



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 Logbook, cars need to comply with these specifications, the physical appearance shown in the illustrations and the general historic rules as detailed in the current Motorsport Australia Manual.

Make of Car:	Chevrolet	Model:	Camaro
Period of Original Manufacture:	1967		
Motorsport Australia Historic Group:	Nc		
Date of issue of this document:	May 2020		



<i>Update Log</i>	
May 2020	GM Motorsport Block Part # 88962516 added
June 2020	Bodywork photos added

Refer to Motorsport Australia Manual, 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:	Sep 1966 to Dec 1967
Manufacturer:	Chevrolet
Chassis no. from:	24377N – 100001
Chassis no. location:	Left hand side of dash
Material:	Steel
Comment:	None

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
Comment:	None		

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
Comment:	None		

1.4 STEERING			
Type:	Recirculating ball & nut	Make:	GM
Comment:	None		

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		
Comment:	None		

SECTION 2 - ENGINE

2.1 ENGINE			
Make:	Chevrolet		
Model:	Small block - 350		
No. cylinders:	Eight	Configuration:	Vee
Cylinder block material:	Cast iron	Two/Four Stroke:	Four
Bore - Original:	101.6 mm	Max. allowed:	103.1 mm
Stroke - original:	88.392 mm	Max. allowed:	88.392 mm
Capacity - original:	5733 cc	Max. allowed:	5904 cc
Cooling method:	Fluid		
Identifying marks:	Refer appendix A, Casting number, New Block added		
Comment:	Refer appendix A for component substitution <ul style="list-style-type: none"> • GM Performance Small Block: 10066034 • GM Performance Small Block: 88962516 		

2.2 CYLINDER HEAD					
Make:	GM				
No. of valves/cylinder:	Two	Inlet:	One	Exhaust:	One
No. of ports total:	Eight	Inlet:	Four	Exhaust:	Four
No. of Cam shafts:	One	Location:	Block	Drive:	Chain
Valve actuation:	Pushrod & rockers				
Spark plugs/cylinder:	One				
Identifying marks:	Refer appendix A				
Comment:	Conditional upon individual application Refer Appendix A for component substitution <ul style="list-style-type: none"> • Dart Iron Eagle 180 SBC 23 Degree cast iron part no 10120010 • RHS "Pro Action" 23 degree Cast Iron SBC head – (180cc Intake Runner/64cc chamber). Part No. 12317 straight plug Part No. 12318 angled plug 				

2.3 LUBRICATION			
Method:	Wet sump		
Oil cooler standard:	No		
Comment:	None		

2.4 IGNITION SYSTEM	
Type:	Coil & distributor
Make:	Delco Remy
Comment:	None

2.5 FUEL SYSTEM			
Carburettor Make:	Rochester	Model:	Quadrajct
Carburettor number:	One		
Size:	Primary 27.69 mm	Secondary 38.10 mm	
Comment:	None		

SECTION 3 TRANSMISSION

3.1 CLUTCH			
Make:	GM		
Type:	Diaphragm		
Diameter:	280 mm	No. of Plates:	One
Actuation:	Hydraulic		
Comment:	None		

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
Comment:	None		

3.3 FINAL DRIVE			
Make:	GM	Model:	12 bolt
Type:	Live rear axle		
Wheel drive method:	Rear		
Ratios:	Various		
Differential type:	LSD		
Comment:	None		

3.4 TRANSMISSION SHAFTS (EXPOSED)	
Number:	One
Description:	One-piece open tail shaft
Comment:	None

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.		
Comment:	None		

SECTION 4 - GENERAL

4.1 FUEL SYSTEM

Tank Location:	Boot	Capacity:	N/A
Fuel pump type and location:	Mechanical on engine block	Make:	GM
Comment:	None		

4.2 ELECTRICAL SYSTEM

Voltage:	12	Alternator:	Fitted
Battery Location:	Engine bay		
Comment:	None		

4.3 BODYWORK

Type:	Coupe	Material:	Steel
No. of seats:	Four	No. doors:	Two
Comment:	See Appendix B		

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		
Comment:	None		

4.5 SAFETY EQUIPMENT

Refer applicable Group Regulations

Appendix A

Engine Block

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

Spare part 88962516 GM performance parts replacement small block 305, 327 & 350, four bolt design with one-piece rear seal, a kit to retain split rear seals is available and will be permitted.

88962516 Engine Block Casting Numbers

TBA						
Or others by specific approval						

10066034 Engine Block Casting Numbers

3782870	3789817	3790721	3791362	3794460	3852174	3858174
3858180	3858190	3868657	3876132	3892657	3903352	3914660
3914678	3932368	3955618	3959512	3970010	3970014	3970016
Or others by specific approval						

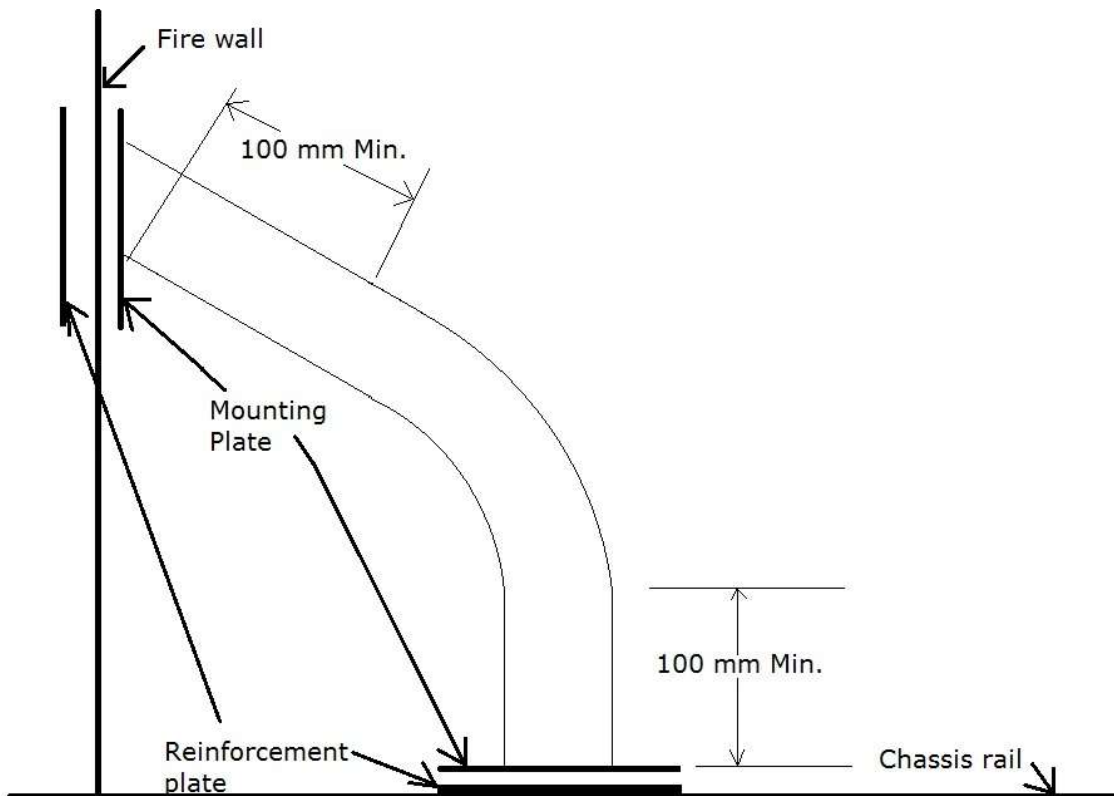
Cylinder Head

GM 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						

- Dart Iron Eagle 180 SBC 23 Degree cast iron part no 10120010
- RHS "Pro Action" 23 degree Cast Iron SBC head – (180cc Intake Runner/64cc chamber).
Part No. 12317 straight plug
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 heads 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 this appendix.
- Once approved, endorsement and the engine seal numbers will be recorded in the log book.

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 in 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.

Appendix B



The rear spoiler is to meet the specifications and dimensions of the original GM part number 3916633.