



2017 SUPER LATE MODEL RULES AND REGULATIONS

1.0 DRIVER ELIGIBILITY

1.1 AGE REQUIREMENTS

All drivers must be at least 14 years of age to compete in the Pacific Challenge Series. Drivers under the age of 16 must have at least 2 years of racing experience and will be required to complete an on-track evaluation at the discretion of the series director.

1.2 MEMBERSHIP

All drivers must be a current **PCS** member in good standing to compete in any **PCS** sanctioned event. **2017** membership fees will be \$100.00. **Paid membership covers the driver and all pit crew members.** Membership license applications are online at www.pacificchallengeseries.com or will be available at the track the day of the event. **Pre – registration is recommended.**

1.3 PCS competitors must race a minimum of 5 PCS scheduled events to be eligible for end of the year championship payout. Championship payout will be for the top 10 positions.

1.4 DRIVER SUBSTITUTIONS

Any **PCS** driver is eligible to have a substitute driver for one (1) event per year and still receive championship points for that event. Substitute driver(s) must be a **PCS** member in good standing. Any **PCS** driver wishing to use a substitute driver must inform **PCS** director prior to the racing event. Only designated substitute driver may practice, qualify and race said event. Points will be awarded to the primary driver for that one event. If a substitute driver is used for more than one event per year, the additional points will be awarded to the substitute driver only.

2.0 CONDUCT

All **PCS** drivers, crew and any other participants are expected to act in a courteous and sportsman-like manner at all times at all events. All **PCS** participants will be expected to represent our series in a respectful, professional, and positive manner. Any conduct unbecoming may result in penalties, fines, and/or suspension, as deemed necessary by **PCS** director. All **PCS** drivers are responsible for the actions of any and all crew members signed in under their car number.

3.0 RACE PROCEDURES

3.1 QUALIFYING

Qualifying times will be based on the fastest recorded lap times from race day practice sessions. At the discretion of the PCS director, if circumstances dictate, a dedicated qualifying session may be Implemented

3.2 CAUTION FLAGS

PACIFIC CHALLENGE SERIES does **not** race back to the yellow (caution) flag. Race line up will revert back to the lap prior to the yellow flag being displayed. All cars involved in the yellow flag incident will be restarted at the rear of the field. Any driver deemed to be the cause of the caution will also be moved to

the rear of the field - even if he or she did not spin in the incident. Any driver deemed to be the cause of 3 yellow flags during the race event will be black flagged from the race at PCS officials discretion. PCS Officials will apply the "INVOLVED" rule at their own discretion based on their view of the incident. Yellow flag laps will not be counted unless there is a time constraint on finishing the race.

3.3 ROUGH DRIVING

Excessive rough driving will not be tolerated. Any competitor that is deemed to be driving excessively rough or intentionally spins, damages or wrecks another competitor will be penalized at the discretion of the PCS director. Repeat offenses will result in suspension, loss of points or fines. Today's high cost of racing makes our sport more challenging than ever before. Unnecessary damage to expensive race cars and equipment only jeopardizes the health of our sport and diminishes the quality of show we want to bring to our fans. Let's strive to be respectful of our fellow competitors and their equipment.

3.4 TAP RULE

Any competitor that spins another competitor without intent may claim responsibility by tapping his or her hand on the roof of their car to signal officials. In the interest of good sportsmanship, this will result in the spun car restarting back in their original position.

3.5 RESTARTS

All restarts will be double file. In the event of multiple failed restarts or time constraints, race control has the option of moving the two lead cars back a position or going to a single file restart. Restarts in the final 10 laps will move lap down cars to the rear of the lead lap cars.

3.6 Green White Checkered.

Every attempt will be made to finish the race under the green flag. At least 2 attempts will be made at a Green, White, Checkered finish if time allows. At the discretion of the series director a single file restart may be implemented.

3.7 Fast Pass

PCS will have a "fast pass" (lucky Dog). When a yellow comes out, the first car a lap down will advance 1 lap to the rear of the lead lap cars resulting in gaining his or her lap back. (1 lap)

3.8 Points

PCS championship points will be awarded as follows. 50 points to the race winner, reducing by 2 points per position. 5 points will be awarded for each car with a paid entry to the event. All PCS races will count for championship points, there will be no "throw away" races for the 2017 season.

4.0 TECH PROCEDURES

4.1 PRE - PRACTICE (QUALIFYING) TECH

All cars must pass through pre - practice scaling and tech prior to entering the track. Although PCS has no minimum frame height requirement, all cars must roll freely across designated PCS scales and ramps. Any car not passing through tech prior to the practice sessions will not receive an eligible qualifying time for that practice session. Only cars that have passed through pre - practice tech will have eligible timed qualifying practice laps.

4.2 POST QUALIFYING TECH

Any car setting fast time for the event may be subject to post qualifying tech inspection.

4.3 PRE - RACE TECH

All cars must pass through pre - race scaling and tech prior to the main event. Any car not making pre-race scaling and tech in the allotted time will start in the rear of the field and be subject to post race scaling and tech regardless of finishing position.

4.4 POST - RACE SCALE AND TECH

The top 5 main event finishers will proceed directly to the designated scale and tech area. Stopping at your pits or any other pit stall or performing ANY work on the car before proceeding to impound will result in disqualification.

4.5 POST - RACE TECH INFRACTIONS

Post-race infractions vary by severity. RPM limit infractions will be penalized to the end of the lead lap.

p **5.0 SAFETY EQUIPMENT REQUIREMENTS**

RACING IS AN EXTREMELY DANGEROUS SPORT. IT IS THE RESPONSIBILITY OF THE DRIVER, CAR OWNER AND CREW TO MAKE EVERY ATTEMPT TO INSPECT, REPAIR AND REPLACE AS NEEDED ANY SAFETY EQUIPMENT UTILIZED TO AVOID INJURY IN THE EVENT OF A CRASH.

5.1 SEATS A professional grade (made for racing) aluminum seat is required. Head, shoulder and leg Supports are strongly recommended on all seats. Absolutely no plastic or fiberglass seats will be allowed. Seat must be securely mounted to the main roll cage with minimum 3/8" grade 8 bolts and large washers to prevent pull through.

5.2 SEAT BELTS

Professional grade SFI certified (Made for racing) seat belts / harnesses are required. A minimum 2" wide, 5 point harness with double shoulder belts (no "y" type) is required. Seat belt set should include anti-sub belt to prevent driver from sliding forward under the lap belt. Seat belts may not be more than 3 years old per the SFI tags. Belts with missing or unreadable tags will be required to be replaced. Seat belts shall be securely fastened to roll cage and frame with welded tabs and minimum 1/2" grade 8 bolts. Shoulder belts shall be anchored below the shoulder line by either bolting or looping around the spreader bar with the proper hardware.

5.3 HELMETS

Snell approved SA 2005 or newer full faced racing helmet with Lexan shield or goggles is required. SFI head sock is **strongly** recommended.

5.4 HEAD / NECK RESTRAINTS

A Hans or similar type SFI approved head and neck restraint system is required to be worn at all times while competing on track.

5.5 RACING SUITS

SFI Certified racing suit is to be worn at all times while on track. SFI rated undergarments are **strongly** recommended. Damaged drivers suits showing holes or tears will be required to be repaired or replaced. SFI rated shoes and gloves are also required.

5.6 ON - BOARD FIRE SUPPRESSION SYSTEM

An onboard fire suppression system is mandatory. System must be mounted inside the driver's compartment either under or behind the driver's seat using approved secure mounting brackets. 3 operational nozzles. (1 at the fuel cell, 1 at the rear of engine and 1 in the driver's compartment) are strongly recommended. At least 1 driver's compartment nozzle is mandatory. A quick pull activation cable should be in easy reach of both the driver and the outside safety crew. A marked pull handle mounted at the base of the "A" pillar upright on the top left door bar is recommended.

5.7 WINDOW NET

A ribbon style window net is required on the driver's side window and must be securely fastened at the top of the door bar and the halo and have a quick release latch that is easily accessible to the driver and the outside safety crew. (Mesh window nets will not be allowed)

5.8 RADIOS A 2 - way radio system is mandatory. Spotter and or crew must be able to communicate at all times with the driver while on track. A designated spotter is mandatory and will be required to be present in a pre-determined spotters stand at all times during the racing event. The spotter must be clearly identified with the car number that he or she represents. Any un - sportsman like conduct or aggressive behavior among spotters will not be tolerated and will result in dismissal from the spotters stand and possible fine or suspension as deemed necessary by **PCS** director. Any car on the track without a spotter in the designated area will be black flagged from the event.

5.9 TRANSPONDERS Transponders are mandatory and must be mounted no further forward than 11 ft. (132") from the forward most part of the car and no higher than 24" off the ground.

5.10 FUEL CELLS AND FUEL SYSTEMS

Maximum 22 gallon fuel cell. Minimum 20 ga. steel containment can required. Must have a ground strap from the fuel cell top fill plate to the chassis. **Must be a minimum of 8" off the ground when measured** at tech inspection. Rear fuel cell guard mandatory. All fuel lines, shut off valves and filters must be mounted or routed outside of driver's compartment.

6.0 WEIGHTS AND PERCENTAGES

6.1 WEIGHT BY ENGINE OPTIONS

See section **13.0** for specific engine package and weight details

Engine group (A) 2800 #s

Engine group (B) 2850#s

Engine group (C) 2875#s

Engine Group (D) 2900#s

Engine Group (E) 2925 #s

6.2 LEFT SIDE WEIGHT DISTRIBUTION

Left side weight percentage will be **57%** maximum for **ALL** cars.

Straight rail or non-conforming perimeter chassis will be required to bolt 30# on the outside of the right frame rail between the 2 main cage uprights. Weight may be in 1 or 2 pieces but must add up to 30 # total. See **6.3** for proper mounting procedures.

6.3 CHASSIS BALAST (LEAD)

All ballast must be in minimum 5 lb. block form (no pellets) and securely fastened with minimum ½" bolts or contained inside a steel weight box frame tube. **It is strongly recommended that weight blocks are mounted outside of driver's compartment.** All Blocks must be painted white and have car number identification on them. Any car that loses ballast while on the track may be subject to a \$10.00 per lb. fine for improper or unsafe mounting.

6.4 ADDITIONAL WEIGHT PENALTIES OR WEIGHT BREAKS

A non - conforming or down force type body (must be pre - approved by **PCS** director) will carry a 50 lb. weight penalty. (Penalty may be adjusted up or down as needed)

A 50 lb. weight break will be granted to any Muscle car type body configuration (ARP or 5 Star)

7.0 CHASSIS

7.1 CHASSIS CONSTRUCTION

Any made for racing tubular steel frame, straight rail or perimeter late model stock car chassis with a wheel base of 101" to 108". Chassis center section must be constructed of minimum .090 steel tubing. Main roll cage must be a minimum of 1 ¾" .090 steel tubing. Main frame rails must be a minimum of 2x3 .090 box steel tubing.

Must have a minimum of 4 horizontal driver's side door bars 1 ¾ .090 steel tubing.

Must have a minimum 1/8th" steel or ¼" aluminum driver's side door plate.

7.2 CHASSIS DIMENSIONS

Strait rail chassis width - minimum of 49" maximum of 60" outside of frame to outside of frame.

Perimeter chassis width - minimum of 55" maximum of 60" outside of frame to outside of frame.

Strait rail halo width - minimum 30 " outside to outside of halo bars

Perimeter halo width - minimum 42" outside to outside of halo bars

7.3 TRACK WIDTH

Std. big spring (5"), (no coil overs), stock lower control arm, steering box.

68" max

Coil over, rack and pinion.

66" MAX

With SRL doing away with their 64.5" track width rule there will no longer be a 25# weight break for SRL conforming cars. SRL "E" engine cars will race @ 2925 lbs.

8.0 GENERAL CAR BODY REQUIREMENTS

8.1 APPROVED BODY TYPES

Any **ARP** or **5- STAR** ABC or straight up body (ABC Monte Carlo, Impala, Fusion, Charger, Camry) ARP muscle car Camaro, Mustang, Challenger (will be allowed a 50lb weight break)

Non-conforming down force enhanced body types (must be approved) will receive a 50lb weight penalty.

8.2 APPEARANCE

All bodies must be mounted in an approved manner. (see 8.4 for dimensions)

Cars must be maintained in a neat and clean manner. Bodies must be complete with no missing panels.

Full front, rear and quarter windows must be used. Front windshield must have 3 vertical braces inside.

No rub rails on the exterior of the body.

No nose splitters, wickers, wings or other aero devices shall be added to the body. No belly pans or front or rear under pans. No air deflecting devices allowed.

Front R & L lower nose valance must not protrude out past the widest part of the tire bulge.

8.3 SPOILERS

Rear spoiler may be a maximum of 60" wide and 6 1/2" tall and must be centered and equally spaced on the tail. No side braces or forward struts allowed.

8.4 BODY DIMENSIONS

The following dimensions will be measured with the car sitting on 4" ride blocks.

(These dimensions include the ARP muscle car bodies)

A minimum roof height (measured in the center, 10" back from windshield) will be **47"**

The rear quarter panel height measured where the spoiler meets the top rear of the quarter panel on the right and left side will be **34" min / 35 1/2" max**

The front and rear overhang measured from the axel / wheel centerline to the forward most or rearward most part of the front or rear bumper cover will be **47"**

8.5 BODY MODIFICATIONS, ENHANCEMENTS AND ADD ON PARTS

6/5/2016 No add on body pieces will be allowed. No add on lower quarter panel extensions, No rear window air deflectors, No custom built stepped or angled rocker panels. No add on front wickers. No add on right side window opening enhancements. **All body parts etc. MUST COME IN**

THE 5 STAR OR ARP BODY KIT AS DELIVERED. NO CUSTOM FABRICATED ADD ON PARTS.

The only add on parts allowed will be maximum 1" tall aluminum angle roof rails running straight front to back not to extend past the front or rear upper windshield edge.

Rocker panels and lower nose valance pieces may be fabricated but must be straight pieces similar to the ARP or 5 star production pieces.

9.0 SUSPENSION

9.1 No titanium or carbon fiber suspension parts allowed.

No live axle or bird cage type rear suspension allowed.

10.0 SPRINGS AND SHOCKS

10.1 SPRINGS

1 spring per wheel. Must be a magnetic steel spring.

Bump stops allowed. Must be urethane, or metal. No carbon fiber.

10.2 SHOCKS

1 shock per wheel, aluminum or steel ok. No driver adjustable or remote adjustable shocks allowed.

11.0 BRAKES

Must have working brakes on all 4 wheels. Must use magnetic steel rotors. No titanium, carbon fiber or ceramic rotors allowed.

12.0 WHEELS AND TIRES

12.1 WHEELS

No aluminum wheels

10" wide (max) **steel**, made for racing wheels. W-5 or 5 x 5
5/8 steel wheel studs mandatory.

12.2 TIRES

American Racer EC84 10" Tires must be purchased from Penney Racing Supply/ PCS only
Race tires must be run for practice, qualifying trophy dash and the main event.
No tire soaking, softening or chemical treatment will be allowed. Suspicious tires will be
confiscated and tested. The penalty for a chemically altered tire will result in a \$500.00 fine and a
loss of all accumulated points.

13.0 ENGINE

Car weights by engine class

A. = 2800# B. = 2850# C. = 2875# D. = 2900# E. = 2925#

A. 2800#) GM "604" sealed Crate Engine. Must use GM spec carb (see below)(any carb add 25#)

Gm "604" crate engine must be run as delivered from GM with all applicable Gm factory seal bolts intact.

No altering or rebuilding allowed.

Must have correct GM oil pan and harmonic balancer.

Rocker arms, valve springs, retainers and keepers must all be as delivered.

Must use either Holly 4150 650 cfm carb (mechanical secondary) or Holly 4160 670 cfm carb (vacuum secondary)

Carb must be unaltered other than choke removed . Jets and power valves may be changed for tuning.

May use a 4 hole or open 1" max carb spacer. 1 ¼" max with gaskets

Any HEI or aftermarket distributor may be used. No magnetos or crank fired or optical ignitions allowed.

Must run a **6400** chip or rev limiting device at all times while competing with this engine package.

A. 2800#) Ford Motorsports sealed spec M6007–D347sr Holly 4150 650 cfm carb. (any carb add 25#)

FM sealed crate D347sr must be run as delivered from Ford with all applicable FM seals intact.

No altering or rebuilding allowed. Must have correct FM oil pan and harmonic balancer.

Rocker arms, valve springs, retainers and keepers must all be as delivered.

Must use either a Holly 4150 650 cfm carb (mechanical secondary) or Holly 4160 670 cfm carb (vacuum secondary).

Carb must be unaltered, other than choke removed. Jets and power valves may be changed for tuning.

May use a 4 hole or open 1" max carb spacer. 1 ¼" max with gaskets

Any HEI or aftermarket distributor may be used. No magnetos or crank fired or optical ignitions allowed.

Must run a **6400** chip or rev limiting device at all times while competing with this engine package.

B.2850#) Any Rebuilt GM "604" based spec engine. 360ci, 10.0:1 comp. Any 4 bbl carb.

Must use the correct 604 block, casting # 10105123, May be bored .030 over (4.030 max) and deck surfaced.

Must use the correct 604 55lb steel crank, part #10243880. May be resized & rebalanced for rebuild but must maintain stock stroke. May not be lightened in any way.

Must use correct 604 powdered metal 595 gram 5.7 rods, part # 10108688. May be resized and balanced for rebuild but may not be lightened in any way.

May use replacement flat top 4 valve relief pistons and magnetic steel pins of similar weight and design as stock.

Maximum compression ratio not to exceed 10.0: 1 as measured with a Katech Whistler.

Any rings, bearings and gaskets may be used.

Any after-market stock replacement type timing chain and sprockets may be used. Timing gears with adjustable cam timing keyways or slugs are allowed. Any aftermarket harmonic balancer may be used.

Any aftermarket stock replacement wet sump, high volume type oil pump is allowed.

Any aftermarket steel wet sump oil pan is allowed. Stock height or shallow (6 ½")

Only GM 604 aluminum vortec cylinder heads, part #'s 12464298 or 19300955 may be used. May be resurfaced but no other port work, smoothing or enlarging of intake and exhaust ports or valve pockets.

May use aftermarket replacement valves .Must be max 2.00/1.55 steel or stainless steel valves with 11/32 stems. No performance enhancing valves such as back cut, swirl polished or titanium valves.

May use any valve springs, retainers and keepers.

May use **ANY** hydraulic roller lifters and cam shaft. No solid roller cam or lifters.

May use 1.5 or 1.6 (max) ratio roller rockers. No shaft mounted rockers.

Must use Gm 604 part # 12496822 aluminum intake. **Must be as cast.** No modifications, porting, grinding or smoothing of runners or reworking of plenum floor allowed.

Any 4 bbl carb may be used. A maximum of a 1" tall open or 4 hole spacer may be used. 1 ¼" max with gaskets.

Any HEI or aftermarket distributor may be used. No magnetos or crank fired or optical ignitions allowed.

Must run a **6800** chip or rev limiting device at all times while competing with this engine package.

B. 2850#) Brodex Spec Head 362 ci 11:1 comp. gauge legal 2 bbl (gauge legal 390 add 25#)(any carb add 50#)

Any cast iron block.

Maximum 362 cubic inch.

Must use Brodex (GM, Ford, Mopar) untouched aluminum "SPEC" heads, as cast, with no intake or exhaust port modifications and 2.08 / 1.60 valves max.

Maximum 11.0:1 compression as measured with a Katech Whistler.

May use any **flat tappet** camshaft and lifters. (Roller cam and lifters. Add 25#)

Must use magnetic steel crank and rods.

Must use a wet sump oil pump and pan.

Must run a **7800** chip or other rev limiting device at all times when competing with this engine package

C. 2875#)Factory sealed GM 525 crate motor. GM 525 crate engine must be run as delivered from GM with all applicable GM factory seal bolts intact. No altering, rebuilding or repairing allowed. May use Holley 4150 650 or 750 cfm carb. Must use either a GM pn19171130 ignition control box or MSD part # 6012-6ls ignition control box. Must be programed for 6800 max rpm when competing with this engine at all times.

Ignition coil packs may be relocated to avoid heat from headers.

D.2900#) Ford Motorsports sealed spec M6007- S374w wet sump. Any 4 bbl carb.

(see package "E" specs and requirements for this engine)

D.2900#) Any 362 ci max open motor, gauge Legal 2 bbl (gauge legal 390 add 25#) (any carb add 50#)

Any cast iron block.

Maximum 362 ci, open compression. Any cam (must be in the block, no overhead cams)

May use aluminum or steel heads.

Must run a **7800** chip or other rev limiting device at all times when competing with this engine package

E..2925#) Any other non – conforming engine (subject to approval by PCS) gauge legal 2 bbl

Gauge legal 390 add 25# Any 4 bbl carb add 50#

Must run a **7800** chip or rev limiting device at all times while competing with this engine package.

E.2925#) Mcgunegill, Hamner or Progressive S.E.A.L engines Any 4bbl carb

Must be run as sealed and certified. Must have all applicable seals intact.

Must run an All Star Performance 4 hole spacer Part#26060 with 1.200 restrictor inserts(4) Part#26065

Must run a **7600** chip or other rev limiting device at all times when competing with this engine package.

S.E.A.L. Engines must run a 7800 chip

E.2925#) GM / Ford 9-1 362 ci. Tour legal 390 carb.. (CRA carb add 25#)

Built in the guidelines of a typical tour legal type 9-1 motor

Any cast iron block

Maximum 362 ci. Maximum 9.5: 1 compression as measured with a Katech Whistler.

May use any flat tappet or roller cam

Wet or Dry sump

Must run a **7800** chip or rev limiting device at all times while competing with this engine package.

E.2925#) Any open motor over 362 ci. gauge legal 2 bbl. (gauge legal 390 carb add 25#) (any carb add 50#)

Any cast iron block.

Open compression. Any cam (must be in the block, no overhead cams) May use aluminum or steel head.

Must run a **7800** chip or rev limiting device at all times while competing with this engine package.

E. 2925#) Ford Motorsports sealed spec M6007 – S347 dry sump. Any 4 bbl carb.

FM sealed crate s347w must be run as delivered from Ford with all applicable FM seals intact. May be certified and sealed by Brad Peters Racing Engines or CRA certified and sealed. Must have correct FM oil pan and harmonic balancer. Rocker arms, valve springs, retainers and keepers must all be as delivered and certified.

Must run a **7600** chip or other rev limiting device at all times when competing with this engine package.

E. 2925#) Any other non- conforming engine (subject to approval by PCS) gauge legal 2bbl. (gauge legal 390 add 25#) (any 4 bbl carb add 50#)

14.0 EXHAUST

Due to increasing issues with meeting sound requirements at some scheduled tracks we travel to. It is required that your exhaust system has some provisions built in to make it possible to add additional muffling hardware as needed. Example, turn downs, cone inserts, supertrapps, etc.

When racing at All American Speedway it will be required to exit the exhaust under the car only. No side exit exhaust allowed.

As needed, you will be required to quiet your car to meet acceptable levels for that given track.

15.0 IGNITION

15.1 IGNITION BOXES

No digital programmable or crank trigger ignitions allowed. Ignition boxes must be MSD or Crane type boxes with either a rev limiting chip or rpm limiting adjuster. All adjustable rev limiting ignition systems will be set and sealed in pre practice and pre- race tech by a **PCS** series tech official. Like -wise all rev limiting chips will be installed and sealed in place during pre -practice and pre -race tech by a **PCS** series tech official and will be subject to post race inspection. All ignition box wiring and plug connectors shall be easily accessible for inspection by tech officials. Ignition boxes and rev control units shall be mounted in the right side front of the driver's compartment well out of reach of the driver. Ignition box shall have an easily accessible weather pack or deutch 6 pin wiring harness connector to enable PCS tech officials to plug in and tech ignition boxes and rev control devices.

15.2 TRACTION CONTROL

ABSOLUTLY NO TRACTION CONTROL ALLOWED! Penalty for traction control will be a 1 year suspension from any and all **PCS** events and a \$5000.00 fine and loss of all accumulated points.

16.0 FUEL

Sunoco 110 leaded purple is the spec fuel for the Pacific Challenge Series.

All cars will run **Pacific Challenge Series** Spec fuel. . No oxygenate enhancing agents or other additives will be allowed.

Fuel testing will be performed at the discretion of **PCS** series officials.

17.0 TRANSMISSION, REAR END AND DRIVELINE

17.1 TRANSMISSION

No automatics allowed.

Must have at least 2 working forward gears and 1 working reverse gear.

17.2 REAR END

9" FORD OR QUICK CHANGE ALLOWED. No titanium axles.

17.3 DRIVELINE

Must use a steel or aluminum drive shaft. No carbon fiber. Must be painted white.

18.0 ENGINE MOUNTING LOCATION

GM engines forward most sparkplug no farther back than 3" from c/l of upper ball joint.

Ford engines forward most spark plug no farther back than 5" from c/l of upper ball joint.

All crank heights will be minimum 10" to c/l of crank @ 4" of ride height.