



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: | Holden Torana | Model: | LC GTR XU1 |
| Period of Original Manufacture: | 8/1970 – 11/1971 | | |
| Motorsport Australia Historic Group: | Nc | | |
| Date of issue of this document: | August 2019 | | |



| Update Log | |
|-------------------|------------------------------------|
| June 2018 | Ian Moodie Cylinder Head permitted |
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| | |
| | |

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: | Unitary construction |
| Period of Manufacture: | 8/1970 – 11/1971 |
| Manufacturer: | General Motors Holden |
| Chassis no. from: | LC00001S* |
| VIN | 82911CH100001 |
| Chassis no. location: | Passenger side Inner front guard |
| Material: | Steel |
| Comment: | VIN - 82911 prefix indicates that it is a GTR, C is for LC and H1 is the plant code then it is the sequence number. |

| 1.2 FRONT SUSPENSION | | | |
|-------------------------------|-----------------|--------------------|----|
| Description: | Double wishbone | | |
| Spring Medium: | Coil | | |
| Damper Type: | Telescopic | Adjustable: | No |
| Anti-sway bar: | Fitted | Adjustable: | No |
| Suspension adjustable: | No | | |
| Comment: | | | |

| 1.3 REAR SUSPENSION | | | |
|-------------------------------|------------------------------|--------------------|-----|
| Description: | Live axle with trailing arms | | |
| Spring medium: | Coil | | |
| Damper type: | Telescopic | Adjustable: | No |
| Anti-sway bar: | None | Adjustable: | N/A |
| Suspension adjustable: | No | | |
| Comment: | | | |

| 1.4 STEERING | | | |
|---------------------|---------------|--------------|-----|
| Type: | Rack & pinion | Make: | GMH |
| Comment: | | | |

| 1.5 BRAKES | | | |
|--------------------------------------|--------------|--------------|--------|
| | Front | Rear | |
| Type: | Disc | Drum | |
| Dimensions: | 254 x 15 mm | 228 mm dia. | |
| Material: | Cast iron | Cast iron | |
| No. cylinders/pots per wheel: | Two | One | |
| Actuation: | Hydraulic | Hydraulic | |
| Caliper Make: | Girlock | | |
| Caliper Type: | Split | | |
| Caliper Material: | Cast iron | | |
| Master cylinder make: | PBR | Type: | Tandem |
| Adjustable bias: | None | | |
| Servo Fitted: | Yes | | |
| Comment: | | | |

SECTION 2 - ENGINE

| 2.1 ENGINE | | | |
|---------------------------------|--|-------------------------|----------|
| Make: | GMH | | |
| Model: | Red 186 | | |
| No. cylinders: | Six | Configuration: | In line |
| Cylinder block material: | Cast iron | Two/Four Stroke: | Four |
| Bore - Original: | 92.07 mm | Max. allowed: | 93.57 mm |
| Stroke - original: | 76.20 mm | | |
| Capacity - original: | 3044 cc | Max. allowed: | 3144 cc |
| Cooling method: | Liquid | C/R: | N/A |
| Identifying marks: | | | |
| Comments: | The engine number is on the engine boss, right hand side of the engine. It consists of a model identification number followed by a serial number that started at 1001 & ran consecutively regardless of the engine size. The pre Bathurst 1971 engines were stamped with a number that was prefixed with either 186X or 3100X i.e. 186X1001. The Bathurst 1971 XU1's were prefixed by CK & suffixed by an X i.e. CK1001X. All LC XU1 engines had an external copper oil feed pipe that linked all the main bearing & ran down the side of the block. | | |

| 2.2 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 | | | | |
| Comment: | The head fitted to the LC is a 161cu in with larger valves & stronger springs. Any Holden 9 port rounded shoulder cylinder head may be used. Alternate cylinder head see Appendix A | | | | |

| 2.3 LUBRICATION | | | |
|-----------------------------|----------|--|--|
| Method: | Wet sump | | |
| Oil cooler standard: | No | | |
| Comment: | | | |

| 2.4 IGNITION SYSTEM | |
|----------------------------|-------------------------------|
| Type: | Coil, points, and distributor |
| Make: | Delco Remy |
| Comment: | |

| 2.5 FUEL SYSTEM | | | |
|----------------------------|------------------|---------------|-----------|
| Carburettor Make: | Zenith Stromberg | Model: | 150 CD |
| Carburettor number: | Three | Size: | 1.75 inch |
| Comment: | | | |

SECTION 3 - TRANSMISSION

| 3.1 CLUTCH | | | |
|-------------------|------------|-----------------------|-----|
| Make: | GMH | | |
| Type: | Diaphragm | | |
| Diameter: | 219 mm | No. of Plates: | One |
| Actuation: | Mechanical | | |
| Comment: | | | |

| 3.2 TRANSMISSION | | | |
|---------------------------------------|--|---------------------------|---------------|
| Type: | Synchromesh | | |
| Make: | GMH M20 or Opel | | |
| No. forward speeds: | Four | Gearbox location: | Behind engine |
| Gear change type and location: | Remote lever, Floor | | |
| Case material: | Cast iron | Identifying marks: | N/A |
| Comment: | Pre Bathurst 1971 XU1's were fitted with the 'Opel' gearbox as fitted to the 186S Holden Kingswood etc. The stronger M20 box was fitted for Bathurst 1971. | | |

| 3.3 FINAL DRIVE | | | |
|----------------------------|-------------|---------------|-----|
| Make: | GMH | Model: | N/A |
| Type: | N/A | | |
| Wheel drive method: | Rear | | |
| Ratios: | Various | | |
| Differential type: | Free / open | | |
| Comment: | | | |

| 3.4 TRANSMISSION SHAFTS (EXPOSED) | |
|--|---|
| Number: | One |
| Description: | Open tail shaft with two Cardan type joints |
| Comment: | |

| 3.5 WHEELS & TYRES | | | |
|------------------------------------|---|-----------------------------|---------------|
| Wheel type - Original: | Pressed disc | Material - Original: | Steel |
| Allowed: | Cast | Allowed: | Aluminium |
| Fixture method: | Studs | No. studs: | Five |
| Wheel dia. & rim width: | FRONT | | REAR |
| Original: | 5.5 x 13 inch | | 5.5 x 13 inch |
| Allowed: | 7 x 13 | | 7 x 13 |
| Tyres allowed: | 60% minimum aspect ratio, refer approved tyre list. | | |
| Comment: | | | |

SECTION 4 - GENERAL

| 4.1 FUEL SYSTEM | | | |
|-------------------------------------|---|------------------|-----------|
| Tank Location: | Boot | Capacity: | 77 litres |
| Fuel pump type and location: | Mechanical, engine block | Make: | AC |
| Comment: | Two Torana lower fuel tank sections were welded together to achieve this capacity. An alternate filler mounted through the Gauge hole should be strongly recommended as fuel surge under acceleration produces leakage through the standard filler. | | |

| 4.2 ELECTRICAL SYSTEM | | | |
|------------------------------|--------------------|---------------------------------|------------|
| Voltage: | 12 | Generator or Alternator: | Alternator |
| Battery Location: | Engine compartment | | |
| Comment: | | | |

| 4.3 BODYWORK | | | |
|----------------------|----------------|-------------------|-------|
| Type: | Closed touring | Material: | Steel |
| No. of seats: | Four | No. doors: | Two |
| Comment: | See Appendix B | | |

| 4.4 DIMENSIONS | | | |
|-----------------------|---------|------------------------|---------|
| Track - Front: | 1331 mm | Rear: | 1300 mm |
| Wheelbase: | 2540 mm | Overall length: | 4386 mm |
| Dry weight: | 1031 Kg | | |
| Comment: | | | |

| 4.5 SAFETY EQUIPMENT | | | |
|---|--|--|--|
| Refer applicable Group Regulations | | | |

Appendix A

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.

Appendix B

- Metal front spoiler & Fibreglass rear spoiler.
- Three (3) Vents cut in the lower section of the front guards behind the wheel opening.
- sports steering wheel
- A plastic centre console around the gear stick.
- The door trims 'GTR' in chrome lettering.
- The dashboard featured full instrumentation.
- High back seats without headrests were fitted.