firing order must be: Ford 1-3-7-2-6-5-4-8, GM 1-8-4-3-6-5-7-2

**M.** The manufactures cylinder identification sequence is as follows

Ford/GM Front

5-1

6-2

7-3

8-4