



5TH CATEGORY - HISTORIC RACING

GROUP Nc

APPROVED VEHICLE SPECIFICATION

This form details the approved specifications of individual vehicle models in the 5th Category Historic car group. To be issued with a Historic Log Book, cars need to comply with these specifications, the physical appearance shown in the illustrations and the general historic rules as detailed in the current CAMS Manual of Motor Sport.

Make of Car: Chevrolet
Period of Original Manufacture: 1968
CAMS Historic Group: Nc
Date of issue of this document: May 2018

Model: Camaro SS 350 Small block



Refer to CAMS Manual of Motor Sport, Vehicle Eligibility, Historic Touring Cars, General Requirements & Nc Regulations for permitted modifications.

SECTION 1 - CHASSIS

1.1 CHASSIS FRAME

Description: Uni body, two door coupe with sub frames
Period of Manufacture: Jan 1968 to Dec 1968
Manufacturer: Chevrolet
Chassis no. from: 24378N – 300001
Chassis no. location: Left hand side of dash
Material: Steel

1.2 FRONT SUSPENSION

Description: Independent, wishbones
Spring Medium: Coil
Damper Type: Telescopic **Adjustable:** No
Anti-sway bar: Fitted **Adjustable:** No
Suspension adjustable: Yes **Method:** Shims for caster & camber, tie rod for toe

1.3 REAR SUSPENSION

Description: Live rear axle
Spring medium: Semi-elliptical leaf
Damper type: Telescopic **Adjustable:** No
Anti-sway bar: Fitted **Adjustable:** No
Suspension adjustable: Yes **Method:** Spring height

1.4 STEERING

Type: Recirculating ball & nut **Make:** GM

1.5 BRAKES

	Front	Rear
Type:	Disc, vented	Drum
Dimensions:	25.4 x 280 mm	50 x 241 mm
Material:	Cast iron	Cast iron
No. cylinders/pots per wheel:	Four	One
Actuation:	Hydraulic	Hydraulic
Caliper Make:	GM	
Caliper Type:	??	
Caliper Material:	Cast iron	
Master cylinder make:	GM	Type: Tandem
Adjustable bias:	No	
Servo Fitted:	No	

SECTION 2 - ENGINE

2.1 ENGINE

Make:	Chevrolet	Configuration:	Vee
Model:	Small block	Two/Four Stroke:	Four
No. cylinders:	Eight	Max. allowed:	103.1 mm
Cylinder block material:	Cast iron	Max. allowed:	5904 cc
Bore - Original:	101.6 mm		
Stroke - original:	88.392 mm		
Capacity - original:	5733 cc		
Cooling method:	Fluid		
Identifying marks:	Casting number, refer appendix A, <u>New block added</u>		

2.2 CYLINDER HEAD

Make:	GM		
No. of valves/cylinder:	Inlet: One	Exhaust: One	
No. of ports total:	Inlet: Four	Exhaust: Four	
No. of camshafts: One	Location: Block	Drive: Chain	
Valve actuation:	Pushrod & rockers		
Spark plugs/cylinder:	One		
Identifying marks:	Refer appendix A		

Comments:

Conditional upon individual application.

- Approved cast iron cylinder heads are: Dart Iron Eagle 180 SBC 23 Degree cast iron part no 10120010, or the RHS "Pro Action" 23 degree Cast Iron SBC head – (180cc Intake Runner/64cc chamber). Part No. 12317 straight plug or part No. 12318 angled plug
- The heads to be in the manufactured state, save for refacing the cylinder gasket face and matching the inlet ports by not more than 12mm from the port face
- Dart Iron Eagle require the use of a MSD Soft Touch rev limiter Part No 8728 with a 7500 RPM limit. The limiter will be subject to testing at race meetings. The limiter will be located in an easily accessible position within the engine bay.
- Engine to be sealed as per procedure in the appendix
- Once approval, endorsement and the engine seal numbers will be recorded in the log book.

2.3 LUBRICATION

Method:	Wet sump
Oil cooler standard:	No

2.4 IGNITION SYSTEM

Type:	Coil & distributor
Make:	Delco Remy

2.5 FUEL SYSTEM

Carburettor Make:	Rochester	Model:	Quadrajct
Carburettor number:	One		
Size:	Primary 27.69 mm	Secondary	38.10 mm

SECTION 3 - TRANSMISSION

3.1 CLUTCH

Make: GM
Type: Diaphragm
Diameter: 280 mm
Actuation: Hydraulic
No. of Plates: One

3.2 TRANSMISSION

Type: Synchro-mesh
Make: GM Muncie M20 model
No. forward speeds: Four
Gearbox location: Behind engine
Gear change type and location: Remote on floor
Case material: Alloy
Identifying marks: N/A

3.3 FINAL DRIVE

Make: GM
Model: 12 bolt
Type: Live rear axle
Wheel drive method: Rear
Ratios: Various
Differential type: LSD

3.4 TRANSMISSION SHAFTS (EXPOSED)

Number: One
Description: One piece open tail shaft

3.5 WHEELS & TYRES

Wheel type - Original:	Disc	Material - Original:	Steel
Allowed:	Cast	Allowed:	Aluminium alloy
Fixture method:	Studs	No. studs:	Five
Wheel dia. & rim width:	FRONT	REAR	
Original:	6 x 14 inch	6 x 14 inch	
Allowed:	8 x 15 inch	8 x 15 inch	
Tyres allowed:	60% minimum aspect ratio, refer approved tyre list.		

SECTION 4 - GENERAL

4.1 FUEL SYSTEM

Tank Location:	Boot	Capacity:	N/A
Fuel pump type and location:	Mechanical on engine block	Make:	GM

4.2 ELECTRICAL SYSTEM

Voltage:	12	Alternator:	Fitted
Battery Location:	Engine bay		

4.3 BODYWORK

Type:	Coupe	Material:	Steel
No. of seats:	Four	No. doors:	Two

4.4 DIMENSIONS

Track - Front:	1498.6 mm	Rear:	1496.0 mm
Wheelbase:	2743.2 mm	Overall length:	4691.4 mm
Dry weight:	1256.5 kg		

4.5 SAFETY EQUIPMENT

Refer applicable Group Regulations

Appendix A

Spare part 10066034 GM performance parts replacement small block 305, 327 & 350, four bolt design with split rear seal.

Engine Block Casting Numbers

3782870	3790721	3791362	3858174	3858180	3892657	3903352
3914660	3914678	3932386	3932388	395618	3970010	3970014
3970016						

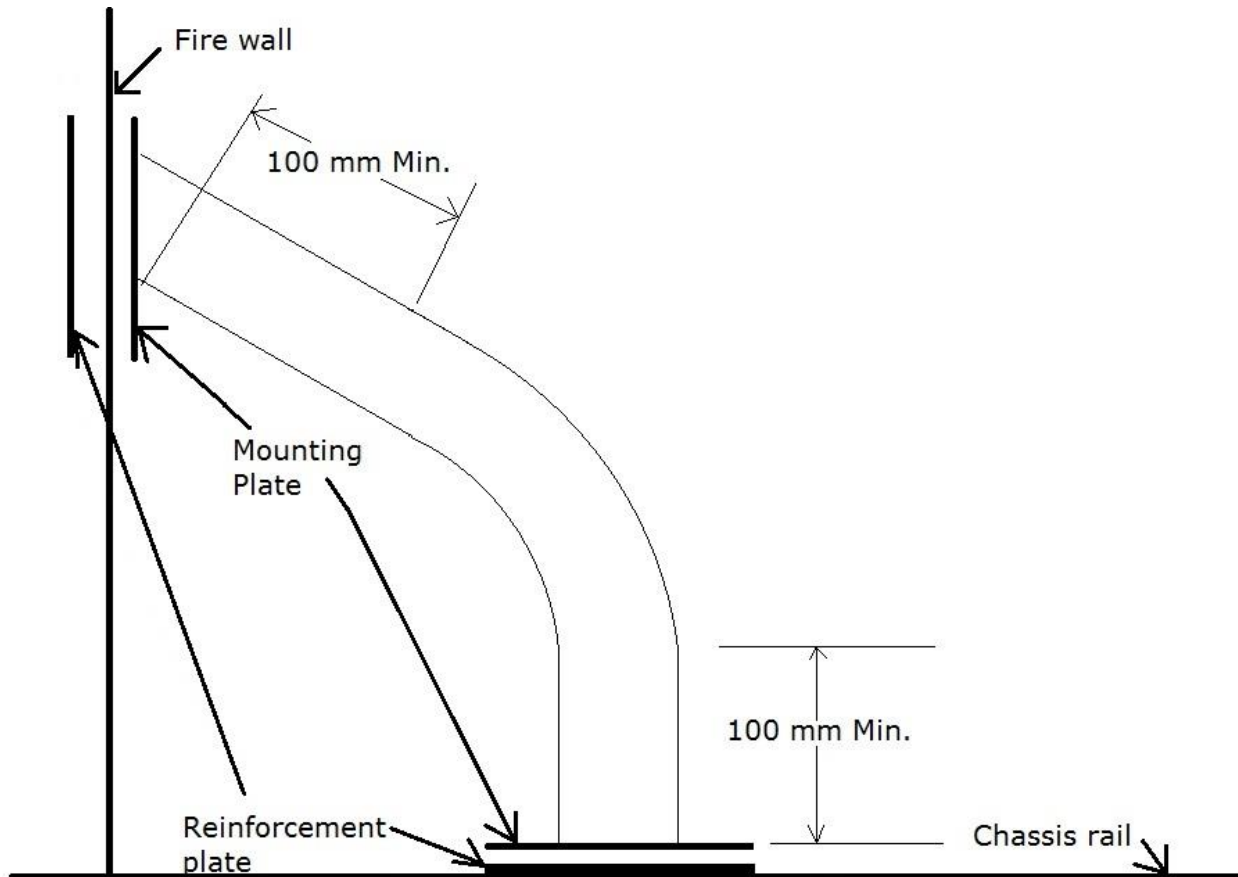
OR OTHERS BY SPECIFIC APPROVAL

Cylinder Head Casting Numbers

3782461	3890462	3917291	3917292	3917293	3927185	3927186
3927187	3927188	3932441	3947041	3973414	3973487	3986316
3986339	3991492	3998916	3998993			

OR OTHERS BY SPECIFIC APPROVAL

Sub frame reinforcement



Requirements of sub frame reinforcements

Reinforcement plates:

On chassis rail – minimum of 8 mm thickness. To be the same size of tube mounting plate.

Firewall plate - 3 mm mild steel plate same size of tube mounting plate.

Maximum size of each mounting & reinforcement plates is 75 x 75 mm or 56.25 cm².

Reinforcement tube:

To be round mild steel tube 38mm dia. With 2.5 mm wall thickness.

Minimum length of straight tube from the end of the bent to the mounting plate is to be 100 mm.

The bend in the reinforcement tube is to be a included angle between 90° and 120°.

Location:

Lower chassis rail mounting point is on the chassis rail. Location is allowed from the firewall to 200 mm forward of the front wheel centre line.

The upper mount on the firewall is not to be aligned with any part of the roll cage.

The locating area on the firewall is defined by a rectangle within the following parameters.

The vertical area is from the top of the chassis rail to the top of the firewall.

The horizontal area is from the outer edge of the chassis rail (where it contacts the firewall) to 300 mm towards the centre line of the vehicle.

Mounting:

Chassis reinforcement plate to be welded to chassis rail, drill & tapped to allow mounting plate attachment.

Firewall reinforcement plate is to be bolted through the firewall & tube mounting plate.

Each mounting point to incorporate at least two fasteners having the minimum diameter of M8 and minimum quality 8.8 (ISO standard), self-locking or fitted with lock washers.

Chevrolet small block sealing procedure for engines using the substitute cylinder head

1. Engine to be assemble to short motor without sump.
2. Heads to be assembled ready to be fitted to engine.
3. 2 sump bolts/studs to be drilled. 2 top timing case bolts/studs to be drilled.
4. The sealer will pick two valves from one cylinder of either head to be removed to check that under the valve head and the ports are unmodified and that the valve heads are 2.02" in diameter for the inlet, and 1.60" for the exhaust.
5. Check the inlet and exhaust ports are unmodified except for the allowance allowed, from the manifold faces, into the port for manifold alignment.
6. Combustion chambers are to be as per above.
7. Measure bore and stroke.
8. Note whether 2 bolt or 4 bolt block.
9. Fit sump and fit seal. Seal timing case.
10. Fit heads and drill holes in appropriate positions in the corners of the block and heads to enable wire and seals to be fitted.
11. Seal heads to block. Note seal numbers. Competitor gets a signed sealers document.
Note: If the heads are removed they must be re-sealed following the above points 4, 5, 10 and 11.

Allowances

1. Surfacing of the head face is allowed to achieve required combustion chamber volume or restore the cylinder head from engine failure damage and/or overheating.
2. K Line .030" bronze valve guide inserts are allowed if required and to recondition to standard size from excessive wear.
3. Port matching in the cross hatched area for the inlet and exhaust ports to manifold to a maximum of the 12 mm from the manifold face. Inlet and exhaust ports must be left completely untouched from under the valve seats to within allowed depth from the manifold face.
4. Machining is allowed of the valve spring pad and valve guide outside diameter and length as well as pushrod holes. This will enable spring locators, valve springs, stem seals, valve spring installation height and pushrod clearance to be correctly set up and fitted.
5. Valve seat cutting/grinding is allowed, but the original valve sizes of 2.02" inlet and 1.60" exhaust must be retained. No machining is permitted under the valve seat.
6. No machining is permitted in the combustion chamber. Combustion chambers must be left completely untouched except for original machining by the manufacturer.



ie. No machining, no hard or soft wire brushing, no coarse or fine grinding either by hand, machine or high speed grinder etc, no shot peening, no sand blasting, no glass bead blasting, no water blasting, no hand scraping, no filing, no emery wheels or stones, no acid etching, no chiselling, no hammering or pneumatic peening, no flexi honing, no spark eroding, no removal of any metal by milling machine.

The only exception is the metal between the inlet valve head and the exhaust valve head which may be rounded in case it creates a hot spot.