

# STAFFORD MOTOR SPEEDWAY

## SK MODIFIED® SPEC ENGINE RULES

These SMS Spec Engine rules are intended and designed to create a standardized rule package to reduce cost, increase the level of competition, and to promote a better technical atmosphere by involving the engine builders in the process of technical inspection. To help keep the full integrity of the Spec Engine program intact, any published engine builder whose engine finishes in the top three may be involved in the tech process.

**20E- 5 GENERAL SPEC ENGINE REQUIREMENTS-** The only approved engine for Spec use is the Chevrolet 350. All parts for the Spec Engine must maintain manufacturers overall dimensions and weight. All Spec Engine parts must be installed as supplied, with no machining or modification except where noted. These SMS Spec Engine rules are intended to create a standardized rule package to reduce cost and increase the level of competition. *With the exception of engine machined components, all Spec Engine listed parts and components must be used as purchased, with no modifications permitted, unless otherwise noted. We will add a list of Spec Engine component part numbers.*

**DETAILED SPEC ENGINE REQUIREMENTS-** Approved part numbers are as follows:  
GM BLOCK – 10066034, 3970010, 3970014, 14010207, 14010209, 14011064, 14016379 , the DART SHP, or any pre-existing GM Bow-Tie block.

PISTONS- Wiseco Pro Tru-PT003H, JE SPR-157076, or Manley 5915 must be used.

The ring package used (type and thickness) must be the one designed for the piston used.

RODS- Manley-14101-8, 14050R-8, or Crower Sports Rods- SP3205

OIL PAN – Any pre-approved aluminum pan or Canton 11-196.

VALVES- Manley Intake 11596 or 11864, Manley Exhaust 11543 or 11863

CRANK- Scat Cast or Steel – 9-350-3480-5700, Callies Comp Star Series, or Manley 190190.

INTAKE- Edelbrock 7101

HARMONIC BALANCER- ATI 917260 or 917320 or BHJ CH-IBF-6-C or Power Bond PB1012-SS.

CARB SPACER- CANTON- 85-060, 85-060S & 85-065, 85-065S.

The maximum decking of the block is 9.00". Angle milling of block deck is not permitted. Offset dowel pins are not permitted. De-flashing, grinding, welding or painting of any internal area is not permitted. Maximum overbore is .060". A maximum static compression ratio of 11.0 to 1 is permitted.

### 20E- 5.5 PISTONS/RODS

Wiseco Pro Tru -PT003H, JE SPR- 157076, or Manley-5915 piston must be used. Manley-14104-8 or 14050R-8, or the Crower Sport Rod- SP3205 must be used.

A. The approved piston must retain all its manufactured dimensions and weight. The JE and Manley pistons must maintain a 2.50" pin length. Wiseco pistons must maintain a 3.00" pin length. Additional gas porting of any type is not permitted. All rings must be installed, working and of magnetic steel. Stainless, z-gap, gapless, or Dykes type rings are not permitted. No portion of piston may protrude above the top of the block. The minimum ring thickness permitted is as follows:

Compression rings .043"

Oil ring assembly 3mm

B. Only magnetic steel non-coated piston pins maintaining a minimum diameter of .927" inch are permitted. They must be contained by bushings only (no bearings of any type). Full floating pins are permitted. Wrist pins may not be coated.

C. Piston pin holes must be in a fixed location in the piston and connecting rods.

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

**E.** The approved rod must retain all of its manufactured dimensions and weight. Only normal engine balancing and the use of after-market bolts and nuts are permitted. No de-burring, de-flashing, polishing, grinding or lightening is permitted. Rod length must be 5.700”.

**G.** Minimum weight for piston, pin, ring, bearing and rod assembly is 1185 grams.

**20E- 5.5.4 OIL PAN** – Dry sumps, external oil pumps or tanks or accu-sump systems are not permitted. The Canton #11-196 steel pan or any pre-approved existing aluminum oil pan may be used. Oil coolers are permitted. Only OEM in the pan magnetic steel type oil pumps are permitted. No pumps of any type may be used in the evacuation systems.

**20E-5.6 HEADS** – Dart part number 10024266 cylinder head casting must be used. The casting part number must be purchased as completely produced by Dart, custom ordering of partial production/finishing is not permitted. The Dart casting is produced with, and must maintain a 60cc combustion chamber, a 2.02” intake valve and a 1.60” exhaust valve. Machining the valve guide bosses for seals and machining the gasket surfaces is permitted. The addition of screw-in studs, guide plates, valve spring seats, valve seals, poly-locks or jam-nuts is permitted. Coolant lines are permitted on the front/rear ends of the heads. Coolant lines are not permitted on the side of the head. Max Intake port volume is 177cc. Max Exhaust port volume is 71cc. Head gasket surface milling tolerance for SK Modified® is *0.00” to 0.050” from true 23.00* degrees of stock valve position.

The Intake to pin measurement must be no less than *6.050”*. No other machining or modifications of any kind are permitted.

The ports/runners, combustion chamber, the valve angle and location must remain as produced by Dart. The EGR port may be blocked off at the intake gasket area only, by use of a metal shim on one surface of the gasket. The exterior of the casting may be painted. A maximum of 2 intake mounting holes may have HeliCoils. Intake and exhaust mounting holes may not be added or relocated. Holes must take standard dimension bolts.

**VALVES-** The Manley intake valve #11596 (111 grams), Manley intake valve #11864 (114 grams), Manley exhaust valve #11543 (95 grams) or Manley exhaust valve #11863 (102 grams) must be used. Valve stems must have a minimum diameter of 11/32 inch. Valve lifter weight is 85 grams minimum. All parts must maintain production dimension and weight.

**VALVE JOB-** 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. Competition style multi-angle valve job is permitted. The bowl area must pass the 360 degree “ball” check (the appropriate sized ball must not fall into the guide area when rolling around on the valve stem). Intake is a .787” ball. Exhaust is a .531” ball. 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.

**VALVE SPRINGS & RETAINERS-** OEM Stock type magnetic steel retainers that weigh a minimum of 30 grams (retainer only) must be used. Valve springs may be single or double springs, but must be parallel wound. Barrel wound, conical wound springs, or beehive type springs are not permitted. Double springs must have a diameter between 1.450” and 1.437”. Valve springs must have a height of 1.700” to 1.800”. Retainer locks must be magnetic steel, and must be Machine 7 degree, Super 7 degree, or 10-degree types only.

#### **20E- 5.7 CRANKSHAFT**

**A.** The Scat Cast or Steel Crank # 9-350-3480-5700, Callies Comp Star series crankshaft, or the Manley #190190 may be used. The main and rod journal sizes are .020” under for the main and .030” under for the rod journals. Stroke must be 3.480”.

If you are currently converting an existing SK Engine over to the SK Spec Engine, you may use your existing GM cast or forged steel crankshaft, and it must weigh a minimum of 50 pounds and must be 3.480" to 3.495" in stroke. You must contact the SMS Tech Staff to notify them of your intent to run this pre-existing crankshaft. NOTE: The GM style crankshaft will be allowed until the conclusion of the 2013 season.

**B.** Small journal or Honda pin crankshafts are not permitted.

**C.** Machining or polishing of the crankshaft counterweights is not permitted. Normal standard engine balancing is the only acceptable modification that can be performed on this component. No painting or Teflon coating. No capping of the counterweight holes. Crankshafts must maintain the manufacturer's dimensions.

**D.** Minimum crankshaft weight is 45 lbs for the SCAT, Callies, or Manley crankshaft, and 50 lbs for the old style SK pre-existing crankshaft.

**E.** The Power Bond # PB1012-ss, ATI 917260 , 917320, or the BHI CH-IBF-6-C harmonic balancer must be used.

**20E-5.8.1 CAMSHAFT-** K15 or P55 cast core camshafts must be used (Billet steel cores are not permitted). The maximum camshaft bearing journal size is 1.875" (47.5mm). Camshaft may not exceed .550" +/- .005" lift at the valve with zero lash.

#### **20E – 5.8.2 VALVE LIFTERS-**

**A.** An 842" diameter magnetic solid steel valve lifter must be used. Roller tappets, ceramic valve lifters, tool steel solid 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.

**B.** Valve lifters can weigh no less than 85 grams.

**20E- 5.8.3 ROCKER ARMS-** Aluminum or stainless stud mounted roller rocker arms are permitted. 7/16" studs may be used. Steel 5/16" x .080" minimum wall push rods must be used. Chevrolet must run 1.5 ratio rockers. Stud-girdles are permitted, aftermarket shaft rocker systems are not permitted. Comp rocker 1604 will be permitted.

**20E- 5.9 INTAKE MANIFOLD-** A second generation Edelbrock #7101 intake manifold must be used. There are no modifications or alterations permitted to the intake manifold. No porting, polishing, acid dipping, deburring, de-flashing, abrasive cleaning, internal painting, milling, cutting, drilling holes, enlarging bolt holes, matching of ports or welding. An SMS supplied intake manifold must fit your engine complete with stock gaskets. All bolt holes must be in alignment and same size as stock. Coolant lines are only approved from the water neck to the back side of heads. The maximum thickness allowed for the Intake gasket is .064".

Note: SMS Officials reserve the right to swap competitors intake manifolds as part of their routine post-race tech process.

**20E- 5.10.2 CARBURETOR SPACER** –The Canton part number 85-065, 85-060, 85-060S or the 85-065S (with a maximum height of 1") may be used. One gasket per side, maximum gasket thickness of .075" permitted. The spacer may be cut out to a maximum dimension area (port hole) of 2.150" x 3.750". Additional openings for the induction of air is not permitted. All spacers must be approved by SMS Officials.

**20E- 15 FUEL SPECIFICATIONS** – The only approved fuel is Sunoco Supreme.

**A.** Icing or cooling of the fuel system is not permitted in the paddock, pit or racing area.

**B.** Gasoline may be tested and certified at any event through the application of various chemical analyses as considered appropriate by SMS Officials. Gasoline may be checked before, during and after the racing events.

C. Nothing may be placed in the fuel line other than a standard fuel filter. The use of any type of fuel catalyst or other fuel-altering devices is prohibited.

### **20E- 9 ENGINE EXHAUST SYSTEM**

A. SK Spec Engine must use Flowrite Part Numbers:

Troyer #3025, C.D. #3035, SPAFCO #3055, RACE WORKS #3045

Or the Kooks Part Numbers:

Troyer #SMS1048, C.D. #SMS1438, SPAFCO #SMS1348, RACEWORKS #SMS1253

B. 180-degree headers, Tri-Y headers and Multi merge headers are not permitted.

C. The exhaust header flange must mount directly to the cylinder head with no spacers between the flange and the cylinder head. A maximum header flange thickness of ½ inch is permitted.

D. Inserts are not permitted in any part of the header or collector. Only one (1) collector allowed per side.

E. Exhaust pipes must come out of engine at cowl and must extend a minimum of six (6) inches past the cowl. Right exhaust pipe may run beneath the car, but must turn down and out toward the bottom of the right side frame rail.

F. Kooks #R35-30-10 or #R35-35-10, or the Flowrite #FR-300 or #FR-3500 mufflers must be used. The Muffler must be 3.5" on the inlet and outlet. Modifications to the 3" flange on the existing mufflers to make them 3.5" will be permitted. Both muffler flanges must still be intact. Mufflers must be removable for inspection.

### **20E- 10 ENGINE DRIVE TRAIN – FLYWHEEL AND CLUTCH**

**SPEC ENGINE- The Quarter Master #298108 or #298158, 7-1/4" two disc V-Drive, with a 153 tooth steel OEM type ring gear/flexplate that weighs a minimum of 4.1 pounds may be used in with the SK Spec Engine.**

Optional stock type clutch rule: A Stock OEM dimension 153 tooth steel flywheel and 10" steel clutch and pressure plate may be used. OEM type steel pressure plate and steel disc only. Solid type disc only, no paddle or button type discs. Minimum diameter 10" clutch and pressure plate. Drilling or lightening of any part is not permitted. Steel bolts only. Flat surface machining allowed only on the face of the flywheel, any cutting on the back side of the flywheel will deem the part illegal.

Spec Engine flywheels must weigh a minimum of 9 lbs (without bolts) and be one of the following part numbers:

10,000 RPM #1019-9.5

Magnus #MRPBF-95

Ram #851