



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:	Holden	Model:	HR
Period of Original Manufacture:	1966 – 1967		
Motorsport Australia Historic Group:	Nc		
Date of Issue of this Document:	1 January 2024		



Refer to The *Manual*, Historic Appendix, Vehicle Eligibility, General Requirements & Historic Touring Cars Group N Regulations for permitted modifications.

Update Log

1/1/2024	Inclusion of kerb and minimum racing weights

SECTION 1 - CHASSIS

1.1. CHASSIS

Description:	Unibody four door sedan		
Period of Manufacture:	1963 - 1964		
Manufacturer:	General Motors Holden		
Chassis Number From:	HR?????? HR 215 – Standard sedan HR 225 – Special sedan HR 235 – Premier Sedan		
Chassis Number location:	Plate on centre of firewall		
Material:	Steel		
Comments	None		

1.2. FRONT SUSPENSION

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

1.3. REAR SUSPENSION

Description:	Live rear axle		
Spring Medium:	Semi elliptic leaf		
Damper Type:	Telescopic	Adjustable:	No
Anti-sway bar:	No	Adjustable:	N/A
Suspension adjustable:	No	Method:	N/A
Comments:	Refer to Appendix A		

1.4. STEERING

Type:	Recirculating ball	Make:	Holden
Comments	RAM power steering is optional		

1.5. BRAKES

	Front	Rear
Type:	Disc, solid	Drum
Dimensions:	256 mm x 9.53 mm	229 mm x 44.4 mm
Material of drum/disc:	Cast iron	Cast iron
No. cylinders/pots per wheel:	Two	One
Actuation:	Hydraulic	Hydraulic
Caliper make:	N/A	
Caliper type:	N/A	
Material:	N/A	
Master cylinder make:	Girlock / PBR	
Type:	Single	
Adjustable bias:	No	
Servo Fitted:	Yes	
Comments:	None	

SECTION 2 - ENGINE

2.1. ENGINE

Make:	GMH		
Model:	161 or 186		
No. cylinders:	Six	Configuration:	In-line
Cylinder Block-material:	Cast iron	Two/Four Stroke:	Four
161 Bore - Original:	85.72 mm	Max allowed:	87.255 mm
161 Stroke - original:	76.20 mm	Max allowed:	76.20 mm
161 Capacity - original:	2639 cc	Max allowed:	2732 cc
186 Bore - Original:	92.075 mm	Max allowed:	93.575 mm
186 Stroke - original:	76.20 mm	Max allowed:	76.20 mm
186 Capacity - original:	3044	Max allowed:	3144 cc
Identifying marks:	The engine number is on the engine boss, right hand side of the engine. 186 has "186" on block. Various.		
Cooling method:	Liquid		
Comments:	The later 2.8 block (Blue/Black block with large journal size {202}) is NOT permitted. The VC-VH block is NOT permitted.		

2.1. CYLINDER HEAD

Make:	GMH		
No. of valves/cylinder:	Two	Inlet: One	Exhaust: One
No. of ports total:	Nine	Inlet: Three	Exhaust: Six
No. of camshafts:	One	Location: Block	Drive: Gear
Valve actuation:	Pushrod and rocker		
Spark plugs/cylinder:	One		
Identifying marks:	N/A		
Comments:	The Ian Moodie XU1 Cylinder Head casting No 2815843 is allowed. See Appendix A.		

2.2. LUBRICATION

Method:	Wet sump	Oil tank location:	N/A
Dry sump pump type:	N/A	Location:	N/A
Oil cooler standard:	No	Location:	N/A
Comments:	None		

2.3. IGNITION SYSTEM

Type:	Points, distributor & coil		
Make:	Bosch or Lucas		
Comments	Breakerless electronic ignition permitted		

2.4. FUEL SYSTEM

Carburettor Make:	Stromberg	Model:	BXUV – 2 or BXV – 2
	Bendix	Model:	BXV
Carburettor Number:	One		
Size:	Various		
Fuel injection Make:	N/A	Type:	N/A
Supercharged:	No	Type:	N/A
Comments:	None		

SECTION 3 - TRANSMISSION

3.1. CLUTCH

Make:	Holden
Type:	Diaphragm
Diameter:	219 mm
No. of Plates:	One
Actuation:	Hydraulic
Comments:	None

3.2. TRANSMISSION

Type:	Three speed - Synchromesh, not on first gear Four speed - Synchromesh
Make:	Holden – 3-speed Opel – 4-speed
Gearbox location:	Behind engine
No. forward speeds:	Three or Four
Gearchange type and location:	3-Speed – column shift. 4-Speed - Remote lever floor
Case material:	Cast iron
Identifying marks:	N/A
Comments:	The standard gearbox was the 3-speed column shift and the 2 speed Powerglide auto as an option. Holden HT three speed gear box is the approved substitute for a 3-speed gearbox. Original HR Column to be retained & modified to operate HT gear box. Manual gearbox vehicles require floor modifications to fit HT gear box, automatic vehicles do not. Holden offered the 186S "pack" as an option, with, a 186 engine and the 4 speed Opel gearbox with floor shift.

3.3. FINAL DRIVE

Make:	Holden	Model:	HT
Type:	Live axle, banjo type, semi floating		
Ratios:	Various		
Differential type:	Open/free		
Comments:	None		

3.4. TRANSMISSION SHAFTS (EXPOSED)

Number:	One
Location:	Gearbox to final drive
Description:	Open tail shaft with twin uni joints
Comments:	None

3.5. WHEELS & TYRES

Wheel type - Original:	Pressed disc	Material - Original:	Steel
Wheel type - Allowed:	Alloy (period style)	Material - Allowed:	Alloy
Fixture method:	Studs	No. studs:	Five
Wheel dia. & rim width	FRONT		REAR
Original:	4.5" x 13"		4.5" x 13"
Allowed	7" x 13"		7" x 13"
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	Capacity:	51 litres
Fuel pump, type:	Mechanical, engine block	Make:	AC
Comments:	None		

4.2. ELECTRICAL SYSTEM

Voltage:	12	Alternator fitted:	Alternator
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:	1394 mm	Rear:	1394 mm
Wheelbase:	2963 mm	Overall length:	4597 mm
Approved Manufacturer's kerb weight:	1183 kgs		
Approved minimum racing weight:	1159 kgs		
Comments:	None		

4.5. SAFETY EQUIPMENT

Refer applicable Group Regulations

Appendix A

Suspension

Front

Spring height adjustment permitted.

Rear

Spring height adjustment permitted.

Alternate Cylinder Head

Ian Moodie Cylinder head

- The Ian Moodie XU1 Cylinder Head casting No 2815843 is allowed.
- The cylinder head may be modified as permitted in the Group N regulations.
- The Ian Moodie Cylinder head requires 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.