

<b>5TH CATEGORY - HISTORIC RACING</b> <b>GROUP N</b> <b>APPROVED VEHICLE SPECIFICATION</b>
--

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.

<b>Make of Car:</b>	Valiant	<b>Model:</b>	VG	Pacer	Hemi 245
			VH	Pacer	Hemi 265
			VH	Pacer	Hemi 265
<b>Period of Original Manufacture:</b>	1968 - 1971				
<b>Motorsport Australia Historic Group:</b>	Nc				
<b>Date of Issue of this Document:</b>	27 May 2024				



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

***Update Log***

1/1/2024	Inclusion of kerb and minimum racing weights
27/5/2024	Corrections to VG – number of gears and bore size in 245 motor

## 1. - CHASSIS

### 1.1. CHASSIS

<b>Description:</b>	Unitary construction		
<b>Period of Manufacture:</b>	1968 - 1971		
<b>Manufacturer:</b>	Chrysler Australia		
<b>Chassis Number From:</b>	VG7S23 or VG7S41 VH7S29**** Chassis D364C (C-1972, D-1973)		
<b>Chassis Number location:</b>	RHS Firewall		
<b>Material:</b>	Steel		
<b>Comments</b>	None		

### 1.2. FRONT SUSPENSION

<b>Description:</b>	Independent - upper wishbone & lower arm with castor rod		
<b>Spring Medium:</b>	Torsion bar		
<b>Damper Type:</b>	Telescopic	<b>Adjustable:</b>	No
<b>Anti-sway bar:</b>	Yes	<b>Adjustable:</b>	No
<b>Suspension adjustable:</b>	Yes	<b>Method:</b>	Caster, camber and toe
<b>Comments:</b>	Refer to Appendix A		

### 1.3. REAR SUSPENSION

<b>Description:</b>	Semi elliptic Hotchkiss		
<b>Spring Medium:</b>	Semi elliptical leaf		
<b>Damper Type:</b>	Telescopic	<b>Adjustable:</b>	No
<b>Anti-sway bar:</b>	No	<b>Adjustable:</b>	N/A
<b>Suspension adjustable:</b>	No	<b>Method:</b>	N/A
<b>Comments:</b>	Refer to Appendix A		

### 1.4. STEERING

<b>Type:</b>	Recirculating ball	<b>Make:</b>	Chrysler
<b>Comments</b>	None		

### 1.5. BRAKES

	Front	Rear
<b>Type:</b>	Disc, ventilated	Drum
<b>Dimensions:</b>	280 mm x 22.3 mm	229 mm x 58 mm
<b>Material of drum/disc:</b>	Cast iron	Cast iron
<b>No. cylinders/pots per wheel:</b>	Two	Two
<b>Actuation:</b>	Hydraulic	Hydraulic
<b>Caliper make:</b>	Girlock	
<b>Caliper type:</b>	Floating	
<b>Material:</b>	Cast iron	
<b>Master cylinder make:</b>	Girlock	
<b>Type:</b>	Tandem	
<b>Adjustable bias:</b>	No	
<b>Servo Fitted:</b>	Yes	
<b>Comments:</b>	None	

**SECTION 2 - - ENGINE**

**1.1. ENGINE**

**A. Hemi 245**

<b>Make:</b>	Chrysler		
<b>Model:</b>	Hemi 245		
<b>No. cylinders:</b>	Six	<b>Configuration:</b>	In line
<b>Cylinder Block-material:</b>	Cast iron	<b>Two/Four Stroke:</b>	Four
<b>Bore - Original:</b>	96.52 mm	<b>Max allowed:</b>	98.02 mm
<b>Stroke - original:</b>	93.5 mm	<b>Max allowed:</b>	93.5 mm
<b>Capacity - original:</b>	4015 cc	<b>Max allowed:</b>	4233 cc
<b>Identifying marks:</b>	Next to distributor "D" prefix. Second Digit - size 1    215 2    245 3    265 Third Digit – performance level: 1    Low Compression 2    Standard Performance (1 BBL) 3    High Performance (2 BBL) 4    Premium Performance (Pacer, R/T & 770) 5    Six Pack (E37 & E48) 6    Six Pack (E38 & E49) Fourth Digit - gearbox 1    Auto 3    3 speed manual 4    4 speed manual Fifth Digit - year of manufacture: A    1970 B    1971 C    1972		
<b>Cooling method:</b>	Liquid		
<b>Comments:</b>	Engine fitted to VH. External single stage, wet, belt driven oil pump allowed. Refer Appendix A.		

**1.2. CYLINDER HEAD**

<b>Make:</b>	Chrysler		
<b>No. of valves/cylinder:</b>	Two	<b>Inlet:</b> One	<b>Exhaust:</b> One
<b>No. of ports total:</b>	Twelve	<b>inlet:</b> Six	<b>Exhaust:</b> Six
<b>No. of camshafts:</b>	One	<b>Location:</b> Block	<b>Drive:</b> Chain
<b>Valve actuation:</b>	Pushrod and rocker		
<b>Spark plugs/cylinder:</b>	One		
<b>Identifying marks:</b>	N/A		
<b>Comments:</b>	None		

**1.3. LUBRICATION**

<b>Method:</b>	Wet sump	<b>Oil tank location:</b>	N/A
<b>Dry sump pump type:</b>	N/A	<b>Location:</b>	N/A
<b>Oil cooler standard:</b>	No	<b>Location:</b>	N/A
<b>Comments:</b>	External single stage, wet, belt driven oil pump allowed. Refer Appendix A.		

**1.4. IGNITION SYSTEM**

<b>Type:</b>	Points, distributor & coil
<b>Make:</b>	Optional
<b>Comments</b>	Breakerless electronic ignition permitted

**1.5. FUEL SYSTEM**

<b>Carburettor Make:</b>	Carter	<b>Model:</b>	2 or 4 Barrel
<b>Carburettor Number:</b>	One		
<b>Size:</b>	Various		
<b>Fuel injection Make:</b>	N/A	<b>Type:</b>	N/A
<b>Supercharged:</b>	No	<b>Type:</b>	N/A
<b>Comments:</b>	E34 option – 4 barrel E35 option – 4 Barrel		

## SECTION 2 - ENGINE

### 1.6. ENGINE

#### B. Hemi 265

<b>Make:</b>	Chrysler		
<b>Model:</b>	Hemi 265		
<b>No. cylinders:</b>	Six	<b>Configuration:</b>	In line
<b>Cylinder Block-material:</b>	Cast iron	<b>Two/Four Stroke:</b>	Four
<b>Bore - Original:</b>	99.3 mm	<b>Max allowed:</b>	100.8 mm
<b>Stroke - original:</b>	93.47 mm	<b>Max allowed:</b>	93.47 mm
<b>Capacity - original:</b>	4340 cc	<b>Max allowed:</b>	4474 cc
<b>Identifying marks:</b>	Next to distributor "D" prefix. Second Digit - size 1    215 2    245 3    265 Third Digit – performance level: 1    Low Compression 2    Standard Performance (1 BBL) 3    High Performance (2 BBL) 4    Premium Performance (Pacer, R/T & 770) 5    Six Pack (E37 & E48) 6    Six Pack (E38 & E49) Fourth Digit - gearbox 1    Auto 3    3 speed manual 4    4 speed manual Fifth Digit - year of manufacture: A    1970 B    1971 C    1972		
<b>Cooling method:</b>	Liquid		
<b>Comments:</b>	Engine fitted to VH. External single stage, wet, belt driven oil pump allowed. Refer Appendix A.		

### 1.7. CYLINDER HEAD

<b>Make:</b>	Chrysler		
<b>No. of valves/cylinder:</b>	Two	<b>Inlet:</b>	One
		<b>Exhaust:</b>	One
<b>No. of ports total:</b>	Twelve	<b>inlet:</b>	Six
		<b>Exhaust:</b>	Six
<b>No. of camshafts:</b>	One	<b>Location:</b>	Block
		<b>Drive:</b>	Chain
<b>Valve actuation:</b>	Pushrod and rocker		
<b>Spark plugs/cylinder:</b>	One		
<b>Identifying marks:</b>	N/A		
<b>Comments:</b>	None		

### 1.8. LUBRICATION

<b>Method:</b>	Wet sump	<b>Oil tank location:</b>	N/A
<b>Dry sump pump type:</b>	N/A	<b>Location:</b>	N/A
<b>Oil cooler standard:</b>	No	<b>Location:</b>	N/A
<b>Comments:</b>	External single stage, wet, belt driven oil pump allowed. Refer Appendix A.		

### 1.9. IGNITION SYSTEM

<b>Type:</b>	Points, distributor & coil
<b>Make:</b>	Optional
<b>Comments</b>	Breakerless electronic ignition permitted

### 1.1. FUEL SYSTEM

<b>Carburettor Make:</b>	Carter	<b>Model:</b>	2 or 4 Barrel AVS
<b>Carburettor Number:</b>	One		
<b>Size:</b>	Various		
<b>Fuel injection Make:</b>	N/A	<b>Type:</b>	N/A
<b>Supercharged:</b>	No	<b>Type:</b>	N/A
<b>Comments:</b>	E34 option – 4 barrel E35 option – 4 Barrel		

### SECTION 3 - TRANSMISSION

#### 3.1. CLUTCH

<b>Make:</b>	Borg and Beck
<b>Type:</b>	Diaphragm
<b>Diameter:</b>	235 mm
<b>No. of Plates:</b>	One *
<b>Actuation:</b>	Mechanical
<b>Comments:</b>	VH with A84 track pack used twin plate 228.6 mm clutch plates

#### 3.2. TRANSMISSION

<b>Type:</b>	Syncromesh
<b>Make:</b>	Borg Warner
<b>Gearbox location:</b>	Behind engine
<b>No. forward speeds:</b>	VG – Three VH - Three or Four
<b>Gearchange type and location:</b>	H pattern – central location
<b>Case material:</b>	Cast iron casing, aluminium tailhousing
<b>Identifying marks:</b>	N/A
<b>Comments:</b>	None

#### 3.3. FINAL DRIVE

<b>Make:</b>	Borg Warner	<b>Model:</b>	Sure Grip
<b>Type:</b>	Live rear axle		
<b>Ratios:</b>	Various		
<b>Differential type:</b>	Semi floating hypoid		
<b>Comments:</b>	None		

#### 3.4. TRANSMISSION SHAFTS (EXPOSED)

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

#### 3.5. WHEELS & TYRES

<b>Wheel type - Original:</b>	Steel – Sports style Alloy	<b>Material - Original:</b>	Steel Alloy (Period)
<b>Wheel type - Allowed:</b>	Steel Alloy (period style)	<b>Material - Allowed:</b>	Steel Alloy
<b>Fixture method:</b>	Stud and nut	<b>No. studs:</b>	Five
<b>Wheel dia. &amp; rim width</b>	<b>FRONT</b>	<b>REAR</b>	
<b>Original:</b>	5.5" x 14"	5.5" x 14"	
<b>Allowed</b>	8" x 14"	8" x 14"	
<b>Tyre Section:</b>			
<b>Allowed:</b>	Refer approved tyre list.		
<b>Aspect ratio - minimum:</b>	60% minimum aspect ratio.		
<b>Comments:</b>	None		

## SECTION 4 GENERAL

### 4.1. FUEL SYSTEM

<b>Tank Location:</b>	Under boot floor	<b>Capacity:</b>	86 litres
<b>Fuel pump, type:</b>	Electrical	<b>Make:</b>	Holley
<b>Comments:</b>	None		

### 4.2. ELECTRICAL SYSTEM

<b>Voltage:</b>	12	<b>Alternator fitted:</b>	Alternator
<b>Battery Location:</b>	Engine bay		
<b>Comments:</b>	None		

### 4.3. BODYWORK

<b>Type:</b>	VG - Coupe or Sedan VH - Sedan	<b>Material:</b>	Steel
<b>No. of seats:</b>	Five	<b>No. doors:</b>	VG - Two or Four VH – Four
<b>Comments:</b>	<p>VG and VH 245 models have red and black grille.</p> <p>VG and VH 245 models have decals:</p> <ul style="list-style-type: none"> <li>• "245 PACER HEMI" on the bonnet</li> <li>• body stripe from rear to middle of front door</li> </ul> <p>All VH 265 models have decals:</p> <ul style="list-style-type: none"> <li>• 'HEMI 265' qtr-panel</li> <li>• 1 x 'HEMI-PACER' beaver panel</li> <li>• 1 x 'HEMI 265' (bonnet) decal</li> <li>• "HEMI 265" on rear quarter panel</li> <li>• Black stripes – Option codes A88/A84 - across top of boot and top of rear</li> </ul>		

### 4.4. DIMENSIONS

<b>Track - Front:</b>	1519 mm	<b>Rear:</b>	1530 mm
<b>Wheelbase:</b>	2070 mm	<b>Overall length:</b>	4570 mm
<b>Approved Manufacturer's kerb weight:</b>	1311 kgs		
<b>Approved minimum racing weight:</b>	1285 kgs		
<b>Comments:</b>	None		

### 4.5. SAFETY EQUIPMENT

Refer applicable Group Regulations
------------------------------------

## **Appendix A**

### **Suspension**

#### **Front**

Spring height adjustment permitted.

#### **Rear**

Spring height adjustment permitted.

### **Engine**

#### **External oil pump**

Three options of pump brands permitted, Johnson, Moroso and SCP.

The pumps are to be external single stage, wet, belt driven pump.

Maximum width of belt is to be 25mm.

Maximum width of rotor / gear on pump is 1.1 inches.

Mounting is to be below the horizontal centreline of the water pump.

Piping / Plumbing to be a maximum size of dash 12.

One hose in and one hose out of pump, single pick up, single return, can be via oil cooler / filter.

Pipes connected to the pump must be black in colour.