



5TH CATEGORY - HISTORIC RACING
GROUP N
 APPROVED VEHICLE SPECIFICATION

This form details the approved specifications of individual vehicle models in the 5th Category Historic car group. To be issued with an 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 Motorsport Australia Manual.

Make of Car:	Chevrolet	Model:	Impala
Period of Original Manufacture:	1964		
Motorsport Australia Historic Group:	Nb		
Date of Issue of this Document:	1 January 2024		



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

Update Log

5 February 2024	New Specification sheet for vehicle
1/1/2024	Inclusion of kerb and minimum racing weights

SECTION 1 - CHASSIS

1.1. CHASSIS

Description:	Uni body, two door coupe with sub frames
Period of Manufacture:	1964
Manufacturer:	Chevrolet
Chassis Number From:	1#### W or N ##### Digits two and three denote Model series, fourth and fifth digits denote body style; digit six is model year, digits eight through twelve denote production sequence
Chassis Number location:	Steel plate riveted to the left door jamb on the hinge pillar
Material:	Steel
Comments	None

1.2. FRONT SUSPENSION

Description:	Independent - upper & lower wishbones		
Spring Medium:	Coil		
Damper Type:	Telescopic	Adjustable:	No
Anti-sway bar:	Fitted	Adjustable:	No
Suspension adjustable:	Yes	Method:	Caster, camber and toe
Comments:	Refer to Appendix A		

1.3. REAR SUSPENSION

Description:	Four link – upper control arm lateral control bar, with lower control arms		
Spring Medium:	Coil		
Damper Type:	Telescopic	Adjustable:	No
Anti-sway bar:	Fitted	Adjustable:	No
Suspension adjustable:	No	Method:	N/A
Comments:	Refer to Appendix A		

1.4. STEERING

Type:	Recirculating ball and nut	Make:	Chevrolet
Power steering	Optional - RAM type system		
Comments	None		

1.5. BRAKES

	Front	Rear
Type:	Drum	Drum
Dimensions:	279.4 mm x 69.85 mm	279.4 mm x up to 50.8 mm
Material of drum/disc:	Cast iron	Cast iron
No. cylinders/pots per wheel:	Two	One
Actuation:	Hydraulic	Hydraulic
Brake shoe configuration	Twin leading shoe	Single leading shoe
Caliper make:	Chevrolet	
Caliper type:	Fixed	
Material:	Cast iron	
Master cylinder make:	GM	
Type:	Dual	
Adjustable bias:	No	
Servo Fitted:	Optional	
Comments:	None	

SECTION 2 - ENGINE

2.1. ENGINE

Make:	Chevrolet		
Model:	Small Block 327		
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:	82.55 mm	Max allowed:	82.55 mm
Capacity - original:	5354 cc	Max allowed:	5513 cc
Identifying marks:	327xxxxTxxxxH5 RHS of engine block, on a pad just forward of the right side (passenger) cylinder head.		
Cooling method:	Liquid		
Comments:	Refer to Appendix A for component substitution: <ul style="list-style-type: none"> • GM Performance Small Block: 10066034 • GM Performance Small Block: 88962516 		
Make:	Chevrolet		
Model:	Big Block 409		
No. cylinders:	Eight	Configuration:	Vee
Cylinder Block-material:	Cast iron	Two/Four Stroke:	Four
Bore - Original:	109.47 mm	Max allowed:	111.97 mm
Stroke - original:	88.9 mm	Max allowed:	88.9 mm
Capacity - original:	6694 cc	Max allowed:	7003 cc
Identifying marks:	3##### RHS of engine block, on a pad just forward of the right side (passenger) cylinder head.		
Cooling method:	Liquid		
Comments:	None		

2.2. CYLINDER HEAD

Make:	Chevrolet		
No. of valves/cylinder:	Two	Inlet: One	Exhaust: One
No. of ports total:	Eight	Inlet: Four	Exhaust: Four
No. of camshafts:	One	Location: Block	Drive: Chain
Valve actuation:	Pushrod and rocker		
Spark plugs/cylinder:	One		
Identifying marks:	N/A		
Comments:	Small block 327 - Refer to 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). <ul style="list-style-type: none"> ○ Part No. 12317 straight plug ○ Part No. 12318 angled plug 		

2.3. LUBRICATION

Method:	Wet sump	Oil tank location:	N/A
Dry sump pump type:	No	Location:	N/A
Oil cooler standard:	No	Location:	N/A
Comments:	Oil cooler permitted.		

2.4. IGNITION SYSTEM

Type:	Points, coil & distributor		
Make:	Delco		
Comments:	Breakerless electronic ignition permitted		

2.5. FUEL SYSTEM

Carburettor Make:	Rochester	Model:	Quadrajct
Carburettor Number:	One		
Size:	750		
Fuel injection Make:	N/A	Type:	N/A
Supercharged:	No	Type:	N/A
Comments:	Barry Grant reproduction carburettor not approved.		

SECTION 3 - TRANSMISSION

3.1. CLUTCH

Make:	GM
Type:	Diaphragm
Diameter:	264 mm
No. of Plates:	One
Actuation:	Mechanical
Comments:	None

3.2. TRANSMISSION

Type:	Synchromesh
Make:	Borg Warner T10
Gearbox location:	Behind engine
No. forward speeds:	Four
Gearchange type and location:	H pattern floor mounted
Case material:	Cast iron or Alloy
Identifying marks:	N/A
Comments:	None

3.3. FINAL DRIVE

Make:	Chevrolet	Model:	Salisbury 10 or 12 bolt
Type:	Live rear axle		
Ratios:	Various		
Differential type:	Limited slip		
Comments:	None		

3.4. TRANSMISSION SHAFTS (EXPOSED)

Number:	One
Location:	Gearbox to final drive
Description:	Open tailshaft with twin uni joints
Comments:	Steel

3.1. WHEELS & TYRES

Wheel type - Original:	Pressed disc	Material - Original:	Steel
Wheel type - Allowed:	Period cast	Material - Allowed:	Alloy
Fixture method:	Studs	No. studs:	Five
Wheel dia. & rim width	FRONT		REAR
Original:	5.5" x 14"		5.5" x 14"
Allowed	6" x 14"		6" x 14"
Tyre Section:			
Allowed:	Refer approved tyre list.		
Aspect ratio - minimum:	60% minimum aspect ratio.		
Comments:	None		

SECTION 4 GENERAL

4.1. FUEL SYSTEM

Tank Location:	Boot floor	Capacity:	75.7 litres
Fuel pump, type:	Mechanical, engine block	Make:	AC
Comments:	None		

4.2. ELECTRICAL SYSTEM

Voltage:	12	Alternator fitted:	Generator
Battery Location:	Engine compartment		
Comments:	None		

4.3. BODYWORK

Type:	Closed	Material:	Steel
No. of seats:	Five	No. doors:	Four
Comments:	None		

4.4. DIMENSIONS

Track - Front:	1557 mm	Rear:	1531 mm
Wheelbase:	3022 mm	Overall length:	5315 mm
Approved Manufacturer's kerb weight:	327 4 door – 1790 kg 409 4 door – 1856 kg		
Approved minimum racing weight:	327 4 door – 1754 kg 409 4 door – 1819 kg		
Comments:	None		

4.5. SAFETY EQUIPMENT

Refer applicable Group Regulations

Appendix A

Suspension

Front

Spring height adjustment permitted.

Rear

Spring height adjustment permitted.

Block

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

Logbook endorsed and the engine sealed required.

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.

Logbook endorsed and the engine sealed required.

88962516 Engine Block Casting Numbers

N/A

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 Heads

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						

Approved substitute heads are:

- 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 are 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 must be located within the engine bay in an easily accessible position. The wiring must be visible along its length with the earth connected to the nearest practical earth point. The limiter will be subject to testing at race meetings.

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 1.94" in diameter for the inlet, and 1.6" 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 match inlet and exhaust ports to manifold to a maximum of the allowed depth 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. 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.
4. Valve seat cutting/grinding is allowed, but the original valve sizes of inlet and exhaust must be retained. No machining is permitted under the valve seat.
5. No machining is permitted in the combustion chamber. Combustion chambers must be left completely untouched except for original machining by the manufacturer. i.e. 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.

